THE BASIC NATURE OF ALTERED STATES OF CONSCIOUSNESS: A SYSTEMS APPROACH

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This paper is an edited version of a talk presented to a meeting of the American Academy of Psychoanalysis in Detroit, Michigan, May 4, 1974.

When I was asked to speak at this meeting and discuss my theory of the basic nature of altered states of consciousness, I was quite pleased with the idea of being able to speak to a group who would be able to give me useful feedback from their expertise on the workings of the mind. Little did I know, however, that I would also be asked to perform a miracle, namely to cover the basic nature of altered states of consciousness in 30 to 40 minutes! I'm going to see what I can do with this kind of challenge, but I warn you we are going to cover an awful lot of ground very rapidly in order to get this overview. Hopefully, we shall have time in the workshop this afternoon for those who would like to go into various aspects of the theory in more detail. More detailed presentations of the theory and background data can be found elsewhere (Tart, 1970; 1971a; 1971b; 1974; 1975a; 1975b).

a theoretical framework

In a dozen years of reading the literature on states of consciousness, conducting extensive researches into hypnosis, sleep, dreams, and marijuana intoxication, with minor excursions into psychedelic drug phenomena and meditation, I have been struck over and over again by the degree of disorganization in this field. It's as though we have ten thousand miscellaneous pieces of data, a few pieces hanging together here, a few pieces hanging together there, and many pieces not seeming to connect with anything else. What I have mainly tried to do in the last few years, and what 1 shall share with you

this morning is to create a theoretical framework, a paradigm, that will give some coherency to the isolated bits of data in this field and provide a useful framework for asking further quesdons. I had originally thought of this as a theory, but I found it's of wide enough scope to be more in the order of a metatheory. Only recently I discovered the difference between a 'theory' and a 'metatheory': a theory is easily disprovable if the facts don't check out against it, but a metatheory is an obviously sensible sort of way of thinking about a field that *is* not easily destroyed by a few inconvenient facts, and thus carries less risk for its proponents!

a psychological framework

The theory 1 will give you today is a *psychological* framework, since that's the basic nature of the phenomena of altered states of *consciousness.* I shall let others try to relate it to physiological data eventually, but this framework is perfectly compatible with both physiological and behavioral data, as it is primarily a *systems approach,* and as the particular units from which one builds systems can be varied according to what one likes to believe is 'fundamental', I feel no need to 'physiologize' psychology in order to make it 'scientific', so I shall be happy to keep it on the psychological level.

THE CONSTRUCTED NATURE OF ORDINARY CONSCIOUSNESS

a questionable assumption

I want to begin by reminding you of the questionableness of an assumption that is almost universally made by professionals in this field, one which is implicitly and emotionally made even when it's not intellectually accepted, namely the assumption that our ordinary state of consciousness is somehow the 'best' or 'optimal' state or organization of consciousness that a human being can have, and that all altered states of consciousness are somehow inferior or pathological variants of this. Modern psychological research indicates clearly that ordinary consciousness is a *construction,* not a given, and a construction that has a very large number of arbitrary aspects in it whose value is quite arbitrary and/or culturally relative.

Figure I illustrates a concept I call the spectrum of human potentialities. By virtue of being born a human being you have a certain kind of body and nervous system operating in the environment of spaceship earth. That means there are an untold number of thousands of potentials which *could* be developed in you. Everyone, however, is born into a particular culture, and we can view any human culture as a group of people who have, through various historical processes, decided that some of these human potentialities are good and so to be encouraged, others are bad and so to be discouraged, and
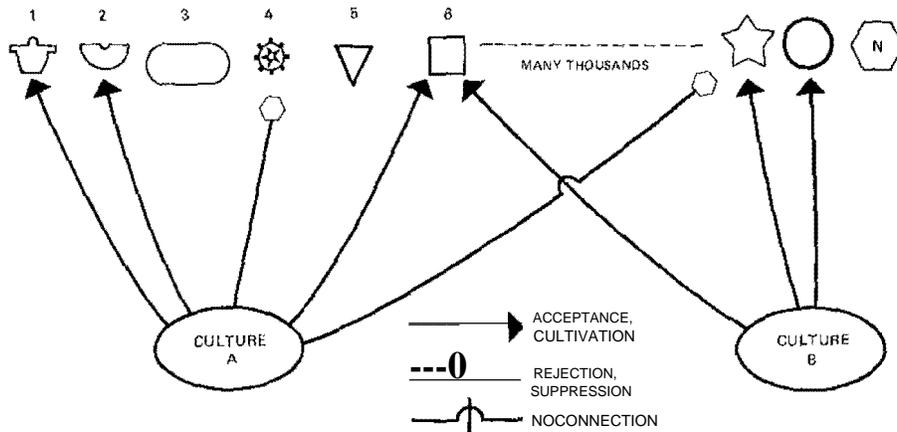
Figure 1; Spectrum of human potentialities.

many others simply have not been heard of. So culture A in Figure 1 selects certain human potentialities for development, the ones shown with arrows, and blocks others, the ones shown with hexagons. Culture B makes different, possibly partially overlapping, selections from the spectrum. Both cultures ignore many potentialities. This should remind us that the 'normal' state of consciousness any adult ends up with is culturally relative, and represents only a small fraction of the potential-Hiesopen to a human being. As we are all too aware, of course, each local culture tends to think *of* its particular selection of human potentialities as the best possible and likely to regard other cultures as 'primitive' or semi-human.

Now let us change the labels in Figure 1 to make this a spectrum of experiential potentialities, the various potentials for different kinds of conscious experiences. We could again take the selection foci as two cultures, but this time let us consider them as two states of consciousness in a given individual. (I shall later define the concept of a state of consciousness more specifically, but here we will use the term generally.) State of consciousness A, which might be our ordinary state of consciousness, develops and uses some human potentials and rejects others. State B has a different gamut of selections and rejections. Insofar as an individual is dissatisfied with his life in state A, he may find some of the potentials available in state B, but not available in his ordinary state of consciousness, very intriguing and of considerable value. This is the basis of the Widespread cultural interest in altered states today, as more and more people find the lifestyle in their ordinary state of consciousness unsatisfactory. I refer not simply to neurotic dissatisfaction, failure to function smoothly within a culture, but also to the existential dissatisfaction of the successful.

selection-
rejection
of states
of consciousness

Looking at this a little more systematically, a human being comes into the world with a basic capacity for attention or awareness, and with a given biological structure. Figure 2 shows the enculturation process in schematic *form.* On the left is the basic capacity *for* awareness. Then come various fixed biological structures which must develop if a person is to be a human being. These include such things as the capacity for language. To use John Lilly's (1967) analogy of the human biocomputer, we n o tonly have awareness, but we *come* with a certain design of computer, and certain ready-made programs are already stored in the computer. Then we have many other potential programs, given potentialities which *may* develop if the culture reinforces them, but which do not necessarily have to develop. Finally we have what may be the most distinctly human category, the many potentially programmable structures or capacities, the blank spaces in the computer that can be filled in, Because of pressures from the culture, from the physical environment, and from random factors, there is a process of selective development and inhibition of both the capacity for awareness and the various fixed and programmable structures, until finally we talk about an adult having a 'normal' state of consciousness. Normal, of course, is defined relative *to* the culture. The achievement of this normal state of consciousness is also part of the process of learning to function in *consensus reality,* the reality we learn to perceive as it is defined by and perceived by significant agents of the enculturation process.

To begin our systems approach more formally, consider the elements or basic molecular components of the system we can (a state of) consciousness. A molecular approach *to* looking at consciousness is to see that it basically consists of attention! awareness, which can act as a kind of activating energy, and of large numbers of structures. The structures are what we mean by things such as arithmetical skills, ability to dance, various types of emotions, etc. These structures are always present in non-activated form, but can be activated either by having attention/awareness focused on them, and/or by other kinds *of* biological or psychological energies flowing into them.

Now I am skimming rapidly over the concepts of attention as a kind *of* psychic energy and of the existence of (psychic) structures because these are concepts familiar to those with psychoanalytic training, and I suspect I am using them in a fairly straightforward psychoanalytic sense. But I do want to make two important points about them before we move on.

First, I have been saying attention! awareness to indicate that not only do we have a basic capacity for being *aware,* for being conscious in some sense, but it is *partially* directable, thus we
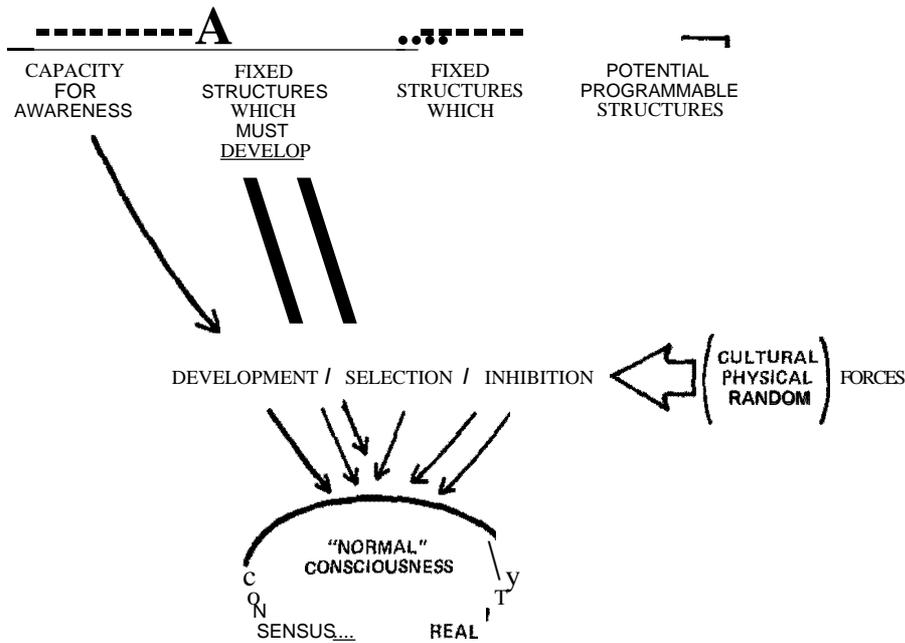
Figure 2: Enculturation.

speak of attention. I emphasize the 'partially', however, for we almost never have anything like a total ability to control our attention volitionally. If one looks at many meditative systems and other systems for spiritual development (Tart, 1975a), a main technique running through all of them is training in learning to focus attention more selectively. Since attention / awareness serves to activate structures by being able to deploy attention at will, one potentially can have enormous control over the activity of consciousness.

Second, we must note that various structures have important, innate properties that determine if and how they may interact with other structures. Figure 3 illustrates this, using the analogy of structures being like various shaped blocks which must exist in a gravitational field, this field being analogous to the energetic functioning of the system comprising a state of consciousness functioning in an environment. There are four illustrations here of ways different kinds of blocks can be stacked up to form structures that will be stable in the gravitational field. The one in the upper left-hand corner (A) for instance, is quite stable in the gravitational field. The one in the upper middle (B) is easily disrupted by a push on the arc structure because of leverage. The one in the right-hand corner (C) is much taller, but rather vulnerable to sideways pushes. We may think of states of consciousness (or of cultures) as being ways of interconnecting various human potentials into
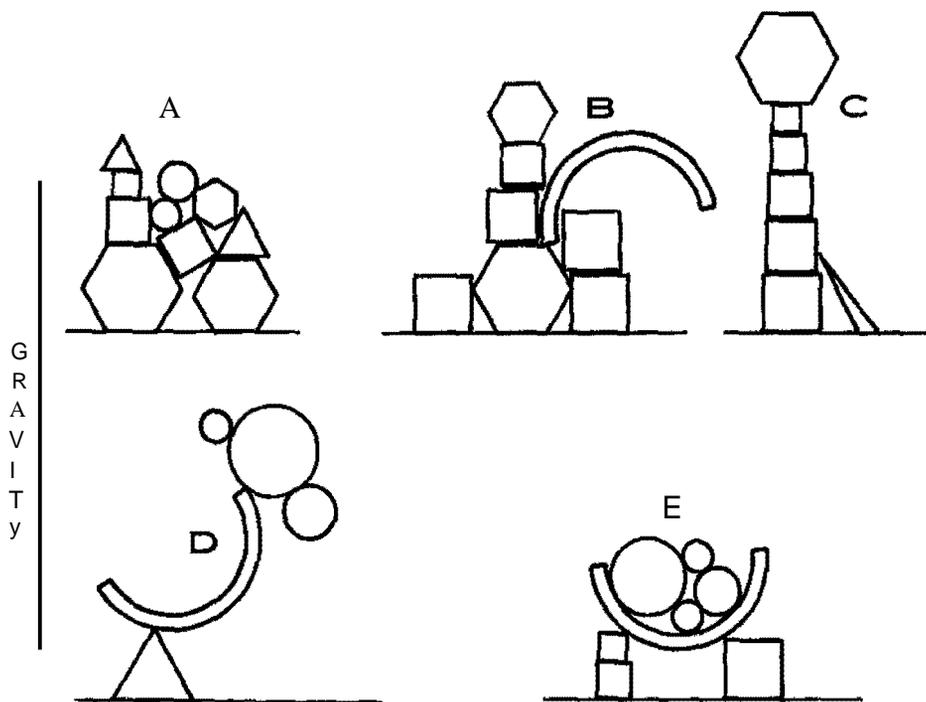
analogies for states of consciousness

Figure 3: Constraints and limits of structure.

functioning systems. One gets certain useful things out of various combinations of potentials, but has various vulnerabilities as a result Fancifully, we may say the state of consciousness in the left-hand corner (A) presents a very 'straight' and stable state of consciousness that may be somewhat dull, but certainly resists the vicissitudes of life, while the one in the upper right-hand corner (C) enables its possessor to get 'high', but is rather susceptible to certain kinds of stresses.

limitations

The structure in the lower left-hand corner (D), by contrast, indicates an obviously impossible organization. You can't put blocks together like this in a gravitational field, as it will collapse the instant you remove the constructing forces. Similarly, one can think of the possible combinations of human potentialities which one simply never hears of as existing in stable systems. This suggests very strongly that the number of ways you can combine human potentialities into a state of consciousness is indeed limited. I do not think our current knowledge of exactly what these limits are is any too good, but we must be aware of this. Again using John Lilly's analogy of the human biocornputer, the biological computer given 11sis apparently not totally 'general purpose'. There are a lot of programs you can put into it, but there are some programs you just can't run on a functioning human biocomputer. This means

that the number of states of consciousness one can have will be limited.

DISCRETE STATES OF CONSCIOUSNESS

J am now ready to define what a state of consciousness is. As a preface I should note, with some guilt, since J helped to popularize the terms 'state of consciousness' and 'altered state of consciousness' (Tart, 1969), that those two terms are now generally used in such an ambiguous way as to be almost meaningless. People use 'state of consciousness' simply to mean what's on their mind at any moment, and if it changes a moment later then they talk about an *altered* state of consciousness. So now as I touch the top of my head I am in 'top of the head state of consciousness', and now as I touch my chest I am in the 'altered state of consciousness' of 'chest consciousness', etc. Clearly this use is so ambiguous as to simply contribute confusion.

states and altered states

I am now attempting to introduce two new terms, *discrete state of consciousness* and *discrete altered state of consciousness* for scientific usage, and I shall define these in a moment. Recall that on a molecular level the systems approach to (states of) consciousness has two basic components, energies and structures. We have a kind of basic awareness, partially directable so that we call it attention/awareness, as well as other forms of biological and psychic energy, and we have various kinds of semi-permanent structures that are activated by attention/ awareness and other kinds of psychic and biological energy. Figure 3, illustrating the limitations of structure, is partially misleading in that it illustrates a static kind of system. As our first look at a discrete state of consciousness, we can consider it a large number of psychological structures, *dynamically* interacting with each other as attention / awareness energy and other kinds of psychic and biological energy circulate through the structures of the system. There are certain preferred, habitual paths of energy circulation, and others which are seldom used. Certain structures, which are latent in a given state of consciousness, receive no energy ordinarily at all and so are not active. Other kinds of structures receive certain kinds of psychic energies but not the energy that attention / awareness constitutes, and so affect the quality of consciousness of the system indirectly. These, of course, are what we mean by the 'unconscious'.

two new terms

dynamic interactions

Figure 4 is a representation of a discrete state of consciousness as a system. Each of the circles of various sizes represents different sorts of human potentialities. The heavy lines repre-
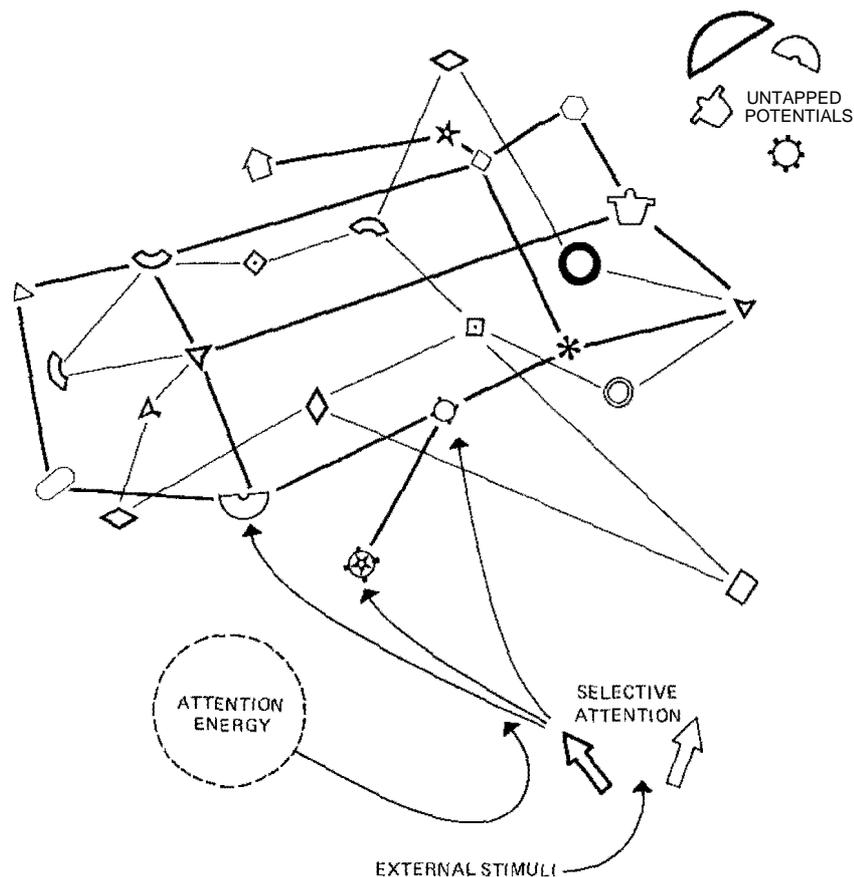
sent attention/awareness energy and other kinds of psychic energy flow routes which keep certain structures connected and interacting with one another in a relatively stable and habitual sort of fashion. Input from the environment, filtered by selective attention, also tends to activate certain structures habitually. In the upper right hand corner I have shown certain human potentialities as untapped, not connected with the system. By the light lines I have shown another possible way of connecting up various structures of human potentialities to form a different kind of system, a system with a different configuration. We shall come to that in a moment.

discrete
state
pattern

Now [shall formally define a discrete state of consciousness (d-SoC) for a given individual (and I emphasize for a given *individual*) as *a unique configuration or system of psychological structures or subsystems. The structures or subsystems show some quantitative and minor qualitative variation in the wa.vin which they process information or cope or have experiences, but the structures or subsystems and their energetic pattern of inter-*

actions comprise a 'system'. The operations of the components, the psychological structures, interact with each other and stabilize each other's functioning by means of feedback control such that the system, the discrete state of consciousness, maintains its overall patterning of functioning within a varying environment. That is, the parts of the system that comprise a discrete state of consciousness may vary over various ranges if we look at individual components, but the overall, general configuration, the overall pattern of the system remains recognizably the same. As an analogy, you can drive your car faster or slower, with a varying number of passengers in it, or change the color of the seat covers, but it retains its identity as the system we know as an automobile. So one may have variations in consciousness, such as being more or less activated, more or less aware of the environment, etc. that represent quantitative changes in certain subsystems or structures of the system, but they do not change the overall, recognizable configuration of the system as being that of our ordinary state of consciousness, or, for that matter, of any particular discrete state of consciousness. The way to understand a discrete state of consciousness, then, is not only to investigate the structure of the parts in a more and more molecular way, but also to be aware of the way in which the parts interact and the 'gestalt' tern-properties of the configuration that arise that may not be predictable from a knowledge of the parts alone.

interaction of parts

Figure 5 illustrates what I mean by a discrete *altered* state of consciousness   Now the pattern that was the background of the previous figure becomes the foreground, and the earlier pattern is the background. We have a radical reorganization of the selection of structures making up consciousness and/ or the pattern of energetic and informational interaction between them. The basic difference of a discrete altered state of consciousness from the baseline state, the discrete state of consciousness we take as a reference, is that the *system-prop*-erties now produce something quite different. You might say there has been a quantum jump to a quite different type of organization (Tart, 1975b). If we take your automobile apart and use the parts to form the components of an airplane, with the addition of a few other parts (corresponding to latent potentials), we obviously have a quite different system, although one can certainly find similarities of functioning in particular parts.

discrete altered state pattern

I am deliberately stressing *radical* reorganization or a kind of quantum jump here in order to keep the concept of a discrete state of consciousness useful. A discrete state is discretely different from some other state. On the psychological level, one might, for example, argue that one can dream about almost anything that one can experience in the waking state.
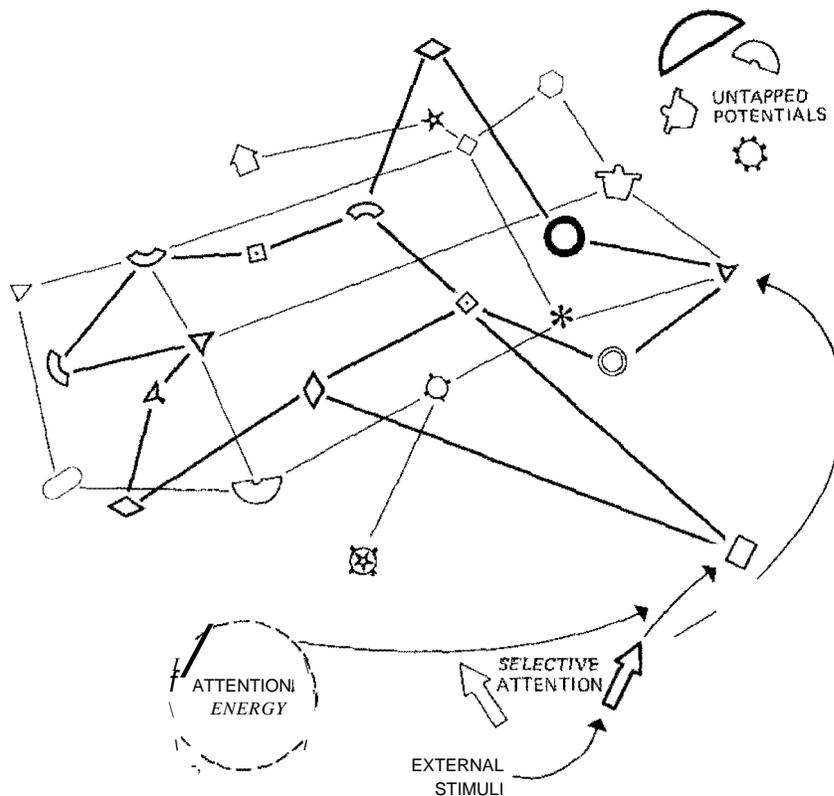
Figure 5: Representation of a d-ASC as a new configuration of structures/subsystems, a new gestalt. The configuration of the baseline d-Sot; (Figure 4) is shown in light lines and circles. Although there is some overlap of connections and structures/subsystems, a distinctly new pattern has emerged, and different human potentials are used in different ways to form a new system, the d·ASC.

There can be great overlap in *content,* yet the overall functioning and patterning of the dreaming state and of our ordinary consciousness are quite different in normal people. I have never yet found anyone who, in his ordinary state of consciousness, would seriously argue with me that he might really be just dreaming about arguing with me. As J have defined a discrete state of consciousness, in order to get from it into a discrete altered state of consciousness, the individual must somehow have the organization of his baseline state temporarily disintegrate, go through a transitional period, and then restructure into the altered pattern of the discrete state of consciousness.

INDIVIDUAL DIFFERENCES

Now we must briefly look at a reality that has greatly confused our studies of and concepts about discrete states of consciousness, namely that of individual differences. Figure 6 shows a different way of defining the concept of discrete states of
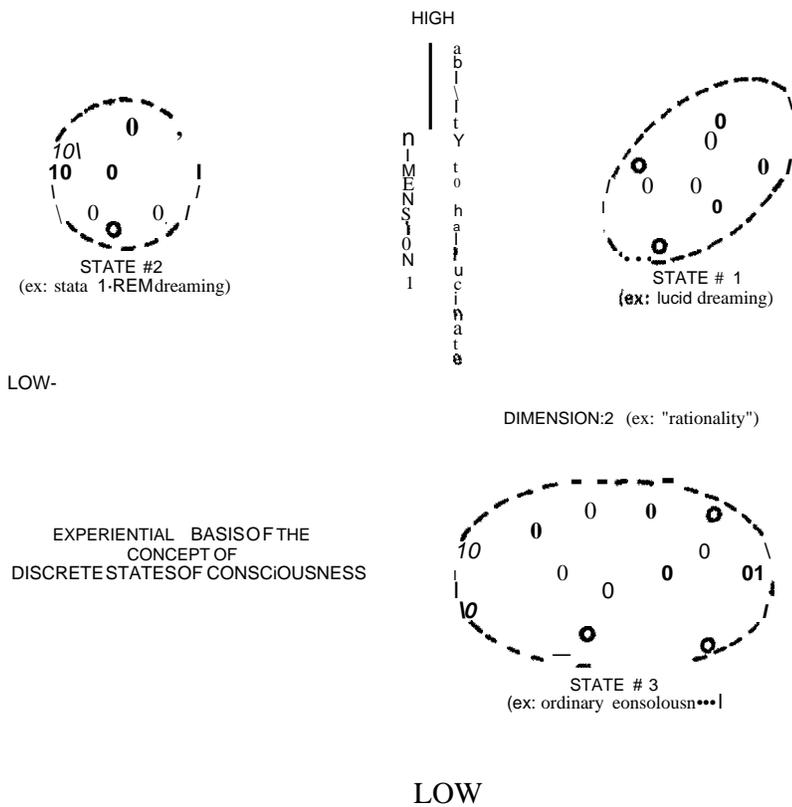
Figure 6: Mapping experience.

consciousness, namely a quantitative mapping of an individual's experiences in psychological space. For simplicity here we make the ridiculous assumption that a two-dimensional map is sufficient Assume these are experiential points, estimates of the intensity of experience on two dimensions, obtained from one individual at various times. We see that **in** spite of quantitative variation within clusters, his experiences fall into three quite discrete clusters, and never into regions between them. If we follow the process of his getting from one cluster to another, we find that he reports not being clear about what happens in between, or of a blank period, or of strange experiences happening that don't seem to repeat themselves. So here we have a map illustrating three discrete states of consciousness, with some quantitative variation within each state, but very clear discreteness among them.

Now suppose we do the same kind of experiential mapping for a second individual, and get the kind of results shown in Figure 7. Person A again shows two discrete clusters of experience, and the concept of two *discrete states of consciousness* makes sense for him. Person B, however, shows 'functioning' throughout the entire range of A's experiences, including the 'forbidden zone' for A. For person B, the concept of a discrete
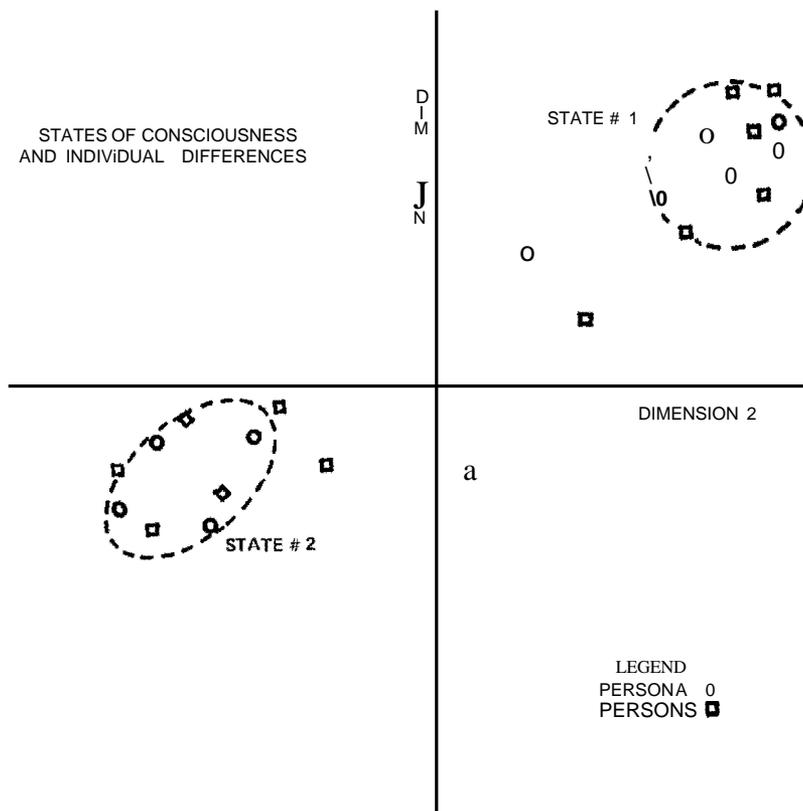
quantitative mapping

STATES OF CONSCIOUSNESS
AND INDIVIDUAL DIFFERENCES

DIMENSION

STATE # 1

DIMENSION 2

a

STATE # 2

LEGEND
PERSONA 0
PERSONS ▢

Figure 7: Individual differences.

*a major
methodological
problem*

state of consciousness does not make sense. I have become increasingly convinced that the ignoring of individual differences in studies of states of consciousness has resulted in the mixing of data from individuals of these two types, and has often given the impression of continuity when the reality is that there is continuity for *some* individuals, but discrete states of consciousness for others. This is a major methodological problem that will have to be worked on if we are to advance in this area.

SUBSYSTEMS COMPRISING STATES OF CONSCIOUSNESS

I have talked about consciousness as being a system comprised of structures and various kinds of psychic energies. Ideally we ought to be able to work at the most molecular level of the system, which at a psychological level would be basic conditionings and learnings-emotional, bodily, and cognitive-which lead to the formation of subsystems and systems. Unfortunately we know so little about how these form into the presented system of functioning that we *see as* an actual state of consciousness, that we are not yet able to work at very molecular levels. Figure 8 gives you a very brief glance at the
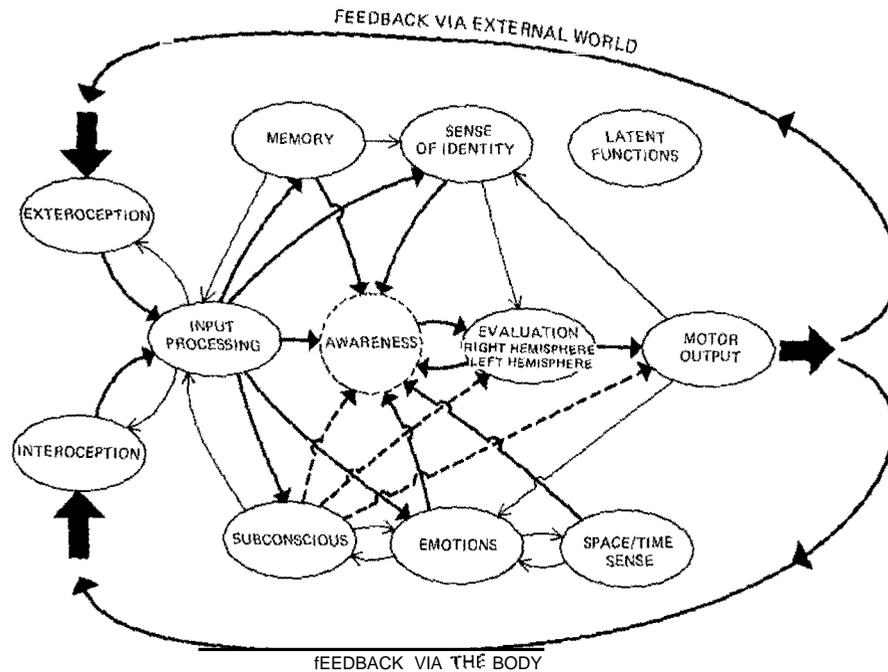
Figure 8: Subsystems comprisiag states of consciousness.

kind of subsystems comprising the system of various discrete states of consciousness that is useful to talk about at this stage of our knowledge. All of these subsystems are capable of finer divisions until we reach a molecular level in principle, but this is the level we have to look at now. The arrows in the figure represent some of the major routes of information flow, and the dotted arrows represent some of the major routes of stabilization control, which I shall discuss in a moment. The required miracle of covering the basic nature of altered states of consciousness in thirty to forty minutes doesn't allow me to say anything about the internal operation of these subsystems, but just by glancing at the figure you see we have information flow from the outside world and from the body being processed in various kinds of psychological ways as awareness flows through the system, and eventuating in motor actions which in turn constitute overall feedback signals, and so our system of consciousness cycles on through its inner and outer worlds. I want to devote the rest of my time to quickly reviewing a few of the properties of discrete states of consciousness that make sense when we view them as systems.

functioning subsystems

STABILIZING A DISCRETE STATE OF CONSCIOUSNESS

The basic function of any discrete state of consciousness is to successfully cope with some world or environment. The state of consciousness is our toot for dealing with various realities. If

it's a good tool, it should hold together while performing *its* function. If you were trying to unscrew some nuts and your wrench turned into a screwdriver or a hammer every once in a while, on an unpredictable basis, you would not have a very good tool, Any discrete state of consciousness, including our ordinary state, is a highly complex system designed to function, among other things, as a tool for dealing with environment, and so, like any well-engineered system, it has many stabilization processes occurring simultaneously in order to give it dynamic stability. If every time a car honked its horn you went into some altered state characterized by infinite bliss and unawareness of the environment, you would not be around very long if your environment included having to cross city streets!

discrete states as tools

There are four major ways of stabilizing the system of a state of consciousness, analogous to the way societies control the activities of their members. If you want someone .to be a 'good citizen' you (1) keep him busy with activities which constitute being a good citizen; you (2) reward him and make him feel good for carrying out these activities; you (3) punish him if he engages in undesirable activities, perhaps if he even thinks about them; and you (4) try to eliminate the opportunities for engaging in undesirable activities.

The first major way of stabilizing a discrete state of *consciousness* is what I shall call *loading stabilization,* keeping a person's thoughts and feelings occupied with things his society considers good or useful, thus keeping most of his attention/awareness energy in desirable channels and keeping desirable structures functioning. It is illustrated by the Puritan adage, "Idle hands do the Devil's work." As the Yaqui man of knowledge, don Juan, told Carlos Castaneda, the ordinary, repeated, day-to-day activities of people keep their energy so bound within those particular patterns that it keeps them from becoming aware of non-ordinary realities.

loading stabilization

Coping with physical reality, which seems to generally stick within certain lawful patterns, is a major kind of loading stabilization. Similarly sensing the same body every morning when you wake up is a kind of loading stabilization: it would be hard to maintain your ordinary state if you woke up some mornings with no head and five arms rather than one head and two arms! The kinesthetic feedback from moving our body also constitutes loading, and the constant internal talking we do with ourselves about familiar things also loads our consciousness and stabilizes it.

There are two types of *feedback stabilization.* Any type of feedback stabilization in a discrete state of consciousness

means that you have a structure or structures or subsystems to sense when other subsystems are operating outside of desirable levels, and which then apply a correction process to bring the erring subsystems back to the norm. In systems terms we call this *negativefeedback stabilization* if we have to inhibit the activity of a subsystem which is going outside the norm, and *positivefeedback stabilization* if we amplify or enhance activity within the normal range of the subsystem. Negative feedback stabilization may mean, for instance, feelings of anxiety if certain taboo thoughts are thought of. Successful stabilization of this sort makes the thinker disinclined to follow up that line of thought. Positive feedback stabilization might be illustrated by feeling happy, clever, competent, whatever, when you do socially approved things. So, you are very happy when you get an A on your paper or your article is accepted for publication, whether you receive any external reinforcement or not. Note that positive and negative feedback stabilization do not necessarily refer to positive and negative consciously experienced affects, although the two examples I gave were of that sort.Positive feedback means actively rewarding a process that occurs when a subsystem is within acceptable limits, and negative feedback refers to inhibiting that activity when **it** is outside the limits.

negative and positive feedback stabilization

Fourthly, we should refer to *limiting stabilization,* processes which limit the ability of certain subsystems to respond so that they cannot alter the overall energetic activation of the state of consciousness in a way which would push the system beyond its limits. Extreme emotions, for example, often initiate the transition to a discrete altered state of consciousness by disrupting the stability of the baseline state. A tranquilizing drug, by blunting the range of affective response, limits various affective subsystems and *so* prevents a transition to a discrete altered state of consciousness. Note that a given recognizable psychological operation may comprise several types of stabilization simultaneously. If, for example, I fantasize intensely about various past triumphs, I am both loading my consciousness to decrease the energy available to processes that might destabilize it, and I am calling up, from my memory associations, various positive affects that make me enjoy doing this, and *so* I keep doing it.

limiting stabilization

INDUCTION OF A DISCRETE ALTERED STATE OF CONSCIOUSNESS

Let's now look at the opposite of the process of stabilization: how do we induce a discrete altered state of consciousness? We start from some baseline state of consciousness, an interacting configuration of subsystems comprising a dynamically stable system. We can get to an altered state of consciousness by using

two psychological and/or physiological operations in a three-step process.

The first basic induction operation is that of *disrupting* the stabilization of the baseline state of consciousness. We may try to disrupt the stabilization processes directly when they can be identified, or do it indirectly by pushing other psychological functions and subsystems to and beyond normal limits of functioning. We might disrupt particular subsystems by over-loading them with stimuli, depriving them of stimuli necessary for their operation, giving them anomalous stimuli which can't be processed in habitual ways, or by deliberately withdrawing attention/ awareness energy from them so that they cease to function. Remember, however, that the system of our discrete state of consciousness *is multiply* stabilized. We may succeed in interrupting some stabilization processes, but those still functioning may be sufficient to hold the system in its normal pattern of operation. This view leads to the resolution *of* many paradoxes involved in drug work. Giving a person a psychoactive drug does not necessarily induce a discrete altered state of consciousness. You may get no responses at all other than physiological ones. This means that while the pharmacological action of the drug may have disrupted some stabilization processes, enough are left to hold the system in the ordinary mode of operation. To make that concrete, I can clap my hands right now *[claps!]* and while your level of activation may have risen momentarily, I doubt that any of you have been unexpectedly thrown into a discrete altered state of consciousness, such as the meditative state of the void. If you have been rather bored by this talk and were in a hypnagogic state, however, that one disrupting stimulus may have been sufficient to cause a transition! Obviously the hypnagogic state is not as well stabilized as your ordinary waking state in that particular respect.

The second induction operation (and I should note that these two are often carried on simultaneously) is to apply what I call *patterning forces* or stimuli. Once the elements comprising the system of consciousness have been disrupted, they must be patterned into the desired discrete altered state of consciousness. Figure 9 sketches the induction process, again using our analogy of differently shaped blocks in a gravitational field corresponding to various psychological structures and sub-systems energetically interacting in an environment. The left-hand sketch represents a stable baseline state of consciousness. We begin applying disrupting and patterning forces as the first step of induction. The second sketch represents quantitative change *within* the baseline state of consciousness, but no transition yet. The disruptive forces have pushed the pattern *to* its
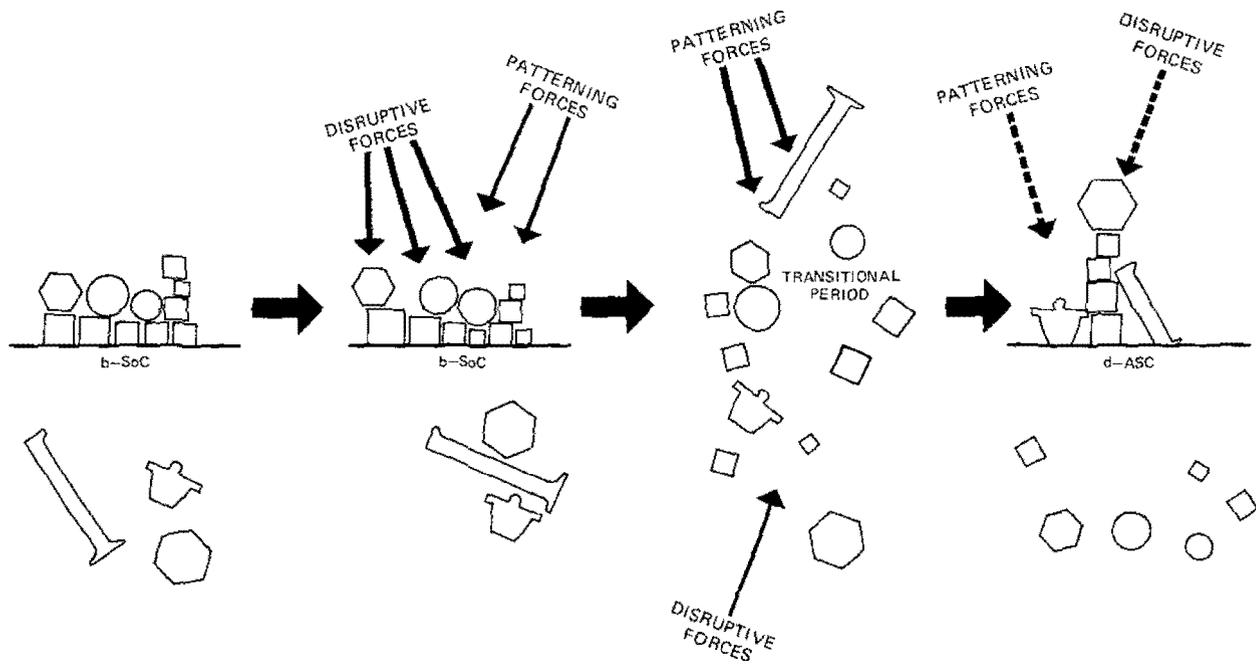
Figure 9: Induction of a discrete altered state of consciousness.

limits of stability, and although we have quantitative change, we cannot say that the person is in a different state of consciousness. I have also shown some latent potentials that are outside the system of consciousness as changing their possible interrelationships, a theoretical prediction that psychoanalytic and other findings require us to make.

The third sketch shows the transition. The baseline state of consciousness has been broken lip, there is no stable relationship between the various subsystems or structures. **In** terms of a person's experience, he may experience unrepeating, confusing sorts of phenomena, he may just blank out, or, if the transition process has become automated, he may not have any awareness of the transition process at all.

internal stabilization

The patterning forces now become more important than the disrupting forces, and the fourth sketch shows the patterning forces having created the new state of consciousness. Some potentialities not available in the baseline state of consciousness are incorporated into this new, stable system. I have shown the patterning and disrupting forces as dotted arrows now *to* indicate that until the discrete altered state of consciousness is well learned, has developed its own internal stabilization mechanisms, it may be necessary to keep up these 'external' forces in order to keep the state stable. The kind of discrete altered states of consciousness we deal with today though, are ones that develop their own internal stabilizing processes relatively rapidly.

To give a quick example of the induction process, think of falling asleep. You lie down in a dark, quiet room. The dark, quiet room takes away the environmental stimuli that tend to stimulate and load your ordinary state of consciousness, and lying still allows kinesthetic receptors to adapt out so that the body fades as a source of loading stabilization. You take an attitude of nothing being important (you know how useless it is to *try* to go to sleep), and this involves a deliberate withdrawal of attention/ awareness energy from various structures, further destabilizing the functioning of the system. Tiredness, the physiological need to sleep, acts as a further disrupting force *and* as a patterning force, and we go on to various sleep states in accordance with various psychological and physiological pressures.

METHODOLOGICAL CONSEQUENCES OF THE THEORY

Time does not permit me to go into any detail about the systems approach to the workings of discrete states of consciousness, so I will close with just a few brief remarks on some of the methodological consequences of this approach.

First, I want to note that while the theory has predictive capabilities, it is currently intended primarily to serve the very necessary function of organizing the chaotic data in this field. It will take us many years to place specifically within this framework the enormous number of observations that we already have, but my feeling now is that most of them will indeed fit quite well.

Second, this theoretical approach emphasizes that you start with the study of *individuals,* you map their experiential spaces and find out just where the concept of discrete states makes sense for them and where it doesn't. You then go on to map the areas of discrete states of consciousness in particular individuals *in detail,* asking questions like, what are the main features of each state? What induction procedures produce if! What induction procedures get the individual out of it? What arc the limits of stability of this state? What advantages or uses does this state have and what disadvantages or hazards? Is there a depth dimension to it and how do we measure it? What are convenient marker phenomena of the state, etc., etc.? With this kind of individual study background, you can then see if there are enough similarities across groups of individuals to warrant common state names for groups. Of course this is idealistic, and it hasn't been done that way. Common state names have been with us for a long time indicating some similarities across states, but I'm sure detailed investigations of the altered states we know about will show that these common names are highly misleading in some cases and reasonably accurate in others.

individual orientation

A third consequence of this approach is that it points out the importance of discovering the basic subsystems and structures comprising consciousness, and discovering the basic nature of awareness and psychic energy. The variations in subsystem functioning across various discrete states of consciousness enable the functions of subsystems to become apparent, whereas they might be so implicit in one state as to not be noticeable. It's like the old dictum that the abnormal teaches us a great deal about the normal. However, we should avoid premature reductionism by being aware that there are 'system' properties which do not follow simply from knowing the properties of the subsystems or structures. Reduction must be balanced by synthesis.

importance of subsystems

We should also note the possibility of tapping and developing latent human potentials **in** altered states. The fact that so many individuals in our culture are trying to do so because of the value breakdown in our society, presents us with a real challenge: will we leave the very dynamic and powerful potentials of discrete altered states of consciousness in the hands of untrained and careless individuals, or will we try to achieve

enough scientific understanding of the powerful forces released in these states to employ them constructively?

cultural relativity of ordinary slates of consciousness

This question brings me to the last point I want to make, namely to remind us of the cultural relativity of our ordinary state of consciousness. I do not want to propose that the only thing we need to do is gain a normal consciousness understanding of what altered states of consciousness are like. An insistence on reducing the unfamiliar to the familiar would seriously distort the realities of various altered states. I have argued elsewhere for the creation of *state-specific sciences* (Tart, 1971b; 1972), the recognition that *any* state of consciousness is a specialized tooL If we apply basic scientific method using other tools, other states of consciousness, we may greatly broaden our knowledge.

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