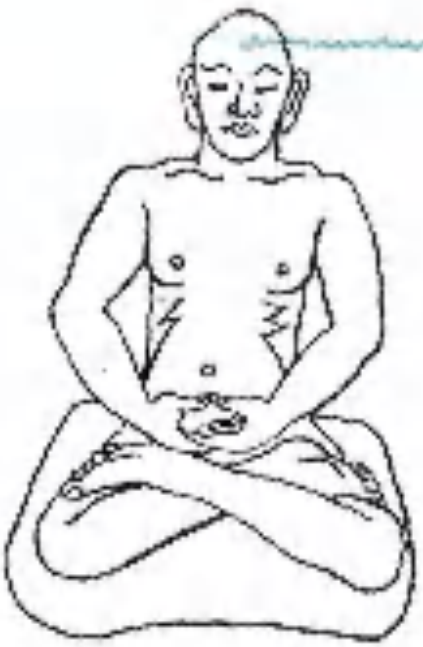
ALTERED STATES OF CONSCIOUSNESS

A Book of Readings

Edited by CHARLES T. TART



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INTRODUCTION

CHARLES T. TART

Whenever I speak on the topic of dreams, I mention a very unusual sort of dream, the "lucid" dream (see Chapter 8) in which the dreamer knows he is dreaming and feels fully conscious in the dream itself. After discussing some of the philosophical and semantic difficulties in defining states of consciousness, I always ask whether anyone has the slightest doubt that he is awake, that is, in a "normal" state of consciousness at that moment; I have never found anyone who had difficulty in making this distinction.

In introducing a book of readings on altered states of consciousness, I find myself in a similar position: there is a multitude of philosophical and semantic problems in defining just what "normal" consciousness and "altered" states of consciousness are, yet at this instant I have not the slightest doubt that I am in my normal state of consciousness. Yet there have been a number of occasions in my life when I have not had the slightest difficulty in realizing that I was in an altered state of consciousness (ASC). Thus I shall give only the simplest sort of definition of what an ASC is here and let the articles in this book flesh it out: our knowledge of ASCs is too incomplete at this time for a tight conceptualization.

For any given individual, his normal state of consciousness is the one in which he spends the major part of his waking hours. That your normal state of consciousness and mine are quite similar and are similar to that of all other normal men is an almost universal assumption, albeit one of questionable validity. An altered state of consciousness for a given

individual is one in which he clearly feels a *qualitative* shift in his pattern of mental functioning,* that is, he feels not just a quantitative shift (more or less alert, more or less visual imagery, sharper or duller, etc.), but also that some quality or qualities of his mental processes are *different*. Mental functions operate that do not operate at all ordinarily, perceptual qualities appear that have no normal counterparts, and so forth. There are numerous borderline cases in which the individual cannot clearly distinguish just how his state of consciousness is different from normal, where quantitative changes in mental functioning are very marked, etc., but the existence of borderline states and difficult-to-describe effects does not negate the existence of feelings of clear, qualitative changes in mental functioning that are the criterion of ASCs.

This book is concerned with those states of consciousness in which the individual feels one or more qualitative (and possibly one or more quantitative) shifts in mental functioning, so that he believes himself to be in an ASC.

Within Western culture we have strong negative attitudes toward ASCs: there is the normal (good) state of consciousness and there are pathological changes in consciousness. Most people make no further distinctions. We have available a great deal of scientific and clinical material on ASCs associated with psychopathological states, such as schizophrenia: by comparison, our scientific knowledge about ASCs which could be considered "desirable" is extremely limited and generally unknown to scientists. One of the purposes of these articles is to begin to provide some balance; therefore almost all the ASCs treated here have *positive* qualities in that they are ASCs that many people will go to considerable trouble and effort to induce in themselves because they feel that experiencing a particular ASC is rewarding. Our understanding of mental processes has been greatly facilitated by focusing on psychopathology, but it cannot be complete without looking at the other side of the coin. Further, we need to drop the "good" or "bad" judgments about various ASCs and concentrate on the question: What are the characteristics of a given ASC and what consequences do these characteristics have on behavior in various settings?

A normal state of consciousness can be considered a resultant of living in a particular environment, both physical and psychosocial. Thus the normal state of consciousness for any individual is one that has adaptive value within his particular culture and environment; we would expect the normal state of consciousness to show qualitatively and/or quantitatively

*For those who prefer a behavioristic approach an ASC is a hypothetical construct invoked when an *S*'s behavior (including the behavior of verbal report) is radically different from his ordinary behavior.

different aspects from one culture to another. But one of the most common cognitive errors made is what Carl Jung has called the fallacy of the psychologist projecting his own psychology upon the patient, that is, we almost always make the implicit assumption that everybody else thinks and experiences about the same way as we do, with the exception of "crazy" people.

In a broader perspective it is clear that man has functioned in a multitude of states of consciousness and that different cultures have varied enormously in recognition and utilization of, and attitudes toward, ASCs. Many "primitive" peoples, for example, believe that almost every normal adult has the ability to go into a trance state and be possessed by a god; the adult who cannot do this is a psychological cripple. How deficient Americans would seem to a person from such a culture. In many Eastern civilizations, elaborate techniques have been developed for inducing and utilizing ASCs, such as the Yoga and Zen systems.* In some cases vocabularies have been developed for talking about these ASCs more adequately. I recall Fredrick Spiegelberg, the noted Indian scholar, pointing out that Sanskrit has about 20 nouns which we translate into "consciousness" or "mind" in English because we do not have the vocabulary to specify the different shades of meaning in these words. (Spiegelberg, Fadiman & Tart, 1964).

Within our Western culture we have several commonly used words for naming some ASCs, such as trance, hypnosis, dream, and ecstasy, but none of them are very clearly defined. It could be expected that within psychology and psychiatry there would be far more exact terms for describing various ASCs and their components, but except for a rich (but often not precise) vocabularly dealing with psychopathological states, this is not true. A few years ago, for example, I tried to find a clear definition of the word "trance," a very common psychological term, used in an explanatory as well as a descriptive sense. To my surprise, for every defining characteristic of a trance mentioned by one authority, another authority would use the opposite characteristic. Formal psychology in this century simply has not dealt with ASCs, especially positive ASCs, to any reasonable extent, considering their potential importance.

If one (perhaps naively) assumes that the distribution of expended energies in the psychological sciences should show some relation to what is important in affecting people's behavior rather than just being related to what is methodologically convenient to investigate, then this neglect of ASCs by the psychological sciences is strange and has become increasingly

*Many techniques for inducing ASCs were developed in Christian mysticism, but these were not as elaborate as the Eastern techniques and no longer represent an important element in contemporary Western culture.

incongruent with what has happened in American society in the past decade of the "psychedelic revolution." The discrepancies will almost certainly become even greater over the next decade as the present trends continue. I shall not attempt to describe the whole "hippie" movement since it is too diverse, but judging by the more conservative writers in the mass media, there are tens of thousands of people who are *obviously* hippies in their life style and hundreds of thousands (perhaps millions) of "respectable" middle-class people who are experimenting with drug trips, meditation, sensory awareness, encounter groups, intentional communities, dream interpretation, and so forth (see, e.g., Rosenfeld & Farrel, 1966). I see these trends primarily in terms of the interests and activities of psychologists, undergraduate psychology majors, and psychology graduate students in my everyday life; the change over the past few years has been remarkable. When I was a graduate student a few years ago, I found almost no one who shared my interest in ASCs: today it is commonplace for graduate students to discuss their meditation experiences, their drug experiences, and their plans to work in these areas as psychologists. Five years ago a person who mentioned at a party that he had taken LSD-25 became the center of attention: now descriptions of psychedelic experiences are too commonplace to attract special attention.

As further illustration, in the last month two graduate students in physics have come to talk to me about their experiences of their "souls leaving their bodies"; a sociology graduate student told me about a group of students he meets with regularly to discuss what to do with your state of consciousness and style of life after exhausting the LSD-25 experience; a mathematics graduate student asked for a guide to the scientific literature on marijuana so he may compare these findings to his own experiences. These are not hippie students and they are no longer unusual. They are representatives of a whole new generation entering the conventional social power structure who spend much effort in exploring their own consciousness.

This upsurge of serious interest in and personal exploration of ASCs is likely to cause an important change in psychology as a discipline. Students come to talk with me in my role as a psychologist because they believe that the science which treats the mind or behavior will help clarify their ASC experiences. I must tell them we have very little to offer. Undergraduates begin to major in psychology and find that we concentrate our research efforts of "methodologically sophisticated" approaches on what seem to them trivial problems. They can meditate for a month or take a psychedelic drug and have overwhelming psychological effects in their minds: if psychologists largely ignore this whole area, the students then dismiss psychology as an academic word game of no importance. And, in my experience, these are some of the very brightest students. Among graduate

students I have talked to, particularly in West Coast universities, the same trend is evident: a great dissatisfaction with the conventional areas of psychology and a questioning of whether training in psychology is worth while in terms of their interests, I suspect that within a few years the psychology graduate school that does not offer course work and research opportunities in ASCs simply will not attract many bright students. Non-academic centers such as Esalen Institute, in Big Sur, California, are arising to fill some of this need.

This is not to denigrate the valuable research that has been done in psychology these many years: it is simply saying that the profession must pay adequate attention to these areas of such importance to students if we want to avoid losing some good, potential psychologists.

The need for a shift in emphasis in psychology is based on more important considerations than attracting bright students in the future, however. The actual behavior of an important segment of our population, the students and the middle-class intellectuals, is increasingly involved with producing and using ASCs. Yet our scientific knowledge of the nature and effects of these ASCs is so limited that we can offer little sound guidance on public policy with respect to such practices as psychedelic drug use. We cannot give much advice to individuals who wish to experience ASCs, nor can we adequately understand this significant portion of people's behavior.

This collection of articles is an attempt to begin to correct the situation by, hopefully, stimulating research on ASCs in the course of presenting material on them. To many people who are not involved in scientific research, valid knowledge about ASCs is to be obtained by experiencing them; they are somehow beyond the reach of scientific research. The most important obligation of any science is that its descriptive and theoretical language embrace *all* the phenomena of its subject matter; the data from ASCs cannot be ignored if we are to develop a comprehensive psychology. Psychology has often failed to meet this obligation because of premature conceptualizations, that is, investing in simplified and elegant theoretical systems that exclude the data of ASCs, but this has been more a matter of the cultural climate than any inherent shortcoming of scientific method. Man is a theorizing and conceptualizing animal and does not accept experience in and of itself: he always develops beliefs and theories about his experience. The difficulty with studying ASCs by simply experiencing them is that we run as much risk of systematizing our delusions as of discovering "truth." When we complement personal experience with scientific method the risk of simply systematizing our delusions is considerably reduced. Thus the hope of stimulating research on ASCs is the prime reason for assembling these articles.

The readings in this collection cover a wide range of ASCs; they are

presented in groups, beginning with some ASCs available to almost everyone (the hypnagogic state and the dream state), continuing with more specialized and powerful ASCs (meditation, hypnosis, minor and major psychedelic drugs), and ending with the psychophysiology of some ASCs (including the most modern technique for producing an ASC—electroencephalographic feedback). More than 1,000 references to scientific literature relating to ASCs are contained in the articles and they should serve to guide the serious researcher to a vast amount of background literature. The papers range from relatively "hard-headed" experimental articles to very speculative ones. This variability occurs because our knowledge of ASCs is highly variable. My primary criterion for selecting papers is that they be provocative as well as sound: many of the phenomena reported will seem preposterous, impossible, and "unscientific." This simply reflects the limitations of our knowledge. I hope that those readers who are incensed by various articles will sublimate your anger into research.

ASCs are going to become increasingly important in modern life. With proper research our knowledge of them can be immensely enriched very quickly and it is my hope that this book will stimulate research in this area.

INTRODUCTION TO SECTION 1. SOME GENERAL VIEWS ON ALTERED STATES OF CONSCIOUSNESS

The number of discrete states of consciousness subsumed under the general heading ASCs is very large: exactly how large is unknown. This set of readings begins with Arnold Ludwig's "Altered States of Consciousness," one of the most comprehensive overviews available. Ludwig surveys the range of phenomena covered by ASCs and discusses their means of production and their various sociocultural functions. The latter are of particular interest: our Western culture makes virtually no use of ASCs and tends to regard all of them as pathological states. Ludwig's article provides a wide ranging perspective of the variety of *positive* functions that ASCs can serve, both for the individuals experiencing them and for the cultures the individuals live in.

Ludwig's article is primarily a survey of *what happens*, with little theorizing. His is followed by Arthur Deikman's "Deautomatization and the Mystic Experience," in which he looks at the types of ASC often reported by mystics and attempts an analysis of these states from a psychoanalytic point of view. Although our over-all knowledge of ASCs is so meager at this time that no theoretical explanation can be *completely* comprehensive and accurate, Deikman's article is an excellent illustration of the sort of first-class theorizing that can be done currently.

In order to add human relevance and richness to this survey of ASCs, the article by Milton Erickson that completes this section, a "Special Inquiry

with Aldous Huxley into the Nature and Character of Various States of Consciousness," is a remarkable study of the ASCs experienced by one of the greatest minds of our generation. It was Huxley's lucid little book, "The Doors of Perception" (1954), that greatly stimulated my own interest in ASCs years ago: as a description of the psychedelic experience, this book has yet to be surpassed. Erickson's paper further illustrates the creative potentials of some ASCs, for he describes how Huxley did much of his writing in an ASC.

For further general readings on ASC the reader should see Belo (1960), Bucke (1961), Devereaux (1966), Gill & Brenman (1961), James (1958), King (1963), and Ludwig (1967).

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ALTERED STATES OF CONSCIOUSNESS

ARNOLD M. LUDWIG

Beneath man's thin veneer of consciousness lies a relatively uncharted realm of mental activity, the nature and function of which have been neither systematically explored nor adequately conceptualized. Despite numerous clinical and research reports on daydreaming, sleep and dream states, hypnosis, sensory deprivation, hysterical states of dissociation and depersonalization, pharmacologically induced mental aberrations, and so on, there has been little attempt made to organize this scattered information into a consistent theoretical system. It is my present intention to integrate and discuss current knowledge regarding various altered states of consciousness in an effort to determine (a) the conditions necessary for their emergence, (b) the factors that influence their outward manifestations, (c) their relatedness and/or common denominators, and (d) the adaptive or maladaptive functions which these states may serve for man.

For the purpose of discussion I shall regard altered state(s) of consciousness [hereafter referred to as ASC(s)] as any mental state(s), induced by various physiological, psychological, or pharmacological maneuvers or agents, which can be recognized subjectively by the individual himself (or by an objective observer of the individual) as representing a sufficient deviation in subjective experience or psychological functioning from certain

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general norms for that individual during alert, waking consciousness. This sufficient deviation may be represented by a greater preoccupation than usual with internal sensations or mental processes, changes in the formal characteristics of thought, and impairment of reality testing to various degrees. Although there will be some conceptual pitfalls in such a general definition, these pitfalls will be more than compensated for by the wide range of clinical phenomena which can now be considered and hence studied as presumably related phenomena.

PRODUCTION OF ASC

ASCs may be produced in any setting by a wide variety of agents or maneuvers which interfere with the normal inflow of sensory or proprioceptive stimuli, the normal outflow of motor impulses, the normal "emotional tone," or the normal flow and organization of cognitive processes. There seems to be an optimal range of exteroceptive stimulation necessary for the maintenance of normal, waking consciousness, and levels of stimulation either above or below this range appear conducive to the production of ASCs (Lindsey, 1961). Moreover, by adopting Hebb's views (1958), we also find that varied and diversified environmental stimulation appears necessary for the maintenance of normal cognitive, perceptual, and emotional experience, and that when such stimulation is lacking, mental aberrations are likely to occur. Although experimental evidence is sparse concerning the manipulation of motor, cognitive, and emotional processes, there seems to be ample clinical and anecdotal evidence to suggest that gross interference with these processes may likewise produce alterations in consciousness.*

In specifying the general methods employed to produce ASCs, I should like to emphasize that there may be much overlap among the various methods and that many factors may be operating other than those listed. Nevertheless, for the sake of classification (albeit artificial), I have categorized the various methods on the basis of certain variables or combinations of variables which appear to play a major role in the production of these ASCs.

A. Reduction of exteroceptive stimulation and/or motor activity. Under this category are included mental states resulting primarily from the absolute reduction of sensory input, the change in patterning of sensory data, or constant exposure to repetitive, monotonous stimulation. A drastic reduction of motor activity also may prove an important contributing factor.

*See R. Shor's excellent article (Chapters 15 & 16) concerning the conditions necessary for the emergence of trance, a term roughly similar to my usage of ASC.

Such ASCs may be associated with solitary confinement (Burney, 1952; Meltzer, 1956) or prolonged social and stimulus deprivation while at sea (Anderson, 1942; Gibson, 1953; Slocum, 1948), in the arctic (Byrd, 1938; Ritter, 1954), or on the desert; highway hypnosis (Moseley, 1953); "break-off" phenomena in high altitude jet pilots (Bennett, 1961); extreme boredom (Heron, 1957); hypnogogic and hypnopompic states; sleep and related phenomena, such as dreaming and somnambulism; or experimental sensory deprivation states (Heron, 1961; Lilly, 1956; Ziskind, 1958). In clinical settings, alterations in consciousness may occur following bilateral cataract operations (Boyd & Norris, 1941) or profound immobilization in a body cast or by traction (Leiderman et al., 1958). They may also occur in patients with poliomyelitis placed in a tank-type respirator (Mendelson et al., 1958), in patients with polyneuritis which is causing sensory anesthesias and motor paralyses (Leiderman et al., 1958), and in elderly patients with cataracts (Bartlett, 1951). Descriptions of more esoteric forms of ASCs can be found in references to the healing and revelatory states during "incubation" or "temple sleep" as practiced by the early Egyptians and Greeks (Ludwig, 1964) and "kayak disease," occurring in Greenlanders forced to spend several days in a kayak while hunting seals (Williams, 1958).

B. Increase of exteroceptive stimulation and/or motor activity and/or emotion. Under this category are included excitatory mental states resulting primarily from sensory overload or bombardment, which may or may not be accompanied by strenuous physical activity or exertion. Profound emotional arousal and mental fatigue may be major contributing factors.

Instances of ASCs induced through such maneuvers are as follows: suggestible mental states produced by grilling or "third degree" tactics (Sargant, 1957); brainwashing states (Sargant, 1957); hyperkinetic trance associated with emotional contagion encountered in a group or mob setting (LaBarre, 1962; Marks, 1947); religious conversion and healing trance experiences during revivalistic meetings (Sargant, 1957; LaBarre, 1962; Coe, 1916; Kirkpatrick, 1929); mental aberrations associated with certain *rites de passage* (Sargant, 1957); spirit possession states (Sargant, 1957; LaBarre, 1962; Belo, 1960; Ravenscroft, 1965); shamanistic and prophetic trance states during tribal ceremonies (Field, 1960; Murphy, 1964); fire walker's trance (Thomas, 1934); orgiastic trance, such as experienced by Bacchanalians or Satanists during certain religious rites (Dodds, 1963; Mischelet, 1939); ecstatic trance, such as experienced by the "howling" or "whirling" dervishes during their famous *devr* dance (Williams, 1958); trance states experienced during prolonged masturbation; and experimental hyperalert trance states (Ludwig & Lyle, 1964). Alterations in consciousness may also arise from inner emotional turbulence or conflict or secondary to external conditions conducive to heightened emotional arousal. Examples

of these states would include fugues, amnesias, traumatic neuroses, depersonalization, panic states, rage reactions, hysterical conversion reactions (i.e., dreamy and dissociative possession states), berzerk, latah, and whitico psychoses (Arieti, & Meth, 1959), bewitchment and demoniacal possession states (Mischelet, 1939; Galvin & Ludwig, 1961; Jones, 1959; Ludwig, 1965a), and acute psychotic states, such as schizophrenic reactions.

C. Increased alertness or mental involvement. Included under this category are mental states which appear to result primarily from focused or selective hyperalertness with resultant peripheral hypoalertness over a sustained period of time.

Such ASCs may arise from the following activities: prolonged vigilance during sentry duty or crow's watch; prolonged observation of a radar screen (Heron, 1957); fervent praying (Bowers, 1959; Rund, 1957); intense mental absorption in a task, such as reading, writing, or problem solving; total mental involvement in listening to a dynamic or charismatic speaker (Ludwig, 1965b); and even from attending to one's amplified breath sounds (Margolin & Kubie, 1944), or the prolonged watching of a revolving drum, metronome, or stroboscope.

D. Decreased alertness or relaxation of critical faculties. Grouped under this category are mental states which appear to occur mainly as a result of what might best be described as a "passive state of mind," in which active goal-directed thinking is minimal.

Examples of such states are as follows: mystical, transcendental, or revelatory states (e.g., *satori, samadhi, nirvana, cosmic-consciousness*) attained through passive meditation or occurring spontaneously during the relaxation of one's critical faculties (Bucke, 1951; Ludwig, 1966); daydreaming, drowsiness, "Brown study" or reverie; mediumistic and autohypnotic trances (e.g., among Indian fakirs, mystics, Pythian priestesses, etc.); profound aesthetic experiences; creative, illuminatory, and insightful states (Ludwig, 1966, Koestler, 1964); free associative states during psychoanalytic therapy; reading-trance, especially with poetry (Snyder, 1930); nostalgia; music-trance resulting from absorption in soothing lullabies or musical scores; and mental states associated with profound cognitive and muscular relaxation, such as during floating on the water or sun-bathing.

E. Presence of somatopsychological factors. Included under this heading are mental states primarily resulting from alterations in body chemistry or neurophysiology (Hinkle, 1961). These alterations may be deliberately induced or may result from conditions over which the individual has little or no control.

Examples of physiological disturbances producing such ASCs are as follows: hypoglycemia, either spontaneous or subsequent to fasting; hyperglycemia (e.g., postprandial lethargy); dehydration (often partially

responsible for the mental aberrations encountered on the desert or at sea); thyroid and adrenal gland dysfunctions; sleep deprivation (West et al., 1962; Tyler, 1956; Katz & Landis, 1935); hyperventilation; narcolepsy; temporal lobe seizures (e.g., dreamy states and *déja vu* phenomena); and auras preceding migraine or epileptic seizures. Toxic deleria may be produced by fever, the ingestion of toxic agents, or the abrupt withdrawal from addicting drugs, such as alcohol and barbiturates. In addition, ASCs may be induced through the administration of numerous pharmacological agents, such as anesthetics and psychedelic, narcotic, sedative, and stimulant drugs.

GENERAL CHARACTERISTICS OF ASCs

Although ASCs share many features in common, there are certain general molding influences which appear to account for much of their apparent differences in outward manifestation and subjective experience. Even though similar basic processes may operate in the production of certain ASCs (e.g., trance), such influences as cultural expectations (Wallace, 1959), role-playing (Sarbin, 1950; White, 1941), demand characteristics (Orne, 1959; 1962), communication factors, transference feelings (Kubie & Margolin, 1944), personal motivation and expectations (mental set), and the specific procedure employed to induce the ASC all work in concert to shape and mold a mental state with a unique flavor of its own.

Despite the apparent differences among ASCs, we shall find that there are a number of common denominators or features which allow us to conceptualize these ASCs as somewhat related phenomena. In previous research (Levine et al., 1963; Levine & Ludwig, 1965a, 1965b; Ludwig & Levine, 1966), Dr. Levine and I were able to demonstrate the presence of many of these features in alterations of consciousness induced by hypnosis, lysergic acid diethylamide (LSD-25), and combination of these variables. Similar features (described below), in greater or lesser degree, tend to be characteristic of most ASCs.

A. Alterations in thinking. Subjective disturbances in concentration, attention, memory, and judgment represent common findings. Archaic modes of thought (primary process thought) predominate, and reality testing seems impaired to varying degrees. The distinction between cause and effect becomes blurred, and ambivalence may be pronounced whereby incongruities or opposites may coexist without any (psycho)logical conflict. Moreover, as Rapaport (1951) and Brenman (1950) have commented, many of these states are associated with a decrease in reflective awareness.

B. Disturbed time sense. Sense of time and chronology become greatly