

THE HYPNOTIC TRANCE, THE PSYCHEDELIC EXPERIENCE, AND THE CREATIVE ACT¹

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As long as men have reflected about their world, a basic issue has divided them. Some have regarded man's conceptual models as straightforward reflections of reality. Others have looked upon these models as a fragment imposed by the limitations of man's consciousness upon the unlimited variations of his internal and external world.

The eminent philosopher, Henri Bergson (5), took the latter position, maintaining that the function of our brain is basically eliminative. The nervous system attempts to protect us from being overwhelmed and confused by the mass of irrelevant knowledge available to us. It shuts out most of what we should otherwise perceive at any moment and leaves only that small and special selection which is useful in practical situations. Aldous Huxley (11, p. 21) states that:

"According to such a theory, each one of us is potentially Mind at Large. But in so far as we are animals, our business is at all costs to survive. To make biological survival possible, Mind at Large has to be funneled through the reducing valve of the brain and nervous system. What comes out at the other end is a measly trickle..."

Huxley (11, pp. 21-22) further describes the set of verbal symbols that is needed to help us utilize this reduced consciousness.

"To formulate and express the contents of this reduced awareness, man has invented and endlessly elaborated those symbol-systems and implicit philosophies which we call languages. Every individual is at once the beneficiary and the victim of the linguistic tradition into which he or she has been born—the beneficiary inasmuch as language gives access to the accumu-

lated records of other people's experience, the victim in so far as it confirms him in the belief that reduced awareness is the only awareness and as it bedevils his sense of reality, so that he is all too apt to take his concepts for data, his words for actual things."

General semanticists have also recognized the necessity of language for human survival but have warned against confusing concepts and data, words and things. Hayakawa (10, pp. 32, 58-60) has differentiated between the extensional world, which we are capable of knowing through our experiences, and the intensional world of words, expressions, and "maps" which represent extensional "territories."

"If a child grows to adulthood with a verbal world in his head which corresponds fairly closely to the extensional world that he finds around him in his widening experience, he is in relatively small danger of being shocked or hurt by what he finds, because his verbal world has told him what, more or less, to expect... If, however, he grows up with a false map in his head... he will constantly be running into trouble, wasting his efforts, and acting like a fool. He will not be adjusted to the world as it is; he may, if the lack of adjustment is serious, end up in a mental hospital."

Agreeing with Hayakawa, and arguing that children are "naturally extensional," Campbell (6) suggests that more direct sensory experiences be used in school classrooms and calls for a "deverbalization" of education; many other educators, such as Maria Montessori and Julian Huxley have likewise called for more nonverbal education of children.

It has frequently been pointed out that the child's natural tendency is to experience his world directly. However, the child's parents and culture soon teach him to impose linguistic concepts upon extensional events.

A few individuals in each culture, according to many thinkers, have succeeded in

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altering consciousness to such an extent that they have regained rapport with the extensional world. Their number includes the artists, the mystics, and the visionary prophets who have broken through the culturally-imposed "word-game" to achieve esthetic, spiritual, and intellectual goals. To attain these states of altered consciousness, and to achieve a closer contact with both the inner and the outer reality, they have used Yoga, religious rituals, sensory deprivation, physical shock, relaxation, prolonged starvation, sleeplessness, hypnosis, and psychedelic ("mind-manifesting") drugs.

Altered states of consciousness have proved to be effective in fostering creativity because the creative act is basically preverbal and unconscious in origin. Torrance (23, p. 16) recognizes the preverbal origins of creativity when he defines it as the process of sensing gaps or missing elements, forming ideas or hypotheses concerning them, testing these hypotheses, and communicating the results. Freud (9, pp. 46-50) associates curiosity with unconscious drives which can "put themselves in the service of intellectual interests" although they do not originate in the conscious state. "In the case of a creative mind," Freud states elsewhere, "...the intellect has withdrawn its watchers from the gate, and the ideas rush in pell-mell..." He and many others have also stressed the necessity of breaking through the culturally-imposed language structure if creativity is to emerge.

Under properly controlled situations, perhaps the safest and simplest methods of consciousness-alteration employ hypnosis and psychedelic drugs. The creative act goes beyond the mere recombination of similar elements, and thus, altered consciousness can be of considerable assistance in enabling an individual to conceptualize novel solutions to artistic, technological, and scientific problems. Hypnosis appears to focus consciousness so intensely that subthreshold stimuli are perceived; in fact, it is frequently defined in terms of a heightened responsiveness to suggestion. Psychedelic drugs, such as psilocybin, mescaline, and

LSD, seem to expand awareness in such a way that the nervous system is flooded with new and unusual stimuli.

Both hypnosis and psychedelic drugs can aid the breakthrough into the preverbal realm where creative inspiration has its origins. Many creative artists and scientists claim that their creative efforts exist as moods and feelings before they are expressed in words and symbols. Aaron Copeland states that a musical theme comes to him almost like automatic writing. For the late Robert Frost, a poem began as "a lump in the throat... a homesickness, or a love-sickness, a loneliness." It was "never a thought to begin with." Wagner is reported to have heard music spontaneously, and Brahms to have heard fragments of his themes as "inner harmony". The renowned 18th century German chemist, August Kekule, produced a conceptualization of the benzene ring which was inspired by a dream of a snake holding its tail in its mouth.

Some individuals, especially religious mystics, attempt to foster this type of experience. Ben-Avi (3, p. 1819), while discussing Zen Buddhism, counsels that "... change, illumination, or growth, must be rooted in the immediate, the concrete experience of the individual" rather than being based on conscious abstractions and intellectual formulations. Zen Buddhism, with its emphasis on concentration, is often regarded as a modification of autohypnosis. In autohypnosis, as in Zen, meditation leads to increased concentration, a focusing of attention, and an increased receptivity to creative ideas.

The history of creative effort is filled with examples demonstrating the value of altered consciousness. Rachmaninoff wrote his most celebrated piano concerto while under hypnotic treatment. Coleridge was inspired to write the poem "Kubla Khan" while half-asleep from the effects of an anodyne prescribed for an illness. Poincare discovered a major class of mathematical functions while in a state between waking and sleeping. Estabrooks and Gross (8, p. 24), among others feel that hypnosis can release crea-

tive functioning among children as well as adults.

Among the recent research reports in hypnosis, the following four studies assume significance in delineating the relationship between the hypnotic trance and the creative act.

THE HYPNOTIZABILITY OF CHILDREN

London (17) reports, after studying 57 boys and girls aged five and older, that children are significantly more susceptible to hypnosis than are adults. In standardizing the Children's Hypnotic Susceptibility Scale, he also found that the older children could "simulate" hypnosis with a great deal of effectiveness. Furthermore, susceptibility and age had a curvilinear relationship.

London's study bears a striking resemblance to the findings of Torrance (23, p. 97-98). His subjects showed drops in originality upon entering kindergarten, fourth grade, and junior high school, which may be regarded as a tendency of individuals to become less creative as they grow older.

In other words, the stereotyped thinking which is an inevitable result of acculturation, makes the growing child less hypnotizable as well as less original. As he conforms more and more to cultural strictures, he becomes less and less susceptible to hypnotic induction. As a matter of fact, it has frequently been demonstrated that the more intelligent and more imaginative subjects react more quickly to hypnotic suggestion; this fact refutes the notion that hypnosis involves the surrendering of personal independence and conforming to the will of others.

COGNITIVE ACTIVITY WITHOUT AWARENESS

Tinnin (22) recalls how common it is for an individual to put a difficult problem out of his mind and then, suddenly, to experience a spontaneous flash of insight or even a correct solution.

In his experiment, Tinnin used three male college students who were able to attain post-hypnotic suggestibility and who reported complete amnesia for the hypnotic

experience. The technique of progressive relaxation was used to induce the trance state. Cues were introduced to provide the subjects with the structure of algebraic problems that they would be called upon to solve in the waking state.

Upon awakening, the subjects insisted they could remember nothing that happened in the hypnotic trance. Yet, in almost every instance, all three subjects immediately gave the correct answer when the problems were presented. They were not aware of how they solved the problems so quickly: "It just popped into my mind," was a typical report.

One of the subjects experienced the answer as a momentarily visual hallucination; the other two experienced the answer as a sudden flash of certain knowledge. Both of these events suggest how hypnosis might increase and improve an individual's creative output. Tinnin's conclusion is consistent with creativity theory; he states that cognitive awareness can utilize cues without full awareness. This activity can run parallel to, but without intruding upon, concurrent conscious activity.

ATTENTION AND DISTRACTIBILITY

The work of Arvid Ås (2) involved the hypnotized subject's ability to become selectively attentive to the cues emanating from the hypnotist and to become selectively inattentive to other stimuli. Ås advanced two alternative hypotheses to explain these phenomena.

1. Basic in hypnosis is the subject's ability to withstand distracting and irrelevant stimuli, thus leaving the field of attention open for capture by the hypnotist's cues and suggestions.
2. Basic in hypnosis is the subject's focusing of attention and ensuing absorption in the cues and suggestions presented by the hypnotist. As a result, other stimuli become the objects of less attention.

An inventory of subjective experiences was prepared by Ås; the items dealt with experiences of distractibility and attention.

The inventory was administered to three samples of subjects totalling 152; their hypnotizability was subsequently determined by two objective hypnosis scales, the Stanford Hypnotic Susceptibility Scale and the Consolidated Scale of Hypnotic Responsiveness.

Three items in the inventory were used to test the first hypothesis because these items involved the withstanding of distractions.

1. Do you find it difficult to forget failures, mistakes, humiliation, etc., so that they tend to disturb you when you are faced with new tasks?
2. When there are sounds that you do not want to listen to, can you block them from your mind so that they are no longer important to you?
3. Are you able to change easily from one task to another, excluding ideas, associations, and actions of the former task, for the sake of the one you are now presently concentrating on?

None of the correlations between the subjects' responses to these items and their hypnosis scale rating were significant at the .01 level of confidence.

Three items in the inventory were used to test the second hypothesis; they involved the experience of "being completely immersed in nature or in art, totally absorbed in reading, enraptured by music or dance, etc., so that they became oblivious of themselves and their surroundings."

1. Have you ever been completely immersed in nature or in art (e.g. in the mountains, at the ocean, viewing sculpture, painting, etc.) and had a feeling of awe, inspiration, and grandeur sweep over you so that you felt as if your whole state of consciousness was somehow temporarily changed?
2. Have you ever acted in a play and found that you really felt the emotions of the character, and "became" him (or her) for the time being, forgetting both yourself and the audience?
3. Have you ever focused at something so hard that you went into a kind of benumbed state of consciousness or a

state of extraordinary calm and serenity?

All of these items correlated significantly at the .01 confidence level with one or more samples of subjects on one or both of the hypnosis scales.

As concludes that it is "the positive focusing of attention with ensuing absorption in its object that is of importance in hypnosis." The subject, therefore, apparently becomes oblivious or inattentive to irrelevant stimuli as an effect of this absorption, not by actively warding off the distractions.

This situation is remarkably similar to the experience of a fusion of subject and object which typifies the psychedelic state. Furthermore, it is this "openness," this fading of boundaries between the conscious self and the unconscious self and the outer environment that encourages the creative act.

HYPNOSIS, LSD, AND ADDICTION

As hypnosis and the psychedelic drugs represent the outer frontiers of scientific investigation, it is important that their use be restricted to proper experimental and clinical sessions and that only qualified persons be permitted to supervise these sessions. For example, it is wise to have a knowledgeable physician on hand during a psychedelic experiment, and it would be preferred that practicing hypnotists be possessed of a doctoral degree in medicine, dentistry, or psychology, as well as being adequately trained in hypnosis.

The results of a carefully arranged series of combined hypnosis and psychedelic sessions have been reported by Levine, Ludwig, and Lyle (16). Hypnosis was combined with LSD (a psychedelic drug) to change the behavior of narcotic addicts. During the first session, a psychiatric interview was held after which the subjects were trained in entering a hypnotic trance. The second session, held a few days later, began with the oral administration of 100 to 150 micrograms of LSD. Before the drug took effect, the subjects were hypnotized. While in both the hypnotic trance and the psychedelic state, the subjects were actively encouraged

to examine and understand their addiction, of viewing it in the context of early life experiences, exposure to traumatic events, and significant relationships with their parents and siblings. Post-hypnotic suggestions were given to remember what occurred and to continue working on their problems. The subjects were then admitted to the medical ward until the following morning.

Although adequate follow-up has not yet taken place, immediate results included an increase in affect, a greater responsiveness to the therapist, greater personal insight, and a more hopeful perspective. In this instance it would appear that the "insight" phase of the creative process had been successfully stimulated by hypnosis and LSD.

Several other clinical studies report how the creative potentials of brain damaged subjects (7), disturbed children (1), and underachieving college students (13) have been released by hypnosis. Despite the many successes of hypnosis, its mechanical processes are not completely understood. However, a proper setting for its effectiveness is described by Erickson (7) as one "inducing and compelling an open-mindedness or mental receptiveness to new, inexplicable, curiosity-evoking ideas..." It is just such a setting which would be most likely to foster a creative act.

The action of psychedelic drugs is understood no better than is the mechanism of hypnosis. It has been variously suggested that these drugs have some direct effect on the chemistry of the brain: among other possibilities that they reduce the brain's supply of sugar, inhibit the production of cholinesterase, or interfere with the brain's capacity to utilize oxygen. Metzner (19), in surveying the literature, finds "no definite agreement as to the mode of action of psychedelic substances at the biochemical level." Whatever the physiological process, these drugs enable their users to see the customarily ignored aspects of reality if taken under proper guidance and in a supportive setting.

Considerable research has been done with three of these drugs: LSD, a chemical synthesis of the ergot fungus; mescaline, a syn-

thesis of the peyote cactus; psilocybin, a synthesis of a Mexican mushroom. Psychedelic substances are generally regarded as nonaddictive, physically safe, and psychologically harmless when used properly.

Research with LSD and mescaline is several decades old. Even before formal experimentation was instigated, primitive tribes were investigated which had been using the substances for centuries. Work with psilocybin, however, dates back only to 1960. Timothy Leary and Richard Alpert headed a team of Harvard University psychologists who completed four major projects before the controversial aspects of their program brought about its termination in 1963. These projects included:

1. An investigation into the relation of set and setting to the psilocybin experiences of a large group of volunteer subjects (professors, students, housewives, etc.)
2. An investigation into the rehabilitative effects of psilocybin on inmates scheduled for release from prison.
3. An investigation into the effects of psilocybin on the creative efforts of writers, musicians, and artists.
4. An investigation into the effects of psilocybin experiences upon the mystical lives of ministers and other professional workers in religion (15).

The results of these research projects are in each case provocative and contain implications for the study of creativity. The investigators attempted to produce in every case a setting that would be relaxed, congenial, and non-task-oriented. All participants took the drug in groups; collections of total strangers were avoided (14).

The most general descriptive characterizations which the subjects gave to their reactions were those of "increased awareness" and "transcendence of verbal thinking." It was concluded by the investigators that people, events, objects, one's self can be understood without either the need or the ability to verbalize this understanding. Positive expectations tended to produce pleasant and insightful experiences under psilocybin. Mystical incidents and other

highly specific expectations were not generally fulfilled. This indicates that a state of transcendence cannot be "willed." However, many mystical experiences emerged spontaneously, even among the prisoners who were studied.

An examination of situational variables indicated that women had more "ecstatic" and "religious" experiences than did men, but were more likely to "fight" the oncoming effects of the drug. Older subjects had more historical and mythical visions than younger subjects. The investigators concluded that the subjects' tendencies to categorize their experiences lessened under the drug's influence.

Very few of the incidents reported were psychotic-like or hallucinatory in nature. Some writers have called these drugs "psychotomimetic" or "hallucinogenic"; these are improper terms because the breakthrough seems to be into the "real" world rather than into an imaginary one.

It has been suggested that psychedelic drugs might be useful in reconciling the emotionally disturbed person with the extensional world, at least on a temporary basis. Bender (4) has described the progress which is being made along these lines with children. The subjects in Bender's studies remained remarkably free of adverse reactions to the drugs. In addition, they became more alert, more responsive to their environment, and made greater efforts to relate with others. Eating and sleeping habits improved, bizarre fantasies disappeared or were denied, and a more mature type of thinking tended to emerge.

Krippner and his co-workers have emphasized the importance of expectancy set (the readiness of the organism to make a particular response) in making either accurate or inaccurate references from "map" to "territory." Because the Harvard group took the drug in pleasant circumstances, their experiences were generally pleasant. Because feeling is an important determinant of set, those who felt positively about taking psilocybin had more positive reactions to it. Julian Huxley (12) concludes,

"...some of their effects can elicit something quite new from the human mind. They may have unpleasant effects if the subject is in a wrong psychological state, and exceedingly pleasant and rewarding effects if he is in a right one. But in either case they may reveal possibilities of experience which the subject did not know existed at all. For this the term *psychedelic*, or mind-revealing, has been suggested for this type of psychotropic drug.

"In psychedelic drugs we have a remarkable opportunity for interesting research...on their effects on different types of psychologically normal people—people of high and low IQ, of different somatotypes, of different affective dispositions, on verbalizers and visualizers. This would be of extraordinary interest: we might find out not merely how to cure some defect, but how to promote creativity by enhancing the creative imagination."

CREATIVE ARTISTS

Behavior involves learning, except for reflexes, instinctual reactions, and random muscular movements. Behavior, being culturally determined, is basically a series of game sequences. These game sequences include six factors: roles, rules, goals, rituals, values, and language.

Only rarely does a person break through the game structure and experience his world directly. Artists must do this if they are to innovate productions that will be original and creative.

With this artistic struggle in mind, Leary and his associates administered psilocybin to 65 professional writers and artists. No statistical data were obtained, but written reports were elicited from each subject. The great majority claimed to have had a "creative experience." One painter detected a "living glow" in his surroundings; a musician heard the "music of the spheres." Leary found these subjects to revel "in the new and intense and direct confrontation with the world about them."

The studies demonstrate the importance of the visual modality in the psychedelic experience. When the eyes are closed, internal images are revealed; with the eyes open, external surroundings are seen more vividly.

RELIGIOUS EXPERIENCES

Seamans (20) notes that the communication of religious ideas typically meets with a number of serious impediments. There are barriers to religious discourse in the motives and preferences of the communicants as well as in their environment, experience, and language. To overcome these obstacles, several techniques are suggested, among them the development of additional non-verbal modes of religious communication. Art, music, and ritual come readily to mind; psilocybin is an additional agent which may aid in the religious development of an individual.

One of Leary's earliest discoveries (15, p. 3) was the frequent occurrence of religious experiences among his subjects.

Less than ten per cent of our original samples were orthodox believers or church goers, yet such terms as "God," "divine," "deep religious experience," "meeting the infinite" occurred in over half of the reports.

These results were so provocative that an investigation was inaugurated with 47 clergymen and other professional religious workers. Although final results have not yet been published, 90 per cent of the subjects reported mystical-religious experiences.

In commenting on the religious implications of the psilocybin experience, Leary and Clark (15, Pp. 10-13) note the depth of fellowship reported by the subjects and the frequent comments that the psilocybin experience had changed their lives in positive ways.

"The exact nature of the experience is usually felt and reported to be ineffable, while the figure of speech used to describe it and the language used is reminiscent of the mystics. Biblical passages or religious terms formerly meaningless or pale have suddenly acquired vivid meaning. Like the renegade who, through conversion experiences, suddenly finds himself in possession of the meaning of the term 'salvation,' so he who ingests psilocybin may find this or similar terms illuminated for him."

In other words, a breakthrough to the extensional world sometimes has the effect of giving the subjects insight into the meaning of a word or a passage with religious con-

notations. The extensional referent of that word or passage is suddenly made more vivid and the linguistic symbol itself becomes clearer as a result.

The drugs experience, at best, lasts for only a few hours before the subject is returned to the world of intensional meaning and word-games. However, he is able to play the games better because he realizes that they *are* games. In addition, he can substitute reality-oriented games for those characterized by a lack of extensionality. The more emotionally disturbed an individual, the less aware he is of the word-game in which he is trapped. Schizophrenia, for example is often marked by an over-investment in language rather than a retreat from it (21, p. 935).

SUMMARY

It appears that psilocybin and the other consciousness-altering drugs are able to provide a temporary reunion between man and the unconceptualized events in his cortex and in his surroundings. This experience, in the proper setting, can produce positive personality change and can permit the unleashing of man's creative and mystical capacities.

In much the same way, but by a somewhat different process, hypnosis can alter man's consciousness and permit him to pay closer attention to material that is basically preverbal and unconscious. MacKinnon's extensive research (18) on creative adults demonstrates that 97 per cent depend more on "intuition" and on unconscious "hunches" than on direct awareness. Perhaps hypnosis, psilocybin, mescaline, and LSD will increase the number of individuals who are able to come into a more intimate contact with the totality of their external environment and their internal resources. Julian Huxley (12) counsels that,

"The field of the psychiatrist and the psychologist today is nothing less than the comprehensive study of hypnosis, drugs, educations, mysticism, and the subconscious, of mental disease and mental health, of the relation between... all the psychological forces operating in man's life—emotional, imaginative, intellectual and moral—in such a way as to minimize conflict and to

maximize creativity. In so doing, they will be in harmony with the only desirable direction that our scientific vision indicates for the future evo-

lution of man—a direction making for increased fulfillment of individual human beings and fuller achievement of human societies."

REFERENCES

1. Ambrose, G. *Hypnotherapy with children* (2nd Ed.). London: Staples Press, 1961.
2. Ås, A. A note on distractibility and hypnosis. This JOURNAL, 1962, 5, 135-137.
3. Ben-Avi, A. Zen Buddhism. In S. Arieti (Ed.), *American handbook of psychiatry*, Vol. 2. New York: Basic Books, 1959. Pp. 1816-1820.
4. Bender, L. The treatment of childhood schizophrenia with LSD and its derivatives. A paper read at the International Conference on Biological Treatment of Mental Illness, New York, November, 1962.
5. Bergson, H. *Mind energy*. New York: Henry Holt, 1920.
6. Campbell, H. Children are naturally extensional. *Etc.*, 1961, 18, 151-164.
7. Erickson, M. H. Hypnotically oriented psychotherapy in organic brain damage. This JOURNAL, 1963, 6, 92-112.
8. Estabrooks, G. H., and Gross, N. E. *The future of the human mind*. New York: E. P. Dutton and Co., 1961.
9. Freud, S. *Leonardo da Vinci: A study in psychosexuality*. New York: Random House, 1947.
10. Hayakawa, S. I. *Language in thought and action*. New York: Harcourt, Brace, 1949.
11. Huxley, A. *The doors of perception and Heaven and hell*. Baltimore: Penguin Books, 1959.
12. Huxley, J. Psychometabolism. *Psychodelic Rev.*, 1963, 1, 183-204.
13. Krippner, S. Hypnosis and reading improvement among university students. This JOURNAL, 1963, 5, 187-193.
14. Leary, T. The effects of test score feedback on creative performance and of drugs on creative experience. Cambridge: Dept. of Social Relations, Harvard Univ., 1963 (dittoed).
15. Leary, T., and Clark, W. H. Religious implications of consciousness expanding substances. *Religious Education*, 1963, 251-256.
16. Levine, J., Ludwig, A. M., and Lyle, W. H., Jr. The controlled psychedelic state. This JOURNAL, 1963, 6, 163-164.
17. London, P. Hypnosis in children: an experimental approach. *Intern. J. clin. exper. Hypn.*, 1962, 10, 79-91.
18. MacKinnon, D. W. *The personality correlates of creativity*. Berkeley: Institute of Personality Assessment and Research, 1961.
19. Metzner, R. The pharmacology of psychedelic drugs I: Chemical and biochemical aspects. *Psychodelic Rev.*, 1963, 1, 69-115.
20. Seamans, E. L. Barriers in religious communication. *Etc.*, 1962, 19, 172-180.
21. Spiegel, R. Specific problems of communication in psychiatric conditions. In S. Arieti (Ed.) *American handbook of psychiatry*, Vol. I. New York: Basic Books, 1959. Pp. 909-949.
22. Tinnin, L. Cognitive activity without awareness. This JOURNAL, 1963, 6, 37-39.
23. Torrance, E. P. *Guiding creative talent*. Englewood Cliffs, N.J.: Prentice-Hall, 1962.