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ALTERED STATES OF CONSCIOUSNESS AND PSI: AN HISTORICAL SURVEY AND RESEARCH PROSPECTUS

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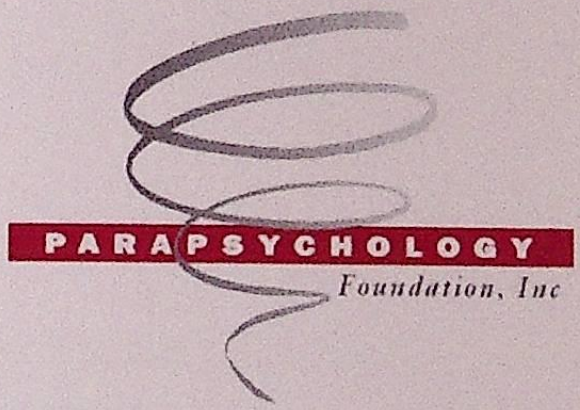

Altered States of Consciousness and Psi: An Historical Survey and Research Prospectus

By

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❖ *Contents*

❖ *Acknowledgments*

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❖ *Preface*

This Monograph was originally published in response to a sort of malaise that seemed to us to settle over parapsychology during the 1970s. "Psychical Research," as broadly conceived by the founders of the SPR, had contracted in large part to a narrowly experimental discipline concentrated on laboratory research with unselected subjects. Psi effects observed under these conditions were typically small, and it was becoming widely appreciated that it is in general extremely difficult or impossible to apportion such effects with confidence among the weak psi sources typically participating in the experiments—most notoriously between the persons designated officially as "subjects" and "experimenters."

But it seemed clear to us, along with others such as Pratt (1975), that the distribution of voluntary psi abilities within the general population is far from bell-shaped or "normal," and that many of the field's historically strongest experimental outcomes had in fact been obtained in repeatable fashion from a small number of exceptional subjects who had somehow found their way into our laboratories. Working with such persons seemed to us the key to progress. This was especially the case for a psychophysiologically oriented research group such as ours, because high between-subject variation seemed certain to be the rule in terms *both* of psi capacity *and* of whatever properties of physiological organization and function might underlie or subserve it.

Our general aim, therefore, was to carry out intensive longitudinal investigations with highly selected psi subjects. But where were we to find these exceptional individuals? We could certainly follow historical precedent by simply waiting for such persons to appear and by making whatever efforts we could to locate them ourselves.

But the central strategy we advocated in the Monograph was instead to approach psi *indirectly*, through intensive study of various altered states of consciousness with which it appears to have been strongly associated, historically and cross-culturally. These unusual states of consciousness seemed to us more accessible than psi itself to psychophysiological analysis, and in learning how to produce them under controlled laboratory conditions we saw the possibility of a definitive long-term solution to the vexed issue of replicability in psi research. The primary topics we surveyed in the Monograph, therefore, included trance mediumship, hypnosis, meditation and mystical experience, and the immense anthropological literature on shamanism with its emphasis on procedures for the systematic induction of psi-conducive ASCs.

The original manuscript is here reprinted verbatim, apart from some minor editorial changes and the addition of an index. We were unable at the time to pursue much further the vision we advanced, mainly due to lack of funding, and we are only now returning to it. However, things have not stood still during this long interim, and we will next review, all too briefly, some supportive recent developments in relation to our main topics.

Trance Mediumship

This is the least satisfactory area, with very little new information having been generated in the last 25 years. Reinsel (in press) reviews previously published material on some of the great mediums of the past, such as D. D. Home, Eusapia Palladino, and Rudi Schneider, and advances some tentative hypotheses about the sources and possible meaning of autonomic changes in particular, but she has precious little to go on in the way of direct physiological observations. Clearly what we most need are new experimental studies of good trance mediums, using modern neuroimaging and psi-testing techniques. Unfortunately, trance mediumship seems to have steeply declined in the U.S. in recent decades, although it continues to flourish in Brazil and other South American countries, the U.K., and various other parts of the world. Hoyt Edge (1996), for example, has undertaken studies of Balinese

mediums, locating them within the social and magico-religious traditions as well as conducting tests of their psi skills within the parameters of cultural acceptability. The first successful field study known to us of EEG changes associated with possession trance has also been carried out in Bali by Oohashi et al. (2002). Patric Giesler (1984,1985) has also made substantial contributions to this area by criticizing culturally inappropriate psi testing and by creating a "psi-in-process" methodology that attempts to preserve cultural, first-person accounts in the study of mediumistic divination in Afro-Brazilian Umbanda.

Hypnosis

At the time of the original publication, a great debate was still raging between behaviorist social psychologists intent on construing hypnosis as nothing but role-playing and conformance behavior, and traditionalists who saw the most interesting and extreme hypnotic phenomena, including psi phenomena, as arising in conjunction with profoundly altered states of consciousness. Up to that point, however, there was little direct evidence of unusual physiological occurrences in hypnosis; indeed, the absence of such evidence was one of the principal factors permitting the debate to continue. In the original Monograph, relying mainly on behavioral and phenomenological evidence, we argued in favor of a qualified altered-state view which pictures deep hypnosis not as a single, homogeneous state but as a family of phenomenologically related altered states of consciousness that lie outside the normal range, stratified in depth. Subsequent research using individuals selected for high hypnotizability has in our opinion strongly confirmed this view. Relevant examples include both functional neuroimaging studies (Kihlstrom, 2003; Nash & Barnier, 2008, Chapters 13 and 14; Rainville & Price, 2003; Sabourin, Cutcomb, Crawford, & Pribram, 1990) and phenomenological studies such as that of Cardeña (2005). The postulated relationship between hypnosis and psi remains to be more fully explored, but that such a relationship exists has been confirmed repeatedly even in studies using relatively unselected subjects (Schechter, 1984; Stanford & Stein, 1994).

Meditation

Strong parallels to the situation regarding hypnosis can be seen in this area. There has certainly been an explosion of research on meditation in recent decades, but a large proportion of that research has been carried out in the context of a marriage of convenience with the burgeoning field of behavioral medicine, fueled by National Institutes of Health support (Andresen, 2000; Murphy & Donovan, 1997). From the standpoint we adopted in the Monograph, this work has remained for the most part at a very superficial level, using unselected subjects and brief practice with meditation techniques of diverse and often questionable sorts to demonstrate generally small and not terribly interesting, although perhaps clinically meaningful, improvements in various behavioral, psychological, and physiological indices of well-being. A much smaller amount of work has focused on advanced meditation practitioners, and this has yielded results which to us are far more interesting and which fall generally in line with expectations set forth in the Monograph. For example, Lutz, Greischar, Rawlings, Ricard, and Davidson (2004), in an important EEG study of highly experienced Tibetan Buddhist monks, confirmed and extended the seminal findings of Das and Gastaut (1957) on high-frequency (gamma) rhythms as a marker of deep meditative states. Also, recent work on adult brain plasticity (e.g., Gilbert, 1998; Taub, Uswatte, & Elbert, 2002) has made clear that it is premature and unwise to attempt to understand what goes on in advanced meditators by freely extrapolating neuropsychological and neurophysiological data obtained from ordinary persons operating under ordinary conditions, after the manner of d'Aquili and Newberg (1999) and numerous others. The brains of long-term meditators appear likely to differ in surprising ways from those of ordinary persons in both anatomical structure and functional organization, and these differences need to be investigated directly, with minimal presuppositions regarding their possible form. It has already been shown, for example, that advanced meditators display sizeable and topographically specific increases in cerebral cortical thickness (Lazar et al., 2005; see also Kelly et al., 2007, Chapter 8). Detailed longitudinal studies of persons involved in intensive meditative practice, of the sort currently being carried

out by B. Alan Wallace and colleagues through the Santa Barbara Institute, are urgently needed. Again as in the case of hypnosis, the hypothesized association between meditation and psi remains to be more fully explored, but there have been at least a few promising recent developments. For example, Roney-Dougal and Solfvin (2006) have obtained direct evidence of practice-dependent psi performance in free-response studies with experienced Tibetan monks, and serious practice of meditation is now widely thought to be predictive of success in the Ganzfeld. Also, there has recently been an increase in scholarly work on the Tantric traditions of southeast Asia, which are in general much more open and friendly to psi phenomena than the traditions epitomized by Patanjali and the Vedantists, and we can reasonably expect this work to unearth a considerable amount of new historical information potentially supporting the postulated linkage between psi and meditation (J. Kripal, personal communication, 2008). One striking example is Sri Aurobindo's remarkable Record of Yoga, a private journal which he secretly kept for nearly 20 years and which has only recently been discovered and published (Aurobindo, 2001).

Mystical Experience

This topic was absolutely central for William James in his classic *Varieties of Religious Experience*, as well as in his later more philosophical works including in particular *A Pluralistic Universe*. But despite this powerful endorsement by the greatest of American psychologists, modern scientific psychology has largely repressed the subject. A well-deserved revival of interest may be occurring, however, as shown by the comprehensive recent reviews, from different but complementary perspectives, of Wulff (2000) and Kelly et al. (2007, Chapter 8). The hypothesized relationship between mystical experiences and psi remains to be explored more thoroughly, but it appears even clearer now than in 1981 that this can in principle be accomplished both through deepening historical scholarship and through new experimental and case studies with persons susceptible to such experiences. Support also derives from what appears to be an emerging association between the occurrence of deep NDEs, characterized in part by a strongly transcendental or mystical

component, and a subsequent influx of spontaneous psi experiences (B. Greyson, personal communication, 2008). Another angle of approach may fairly soon become available through the impending breakdown of restrictions on research with psychedelics, which have already been shown to enable controlled production of mystical-type experiences and which also appeared in promising early experiments to produce strong evidence of psi (Kelly et al., 2007, Chapter 8).

Altered States of Consciousness and Psi in Cross-Cultural Context

One of the principal innovations of our Monograph was to show in some detail how altered states and psi come together in the worldwide complex of shamanism. Among other things, this literature provides a vast storehouse of recipes for induction of trance and possession trance, altered states specifically expected to result in acquisition and exercise of psi abilities. This area of research has not been without its difficulties, with anthropologists drifting into opposing camps about the viability of the concept of "shamanism," especially as it has been used to interpret cultural materials (art, carvings, etc.) in assessments of the evolution of consciousness and the existence of ASCs from the Paleolithic era. However, there is general agreement within anthropology, despite the warring factions, that, however shamanism is defined it must incorporate the cultivation and use of ASCs, especially in connection with rituals having to do with initiation, healing, divination, and life-transitions.

Since the original publication of the Monograph, there have been some significant steps forward in research on cross-cultural ASCs and shamanism. Specifically, Locke and Kelly (1985) have refined the model set forth below for analysis of ASCs cross-culturally, including greater detail in regard to culturally specific ASCs and their connections with ostensible psi phenomena. Also, Locke (1999) has provided more comprehensive application of the model in case studies of !Kung Bushmen trance states and trance and possession trance in Haitian Vodun. These kinds of analyses are currently being extended into a

number of domains (Locke, in preparation) through an examination of shamanic technologies of ASC induction and practice with respect to healing, sorcery, and divination. It is worth noting that there has been an enormous interest in traditional systems of healing, especially since the holistic health-care movement began and the net widened for inclusion of cross-cultural materials. While there has been some attention to the possibility of psi being involved in *healing*, little notice has been paid to *sorcery*, which is diametrically opposed to healing in spirit and practice, but which is most often associated explicitly with beliefs in magical (psi) powers and especially action-at-a-distance.

Mental Health

This is a new area for our attention, but, considering recent developments in the field, it is worthy of serious exploration in relation to the core aims of the Monograph. While there has been a very long history of debate over whether shamans are mentally ill or not, particularly whether they are schizophrenic (Krippner, 2002; Walsh, 1995), one important outcome of this agonistic process has been to draw attention to the relationship between culturally specific ASCs, anomalous experience and behavior, and mental illness. The debate over the mental health status of shamans is a microcosmic version of the larger issue of how one discerns differences and similarities between anomalous experience and behaviors, in the context of culturally specific notions of deviance and conformity, and mental illness (Jones & Fernyhough, 2008). In the last three decades, this has taken the form of introducing a complementary, and sometimes alternative, viewpoint about what might be happening to people who report NDE, abduction, mediumistic, shamanic, kundalini, psi, and possession experiences, for example, and particularly where the occurrence is spontaneous. The advent of what has become known as "spiritual emergence" and "spiritual crisis" phenomena (Grof & Grof, 1989) has gradually changed the face of mainstream mental health tools such as the DSM-IV. Over the last 15 years, there has been a steady production of handbooks (Lukoff, 2004-2005) that extend the range of the DSM into this area, and this is leading toward a substantial body of work being included in the forthcoming DSM-V. This is of interest within the scope of our model since it

leads toward circumstances where individuals having such experiences might be extended a moratorium in which the nature of their experiences is properly examined and a hasty diagnosis and pharmacological treatment avoided. Within transpersonal psychotherapy, there is a strong desire to provide such opportunities not only for humane reasons but also in order that ostensible psi events may be properly investigated (Grof & Grof, 1989). It is worth noting here that our model has been used extensively in this spirit in national training programs in transpersonal psychotherapy in Australia (Locke, 2008).

In sum, we believe that the central research strategy we advocated in the original Monograph remains fundamentally sound and has already begun to bear fruit. Furthermore, the general situation is now far more propitious for carrying the vision forward, in at least four major respects:

First, the last twenty-five years have witnessed an enormous increase in theoretical and experimental work on consciousness and altered states of consciousness, to such an extent that work of this sort is now mainstream and almost universally accepted as legitimate, rather than marginalized and even faintly heretical as it still was in 1981. For comprehensive recent surveys see Velmans and Schneider (2007) and Zelazo, Moscovitch, and Thompson (2007).

Second, there have been major advances in our capacity to observe and characterize subtle physiological events taking place in the interior of intact and functioning human beings. For example, in just the last few decades EEG methodology has been rebuilt virtually from the ground up, and modern EEG hardware and software are at last able to cope with the enormous amounts of data that must routinely be collected in order to provide adequate spatial sampling of scalp electric fields. Other neuroimaging technologies such as Positron Emission Tomography (PET) and Functional Magnetic Resonance Imaging (fMRI), which typically focus on hemodynamic and metabolic consequences of neuronal activity rather than the neuroelectric activity itself, first came into widespread use in the 1980s and 1990s, respectively, and are still undergoing rapid evolution (Toga & Mazziotta, 2002).

Third, serious attempts are at last being made to bring our 1st-person self-report methodologies up to par with the 3rd-person

external-observer methodologies that have so far dominated Western psychological science. This situation arose substantially out of the triumph of behaviorism's advocates in the early 20th century and not out of terminal flaws in the various forms of introspectionism (Danziger, 1980). But the net effect was to render most forms of inquiry into subjectivity (and, therefore, intersubjectivity) unviable in the mainstream of psychological research and practice. This effectively marginalized the nascent phenomenological enquiry, initiated by Husserl (1964) and later extended by Merleau-Ponty (1978) into the existential-phenomenology domain, which has recently been recovered in first-person research on the phenomenal field but also, and particularly, in the phenomenology of embodiment and the hermeneutics of research findings. For example, various authors of *Varieties of Anomalous Experience* (Cardeña, Lynn, & Krippner, 2000) and Varela (1996) move in the direction of producing more precise cartographies of altered states of consciousness and a better characterization of their properties in phenomenological terms. In our Monograph, we had also pointed out the need for a commitment to phenomenological investigation of the experiences of persons undergoing ASCs such as hypnosis, meditation, and various "trance" states that are associated with mediumistic and shamanic work. This is of particular interest, for example, where gifted hypnotic subjects and long-term meditators are concerned. There is urgent need for a refined and sensitive methodology that captures the essential features not only of subjects' experiences but also those of the observers. Moreover, a thorough-going phenomenology will not only cover these experiential domains individually, but will also reflect the intersubjectivity of the experimental process. This need has been expressed, for example, by Cardeña, Lynn, and Krippner (2000), Berenbaum, Kerns, and Raghavan (2000), Pekala (1991), Pekala and Cardeña (2000), Varela (1996), and Walsh (1995). We hope soon to contribute to a revitalized phenomenological methodology, grounded in Husserl's (1964) work, which encompasses and extends existing "psycho-phenomenologies" and "neuro-phenomenologies," in light of the original aim of phenomenology to suspend such categories and only re-install them after phenomenological mapping is complete.

Last but not least, a driving intuition first expressed toward the end of the original Monograph—specifically, that the enormous diversity of observed ASCs may actually reflect socially and culturally conditioned processes playing on a relatively small set of underlying psychobiological themes—seems to be in process of confirmation. Cardeña (2005), for example, has demonstrated a strong phenomenological kinship lying at the core of deep hypnosis, deep meditation, and the kinds of ASCs observed in cross-cultural settings, and Hufford (1982) has provided an excellent model of just the sort of thing we had in mind with his cross-cultural study of night terrors, showing in detail how a common underlying physiology gets variably expressed and interpreted in locally available, culturally specific terms.

In sum, it seems to us even more likely now than it did in 1981 that there is deep order underlying the family of psi-conducive altered states—including somnambulic and deep hypnotic states, deep meditative states, dreams and lucid dreams, OBEs, NDEs, and mystical and psychedelic states—and that grasping this order can help us move toward controlled production of at least some of the relevant states, and hence toward improved opportunities for study of *all* of their associated phenomena, including psi phenomena. That is the central message of the Monograph, and we stand by it. We can only add here that we would welcome hearing from interested readers about any and all research and funding opportunities consistent with this general framework.

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❖ *Introduction*

Is progress being made in laboratory psi research? Certainly there is room for doubt and although the present authors are among those who would answer affirmatively, there is no denying that its pace remains distressingly slow.

The situation is reminiscent of the crisis in survival research years ago. Most parapsychologically knowledgeable readers will recall that J. B. Rhine in 1960 called for abandonment of survival research, his argument, briefly, being that since survival could not be experimentally discriminated from super-ESP among the living, we should get on with study of ESP among the living. Of course, one might also argue the other way, that ESP among the living can be explained by recourse to survival and hence we should get on with survival research. Fortunately, neither of these radical alternatives was able to capture the undivided allegiance of the field and both kinds of research have continued to coexist in varying proportion to the present.

The super-psi problem now confronts us in a different guise within the context of the laboratory research itself. Thoughtful researchers have recognized for many years that psi phenomena present, by their very nature, peculiar difficulties for the experimenter. Once we begin to take psi seriously, we are forced to recognize that it can obtrude into our experimental designs in a variety of insidious and unpleasant ways. In particular, it has been pointed out forcefully (for example, Kennedy and Taddonio, 1976; Millar, 1979) that weak and inconsistent psi effects of the sort we most commonly see in our experiments will be very hard to apportion unambiguously among candidate sources that are virtually equipotential. Most notoriously, this is often the situation that holds for the

individuals formally designated as "experimenters" and "subjects" in psi experiments.

This is serious business. If the results of our experiments represent psi-mediated experimenter effects rather than genuine information about the effects upon psi of factors we set out to study experimentally—or more likely some irreducible mixture of both kinds of effects—then the prospects for experimental advance are gravely threatened, indeed.

Problems of this type recur throughout the field and will continue to afflict us so long as we are unable to establish constraints upon the what, when, and where of psi—constraints that we could exploit in designing and interpreting further experiments. Like Archimedes, we need a fulcrum. Meanwhile, however, we need not be paralyzed by these difficulties. Certainly, research should continue to press forward vigorously in areas which seem to be producing results. At the same time, we also agree strongly with Rhea White (1980) that, while not abandoning what is good in current approaches, we should become more venturesome, less inhibited by the attitude of self-protective conservatism that seems to have settled over our field in response to a largely hostile scientific establishment. What follows in this Monograph is offered in that spirit.

Certainly, few would disagree that our most pressing need is for stronger and more reliable psi sources. If we are ever to learn much about these phenomena, we will simply have to make them more consistently available for study. In general terms, better sources can either be found or developed. So far, we have been largely dependent on finding them. Beyond question, many of our best experimental results have been produced by "gifted subjects," those meteors who occasionally shoot through the field and about whom we know so distressingly little. Moreover, as indicated above, some unknown proportion of further results, though historically attributed to unselected subjects, may in fact have been produced by additional "gifted" individuals appearing in the role of experimenter. And on the other hand, the few existing reports that claim success for methods of "training" psi, for example, Ryzl (1962) and Tart (1976), remain highly controversial, for reasons that need not detain us here.

What we wish to advocate in this Monograph is an indirect and long-term strategy which we believe could ultimately not only produce better psi sources, but also hasten the inevitable reunion of our field with mainstream psychology. Briefly, our proposal is that we ourselves go much more deeply than we so far have into the systematic study of altered states of consciousness (ASCs).

The existing experimental literature on ASCs and psi already looks promising. Our intention here is not to review this literature, which has been amply reviewed elsewhere (for example, Honorton, 1975, 1977; Parker, 1975), but to present it as the opening wedge to a more comprehensive effort along similar lines. For our purposes, there are two critical methodological features in the existing work that merit special emphasis. First, researchers took seriously what nonresearchers had to say about conditions of occurrence of psi. For example, when gifted performers were asked about conditions favorable for success in deliberate ESP response, there proved to be important commonalities running through many of their accounts, revolving around the themes of deep relaxation, sensory isolation, and mental quietude. Much of the relevant material here is summarized in seminal reports by McCreery (1967) and White (1964). Second, experimental tasks and statistical analysis techniques were evolved that were inherently better adapted to these conditions of response than the massed forced-choice methods that have dominated the modern period. The confluence of these factors has produced a flood of recent experiments involving free response to complex target materials under varied conditions of partial sensory isolation, relaxation, and inwardly directed attention. Similarly, the Maimonides dream studies grew from taking seriously the repeated observation that a high proportion of reported spontaneous psi events occurs in conjunction with the dream state; discovery of the association between rapid eye movements and dreaming provided the technical bridge needed to bring this observation within reach of laboratory study, again using free-response methods.

Despite technical caveats about certain details of particular experiments (e.g., Kennedy, 1979), there seems little doubt that as a group these free-response experiments involving "altered states" have been rather successful, in the sense that they have produced strong, qualitatively rich effects, rivaling in many instances those

observed in spontaneous cases. It is pertinent to remark here also that the available statistical analysis techniques (cf. Burdick and Kelly, 1977), based as they are primarily upon comparative judging schemes rather than upon direct appraisal of the "amount of information" successfully transmitted, in all likelihood grossly underestimate the "true" significance of strong and detailed free-response hits.

The exact role of "altered states" in this apparent success remains unclear, which partly explains why we have applied quotes to the term, both here and in the preceding paragraph. For one thing, the literature still consists mainly of studies showing only that psi can be obtained in the ASC conditions, rather than contrasting various ASCs with each other or with the "normal" condition. More pertinent to our interests here is the fact that, apart from the dream studies (where presumably most of us would readily agree that a distinctive altered state is involved), there is usually considerable room for questioning whether the experimental conditions have in fact produced "discrete altered states" in the sense of Tart (1975) or simply varying degrees of movement well within the range of the normal state. Our point here is not to belabor this difficult conceptual and terminological issue, but to emphasize that the apparent successes achieved so far have been achieved without straying terribly far from our normal cultural and experiential baselines.

It is particularly interesting, in this light, to recall a number of additional internal features of the existing data which suggest an association between strength of psi and strength of ASC (we need not try here to specify the meaning of either of these terms precisely). As noted previously by Honorton (1977), there are already several experiments in which shifts toward high "state reports" and/or other indices of change away from pre-experimental normal-state baselines have correlated positively and significantly with performance in psi tasks. These experiments include, for example, an alpha biofeedback study (Honorton, Davidson, and Bindler, 1971), an hypnotic dream study (Honorton, 1972) and a study using Masters' and Houston's "witches' cradle" technique (Honorton, Drucker, and Hermon, 1973). Further evidence of this type from Ganzfeld studies has been marshaled by Sargent (1980). Another suggestive observation in this connection is the strong association in

spontaneous cases between completeness of veridical detail and the state of consciousness of the percipient, with marked superiority of dream reports over waking ones (Rhine, 1962). Finally, recall that even a number of the most gifted forced-choice test subjects have provided evidence of association between episodes of particularly high scoring and transient mild shifts of state. Examples include B. D. (Kelly, Kanthamani, Child, and Young, 1975), Harribance (Morris, Roll, Klein, and Wheeler, 1972), Van Dam (Schouten and Kelly, 1978) and Gertrude Johnson (Tyrrell, 1961, p. 108).

Let us then tentatively suppose that these fragmentary but still rather impressive early results indicate that we are on a productive track and that the underlying methodological principles in particular are fundamentally sound. What we want to do now is to generalize on a grand scale, to follow these signposts toward a more inclusive and systematic approach to the whole subject of ASCs and psi. We seek a broader perspective than can be obtained from within the modern research tradition itself as reviewed so far. In an effort to gain this perspective, we will systematically extend our search not only far back into our own psychical research traditions, but also into still remoter areas including historical and comparative studies of religion and the vast literature primarily from cultural anthropology that deals with preliterate societies.

Before proceeding, however, it will be prudent to indicate more clearly just what we do and do not hope to accomplish in this way and to request certain scholarly indulgences of our readers.

Certainly, the literatures we will draw upon are extremely heterogeneous in scientific value, each presenting special preoccupations, peculiarities, and problems to the modern investigator. Nonetheless, we believe that collectively they represent an enormous treasure-house of reported human experience related to the characteristics and conditions of occurrence of apparent psi events. It would be unfortunate, in our view, if in our preoccupation with accumulating and reporting direct evidence of psi in the currently approved experimental idiom we allowed ourselves to lose touch with this rich mass of potentially instructive material.

At the same time we also recognize and accept its limitations, particularly as a source of direct evidence that psi occurs. It will become evident in what follows that even in this respect we

ourselves take various parts of the material rather more seriously than many other experimentally minded colleagues generally do. However, this will be of little consequence to our main argument. For we regard this as primarily an hypothesis-generating exercise, an effort of discovery rather than one of proof. For this purpose, we propose—and request the reader—to adopt an attitude of "willing suspension of disbelief" toward various claims that psi has occurred and to emphasize instead the *circumstances under which it is believed to have occurred.* Proceeding in this manner, we will develop the thesis that there is substantial and diverse suggestion of association between strong psi manifestations and discrete altered states of consciousness of varied but related types. Along the way and subsequently, we will indicate various ways in which our provisional observations can be extended, consolidated, and hopefully verified through future experimental work.

A further indulgence must be requested before we begin. We are attempting to span a very large amount of material in a very brief compass. No attempt can be made to be definitive or exhaustive here. Rather, we must rely on just a few of the pertinent examples, none presented in adequate detail, in order to indicate the apparent scope and depth of the association between altered states and psi, both historically and cross-culturally. Our primary concern is *perspective;* we hope to sketch in broad strokes a faithful but impressionistic portrait of the entire subject matter, one which emphasizes essential features and relations at the expense of scholarly detail.

Some no doubt will find what we have to say too obvious to require discussion; others, too speculative to merit it. We hope the majority result will be neither of these facile responses, but intensified interest in a subject whose systematic study, in light of its evident importance to our field, has in our opinion been neglected far too long. Indeed, to the degree that our portrait faithfully reflects the "natural history" of psi, one can hardly avoid the conclusion that during recent decades we have too often looked for psi where it was experimentally convenient for us to look, rather than where the phenomena are inherently more likely to be found. Perhaps we can now begin to mount a more balanced effort.

❖ *Early Psychical Research*

There are two central topics from the early history of psychical research that must also figure prominently in any discussion of psi and altered states. These are trance mediumship and hypnosis.

Trance mediumship entered psychical research primarily as a central element of the spiritualist beliefs and practices that swept through the western world in the mid-nineteenth century. The work of Crookes and others with D. D. Home is certainly an early landmark in the scientific study of mediumship, influencing a number of prominent scientists of the day and prefiguring the formation of the Society for Psychical Research (SPR) a decade later. Likewise, the appearance of mediumistic phenomena in so upright an individual as the Reverend Stainton Moses was one of the key factors which encouraged Gurney and Myers to take the subject seriously and thus ultimately collaborate in the formation of the SPR in 1882. Thereafter for several decades a major portion of the effort of the society was allocated to the study of a succession of outstanding mediums, notably Mrs. Piper, Mrs. Leonard, and Mrs. Willett. A voluminous literature was generated, consisting of thousands of pages of séance transcripts together with commentaries and analyses by a large number of serious and able investigators.

The evaluation of this formidable literature is not a task to be undertaken lightly, and we do not propose to attempt it here. A large proportion of the material is of course concerned primarily with establishing the occurrence of *something* paranormal. On this question we will simply record our own opinion, which is that despite its nonstatistical idiom the mediumistic literature contains some of the highest-grade evidence of the paranormal ever obtained. The further

question of its possible bearing on the problem of postmortem survival is, fortunately, one that need not concern us here.

Assuming provisionally, then, that the appearance of psi in this material is a fact, let us turn rather to consider briefly the circumstances in which it occurred. Most trivially, these circumstances include a variety of altered states of consciousness, which *ipso facto* enlists the entire body of mediumistic material in support of our central thesis. But there is more to be said than that. In their attempts to understand the bearing of mediumistic performances on the question of discarnate survival, investigators were obliged to examine carefully their properties and contents in relation to the medium's everyday personality. A natural and appropriate context for these efforts was provided by the recent emergence, through researches in hypnosis, hysteria, multiple personality, and the like, of the concept of hidden states of personality and consciousness. Uninhibited by behaviorist strictures, investigators not only observed what mediums did, but often interviewed them (along with their controls and communicators) in considerable depth about their own experiences and understandings of what was taking place. A substantial body of information was thus assembled on the psychology of mediumship and the processes of trance communication. Extensive reviews of this material are provided, for example, by Balfour (1935), Broad (1962), Salter (1950) and Sidgwick (1915); here, we summarize only the main points pertinent to a discussion of altered states.

Briefly, the relevant states prove to be heterogeneous in type, both within and among mediums. Results were occasionally produced by some mediums in relaxed states of reverie appearing to fall within the "normal" range. The main body of results, however, appeared in conjunction with a variety of states characterized by deepening *dissociation;* that is, by increasing control of the medium's organism from sites lying outside normal awareness. At the most superficial level, this might involve the appearance of automatic writing or other automatisms in a context of more or less full ordinary consciousness, as in Mrs. Willett's "lone scripts." Mrs. Willett, in particular, also manifested progressively a range of states characterized by increasing sensory automatism, from the nonsensory awareness of her "daylight impressions" through a kind of "deep"

trance in which she experienced full-fledged hallucinatory figures of the ostensible communicators. Even in the case of deep trance, Mrs. Willett remained in control of her organism, although she was generally amnesic after the event. Mrs. Piper and Mrs. Leonard, on the other hand, generally underwent much deeper dissociations, the normal consciousness entirely displaced during periods in which "spirit guides," or sometimes even the ostensible "communicators" themselves, appeared to gain more or less complete control of the organism. In some particularly spectacular cases, further dissociations of control appeared, permitting the medium to interact with multiple sitters simultaneously. Complete amnesia was generally the rule following deep trances of these latter sorts, but Mrs. Leonard reported that occasionally, on becoming drowsy following a sitting, she would experience isolated bits and pieces of conversation that she assumed to stem from the events of the preceding trance.

Entry into trance is generally well-marked and often dramatic, with drastic changes of posture, demeanor, physiognomy, voice, diction, etc., accompanying the appearance of successive spirit guides or communicators. During trance, the medium may also display profound isolation from the normal sensory environment. Mrs. Piper, for example, would not respond to pinpricks, cuts, burns, or ammonia held under her nose (Gauld, 1968, p. 256).

Skeptics will point out that many of the behavioral manifestations of trance could readily be simulated and no doubt they sometimes are. But that mediumistic performances such as Mrs. Piper's involve major shifts in state hardly seems open to reasonable doubt. It must again be emphasized, however, that these genuine instances of "trance" do not comprise a simple homogeneous entity even within a single medium, let alone across mediums. Long-term changes occur in the style and content of trance performances and the passage into and out of trance often becomes markedly smoother with experience, suggesting a learning process (cf. Myers, 1903, section 966). Superimposed on these long-term variations there may also be pronounced local variation in depth and other features of trance, even within the course of a single sitting.

Although we cannot argue this strongly on the basis of the evidence presently known to us, we have the impression—consistent,

incidentally, with Spiritualist doctrine—that there is an association both within and across mediums between strength of apparent psi phenomena and depth of dissociation or trance. Some of this might, of course, simply represent selection artifact in the choice of those mediums who have been most intensively studied; but the topic merits more detailed investigation. Perhaps colleagues better informed in this area will comment further. At first glance, there certainly appear to be some striking exceptions. D. D. Home, for example, quite often produced spectacular phenomena in what seemed a more or less normal state of consciousness (although he also worked in trance). But it is particularly interesting to note that on these occasions he did not experience—and stoutly denied—any sense of responsibility for the effects that occurred, attributing them entirely to "spirits." There is an interesting parallel here to RSPK events also; one wonders in both cases whether hypnosis, for example, might not reveal a subsystem of the personality—a hidden observer—that recognizes itself as the source of the phenomena.

The early workers made an excellent beginning in the study of mediumship, without doubt. And with the additional technical and substantive knowledge that has since come into being, we could in principle carry the subject considerably further at the present time. The capacity simply to make detailed audio and video records under conditions congenial to the occurrence of the phenomena is already a major advance. Also, we certainly would know better how to structure and evaluate quantitative investigations of psi performance in trance states, and various kinds of quantitative studies of trance personalities. There are many additional questions related to trance mediumship that one would like to study further: What underlies susceptibility to these phenomena? A prospective study of the personalities of candidates for mediumship would be particularly interesting. What distinguishes the phenomena of mediumship from pathological relatives such as fugues, "hysteria" and multiple personality? We would also like more information about longitudinal aspects of mediumship—its onset and development and the evolution of relationships between waking and trance personalities. More exact cartographies of the trance states themselves, hopefully including psychophysiological criteria, would be

extremely valuable. With regard to production of psi phenomena, we would like to know what distinguishes successful from unsuccessful mediums, and successful from unsuccessful sessions of particular mediums. So there is no shortage of important issues to be addressed. The prospects for carrying out research along these lines, although perhaps not as bright as we might like, also seem to us somewhat better than many researchers suppose. Mediumship is still very much alive in the United States, for example, through the encouragement of organizations such as the Spiritual Frontiers Fellowship. Although currently somewhat estranged from the psi research community, these groups might well respond favorably to signs of genuine positive interest and methodological flexibility on our part.

Let us now move on to our second topic from early psychical research. Hypnotism—or, as it used to be called, mesmerism—was deeply intertwined with the early history of our field (Inglis, 1977). Indeed, for a long time, the so-called "higher" phenomena—transposition of senses, community of sensation, clairvoyance, etc.—were thought to be among the principal marks of the deep hypnotic state.

Hypnosis was grudgingly accepted as a reality by the scientific establishment only after an intense struggle that waxed and waned for over a century. Like contemporary psi research, mesmerism had a large lunatic fringe, lacked an adequate theoretical basis, and drew heavy, often irrational, criticism from the scientific gatekeepers of the day. There was also justified criticism, however, particularly of the pseudo-physical theory of "magnetic fluids" invoked by early mesmerists to explain the phenomena. Elimination of this otiose theoretical baggage and other "occult" associations undoubtedly helped to "naturalize" hypnosis and speed its acceptance as a branch of clinical and experimental psychology. Nonetheless, the subject still has slightly unsavory connotations in many modern minds: Perhaps a lurking fear that their field can yet be brought low through contamination by "occult" elements accounts for the quite surprising hostility which some contemporary hypnosis researchers (e.g., Hilgard, 1977; Shor, 1972) display toward psychical research.

Meanwhile, what has become of the ostensible relations between psi and hypnosis? Several surveys, such as Honorton (1977), have concentrated primarily upon the modern experimental work. Summarizing the results of some forty-two studies, of which twenty-two produced overall results significant at or below the 0.05 level, Honorton states: "I believe the conclusion is now inescapable that hypnotic induction procedures enhance psi receptivity" (*loc. cit.*, p. 450).

The bearing of this important and encouraging outcome on our central topic, however, is not altogether clear. For it is not obvious that the "hypnotic" conditions of the reported experiments have involved an altered state of consciousness. This issue—whether hypnosis does or does not involve an altered state—has in fact been the focus of a massive controversy within the hypnosis literature itself. The traditional view of hypnosis, primarily an outgrowth of clinical experience, regarded an altered state of "trance" as the central feature of hypnosis and the vehicle for its primary effects. This view, however, has been powerfully attacked by experimental psychologists such as Barber (1972) and Sarbin and Coe (1972), who seek to recast the subject as a special topic in the social psychology of influence processes. Briefly, Barber and Sarbin argue that self-reports are unreliable, that no other dependable criterion (in particular no physiological criterion—Sarbin and Slagle, 1972), has been found for the hypothesized "trance" state and that the notion of "trance" is therefore logically empty. Furthermore, numerous experiments have been carried out to show that many of the supposed effects of "trance" can be reproduced by suitably motivating subjects in the absence of hypnotic induction. In short, they argue, the notion of an altered state of consciousness is completely superfluous to hypnosis research.

This behaviorist critique of traditional notions of hypnosis is an extremely important methodological development with ramifications throughout the field of ASC research. There can be no doubt that it has exposed genuine weaknesses in the traditional view and especially in many of the specific observations once thought to support it. Nevertheless, although we cannot pursue the details of the many arguments here, we believe that the Barber/Sarbin onslaught falls substantially short of its goals. Its value, while certainly considerable, is diminished by failure to come to terms with the full

richness and complexity of the subject matter. This constriction is most apparent at two related points: first, the relentless behaviorism which leads them to discount the testimony of hypnotized persons as a legitimate source of information about hypnosis; second, the overwhelming preference for experiments with unselected subjects, which leads them to underestimate the importance of individual differences in capacity to produce hypnotic phenomena.

The first point has been sensitively discussed by Child (1973, chapter 6), using Josephine Hilgard's extensive interview studies with hypnosis subjects as an effective counterexample. The second point has been emphasized particularly by Hilgard (1977, chapter 8), who has examined in unusual detail the distribution of hypnotizability among college students. The "highly hypnotizable" categories of conventional hypnotizability scales prove to be inhomogeneous; using a more refined scale, Hilgard finds that the total hypnotizability distribution is strikingly bimodal, with only a very small proportion, possibly as low as 1 percent, falling into a distinct second group of "extremely hypnotizable" individuals who are conspicuously more successful in producing "classical" hypnotic phenomena such as dissociation, automatisms, and analgesia. It is also conceivable that a larger sample and still more refined scale might reveal additional clusters of still more extreme susceptibility to hypnosis.

It seems likely, therefore, that researchers of the Barber/Sarbin school, by virtue of their restrictive methodological commitments, have systematically reduced the likelihood of their encountering various phenomena whose significance they dispute. At least one exasperated clinically-oriented researcher has even wondered in print whether there has yet been *any* experimental research dealing with hypnosis as it existed in the nineteenth century (Weitzenhoffer, 1978). Weitzenhoffer is perhaps being a bit facetious. But the net effect of all these considerations is surely to show that hypnosis is more complex than either the naive "trance" theory or the modern "role-playing" theory recognize.

Hypnosis embraces a wide range of phenomena, which can be imagined as distributed along a dimension of "depth." Near the shallow end, role theory provides a reasonable description of what takes place and the state of consciousness is in or near the normal

range. Probably most hypnotic experiences, and in particular most of those occurring in the context of recent experimental investigations, lie near this end of the spectrum. As we begin to move in depth, however, the role-playing model begins to break down. Not only is suggestibility greatly increased, but major shifts in the structure and content of experience begin to supervene. For example, imagery and imagination may be greatly enhanced, reality-testing impaired, attention constricted, initiative reduced. Dissociation may occur with appearance of automatisms such as automatic writing (Hilgard, 1977). The subject may report marked and discrete shifts in his state of consciousness (Tart, 1972). Although such cases are relatively scarce, they definitely occur; and note that we are moving psychologically into a domain closely affiliated with mediumistic performances and clinical phenomena of secondary personality.

Now let us return briefly to the existing evidence of relationship between hypnosis and psi. The contemporary experiments unfortunately provide little basis for judging depth of hypnosis or relating it to strength of psi performance. The older literature, however, strongly suggests that it is to the region of deep hypnosis that we should look for our strong psi effects. For example, in Dingwall's (1968) survey of psi in nineteenth-century hypnosis, the strong cases are few and the most impressive ones, such as Alexis Didier and Richet's subject Leonie, also appear to have involved profound hypnotic states. Likewise, Myers (1903, sections 571–573 plus appendices), in his review of paranormal elements in hypnosis, emphasizes that both good subjects and good hypnotists are relatively scarce and that we should not expect psi capacities under hypnosis to be elicited automatically: "They are not often evoked in answer to any rapid and, so to say, perfunctory hypnotic suggestion; they do not spring up in miscellaneous hospital practice; they need an education and a development which is hardly bestowed on one hypnotized subject in a hundred" (Myers, 1903, vol. 1, p. 209).

More work along these older lines, we suggest, is urgently needed. In line with methodological considerations developed previously, it would be particularly desirable (a) to work with subjects preselected for extreme hypnotizability; (b) to work with each subject intensively, rather than on a mechanical one-shot basis; (c) to

develop means for monitoring "depth" as part of experimental protocols; and (d) to adapt our test methods to the characteristics of the hypnotic state. For psi tests, free-response methods would in general appear especially appropriate, possibly using automatic writing or drawing, or crystal-gazing (Kelly and Locke, 1981) as the response method; however, the phenomenon of "community of sensation" could also readily be recast for study within a forced-choice framework, for example, by randomly stimulating a fixed set of body-surface locations on a remote agent "in rapport" with the hypnotic subject. Studies of this type will also provide appropriate vehicles for further investigation of the issue of possible physiological correlates of hypnotic states, which we believe is far from resolved. The existing studies have, in our opinion, assumed a too narrow and homogeneous concept of hypnotic trance and paid far too little attention to individual differences. The EEG studies in particular have also been for the most part fairly primitive technically and investigators may easily have overlooked features of brain-wave activity reflective of hypnotic states. Some work in fact suggests this may be precisely the case (Aladzhalova *et al.*, 1975).

We pass next into a very different domain.

❖ *Major Religious Traditions*

The literatures describing the great religious traditions and their outstanding personalities are saturated with accounts suggestive of connections between paranormal occurrences and various kinds of unusual states of consciousness.

We begin by discussing briefly two obscure works concerned with examples from the Judeo-Christian tradition. The first, by Lindblom (1962), is a massive scholarly study of prophecy in Old Testament times. Although much of the book is devoted to detailed analysis of the doctrinal content of prophetic utterance, it also discusses in considerable detail the political, social, and religious contexts in which the prophets moved and analyzes the psychological nature of prophetic experience. Of particular interest is a long first chapter which surveys parallel occurrences of prophetic behavior outside Israel.

Lindblom characterizes the psychological states associated with prophecy as falling in a range between extreme cases of creative inspiration at one end and the higher stages of mystical experience at the other. Like the inspired genius, the prophet is compelled to body forth the content of inward visions, as revealed to—or more accurately thrust upon—him from some external source. The intensity of these revelatory experiences varies widely. From the point of view of an external observer, they range from brief moments of abstraction to protracted periods in which the prophet is apparently "entranced" and either immobile or hyperkinetic. From the prophet's own point of view, all of the possibilities familiar from our brief review of trance mediumship can apparently occur, depending on the intensity of the influx. The phenomena range from increasingly intense visionary episodes in which full or partial

normal consciousness is nonetheless maintained—the prophet's function being essentially to report or enact the content of the vision—to (relatively rare) possession-like occurrences in which the normal ego appears to be completely displaced and the prophet serves directly as the vehicle of an invading entity.[1]

Another interesting feature is that the prophet is typically "called," for example through an overwhelming initiatory vision or dream in which he is seized by a higher power that demands—not requests—his services as messenger to the mundane world. Although the call may not be welcome, resistance usually proves futile, sometimes leading to transient mental disturbances which only dissipate when the nascent prophet finally capitulates and assumes his new vocation.

Lindblom asserts repeatedly that wherever the prophetic complex is found it occurs in conjunction with paranormal abilities. Unfortunately, the evidence offered to support this view consists mainly of material showing that many different groups have held it. Nonetheless, it is certainly suggestive that similar varieties of altered states and beliefs about their properties should appear independently in a wide variety of cultural and historical contexts.

Moving forward in time within the Judeo-Christian tradition, we will take as our second example a remarkable work by H. Thurston (1952). Thurston was a Jesuit priest who performed the heroic service of digesting innumerable volumes of Catholic hagiography (a large proportion in Latin, of course!), to produce a summary account of various extraordinary phenomena claimed to have appeared recurrently in association with the lives of the saints. Some of these are well within the traditional domain of psi research—for example, levitation, telekinesis (his primary emphasis here is on miraculous transports of the communion wafer), "seeing without eyes," and multiplication of food. The majority fall within the more

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[1] Both here and subsequently in this Monograph, when we use the vocabulary of "possession," etc., we do so only as a convenient way to indicate the phenomenological character of the events and with no commitment to the associated ideologies.

ambiguous domain of extreme physiological manifestations—what F. W. H. Myers (1903) referred to generically as "hyperboulia." These include stigmata (appearance of the wounds of Christ); tokens of espousal (physiological deformation to produce structures with the appearance of wedding rings or other symbols of the mystical marriage with Christ); generation of light by the body; inedia (not eating for weeks, months, or years); production of intense heat (*incendium amoris*); capacity to sustain prolonged contact with fire, boiling water, etc., without pain or injury; and several peculiarities manifested by saintly corpses (incorruption, absence of rigidity, or the continued ability to bleed after weeks, months, or years).

Thurston's method is to adduce evidence systematically for each of the phenomena in turn, based on the lives of saints (mainly post-sixteenth century) who reportedly manifested them. The evidence cited comes primarily from the written records of formal proceedings instituted by the Catholic Church for the purposes of determining whether these particular individuals merited beatification or canonization. However, Thurston also goes to considerable pains to point out instances of analogous phenomena documented outside the Church; in particular, he seems to have been fairly familiar with the early work of the SPR and with its standards of evidence.

What are we to make of this rather mind-boggling assortment of material? We confess to twinges of acute discomfort, sometimes approaching embarrassment, as we read through the book. Many of the reported phenomena go so far beyond what we modern psi researchers are accustomed to countenance as real that they generate in us a peculiar mixture of intense interest and equally intense suspicion, probably not unlike the brew of sentiments that grips many nonparapsychologists encountering our own relatively bland experimental literature for the first time!

Nevertheless, we feel that we must take the reported phenomena seriously, at least for purposes of these hypothesis-generating ruminations. Briefly, there are four features of the material that we find suggestive. First is its sheer *volume.* Many individual events of very unsubtle type (e.g., the levitations of Father Joseph of Copertino—see also Eisenbud, 1979) were observed and reported consistently by large numbers of people and on repeated occasions. Some

of the reports also appear to be independent in the sense that a person manifesting a particular phenomenon appears unlikely to have known of other contemporaneous or previous manifestations of that same phenomenon. Furthermore, most of the categories of phenomena, in particular those that do not depend on specifically Christian doctrine, recur independently in a variety of cultural settings. Note, for example, the striking parallels with reports of physical phenomena in mediums such as Home and Palladino; still others will be noted later on.

Second is the general *quality* of the evidence. Beatification and canonization proceedings are serious business, not unlike secular trials. Although bona fide miracles undoubtedly make good advertisements for the faith, the Catholic Church is a conservative institution with considerable investment in avoiding potentially damaging error. Evidence presented in favor of a candidate is systematically attacked by a "devil's advocate" or *promotor fidei* whose task is to do everything possible to find weaknesses sufficient to throw out the case. The records distinguish among types and grades of evidence—e.g., first-hand vs. second-hand testimony, reliable vs. unreliable witnesses, skeptical vs. docile witnesses, etc. On the whole, the quality of evidence seems to be fairly comparable to the sort that appears in much of the early spontaneous case material of the SPR.

Third is the *attitude* of these saintly individuals toward their phenomena. There is usually scarcely a trace of any sense of pride or ownership. Indeed, most of the cases reveal not only humility, but acute embarrassment often coupled with active efforts to *conceal* the paranormal events, lest they should draw too much attention and disrupt the individual's central spiritual practices. Any superficial attempt to simulate these attitudes in hopes of promoting chances of eventual sainthood would likely have been readily detected by the *promotor fidei*.

Finally and most germane to the central concerns of this paper, a strong association is indicated in this material between the occurrence of the various phenomena and the achievement of exalted states of consciousness through intense spiritual practice. In many cases, such as Father Joseph's levitations, the paranormal events are specifically stated to have occurred during episodes of spiritual ecstasy.

This rings true to us; it corroborates a pattern which is more pronounced in the esoteric literatures of other great religious traditions and in some cases even becomes a matter of explicit doctrine. From this vast subject we will select just a single additional example. Within the Hindu tradition, an enormous body of theoretical and practical information pertaining to yoga was collected, systematized, and crystallized in the form of 196 aphorisms or *sutras* by Patanjali somewhere near the beginning of the Christian era. This remarkable work, still widely regarded as the most authoritative source of practical information on yoga, outlines within its four brief chapters a sophisticated doctrine regarding human psychophysical organization, which supplies in turn the theoretical basis for a comprehensive program of self-development. The claimed results of this program, cataloged at considerable length, explicitly include the systematic appearance of paranormal capacities.

There have been many translations and expositions of the yoga *sutras* and associated commentaries, but the most helpful ones we have found so far are provided by Dasgupta (1970), Eliade (1969), and Taimni (1975). These systematically expand the extremely compressed and often difficult language of the *sutras*, presenting thorough expositions of Patanjali's doctrines and locating them in the larger matrix of orthodox Hindu philosophy.[2]

It has been pointed out by Honorton (1977) that the eight limbs of yogic practice as outlined by Patanjali can be interpreted from one point of view as a system of progressive psychophysical noise reduction leading to a state characterized by physical relaxation, isolation from the normal sensory environment, and intensely focused inwardly directed attention. From this point of view, given the self-descriptions of gifted ESP subjects and the associated experimental results, it would not be surprising if the practice of yoga and its central techniques of meditation should produce conditions favorable for the occurrence of psi. And

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[2] Readers should be forewarned that Taimni occasionally injects Theosophical doctrines into his interpretations of Patanjali's meaning; these embellishments are for the most part easily detected, however.

indeed this is supported to an encouraging degree by initial experimental results on psi performance in relation to meditation (Honorton, *loc. cit.*). However, this conservative interpretation, while correct so far as it goes, does not nearly exhaust the content of Patanjali's doctrine. For it is clear that the central process of *samyama*, culminating in unwavering absorption in the object of contemplation, represents much more than a movement within the range of the normal state of consciousness. Indeed, the central thrust of Pantanjali's exposition is to describe how the practice of *samyama*, systematically intensified, will lead through a hierarchy of increasingly exalted discrete states to the ultimate mystical objective of self-reflexive, transcendental consciousness. The attainment of psychic powers or *siddhis* is entirely secondary to this central movement, their value consisting mainly in providing markers on the path.[3]

The *Yoga Sutras* thus contain an explicit and elaborate theoretical statement of relationships between certain altered states and the paranormal, one which in principle lends itself to empirical verification. In spirit, Patanjali's treatise is really a scientific work more than a religious or philosophical one, although it predates this kind of academic dismemberment of its subject matter. Its central doctrines are not represented as authoritarian dogma simply to be believed, but as empirical realities that can be experientially verified through assiduous practice of specified disciplines.

From a modern experimentally oriented point of view, the state of evidence pertinent to these doctrines is unfortunately rather dismal. Although there are innumerable supportive anecdotes and field observations of varying suggestiveness, there is still extremely little hard evidence documenting the occurrence of high-grade psi

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[3] An interesting detail arises here: although the Yogic discipline of meditation is emphasized as providing the main pathway to the siddhis, Patanjali also acknowledges that they may arise "abnormally" in certain other contexts. The relevant Sutra (1.19) is particularly obscure, but Taimni argues plausibly that it can be construed as referring specifically to capacities for trance mediumship.

in meditative adepts. Nonetheless, we ourselves feel that this great mass of testimony must be taken seriously, despite the weaknesses of its individual elements, as supporting the central broad hypothesis of association between altered states and paranormal capacities.

Two related requirements will need to be met to carry the subject further. First, we need a clearer delineation of the ASCs that are involved. Patanjali's own classification has created some confusion among scholars and it is not clear how closely his cartography of the higher stages of meditation parallels those developed in other parts of the mystical literature. The difficulties of this profoundly interesting subject are greatly magnified by the increasing inability of ordinary language to convey adequately the properties of the relevant states and experiences as one ascends the scale. Despite great uncertainty as to details, however, it is at least clear that there is widespread agreement as to general features of the psychological terrain. An enormous amount of comparative scholarship (for example, Happold, 1970; Huxley, 1944; James, 1958; Otto, 1932; Stace, 1960; and Underhill, 1930) converges on the picture of a range of states stretching from visionary and prophetic experience at the "low" end to the final mystical union in pure unitary consciousness at the "high" end.

Although these states can be strongly colored by preexisting doctrine both in content (particularly at the low end of the scale) and interpretation, a strong case can also be made, particularly for the higher stages, that psychologically they are fundamentally the same throughout their world distribution. This thesis is argued most carefully by Stace (1960) who finds strong motivation, based upon a wide range of sources, for cleaving the domain of mystical experience into at least two major clusters, which he labels *extrovertive* and *introvertive.* (The introvertive type represents the classical mystical experience with complete obliteration of specific sensory content, whereas the extrovertive type embraces a range of experience in which a sensory surround of some kind continues to exist, but transfigured and unified; for details, see references cited.) Whether further structure exists—i.e., whether the domain can be analyzed into a more detailed series of ordered and discrete states along the lines described by

Patanjali and others—can only be determined by deeper comparative and empirical study.[4]

Our second and more pressing need, clearly, is for sources of at least some of these states, so that we can begin to investigate more systematically their properties, including their hypothesized relations to psi. Again, we can either *find* such sources or try to *produce* them. In the short term, it would certainly seem worthwhile to seek opportunities for intensive research involving individuals who already show some ability to move significantly along this dimension of altered states. For the long term, however, we prefer to stress the possibilities of developing such capacities in a deliberate and systematic way. The central meditative disciplines evolved by the great religious traditions for cultivation of ecstatic states are in their psychological aspects fundamentally and remarkably consistent. This deep convergence on matters of both method and results gives to the whole, in our minds, the appearance of nascent psychological fact. Taking its applied aspect seriously, we therefore look to research on meditation and associated topics such as biofeedback as providing the best route to systematic study of the major ecstatic states. Although these topics are much too large to review here, we would like to record a few basic observations on the status and prospects of such research.

Despite a considerable amount of research activity in these areas in recent years, the amount of progress has been rather disappointing. Issues arise similar to those mentioned in

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[4] A related topic which we cannot pursue here concerns formal and phenomenological characteristics of cognition at lower levels of mystical experience. The mystical literatures quite generally distinguish a hierarchy of grades of "visionary" experience, of which only the lowest grades correspond to our ordinary understanding of visual, auditory, etc., imagery. Successively higher stages progressively shed their quasi-sensory character, cognition somehow becoming more complex, multidimensional and abstract. Difficult though such descriptions are to understand, they receive striking echoes from areas such as psychedelic experience (Grof, 1975), creative inspiration (Ghiselin, 1952), prophetic experience (Lindblom, 1962) and trance mediumship (see, for example, Tyrrell's [1954] discussion of the process of "crystallization" underlying Mrs. Willett's trance communications). Further comparative study of these materials would clearly be of great psychological interest.

discussing hypnosis research earlier. Many of the existing studies of meditation, for example, reflect appalling ignorance of its traditional literatures, assuming that the word "meditation" refers both to a single universal technique and to a unitary state and that practice of the technique however elementary is operationally equivalent to induction of the state. Nonetheless, it has already been found that even elementary practice of meditation in various forms does lead at minimum to some clinically useful psychophysiological consequences. Thus, research is continuing and much more sophisticated psychological accounts of the variety of meditative techniques and phenomena have appeared, for example, Brown (1977), Goleman (1977), and Naranjo and Ornstein (1971). It is clear that we have hardly begun to study the intended subject matter; indeed, many of the traditional meditation manuals *begin* their instruction at a point clearly beyond the attainments of the vast majority of subjects of previous experiments. But at least we are moving in the right direction.

Biofeedback research has long been recognized as a possible source of technological support to the induction of altered states, but again the results of research to date have been disappointing. The probable explanation for this, we suspect, is that the features so far employed as the basis for biofeedback regimes—notably the "amount" of alpha rhythm in occipital EEGs—are at best only distantly related to the critical psychophysiological changes occurring in various forms and stages of meditative practice. That there are such changes is suggested by a growing variety of investigations, an important few involving people who were evidently unusually proficient in meditation. For examples, see Anand, Chhina, and Singh (1961); Banquet (1973); Das and Gastaut (1955); and Hirai (1974); an overview is presented in Schuman (1980). Thus, one can envision an evolutionary process in which deepening psychophysiological studies with skilled practitioners will lead to increasingly effective methods for biofeedback training. We hope to be in position to make a substantial investment of the resources of our own laboratory (Lenz, Kelly, and Artley, 1980) in this kind of research, beginning in the near future.

❖ *Preliterate Societies*

The materials reviewed thus far arise from only a minute fraction of the world's cultural traditions, estimated to reside in some 4,000 distinct societies, many of which have evolved in substantial independence from one another. Taking account of this wider universe of human experience should in principle help us attain the breadth of perspective we need. In practice, unfortunately, the information we seek currently exists in an incomplete, unorganized, and somewhat inaccessible state. Nonetheless, some important results are already available and more seem sure to follow.

To date, exploration of relations between parapsychology and anthropology has generally concentrated on the search for compelling *direct* evidence of psi phenomena in premodern societies. The results of this frontal approach have been disappointingly meager. Despite a voluminous anecdotal literature suggesting widespread occurrence of psi, extremely little hard evidence has been forthcoming. Most of the dramatic reports come from untrained and often untrustworthy (ideologically biased, ethnocentric, etc.) observers such as solitary missionaries, travelers, and explorers. Few anthropologists have taken the possibility of psi seriously enough to collect case material with remotely adequate care and detail and it is reasonable to speculate that many others have simply not reported unusual events whose serious discussion might have aroused the wrath of generally skeptical colleagues. Finally, the few attempts to carry out experimental studies of psi in the field, while encouraging, have by no means been uniformly successful (Van de Castle, 1974, 1977).

However, when we approach the anthropological literature from the quite different direction proposed in this Monograph, an

enormously more promising vista immediately opens out before us. For it is clear that the preponderance of reputed psi events occur in conjunction with specific individuals—specialists in the mastery of altered states, the so-called "technicians of the sacred" (Eliade, 1964)—and usually in direct conjunction with what appears to be a limited variety of altered states of consciousness.

It has been estimated by Bourguignon (1968) that almost 90 percent of the world's 4,000 societies have institutionalized at least one set of procedures for systematic cultivation of specific kinds of altered states. ASCs produced under these conditions are regarded almost universally as providing access to a sacred world of spiritual realities underlying or interpenetrating the everyday profane world. The great value placed upon such states by many societies is clearly reflected in the extremity of the psychological and physiological measures which they are willing to employ to produce them. Ostensible psi-like capacities—for example, capacities for divination, prophecy, and healing—are also routinely expected as consequences of mastering access to the sacred realm and indeed are said to be regularly invoked by indigenous observers themselves as tests of such mastery. Unfortunately, anthropologists have tended to treat these associations simply as unanalyzed matters of native belief, not worthy of closer factual examination.

Although thus sadly impoverished in its documentation of psi phenomena, the anthropological literature nonetheless contains a wealth of information related to altered states and particularly to the means by which they are produced. Literature extending over the years since 1900, and especially since 1950, is replete with variously detailed descriptive studies of ecstatic religion, ritual, symbols, and related institutional features of social life. So far, the primary emphasis has been detailed description of events within particular societies, rather than comparative analysis of patterns across societies. Also the relatively few large-scale comparative studies—for example, Bourguignon (1973) and Lewis (1971)—have tended to focus primarily on the sociological contexts in which ASCs appear rather than on the psychological and phenomenological detail of the ASCs themselves. Nonetheless, one can already begin to make out the main structural dimensions of this anthropological material and to see its potential for extending and reinforcing the materials we have

discussed previously. Subsequently, we will outline a strategy for more detailed cross-cultural analysis of relationships between altered states and psi. But first we want to convey an overall feeling for the nature of the anthropological material, which may be relatively unfamiliar to our readers.

The amount of potentially relevant information on ASCs (and claims of psi) in preliterate and transitional societies is altogether enormous. The most incisive angle of approach to this material, particularly for present purposes, is through the concept of *shamanism*. Following Nelson (1969), Ellwood (1973), and Lewis (1971), we use this term broadly to denote a range of activities involving the roles of healer, priest, diviner, medium, and thaumaturge. The common denominator in this set of social functions is the notion that the shaman is a specialist in techniques of ecstasy (Eliade, 1964), where we take ecstasy quite literally to mean *ek-stasis*, a standing outside of whatever is defined socially as everyday consensual reality. Shamanism thus broadly construed provides a continuing measure of the range of expression of connections with "unseen worlds" and a framework for understanding both spontaneous and controlled irruptions of supermundane realities into consciousness and behavior.

The core of the shamanic vocation lies in the systematic cultivation of a variety of altered states of consciousness. In the anthropological literature, these states are generally conceived as falling predominantly into two major clusters referred to as "trance" and "possession trance" (Bourguignon, 1973). This is a convenient and usefully accurate classification but, as we shall see, the literature also provides evidence of a variety of related and transitional forms which are potentially important to the psychological analysis of ASCs.

Some methodological difficulties should first be pointed out. It is clear that in the literatures of anthropology and transcultural psychiatry, categories such as trance and possession trance are applied very freely and with considerable heterogeneity of content. In the first place, this results from the difficulties of interpreting behavior in alien cultural contexts, where the experiential and psychological dimensions are obscured by factors such as profound linguistic differences, problems of access to "sacred" activities for outsiders, and

anthropologists' characteristic concern for the social—rather than phenomenological—structure of ecstasy. This, of course, represents an enduring general problem of cross-cultural study—how to remain faithful to indigenous categories used to explain human action ("emics") and yet move to a relatively context-independent set of conceptual categories and relationships ("etics").

Secondly, particularly where altered states and associated phenomena are concerned, Western analysts have shown a strong predisposition to "solve" these difficult problems through somewhat naive and mechanical application of ethnocentric, technical devices which cloud the psychological and phenomenological "interior" of the altered states. We refer particularly to the use of psychiatrically oriented taxonomies and nomenclature (Spanos and Gottlieb, 1979; Bourguignon, 1973; Kiev, 1972; Silverman, 1967). The effect of this attitude has been to emphasize superficially pathological features of shamanism and partially to veil the deep connections between shamanistic ASCs and corresponding states as they appear in Western societies and the major religious traditions.

Let us now characterize in somewhat more detail the primary axis of the ASC material, with trance and possession trance as its main termini. Trance is the fundamental form of ecstasy appearing in shamanism. It encompasses a variety of experiences and behaviors, including hallucinations, obsessive ideas, dissociation, compulsive actions, transient loss of contact with the sensory environment, physiological collapse, and a number of other aspects (Bourguignon, 1974, 1968; Henney, 1974; Lewis, 1971). A highly developed example of trance phenomena is the visionary experience or journey which opens the sacred realm to the shaman. There he encounters beneficent spirits, forces, or gods from whom he may seek various kinds of information and assistance, or malevolent ones whom he may attempt to subdue. The phenomenology of these voyages seems to range at least from intense imaginative or visionary experience to what we would call out-of-body experiences (OBEs). It is characteristic of these states that the shaman retains sufficient personal consciousness to report his voyage in detail, either concurrently or subsequently. Whereas trance may occur in individuals either alone or in group settings, the *sine qua non* of possession trance is that it is a public performance, in which

the central element is the apparent temporary displacement of the ordinary personality by that of a possessing spirit, force, or god. The onset of both kinds of trance is often marked, particularly in novices, by dramatic physiological events such as tremor, profuse sweating, eyeball elevation, sudden spasmodic movements, or complete collapse. In possession trance the invading entity then typically announces itself by assuming a characteristic, often highly stereotyped, posture and demeanor and interacts in more or less elaborate and ritualized ways with the assembled people. Cessation of trance generally appears to leave the fully possessed individual amnesic for the period of possession.

It is important to stress that in their highest development, trance and possession trance are phenomena voluntarily initiated under more or less complete control of the shaman. Indeed, in its core meaning, shamanism refers specifically to "mastery of spirits" (Shirokogoroff, 1935). Both kinds of trance can coexist in the same society and even in the same individual. Where it is required by the culture, the shaman acquires visionary and/or mediumistic abilities by bargaining with spirits who are to be his familiars (Shirokogoroff, 1935; Balicki, 1963; Lewis, 1971; Mischel and Mischel, 1958). Essentially, the shaman deliberately surrenders part of his life and his psyche, especially on ritual occasions, in return for the *gnosis* and ecstasy of trance and especially possession trance, in which the spirits, gods, or forces which the shaman has "domesticated" possess him. Acquisition of constantly increasing control over the available range of ASCs is thus the heart of shamanic development.

The broad distinction between trance (T) and possession trance (PT), while analytically expedient, does not yet adequately reflect the complete within-culture and between-cultures phenomenological profile of ASCs. Additional types and grades of experience occur, most of which can be related to the dimension of *control* just indicated.

First, trance sometimes occurs in situations where it is given no metaphysical interpretation. For example, Spencer (1965) describes trance-like behavior among Samburu youths as the expected response to extreme tension or frustration during an extended adolescent period when they are caught between social statuses. Likewise, at the possession end of the spectrum it has been pointed out

that possession trance, unlike trance, also involves a set of folk beliefs or theories used to *explain* trance—i.e., in terms of entry into the person of some external agency—and that such theories may also be invoked to explain illness or other abnormal behavior where no trance is perceived (Bourguignon, 1974, 1968; Henney, 1974; Lewis, 1971; Beattie and Middleton, 1969; Firth, 1969).

Gradations and transitional forms also appear in the more interesting central regions of the T/PT axis, spanning the gap between the two clusters as described so far. Possession trance, as indicated, is usually followed by amnesia for the period of possession. In many societies this is explained in terms of soul loss or displacement (Bourguignon, 1968), in which the possessing entity causes the soul of the possessed to depart for some appropriate region of the cosmic order, such as the "astral plane" or the world of spirits. Metaphysical barriers of some kind between the mundane and supermundane realities are thought to account for the amnesia in both directions. Two related kinds of exceptions occur, however. First, there are occasional cases of complete independence or parallelism in possession trance, where the possessing agency "controls" the shaman's body in a public performance even while the "soul" or "spirit body" of the shaman undertakes an unrelated ecstatic journey during the same time span, as reported when normal consciousness has been regained (Schröder, 1955; Hultkranz, 1979). Readers may recall that Myers (1903, chapter 9) noted similar phenomena in conjunction with the mediumship of Stainton Moses and Mrs. Piper and, adopting rather too hastily their literal interpretation, made them the cornerstone of his argument for survival. Second, there are also occasions on which the possessed individual will report seeing and hearing his own possession performance and describe other features of the situation, all as from the vantage point of an external observer—but often as if through a tunnel, from a distance or with some other distorting or obscuring influence (Locke, 1974). Thus, there is again the experience of excursus, but the journey remains tied to the immediate sensory environment, perhaps reflecting a lesser degree of dissociation in the underlying possession trance process.

In addition, there is further evidence of gradation in possession trance states, reflecting differing degrees of dissociation and loss of

control, and coupled with correspondingly variable post-trance amnesia. For example, in the Shango cult and Umbanda and Condomblé, all syncretic versions of West African Orisha cults (Pressel, 1974; Mischel and Mischel, 1958), a partial dissociation or liminal state is explicitly recognized. This state, *weré*, falls between light trance and full possession: a degree of conscious awareness is retained, but behavior is still substantially representative of possession with automatisms and dramatic "impersonations." A closely related phenomenon is that of "overshadowing," where the potentially possessing agent is believed to exert influence over the individual, but does not take full possession of embodied consciousness. Overshadowing is reported extensively by Spiritualist mediums also and is closely related phenomenologically to what is called *inspirational mediumship*—a partly visionary and partly spirit-entity-controlled trance state with volition largely intact (Locke, 1974). Still another transitional phenomenon is *obsession*, more familiar to Western witchcraft, demonology, and Spiritualism (Summers, 1926) than to preliterate societies. Obsession, like overshadowing and inspiration, retains the sense of alien presence (spirit, occult force, power, god), but includes a stronger element of compulsion. Also, obsession is more usually regarded as *prima facie* evidence of malevolent influence and, in demonological and Spiritualist beliefs, predisposes permanent possession (ego-loss) unless it is controlled (Summers, 1926; Oesterreich, 1930).

So far we have pictured the shaman as ranging with increasing precision and control along the primary dimension of trance and possession trance states. But quite often increasing mastery is explicitly conceived as implying mobility along a second, orthogonal, dimension as well—one which may be characterized as having to do with depth or intensity of experience. The materials are more fragmentary here, and correct interpretation depends even more critically on the kind of phenomenological detail that is often conspicuously lacking in anthropological reports. However, it is clear that many groups conceive their supermundane world as having a distinctly hierarchical form. Thus, the entities potentially available for "domestication" by the shaman are far from equipotential and the degree of mastery he has attained at any point is indexed in large part by the level in the hierarchy to which his control has

penetrated. Ideas of this sort are familiar from Western Spiritualism, where the medium often requires a period of adjustment before becoming able to withstand each in turn of the successively "higher" entities that seek expression through her.

Both within and between societies, the entities domesticated through trance and possession trance can also vary greatly in ontological type. That is, the depth dimension of the hierarchy may extend from very concrete entities, with specific personalities and varying intensities or powers, to increasingly abstract entities such as impersonal gods and forces. There is an apparent parallel here to the hierarchies of visionary and mystical states described earlier, and although more positive evidence is still sorely needed, there seems little reason to doubt that shamanic mastery extends in at least some cases well into the region of major ecstatic states as they appear in conjunction with the great religious traditions. Both Myers (1903, sections 976–977) and James (1958, p. 293), for example, recognized that the higher forms of mediumistic trance and possession open out in the direction of ecstatic states of mystical type. Striking phenomenological parallels, such as experiences of profound inner light or luminosity, also recur widely through both mystical and shamanic literatures. And in at least some societies, the pinnacle of shamanic mastery is explicitly described as a kind of fusion with a transcendent divinity (Lewis, 1971, p. 57; Herskovits, 1941, p. 215).

In sum, the anthropological material seems potentially to provide us with an amplified picture of the overall distribution of ASCs, one which naturally accommodates most, if not all, of the material discussed previously and which fills in transitional types and other details that could prove important in ultimately framing a more complete psychological theory of altered states.

With this in mind, let us now return briefly to relations between altered states and paranormal phenomena in the cross-cultural material. First, it must be stated that in many societies production of psi is *not* conceived as necessarily contingent upon achievement of altered states. A range of paranormal skills is often recognized and fostered, for example, in Netsilik Eskimo society, where the full range of abilities is parceled out to different types and grades of shamans (Balicki, 1963; Rasmussen, 1931). Netsilik practices extend from very "low" forms involving simple divinatory behavior and

sorcery to "higher" forms revolving about possession trance. Likewise, Lindblom (1962) cites a variety of cases in which relatively mechanical divinatory techniques exist alongside the "higher" forms of prophetic inspiration involving marked ASCs. But all kinds of shamanism are believed to involve capacities to produce unusual phenomena, often including not only what we would call psi phenomena, but a variety of abnormal physical phenomena as well. Possession trance, for example, has been associated not only with phenomena such as extreme strength, agility, and resistance to exertion, fatigue, pain, etc., but also with more exotic manifestations of types we encountered previously in conjunction with physical mediumship and the Catholic hagiography—for example, bodily plasticity and elongations, generation of light and heat, immunity to fire, and so on (Oesterreich, 1930).

The reported psi-like capacities span the usual range, but adjusted in specific expression to local needs—thus, diagnosis and healing, location and control of game, prediction of future events, controlling weather, killing or influencing at a distance, and so on. Broadly speaking, the relation of these capacities to shamanic proficiency is definitely not random. Greater shamans, having greater mastery of spirits, are expected to wield correspondingly greater powers as well. This is a pattern repeated throughout subarctic Eskimo populations and it appears to be the modal pattern throughout the cross-cultural distribution of altered states and psi phenomena. That is, hierarchies of spirits, powers, or gods are correlated, insofar as they are successfully domesticated, with hierarchies of psi abilities.

The direct evidence related to such claims, as indicated earlier, is extremely slight. Few observers have been sufficiently open-minded to entertain seriously the possibility of genuinely paranormal elements in shamanism, and the skeptical readily find ample justification for their reductive naturalistic attitudes in the widespread and abundant use of sleight-of-hand in shamanistic performances. Reichbart (1978), on the other hand, has provided an interesting discussion from a parapsychological point of view of the shaman's deliberate use of sleight-of-hand and other devices as means to creation of a psychological environment conducive to manifestation of genuine psi phenomena.

Investigations of psi in shamanistic settings, we believe, will become more fruitful to the degree that investigators succeed in penetrating sympathetically and in detail into the interior of the individual settings. Perhaps the outstanding example known to us is the work of Boshier (1974) among Sangomas of southwest Africa. This kind of in-depth study from within, augmented by flexible adaptation of methods of testing and quantitative evaluation to the specific details of the particular social and psychological settings under study, should provide the optimal path to *direct* verification of shamanistic abilities.

Our own preference, however, is again to emphasize the *indirect* route to verification, through attempts to produce the relevant altered states under conditions where their properties can be more systematically and conveniently explored. Right here, in fact, is where the anthropological material may make its greatest contribution, for it contains a vast inventory of practices related to the cultivation of ASCs and the development of the shamanic vocation.

It should first be stated that both trance and possession trance phenomena can appear spontaneously. Indeed, becoming a shaman in some capacity is often presaged by a spontaneously appearing "sign"—a visionary experience, a significant dream, an initiatory trance, sudden peculiar behavior interpreted as possession, illness, and so on. Like the prophet, the shaman is often called to his vocation, sometimes even against his conscious wishes (Beattie and Middleton, 1969; Firth, 1969; Lewis, 1971; Bourguignon, 1973; Hultkranz, 1979).

The largest and most interesting part of the material, however, concerns the variety of procedures through which the shaman progressively acquires control of his own ASCs and learns to orchestrate their production in others. The induction of ACSs, it should first be noted, occurs within an elaborate matrix of socially learned expectations and understandings about the nature of ASCs, the characteristics of the supermundane environment, etc. General predispositions to the appearance of ASC phenomena can also sometimes be traced to other remote or distal factors such as severe social or ecological stresses, dietary factors, personality factors, and so on. But the great center and focus of the material lies in the mass of specific techniques for ritual induction of ASCs.

Again, we will speak here only in the most general terms. The great majority of ASC induction rituals are first and foremost social

events, in which group participation helps to shape the psychological, physiological, and symbolic contours of the ASC over its whole course. Both participants and observers are thoroughly familiar with the general course of events and the particular nuances of ASCs are often the result of intense group monitoring and response. Sometimes such monitoring is the responsibility of specific ritual controllers such as shamans or their helpers—drummers, singers, and so on—who respond to signs of incipient susceptibility to trance or possession by appropriate adjustments of their technical means of ASC production. This may involve changes in tempo, volume or rhythm of clapping, dancing, whirling, singing, chanting, drumming, etc., or suitable modulation of whatever other induction devices are employed. In such ways the controllers help to regulate the attainment, maintenance, and termination of ASCs.

Other technical means of ASC production involve such measures as food, water, and sleep deprivation, self-injury, prolonged immobility, hyperventilation and ingestion or inhalation of a great variety of biochemically active substances. A dimension of particular interest here concerns the systematic use of psychotropic substances in the mastering of sacred ASCs. Such usage reaches its maximum expression in a variety of Central and South American Indian cultures and tends to be associated specifically with the quest for visionary experience and spiritual powers. Despite questions regarding their ethnographic authenticity, accounts provided by writers such as Castaneda (1968), contain interesting echoes of the fragmentary and still largely anecdotal research results so far reported on psi events associated with psychedelic experiences, for example those described by Masters and Houston (1966), Grof (1975), and Cavanna (1970). Hopefully, further experimental work along these lines will become possible in the not-too-distant future.

We cannot leave this sketch of ASC induction without at least mentioning one further topic which, although still obscure, appears to be of fundamental importance to its psychological analysis. We refer to the role of *symbolic function.* Repeatedly, processes of ASC induction are guided and shaped through active participation in—or manipulation of—symbolic constructs which seem to bring together in a highly condensed and psychologically potent manner physical, physiological, psychological, cultural, and cosmological

dimensions specifically appropriate to the particular social settings and technical ritual contexts in which they appear. Thus, deeper study of symbolic function may have considerable relevance for understanding the connections between culturally variable manipulations of psychophysical states and a fundamental set of neurobiological dimensions which may underlie the available range of altered states. A particularly insightful discussion of symbolic function is provided by Huxley (1967) and further related material can be found in Bourguignon (1973), Douglas (1970), Turner (1967), Lex (1979), Merleau-Ponty (1962), and Singer and Pope (1979).

In short, the anthropological literature contains an abundance of information pertinent to controlled production of certain altered states of consciousness which appear *prima facie* likely to be associated with potential for high-grade psi performance. The obvious next step is to subject this material to more systematic and analytical study. Let us therefore now fulfill the promise made at the beginning of this section, by sketching in general terms a strategy for pursuing further the cross-cultural analysis of relationships between altered states and psi.

Basically there are three classes of occurrences involved: ASC induction procedures, resulting ASCs, and possible psi events. Figure 1 illustrates in extremely abbreviated form the kind of information that could be obtained for a sample of cultural settings, using as an example the trance dance of the !Kung bushmen of southwest Africa (Katz, 1979; Lee, 1966; Marshall, 1969). Each class of occurrences can be analyzed both internally and in relation to the others. A great variety of important questions can in this way be addressed, for example: What is the range of ingredients for ASC induction recipes? Do the ingredients and recipes fall into coherent groups? If so, are these related systematically to properties of the resulting states and to categories of psi events which result? Can we identify relationships between recurrent ingredients in ASC induction procedures and the underlying psychological and perhaps physiological principles that account for their effectiveness? To the degree that neural-identity theory approximates a correct account of mind/body relations, major changes in state of consciousness should be reflected in and perhaps even induced by physiological changes, and indeed many of the reported ingredients of ASC induction procedures can readily be

Basic Assumptions:

1. Every man possesses *n/um*, the healing power.
2. *N/um* was given to men by the gods in the distant past: it is *of men*, not of gods.
3. *N/um* is activated by ritual dance and manifests in sweat, *!kia* (trance) and healing.

↓

Ritual Dance:

1. Fire is the central focus, and fire, heat, boiling and sweat are the central symbols.
2. Women sit in a circle around the fire chanting and clapping.
3. Men rotate about the fire and the women and dance—torso slightly stooped, feet stamped heavily in time. Extreme exertion often for hours.

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Action of N/um:

1. It heats up, boils, burns like fire and rises up from the base of the spine and pit of the stomach.
2. It rises, lifting one up, until it reaches the base of the skull. Then *!kia* occurs.

At the Point of Entering !kia:

1. Thoughts whirl and float.
2. The fire whirls and floats.
3. Trembling, convulsions.
4. Pain:
   (a) Physical from exertion, burns from the fire while disoriented, breathing difficult.
   (b) Psychological: one confronts; death, smells rotting flesh, sees ghosts killing people.

No Control (novices):

1. Wild, uncontrollable behavior: antisocial
2. Running through the fire, into the bush
3. Extreme motor activity
4. Extreme disorientation, fear

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Dance Monitors Apply:

1. Physical restraint
2. Sweat
3. Gentling (onlookers and trancers)

Control (→ !Kia):

1. Steadiness–trembling and convulsions stop
2. Direct looking-hold the eyes still, look straight ahead
3. Bring thoughts under control
4. Looking around with heightened awareness

!Kia and Psi:

1. Remote viewing
2. X-ray vision (diagnosis)
3. Seeing ghosts and gods
4. Sensitivity to others' 'troubles'
5. Control of pain, burning, trauma
6. Transmutation: man → animals
7. Mystical protection of the group
8. Healing: *n/um* manifests in sweat which is rubbed on the afflicted

Figure 1: !Kung Bushmen Trance Dance Dynamics.

recognized as having potentially profound physiological consequences. Most important, can careful analysis of this material lead us to efficient methods of ASC induction that could be adapted safely to laboratory use? It seems to us unlikely that any society has so far come close to optimizing consciousness-change techniques. A systematic and thoughtful review, in the light of modern psychophysiological understanding, of procedures found to be more or less useful through thousands of years of relatively blind groping, may well lead swiftly to improved and safeguarded consciousness alteration techniques. Given sufficient insight, we may not be restricted to new combinations of old ingredients.

In an appendix to this Monograph, we outline in considerable detail a preliminary conceptual framework to guide this kind of comparative study. Although this framework could, we believe, profitably be applied to a large-scale sampling of societies, a project of this magnitude could easily occupy a small army of full-time workers for many years and is far beyond our present resources. Also, although the existing anthropological records seem to us sufficiently detailed and reliable to support a useful quantitative approach at least to analysis of ASC *induction methods*, we must acknowledge that there is room for doubt whether this will also hold for the other dimensions, where the records are inherently much weaker. In any event, the general framework will still prove useful in shaping more detailed studies of single cases. Such intensive study of a small sample of well-chosen cases is within our reach, and that may suffice to extract a significant proportion of the potentially available information. We would also hope to stimulate others to carry the project further in various ways. The best result of all would perhaps be to stimulate further fieldwork that addresses itself specifically to these issues and in a sophisticated manner. For example, to our knowledge no physiological data have yet been recorded during ASC episodes in field settings; yet, direct physiological observations could obviously be of great value in elucidating the nature of these states, and radiotelemetry methods (e.g. Dunseath, Klein, and Kelly, 1981; Prince, 1968) have now made such recording technically feasible. We are therefore actively seeking opportunities to provide technical support to anthropologists working in appropriate field environments.

❖ *Research Prospectus*

Many additional bodies of material could be brought forward to supplement those already considered. For example, there is a considerable amount of material on psi in classical antiquity, including two very interesting studies of ecstatic cults (Grosso, 1979, 1981) which reveal strong continuities with the anthropological material. Another large subject concerns the "traditional" theory of creativity, stemming from Plato's *Phaedrus,* which relates genius and its associated phenomena, including both ASCs and psi, to inspired possession. Murphy and White (1978) have assembled an interesting collection of anecdotes suggesting spontaneous occurrence of ASCs and psi events in contexts of extreme physical exertion and concentration reminiscent again of the anthropological settings. And so on.

Although our survey is thus very incomplete and although every subject we have covered merits far more space than is available here, the material already in hand is sufficient, we believe, to suggest the main features of an emerging pattern, a structure of relationships which, though still fragile in terms of the data presently available, lends itself to systematic further development and empirical verification. Let us now try to bring this pattern into sharper focus.

First, although the evidence is fragmentary and still "soft" at many points, there appears to be substantial reason to suspect that unusually strong manifestations of psi are systematically related to various kinds of strong ASCs. The "weak sticks make strong faggots" principle applies usefully here; despite their individual weaknesses, the bodies of data reviewed complement each other and indicate that similar accounts and types of phenomena recur

repeatedly in a wide variety of cultural and historical contexts in conjunction with a limited variety of broadly similar ASCs. Thus, for example, the literature of spirit mediumship in the West presents (on occasion) strong evidence of psi together with a fairly clear delineation of the range of altered states that are encountered, but the appearance of the gift of mediumship itself is for the most part a given, a spontaneous and unanalyzed event. The anthropological literature, by contrast, contains extremely little substantial evidence of psi, but a closely parallel delineation of favorable states together with an enormous amount of material pertinent to their deliberate production. Similarly, the various great spiritual traditions, having evolved substantially similar consciousness alteration disciplines, have also tended to produce parallel hierarchies of altered states, similar categories of psi events, and a more or less explicit sense of relationship between the two.

There is an appealing symmetry about this picture, but we hasten to acknowledge again the large role that imaginative reconstruction has so far played in producing it. Where do we go from here? Further historical inquiry into the subjects reviewed so briefly here could certainly make useful direct contributions in terms of elaboration, refinement, and even partial confirmation; but this does not seem to us the most effective way to proceed. Rather, the main contribution that such scholarship can make seems to us to lie in generating additional information pertinent to the production of the relevant altered states. This is, of course, precisely the central objective of our proposed cross-cultural survey of ASC induction techniques. For the real payoff in all of this, we suggest, will become evident to the degree that we are able to bring these states within reach of systematic investigation. The schema tentatively advanced here will be supported in the strongest possible way if we can learn to produce the relevant states in the laboratory and if these, in turn, lead to major new sources of strong psi effects.

Instrumental to improved control of ASCs would be a deeper analysis of relationships among them, their sources, properties, and physiological substrates. Clearly this is nothing less than the fundamental task of the emerging science of consciousness research. There have already been a few preliminary efforts to create "cartographies" expressing systematic relationships among various

kinds and numbers of altered states—for example, Fischer (1978), Fromm (1977), Gill and Brenman (1959), Ludwig (1966), and Sargant (1973). However, in our estimation the existing schemes can be improved upon substantially by seeing the subject in larger perspective—i.e., by taking into account more sources of data—and by avoiding restrictive and premature theoretical commitments. Although we are not yet prepared to carry through this exercise in any great detail, we can readily indicate its general form and point to some important structural features of the problem that are already visible.

In effect, we have before us a number of major and minor clusters of ASC phenomena bearing strong family resemblances to one another. The particular kinds of clusters we currently have in mind include, for example, certain syndromes such as fugue states, hysterical dissociations, battle neuroses and multiple personality; hypnotic states; dreaming, lucid dreaming, and OBEs; trance and possession trance, including spirit mediumship in both modern and premodern societies; certain drug-induced altered states; meditative states; near-death experiences (NDEs); and a variety of ecstatic and mystical states either spontaneous or deliberately cultivated. An additional sampling of minor ASC-inducing circumstances and techniques has been cataloged by Ludwig (1966). Each cluster represents a range of related phenomena, the size of the range varying from cluster to cluster. Fugues, for example, constitute a rather close-knit, small cluster, whereas "hypnotic" phenomena spread over a much wider area at least partially overlapping the normal range, and ASCs induced with major psychotropic drugs can span virtually the entire field (Grof, 1975; Pahnke and Richards, 1969).

The information presently available about these clusters varies widely in amount and pattern from case to case and consists of varying proportions of clinical observation, experimental work, physiological measurements and/or speculation, phenomenological and behavioral reports, documentation of associated unusual manifestations including in some cases ostensible or verified psi phenomena, and analysis according to one or another theoretical persuasion. Although the different clusters have typically been studied on a piecemeal basis, in relative isolation, what is particularly interesting from our present vantage point is to begin to see the

complementarities, the patterns of internal relationship that connect different clusters in different ways.

Trance mediumship, for example, clearly has much in common psychodynamically with clinical syndromes such as "hysteria" and multiple personality, although remaining distinct in that the dissociative episodes are voluntarily initiated, transient, and benign.[5] Deep hypnosis opens out into a similar region of dissociated states replete with automatisms and can readily mimic, create, or reveal clinical-type dissociation phenomena (Hilgard, 1977). Hypnotic constructs are also regularly invoked to explain the phenomena of trance and possession trance (e.g., Gill and Brenman, 1959; Mooney, 1896; Shirokogoroff, 1935) and although we agree with Bourguignon (personal communication) that at present this amounts to "explaining" one unknown in terms of another, the fundamental continuity of the two domains is clear and compelling. A dimension of increasing voluntary control seems to lead from ordinary dreams through lucid dreams to OBEs (although OBEs reached from other directions, such as near-death situations, may or may not be psychophysiologically heterogeneous in their essential aspects). Out-of-body experiences also appear along a dimension of visionary trance phenomena and trance and possession trance in turn lead by degrees toward the major ecstatic states, overlapping at least partially the domain cultivated through meditative disciplines. The different meditative traditions themselves claim the ability to produce systematically, but gently, a graduated series of increasingly exalted states of consciousness leading toward the ultimate goal of ecstatic mystical union.

Clearly, enormous gaps remain in our knowledge both of the individual clusters and of the relationships among them. But one can readily imagine how, by suitably juxtaposing these complementary

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[5] There is also an interesting group of intermediate cases, the so-called "sleeping preachers." Here, as in secondary personality cases, the normal ego is involuntarily displaced, but the invading trance personality may have markedly greater capacities of various sorts, including on occasion, psi capacities. See, for example, Myers' (1903) accounts of "x+y=z" (section 934A) and Rachel Baker (section 563A) and Voipio (1951).

and evolving bodies of information, we will eventually be able to construct a more complete and coherent account of the range and relationships of available ASCs, methods for inducing and shaping them, and their associations with psi phenomena. Furthermore, we would like to record our sense that the true diversity of these ASC phenomena may actually be substantially less than appears on the surface; that is, we have the distinct impression that the great diversity of observed phenomena is generated by socially conditioned processes playing upon a relatively small number of underlying psychobiological themes. Identification of the critical dimensions of these basic themes, if they exist, could lead ultimately to an elegant conceptual and practical reorganization of the entire domain.

None of this is likely to happen overnight, of course. We can probably expect an evolutionary process in which research and theory interact on a primarily local basis and only gradually extend to a more synoptic view. The level of intensity in any area obviously depends primarily on the availability of the corresponding phenomena for study. Hypnosis and dream research are thus at present relatively active, meditation research is also well begun, and psychological and physiological research on NDEs appears to be rapidly increasing. But psychologically oriented research in several other areas is virtually nonexistent. Much of the little that does exist in some areas—for example, the psychology of trance mediumship—has already been contributed by psychical researchers. But if the central proposition of this monograph is correct, we have an important stake in practically every one of these clusters. We can and we should contribute in major ways to the further development of ASC theory and research.

From a practical point of view, the overwhelming priority is to make available for study the parapsychologically more interesting states and here the results of our inquiry definitely make for optimism. First, it is clear that the relevant states—in particular, trance, possession trance, and the major ecstatic states—are widely distributed culturally and historically, and it may therefore be speculated that they rest upon universal properties of human psychobiological organization. Additional support for this speculation can readily be marshaled. With respect to trance and possession phenomena, for

example, ASC induction rituals often take collective forms which sooner or later produce the intended effects upon a large proportion of active participants. The intrinsic power of these proceedings can readily be experienced by participants from alien cultures (Deren, 1972; Goodman, 1972), including highly unsympathetic and skeptical ones (Sargant, 1973). Even mystical states themselves may not be nearly so scarce as we customarily suppose. A recent national survey (Greeley, 1974) claims that as many as 40 percent of the population may have had, on at least one occasion, a powerful experience falling within the traditional mystical domain. Some 5 percent even describe themselves as having such experiences recurrently. The criteria used in this study for identifying experiences as "mystical" strike us as overly liberal; nonetheless, the true rate of spontaneous occurrence of mystical states could clearly be very much less than Greeley estimates and still encourage considerable optimism that the phenomena are potentially available for more systematic scientific investigation.[6]

This leads to the second major point: It is also clear that these various altered states are in considerable degree susceptible to systematic cultivation through various kinds of culturally patterned psychophysical induction procedures. Inventory and analysis of these practices should, therefore, be a top priority of ASC research. We believe that by applying judiciously selected combinations of existing practices, perhaps eventually supplemented by novel ones

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[6] Other systematic features of this material suggest important possibilities for further interpretive leverage on the psychobiology of mystical and related ASCs. For example, approximately 20 percent of those reporting mystical experiences reported also that they were "triggered" by—or supervened following—sexual orgasm. One thinks immediately of such things as the profusion of sexual imagery in the mystical literature generally, the Indo-Tibetan Tantric traditions and the sexual overtones that often permeate mediumistic performances or even the deliberate psi performances of individuals such as Girard, Sylvio and Rudi Schneider. Sargant (1973, ch. 7) specifically attempts to link the physiology of orgasm with cross-cultural material on possession trance. A good deal of information has by now been accumulated about the psychobiology of sexual experience (Davidson, 1980) and this may provide useful clues to psychophysiological events associated with the deeper ecstatic states as well.

of our own invention, we can reasonably expect to be able sooner or later to bring the corresponding states within reach of controlled and systematic investigation of their properties, including their hypothesized relationships with psi capacities.

This is clearly a long-term project, but meanwhile there are many related things we can do. A number of specific suggestions have already been made although we have tended to emphasize the psychophysiological interests that are central to our own laboratory. Readers with other orientations will no doubt see many additional possibilities for research. Here we want rather to emphasize a more general matter of research strategy: We believe it should prove productive to intensify psi research with selected subjects, where the initial selection is now not *direct*, i.e., in terms of tested capacity to generate psi effects, but *indirect*, i.e., in terms of capacity to enter ASCs of the sorts emphasized here. Particularly promising groups would certainly include exceptional hypnotic subjects, mediums, and advanced practitioners of various meditation techniques. The essence of the selection strategy is to find and work intensively with people who can really move out of the "normal" range of consciousness.

A number of critical methodological caveats must be inserted here, however. It would be naive to suppose that simply by bringing ASCs into the laboratory we will automatically produce uninterrupted fountains of powerful psi effects. Certainly, we already know that ASCs are neither necessary nor sufficient for production of psi. There are many mediums, but few Homes, Pipers, Leonards, and Garretts; many "somnambules," but few Didiers and Leonies; and so on. The relation between ASCs and psi is apparently not one of simple mechanical cause and effect. Once an ASC is available, there may be a considerable amount of secondary learning and exploration to do before its potentials can be effectively utilized. This implies a style of experimentation that stresses intensive work with selected individuals, rather than the research-factory mode that modern behavioral research has tended to cherish.

Secondly, we again emphasize the importance of adapting our psi tasks and experimental procedures to the nature of the particular individuals and ASCs involved. The mechanical administration of forced-choice tests to psychedelic subjects is an example not to be

repeated. An excellent review of methodological considerations in experimentation with psychotropic substances, which applies for the most part with equal force to any other procedure involving induction and exploration of ACSs, is provided by Tart (1977).

Third, finding out how to turn on an ASC and use it as an effective vehicle for psi performance, while certainly a great step forward, would only be a beginning. We would then have to go on to try to understand *why* the ASC works. Is it just the shift in state that matters; associated factors such as conflict reduction, changed attitudes or expectancies; or something intrinsic to the ASC itself?

Finally, some readers may have wondered why we should advocate investing substantial amounts of effort in learning how to induce ASCs if we can count on being able at least occasionally to find persons who have somehow already learned to enter them. First, we *cannot* in fact count on finding such persons. Furthermore, those we do find may arrive equipped with a variety of other characteristics that reduce the prospects for their effective participation in research. Capacity to produce our own ASC sources—hopefully including at least some of the researchers themselves—would simply represent a much higher level of scientific understanding and control and could be our ultimate answer to the problem of replication in psi research.

To conclude, we have strongly recommended increased investment by psi researchers in systematic studies of altered states of consciousness and particularly in studies that lead in the direction of their controlled production and exploration under laboratory conditions. Historically minded readers will surely have noted many parallels here from the earliest days of psychical research. F. W. H. Myers (1903), in particular, keenly appreciated the importance of studying all the varied manifestations of ASC phenomena not only in their uniqueness but, more importantly, in their sequential and logical relationships to one another.

We are not simply turning back the clock, however. Myers and his colleagues were ahead of their time in crucial respects and their early efforts were unfortunately soon pushed aside by the nascent radical behaviorism that occupied center stage following the death of William James. But the climate has now drastically changed. Virtually the entire apparatus of research methodology as we know

it today is a creation only a few decades old. Many of the problems of experimental design and statistical evaluation of evidence that the early workers struggled with unsuccessfully can be routinely handled today. Moreover, we have become more sophisticated in the subtleties of research involving human beings and have developed a variety of devices for verifying introspective reports and inferring the nature of covert processes. In recent years, these behavioral techniques have been further reinforced by the advance of psychophysiological methods which permit more or less direct observation of subtle events taking place in the interior of the organism. All of these forces acting in concert have now compelled a relaxation of the extreme behaviorist strictures against introspection. Long-forbidden topics related to human consciousness, its vicissitudes, structure, and contents, are surging once again toward the center of the research effort, but supported now at a higher level by a great mass of hard-won technical and substantive results.

This is emphatically not another passing fad. It is the inevitable return of psychology to its most central problems. We have a role to play in this evolving drama, quite possibly a crucial role if we play effectively. In so doing, we will not only advance our interests as psi researchers, but also hasten the emergence of an enlarged psychological science and assure our place within it.

❖ *Appendix*

A Framework for Cross-Cultural Analysis of Altered States and Psi

In the preceding survey of the "natural history" of psi in broad historical and cultural perspective, we found substantial grounds for hypothesizing that uncommonly strong manifestations of psi tend to co-occur with a widely recurring family of discrete altered states of consciousness. We therefore argued that psi researchers should become more directly involved in various kinds of research on altered states, which might in turn ultimately lead to production of stronger and stabler sources of psi effects for laboratory study.

Among the various avenues proposed for attempting to produce the relevant altered states under controlled conditions, we laid particular stress on the study of anthropological materials related to ASCs and psi. It was pointed out that the anthropological literature reflects an enormous mass of accumulated human experience related to all aspects of this subject and particularly to methods of systematic ASC induction. Furthermore, these potentially valuable resources have so far scarcely been noticed by students of ASCs, let alone investigated in any systematic way.

This appendix is, therefore, a working report in which we outline the conceptual framework we have developed to guide further investigation along these lines and the next steps to be taken in applying it to the available anthropological materials.

In all cases, one's overriding first impression is of the extreme complexity of the phenomena, which characteristically involve a multiplicity of factors at different analytical levels interacting in rich

and often subtle ways. An illustrative example is that of "Arctic Hysteria" or *piblokto*, which is a well established syndrome in the transcultural psychiatric literature (Benedict, 1959; Kiev, 1972). It is a "disorder," expressed mainly in women, which follows a pattern of social withdrawal, reduced communication, and fatigue followed by an acute "dissociated state" (Katz and Foulks, 1971). *Piblokto* had been generally understood as a culturally specific psychiatric disorder resulting largely from a combination of social stresses and unique Arctic environmental factors—silence, uniformity of the visual field, darkness, and so on.[7] But this is only part of the picture. Research by Katz and Foulks (ibid) and Katz (n.d.) suggests that *piblokto* is also in part the result of dietary calcium deficiency. In addition, the Arctic is low in ultraviolet light sources necessary for the production of vitamin D which, in turn, is essential in calcium homeostasis. *Piblokto* is thus given a partial biochemical basis and amplified by physical environmental factors. In addition, there is a dimension of cultural adaptation which includes the expectation of *piblokto* episodes. Such episodes are in fact given explicit social significance by shamanic performances which are *piblokto-mimetic.* In these ways, *piblokto* is established as a modal pattern of behavior by physical and cultural determinants. It is afforded legitimacy and transmitted to successive generations as a social behavior pattern by the shaman who, in turn, experiences *piblokto* passively as a cultural member and actively as part of shamanic experience and ritual. Ostensible psi events occur in either or both the active and the passive conditions.

Development of a Preliminary Model

In the face of such complexities, a vital first step in our investigation has been to frame an overall model which at least begins to take

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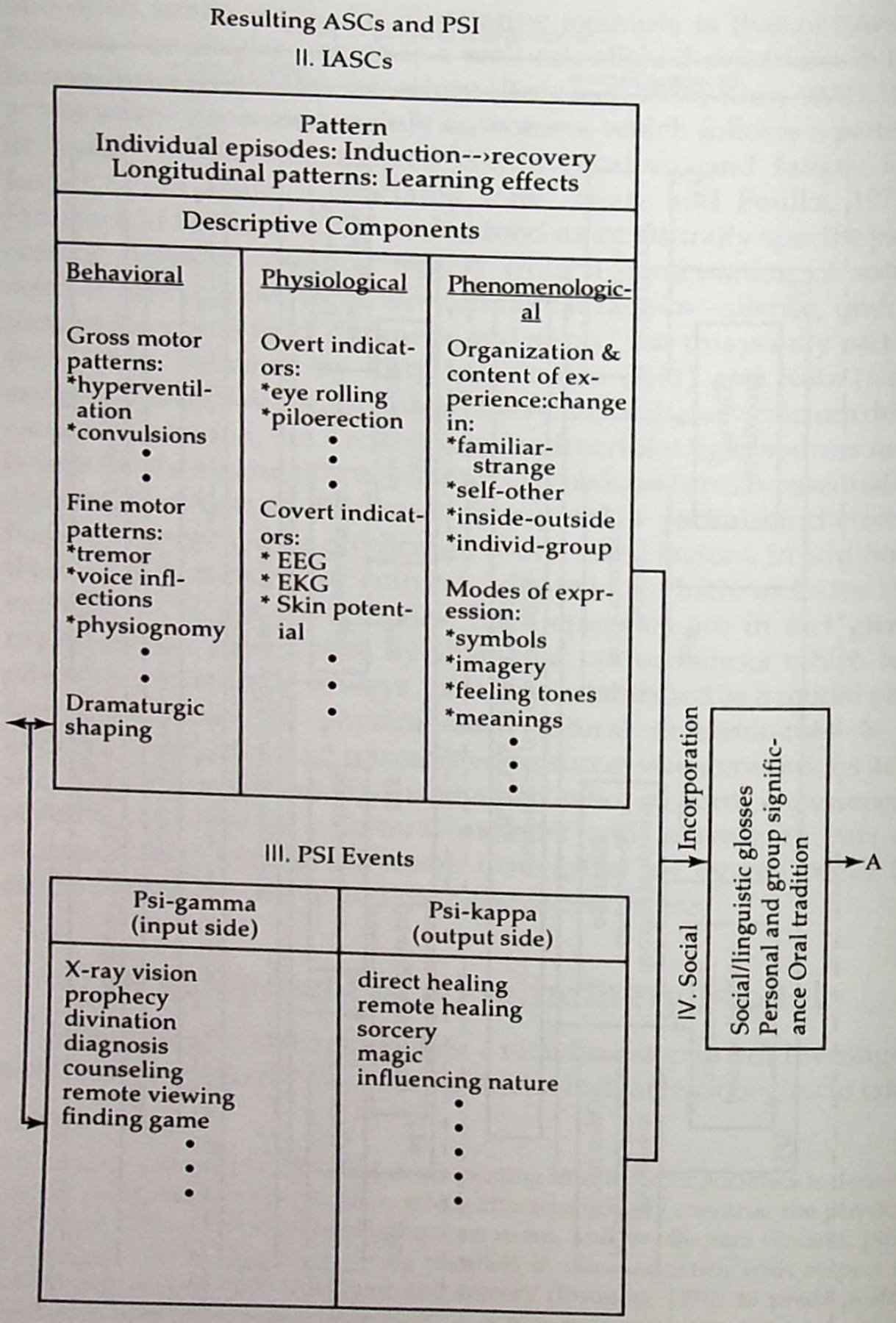
[7] A considerable part of the social stress existing in sub-Arctic societies is derived from a combination of *world-views*, which characteristically construe the physical and supernatural environments in noxious terms, and *sorcery fears* (Balicki, 1963; Rasmussen, 1931). There are strong parallels in other societies with respect to stress and anxiety over witchcraft and sorcery (Douglas, 1970) as predisposing factors to culturally specific disorders.

I. Sociocultural Shaping of ASCs
Distal Factors
Proximal Factors
ETHNOEPISTEMOLOGY
Systems of belief: cosmology, ontology, beliefs about the paranormal
Cultural signs, symbols, and metaphors
PREDISPOSING FACTORS
State and content of sociocultural systems
Stress: Social, psychol., physical
PF1
Personality and socialization
PF2
Diet and nutrition
PF3
Social organization
PF4
Ethnopharmacology
PF5
Ecological factors
PF6
SITUATIONAL FACTORS
Ritual settings and techniques
Inversion procedures
SF1
Driving procedures
SF2
Pharmacological factors
SF3
Ritual and auto-induction; individual & group
SF4
Physical and mental stress and illness
SF5
Other factors: social, psychological, somatic, etc
SF6


Resulting ASCs and PSI
II. IASCs
Pattern
Individual episodes: Induction-->recovery
Longitudinal patterns: Learning effects
Descriptive Components
Behavioral
Gross motor patterns:
*hyperventilation
*convulsions
Fine motor patterns:
*tremor
*voice inflections
*physiognomy
Dramaturgic shaping
Physiological
Overt indicators:
*eye rolling
*piloerection
Covert indicators:
* EEG
* EKG
* Skin potential
Phenomenological
Organization & content of experience:change in:
*familiar-strange
*self-other
*inside-outside
*individ-group
Modes of expression:
*symbols
*imagery
*feeling tones
*meanings
III. PSI Events
Psi-gamma (input side)
X-ray vision
prophecy
divination
diagnosis
counseling
remote viewing
finding game
Psi-kappa (output side)
direct healing
remote healing
sorcery
magic
influencing nature
IV. Social
Incorporation
Social/linguistic glosses
Personal and group significance Oral tradition
A

into account, in a systematic and reasonably complete way, the full range of factors that may potentially be involved in a given case.

Based upon a preliminary overview of cross-cultural studies of altered states of consciousness—for example, surveys such as Bourguignon (1973, 1974, 1976); Goodman, Henney, and Pressel (1974); Prince (1968); and Beattie and Middleton (1969), as well as a broader sampling of anthropological case materials—we have set up a preliminary working model which, while still undoubtedly primitive, is more elaborate than that offered by Bourguignon (1973), the principal anthropological contributor to this area of study. In fairness we must hasten to add, however, that Bourguignon's research is in the tradition of macroscopic, comparative anthropology and thus specifically deflects concern from those physiological, psychological, and phenomenological dimensions of ASCs which are our primary interest.

Our model attempts to identify salient factors in ASC production, content, and consequences, providing both theoretically relevant categories and concepts and a set of hypotheses about their inter-relationships. This starting model will be systematically revised and refined in successive phases of the project as we apply it case-by-case to our studies of culture, ASCs, and psi.

The main task of this interim report is to provide further explanation of the initial version of the model, which is outlined on pages 53 and 54. The model is divided into three main sections, corresponding to (1) factors in ASC induction; (2) characteristics of the resulting ASCs; and (3) ostensible paranormal consequences associated with the ASCs. We now give further details on the content of each section.

1. Factors in ASC Induction

First note that we have divided induction factors broadly into *proximal* (situational or immediate) factors and *distal* (predisposing or remote) factors. This distinction corresponds roughly to that of Tart (1975) between "disruptive forces" (which destabilize the normal state of consciousness) and "patterning forces" (which shape and interpret the altered state which results). Such distinctions cannot be made with absolute clarity and the relevant factors interact

as indicated previously (and throughout this report) in intricate and subtle ways. Nevertheless, for heuristic and analytical purposes it is useful to segregate them for individual discussion as follows.

1.1. Distal Factors

1.1.1. Ethnoepistemology. In many ways, this may be the most important domain in cross-cultural and even within-cultural study. Unfortunately, it is also the most difficult to understand and to describe adequately. The focus here is the complex of beliefs, values, and recipes (social, cultural, psychological, technical, etc.) which make up the knowledge and worldview of cultural members. What we need to know is what any cultural member knows—everyday, routine knowledge, as well as what is specifically relevant to certain roles such as shaman, medium, healer, diviner, etc. The spectrum of materials which may be significant includes, for example, beliefs about the content of the cosmic order (ghosts, spirits, gods, occult forces, etc.); ontological categories (sacred-profane, pure-impure, man-beast, culture-nature, entities-forces, and so on); forms of socially expected, competent, and effective actions (how and when to plant, how to perform a ritual, how to "do" trance, etc.) and expectations about the possible states that exist within men and the world (e.g., is there a notion of trance, possession, psi, etc.?). The importance of ethnoepistemology is further amplified by the fact that it introduces the problem of cultural *relativity* into the study. This is often obscured in the anthropological and related literature, but it is there in terms of: (1) the need to identify each society's distinctive assumptions about the nature of reality, assumptions which depend for their expression both upon language in the narrow technical sense—i.e., *la langue,* which can be technically mastered—*and* upon contextual/experiential factors which are part of language use—*la parole*—in the sense that they assume knowledge of the shared world of experience in which utterances gain significance; (2) the need to accomplish (1) from the perspective of a *stranger*—whether by attempting to participate directly in another, alien culture with the attendant problems of marginality and access or dealing with some researcher's concealed "stranger" experience in field reports and papers; (3) the need to interpret, coextensively and necessarily, our own cultural and scientific presuppositions about the "real" and

significant, and especially our notions about the accessibility or inaccessibility of our knowledge and states of awareness. Questions of related type are also central to phenomenological analysis and to the theory of "state-specific sciences" (Husserl, 1931; Tart, 1972).

Ethnoepistemology represents a profound methodological issue, especially in the areas of magico-religious and parapsychological research and theory. As an instrument of interpretation and an object of inquiry, it represents a hierarchy of assumptions about the nature of "reality," grounded in a metaphysical substrate. Analysis of cross-cultural materials of the kind we are addressing, therefore, requires an attitude which constantly seeks to elucidate the roots of investigation—culturally framed concepts, language habits, and worldviews.

A cogent presentation of this point is given by Lewis (1974), who notes the radically different angles of attack and conclusions exemplified in Evans-Pritchard's classic ethnographies on the Nuer and on the Azande. The logic of Nuer beliefs, a theistic system, is subjected to less scrutiny than Azande beliefs, a nontheistic system, partly out of the "goodness of fit" between Evans-Pritchard's own intellectual Catholicism and Nuer faith (and a corresponding alienness of Azande notions and practices). The difference between the resulting analyses in terms of relative ethnocentricism is striking—although we hasten to add that both of Evans-Pritchard's studies are classic examples of ethnography and especially of ethnoepistemological understanding.

1.1.2. Cultural Signs, Symbols, and Metaphors. Here we are dealing with a domain closely related to ethnoepistemology, in which the emphasis is rather upon specific forms of cultural expression and mediation between individuals and groups and through history. This category can be subsumed under the heading of semiotics: the targets of inquiry are systems of meaning or significance and their characteristic expression. Language use, proxemics (use of social space), kinesics (body language), manual sign language, diacritical signs (dress, appearance, use of honorifics in address, etc.), and symbolic social performances and objects are important here.

Cross-cultural studies of trance and possession trance reveal a wide range of named states, processes, and entities which members

of different cultures use to explain the induction, form, and significance of ASCs. There is usually some definable set of metaphors and symbols which locate ASCs within the social, political, religious, and total cosmic orders. For example, among the !Kung Bushmen, the key metaphors used to describe trance (which is an essential part of healing) are boiling, fire, heat, and sweat (Lee, 1968; Katz, 1979). The !Kung believe that healing power was given to them by the gods long ago; healing power is *within* men and *of* men and not of the gods or occult forces. Healing power is called *n/um* and its mode of operation is analogous to that of the interaction of water and fire. In healing ceremonies *n/um* is brought to "boil" through extreme exertion—protracted ritual dancing and chanting. It ascends and expresses itself at "boiling point" in trance and profuse sweating. Trance healers dance around a fire which is focal, the center of the dance configuration and symbolic of the heat which is generated by the dance, heats *n/um* and produces the healing trance and psi phenomena (as defined in !Kung terms). Sweat is the manifestation of *n/um* and is also literally a healing agent to be rubbed on those receiving healing—a transmitter of healing power.

These metaphors are important as expressions of ethnoepistemology. More particularly, they indicate the experiences and attitudes that are essential for "competent" (controlled) trance induction. They are associated with definite bodily sensations: "*n/um* lifts you up in your belly and lifts you in your back and then you start to shiver. *N/um* makes you tremble; it's hot" (Katz 1979, p. 167). (Note, incidentally, the striking phenomenological parallels between *n/um* rising and the reported action of "Kundalini.") The belief that *n/um* exists and has a characteristic expression is developed and reinforced through extensive imaginal rehearsals prior to ritual as well as through observation within ritual. Thus trance induction is given a social-psychological dimension in that the nature of prior beliefs and imagery associated with trance induction interact with the specific contexts of induction rituals to implement and shape trance.

At a more abstract level, the metaphor of "control" is significant. There is considerable evidence that one of the important aspects of trance in many cultures is movement from a state of very little or no control to one of complete control over ritual trance. "Control" is

expressed in a variety of ways. It means being able to regulate investment of the body with trance-producing power—e.g., the "rising of *n/um*" or the "descent of the Holy Spirit" (among Shakers, Shouters, Pentecostals). Furthermore, it means learning appropriate behaviors related to trance—i.e., conforming to group norms. External compliance is matched with internal control—recognition and shaping of the effects of specific induction techniques (e.g., dancing, drumming, etc.). Among Australian Spiritualists this is expressed symbolically in the saying, "When I can control myself and the spirit can control himself, then the spirit can control me."

Symbolic function is a paramount consideration in other ways. In the first place, there is strong evidence that ASCs which appear to have similar physiological determinants may be experienced and symbolized in radically different ways (Bourguignon, 1973). This suggests that crucial problems in cross-cultural research on ASCs and psi include not only clarification of the physiological substrates of ASCs but also, equally essentially, the production of rigorous phenomenologies of altered states. Both the analysis of ASC induction methods and their successful adaptation for laboratory use will depend in part on establishing systematic context-independent criteria for comparison of ASCs. Secondly, symbolic function is intimately tied to the ASC-psi nexus in folk accounts (Huxley, 1967; Lewis, 1971; Arbman, 1963). Ritual symbolism central to trance induction, for example, is often highly condensed and represents a structure of physical-psychological-cultural interrelations which are systematically manipulated. The most striking single example of these connections is the pervasiveness of "light" symbolism in ecstatic states sought by shamans and initiates. Experiences of light, inner fire, and parallel phenomena are widely distributed and often connected with the acquisition of psi abilities. Perhaps the most arresting examples are those among the Tungus (Shirokogoroff, 1935) and shamanic experiences among various Eskimo groups (Arbman, 1963; Rasmussen, 1931) where psi ability is believed to increase in direct proportion to the strength of the ecstatic light and the corresponding depth of trance.

Semiotics is a rich and indispensable domain in our efforts to penetrate cultural aspects of ASCs and their relationship to psi phenomena, especially since these are often expressed in aesthetic, narrative, and poetic terms (Firth, 1959).

1.1.3. Predisposing Factors. Ethnoepistemological and semiotic considerations thus permeate all areas of our inquiry; they define culture to a large extent and therefore can be considered to be predisposing of ASCs, insofar as they make up worldviews—what exists, what ought to be, what is possible, impossible, and so on. In addition, there is warrant for distinguishing a set of social and environmental factors which are more directly instrumental in providing the contours to collective and individual development across the life-cycle. Here the focus is upon the routine social and environmental interactions which give the society and its individual members identifiable social and psychological features, as well as shaping the social categories and careers associated with specific adepts—mediums, shamans, and diviners, for example.

Referring to pages 53 and 54, six major overlapping categories of predisposing factors (PF) have been identified.

PF1. Stress: There is a growing body of medical and psychological research on interactions among body states, personality, and social relations which indicates that, while stress is universal and to some extent adaptive in human systems, sudden, severe stress or long-term stress of either endogenous or exogenous origin is capable of producing lasting psychological and physical effects. In other words, stress is instrumental in structuring the adaptational matrix which makes up embodied consciousness. What is of greatest importance is not the mere existence of stress but the "psychic style of reaction to it" (La Barre, 1971, p. 22). This poses, implicitly, questions about the relationship between culture, personality, and susceptibility to stress-induced ASCs correlated with psi (see PF2 below). Cultures vary greatly in the types, constancy, periodicity, and severity of stress inflicted upon cultural members. Moreover, this stress profile may be related to physical environmental factors such as seasonal variation in temperature, accessibility to staple foodstuffs, radiation sources, etc. (e.g., as in the *piblokto* example). Certain levels of constant and institutionalized stress, deriving from both the physical and the social environment, may contribute to group and individual susceptibility to ASCs. For example, the Southeast Asian expression of *amok,* behavior described as a violent form of dissociation (Kiev, 1972), takes place against the background of intense heat, frequent physical exhaustion, and chronic

social tension which is usually ritually relieved (drama and ritual insults, for example).[8] Individuals may run *amok* when situational, personality, and other factors interact to produce exceptional stress over the high cultural norm and where there is no socially sanctioned outlet. See also PF4.

PF2. Personality and Socialization: At issue here is whether there are identifiable features or patterns of personality structure that systematically predispose susceptibility to particular kinds of ASCs. Despite difficulties, the anthropological literature provides a useful context for approaching these questions. Much anthropological work in the first half of the twentieth century was given over to that part of personality (and socialization) research concerned with "basic personality structure" (BPS). It is rather unfashionable to talk about BPS nowadays, but it is still instructive to examine relatively small isolated groups that mill their personnel in fairly constant ways.

In such groups the institutionalization of ASCs often revolves around the shamanic complex and thus it becomes particularly interesting to examine personality characteristics and socialization patterns associated with the shamanic vocation. A considerable controversy has developed within the anthropological literature—reminiscent, incidentally, of the controversy over personality characteristics associated with creative genius—as to whether the shaman is a neurotic or psychotic who simply finds an adaptive social niche or whether this kind of psychiatric judgment mistakes social role and belief enactment for individual psychopathology (Benedict, 1959; Devereux, 1939, 1961; Hippler, 1971; Kiev, 1972; Kroeber, 1952; Lowie, 1952; Opler, 1961; Silverman, 1967). According to the latter point of view (which for the most part we favor), the shaman almost necessarily shows signs that can readily but incorrectly be constructed as personal "disintegration," simply in enacting his important social functions—for example, exemplifying group suffering, orchestrating ritual-seasonal cycles, and reacquainting groups with the miraculous and with sources of sacred

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[8] *Amok* is not restricted to Southeast Asia, as Ruth Benedict (1959) points out. The syndrome appears in various cultural and physical settings.

values—many of which functions by definition involve unusual behaviors including dissociative phenomena. At the same time, the picture is undeniably complicated by the observation that in many situations, Plains Indian societies, for example, individuals who manifest definite types of apparent personality disturbance—e.g., "hysteria" or "a nervous psychic disposition" (Hultkranz, 1979, p. 93)—are identified, even sought, as potential shamans. Development of the shamanic vocation then involves amplification and shaping of these prior personality traits according to cultural, ritual requirements.

Application of psychiatric nosology to alien cultural contexts is obviously a very difficult matter, particularly in light of the kinds of ethnoepistemological problems raised above. But with suitable reservations in mind, it still appears very worthwhile to take systematic inventory of the kinds of associations suggested in the anthropological data between unusual personality manifestations and aptitude for shamanic pursuits. Psychiatric models with pejorative implications have, in our opinion, often been applied much too casually in this area, but by looking beyond the nosological categories that are invoked—such as "neurotic," "hysteric," "schizophrenic," "epileptic," and so on—to the underlying behavioral manifestations, one can perhaps begin to see continuities and discontinuities across cultures in the types of personality structure that may underlie susceptibility to various kinds of ASCs. Such investigation also connects directly to the kinds of more direct experimental inquiry that could be conducted on the "mediumistic personality" in our own culture (Swann, 1979).

PF3. Diet and Nutrition: Interest in the biochemical bases of mental illness has propelled nutrition into the picture as one source of personality and consciousness shaping. Quite apart from the *piblokto* example, there is a range of deficiency diseases reflecting not only paucity of environmental food sources, but also sociocultural selection of available nutrition and which can be instrumental in creating conditions favorable to induction of ASCs. Pellagra, for example, is a disease resulting from chronic niacin deficiency, usually in areas where a subsistence economy based on maize production and consumption is formed. In the United States it is associated with depressed mill-town areas in the South where the principal

dietary intake was salt pork, corn bread, and molasses (Guthrie, 1979, p. 304). Pellagra involves physical debilitation and also psychological depression. Although depression is not usually included in classifications of ASCs, the fact of profound and chronic alteration of mental state through dietary deficiencies is well established and worthwhile relating to studies of ASCs. An important example of research connecting dietary deficiencies and possession trance is Judith Gussler's (1973) study of the South African Nguni. She carefully notes the nutritional deficiencies in the Nguni diet, which predisposes a high incidence of pellagra, especially among women. Pellagra manifestations are most likely under circumstances of stress—e.g., temperature change, physical illness, or emotional stress. Women in particular are subject to pressure in Nguni society; their position is an oppressed one in terms of social inequalities and nutritionally in terms of specific taboos which limit the intake of foods containing niacin and tryptophan. The main possession cult, on the other hand, is female-dominated. So, in Nguni possession there is the intersection of several major sets of variables—social and psychological stress, environmental conditions, and nutritional deficiencies. Along with Gussler, we should hasten to say that pellagra symptoms do not necessarily identify the sufferer as possessed. Rather, possession shares some of the pellagra symptoms, but also requires a specific context for social recognition, further involving both a change for the better in social status and a consequent improvement in diet.

Given the widespread coincidence of pellagra and possession trance in sub-Saharan Africa and in other societies (Bourguignon, 1973), there is a substantial basis for reexamining some early ethnographic and sociological studies in a framework similar to that of Gussler. For example, Liston Pope's (1938) classic study of ecstatic religion mainly in the American South acquires a somewhat different interpretation when it is pointed out that the population he studied was mainly "depressed mill-town areas," with the characteristic diet noted by Guthrie (1979).

PF4. Social Organization: In PF2 our concern was for indicating some of the ways in which stress can appear and, particularly, how it is expressed within individuals and whole cultures. Within relatively stable cultures we can recognize that there are avenues for

expression of stress and personal change in culturally defined "sick" roles and shamanism, for example. Indeed, individuals may occupy the former in order to enter the latter role in many situations (Beattie and Middleton, 1969; Benedict, 1959; Bourguignon, 1973). Becoming a shaman constitutes a "cure" to the illness and the illness, correspondingly, is identified, potentially at the outset, as a "call" to the shamanic vocation.

However, the kinds of stresses and responses to them are of equal interest, especially in situations of rapid social change. Classical and recent sociological and anthropological studies of societies in transition, where there are chronic conflicts and strains in social roles, rules, and shared meanings, associate an increase in certain social forms with these conditions—specifically, the appearance of "crisis cults" (La Barre, 1971; Wallace, 1961). One interpretation of these kinds of movements is that when the usual, conventional boundaries and significance of experience are disrupted, there develop adaptive responses which may include socially and psychologically involutional cults (natívism, revitalization) or creative and syncretic groups (e.g., millenarianism), In both of these types of response there is often an ecstatic irruption in the form of prophets, diviners, mediums, mystics, and seers. These particular circumstances, which characteristically involve ASCs and ostensible psi, are attended by a broader change in consciousness, the basic structures which frame experience in the population undergoing change.

There are profound difficulties, of course, in separating the individual-psychological and the social-cultural parameters of such processes. To date, no really adequate scheme has been developed for cross-cultural comparisons which would allow correlation of sociocultural state variables with the appearance of types of ASCs and psi. Anthropological material bearing on the problem has mainly been concerned with macro-level economic, political, and other social-contextual factors associated with the appearance of *group* responses. Bourguignon's (1973) survey of comparative incidence of trance and possession trance in various cultures stands as the most systematic recent example of cross-cultural ASC-social organization correlation. The methodological difficulties of such an undertaking are considerable. However, Bourguignon nevertheless is able to demonstrate significant correlations between broad

social organizational descriptors (social inequality, population-size, settlement pattern, kinship structure, political structure, and so on) and the distribution of trance and possession trance phenomena. Following Lewis (1970, 1971), we can distinguish a further level of analysis which seeks to identify social-structural influences upon individual susceptibility to ASCs. That is, the occurrence of ASCs is usually far from random, tending to pick out quite systematically persons who occupy particular roles and statuses within any given society. Drawing upon a wide variety of examples, Lewis argues that, for example, the social, political, and psychological dynamics of sexual inequalities in some societies predispose women toward possession and possession trance which are socially interpreted and supported by cultic groups. This kind of analysis illustrates not only the existence of definite social trajectories into circumstances such as the role of medium in a possession trance cult, but also a way in which structurally induced stress can be adaptively shaped. Sexual differentiation with respect to susceptibility to ASC induction and spontaneous ASC appearance is an important topic. It has commanded considerable attention from other researchers (e.g., Obeyesekere, 1970; Yalman, 1964) and connects with other relevant areas, such as Western witchcraft and demonology studies (Taylor, 1978; Trevor-Roper, 1969). Moreover, it may provide a fruitful way in which the relationship between sociocultural and individual-psychological factors may be examined, providing some assessment of the viability of notions of "shamanic" and "mediumistic" personality structure.

PF5. Ethnopharmacology: There is a rather considerable history of concern with the pharmacological knowledge and practices of indigenous populations (Schultes, 1972). A great deal of that concern represents responses to "native" use of intoxicants, hallucinogens, narcotics, and so on, in terms of the threat these practices pose to imperialistic faiths and cultures. The hostile attitude of the Catholic Church to Mexican Indians' use of hallucinogens in sacred ceremonies, extending over several centuries, is an example of such an ethnocentric response. More recently, particularly since the early 1960s, ethnopharmacology has received a substantial boost as an area of study. There has been a widespread recognition that various cultures have highly sophisticated systems of medicine which

depend upon extensive pharmacological knowledge (Harner, 1973), but also that the cognitive and affective core of many magico-religious institutions may be traceable to drug-induced ASCs and their social-psychological interpretation (LaBarre, 1971).

Expanding interest in ethnopharmacology derived in large part from countercultural influences which affected major Western institutions from the mid-1960s through the early 1970s (Roszak, 1973; Glock and Bellah, 1976). The measure of changes wrought in this period is indirectly indicated by the growth of acceptability of "consciousness" as a concept and subject matter, in a variety of disciplines and in popular culture. Specific ethnopharmacological focus on consciousness was provided by popular works like those of Carlos Castaneda (1968) and Timothy Leary (1970), which linked psychedelic drugs to consciousness change and psi experience and fueled anthropological interest in "native" knowledge and use of chemical agents found in the environment. However, consciousness-altering drug use in preliterate societies is only a small part of ethnopharmacology, which also covers the recipes involved in ethnomedicine as well as other areas, such as the use of drugs in hunting (LaBarre, 1971) and poisoning in sorcery (Benedict, 1969; Halifax, 1979).

A persistent problem in ethnopharmacology has been the identification of exactly which plants and substances are used by indigenous populations for consciousness alteration. An enormous amount of detective work is often required to locate botanical specimens used to induce ASCs, since the descriptions of these plants in local and shamanic lore may be infused with symbolic, mythical, and heavily stylized forms of expression (Schultes, 1972). In addition, it has often not been possible until recently to determine the effects of certain agents which are apparently associated with consciousness change. Investigative techniques were not sufficiently sophisticated. For example, it had been assumed in studies of spirit mediumship in Palau that betel nut consumed in large quantities on an empty stomach was an hallucinogenic augmentation to trance induction. However, later studies (Leonard, 1973) indicate that betel nut does not have hallucinogenic properties; trance in Palau is most likely sociogenic and psychogenic. Moreover, ethnopharmacological knowledge among the Palauans is

rather poor in general—considerably less developed, even, than that of some Central and South American and Southeast Asian societies, without mentioning the ancients (e.g., mystery cults in Greece, Mesopotamia, and Egypt). However, this observation is not meant in a pejorative sense; rather, it is simply descriptive of the state of Palauan ethnopharmacological knowledge compared to that of other societies. The willingness and ability of societies to explore and exploit available pharmacological resources varies considerably. And, certainly, the matter of availability already circumscribes *possible* ethnopharmacological knowledge.

PF6. Ecological Factors: Several major environmental factors have already been mentioned above. What is aimed at here is a further specification of "environment." Firstly, environment can be understood as the characteristic physical domain in which the particular group exists. In this sense, important factors include terrain, weather, vegetation, and other physical characteristics. A signal instance of environmental shaping of behavior, especially dissociated states, is the previously mentioned example of Eskimo society. Social and physical stresses are amplified by the peculiarities of Arctic diurnal cycles which contribute, seasonally, to extremes of sensory deprivation (darkness, isolation, enclosure, etc.).

Secondly, the sociocultural environment is extremely important, especially in terms of tension produced in interpersonal relations. Threat of attack, social and economic deprivation, political oppression, and conquest, for example, contribute to the likelihood of adaptive, ecstatic responses appearing along with substantial increases in mental and physical stresses (La Barre, 1971; Wallace, 1961; Lanternari, 1963).

In the third place, the way in which both the sociocultural and the physical environments are construed represents a critical indicator of group adaptive potential. Again, in hostile environments, where there are constant threats from the environment, physically and socially, worldviews provide clues to sources of stress in group and individual life. Netsilik Eskimo (Balicki, 1963) and Navaho (Kluckholn, 1967) traditional life, for example, are both framed by the expectation of misfortune; anxiety and anticipation of disaster (illness, loss, suffering) are heightened by institutionalized sorcery. Life in these groups is substantially organized toward intense

environmental scanning for the purposes of monitoring and countering sources of misery. This heightened awareness of injurious potential in the environment has been confused with paranoia by some writers (e.g., Lowie, 1952; Silverman, 1967). Overall, environmental factors may be utilized in distinctive ways in specific societies to contribute to socially recognized procedures associated with ASCs—e.g., vision quests, *rites de passage* for aspiring warriors, and procedures for penitents.

1.2. Proximal Factors

This section of the model deals with situational factors, i.e., specific, immediate settings and techniques for the production of ASCs and ostensible psi phenomena. By contrast with the factors discussed previously, these tend to be both relatively accessible to systematic manipulation and focal and rapid in producing their effects. Therefore, they are of particular interest in relation to efforts to identify effective recipes for ASC induction in controlled laboratory settings. Referring to pages 53 and 54, six major categories of situational factors have so far been identified.

SF1. Inversion Procedures: What we have here is a large family of well described, but as yet poorly understood, cultural recipes which, by and large, mark either rites of transition or some institutionalized way of releasing and orchestrating creative, playful assessment and criticism of society, or providing social niches for otherwise "deviant" individuals (Babcock, 1972). They range in proportion from large-scale social involvement in ritual to individual and small-group practices such as transvestitism, walking and talking backwards, and the use of paradox. These latter are usually associated with deliberate and socially approved attempts to become an adept of some kind. The common denominator is deconstruction—taking the familiar and conventional (in perception, language, and behavior) and systematically inverting it with varying degrees of sophistication and social support, for various lengths of time and with differences in consequent effects. A common and well-documented example of inversion is the *berdache*—the transvestite. Lowie (1952), for example, notes that the *berdache* among North American Indians may have a *berdache* dream which represents the "call" to a shamanic vocation. Response to the dream will

usually involve adoption of the social role and accouterments of the opposite sex and may extend to taking a "spouse." The *berdache* represents the reversal of gender-role, symbolic behavior, and frequently social prestige. The *berdache* is often feared as an exceptionally powerful shaman. Moreover, individual inversions may fall within the context of regular ritual performances which some researchers associate with the release of accumulated tension within the social group (Gluckman, 1963; Norbeck, 1972), ecstatic states, and CNS tuning (Kiefer and Cowan, 1979; Lex, 1979). Inversion procedures are common to some forms of hypnotic induction, spirit mediumship, psychotherapy, and several other kinds of phenomena. A more detailed introduction to this subject is provided by Locke (1980).

SF2. Driving Procedures: This term is used to denote a family of rhythmic activities which are found in varying combinations and with extremely widespread distribution as ingredients of ASC induction rituals. The most familiar of these techniques include both kinesthetic and auditory components, for example, singing, chanting, clapping, dancing, drumming, and so on, often carried out with great intensity for protracted periods of time.

As a group, these procedures appear likely to have a variety of potent psychophysiological effects. For example, one of the ultimate psychological consequences often appears to be an extreme narrowing and focusing of attention upon performance of specific ritual acts. (For an interesting example, see Deren, 1972, chapter 7.) This amounts to a kind of "kinetic mantra" effect and suggests a fundamental psychological continuity between such ASC induction rituals and the various meditative traditions with their more direct emphasis on attentional control. Some of the general physiological effects—for example, those due to hyperventilation, extreme exertion, exhaustion, and so on—should be analyzable in terms of data already developed in analogous domains such as exercise physiology. There are also clear suggestions of more specific effects, extending even to direct entrainment of cortical processes, which need to be pursued further. For example, Neher (1962) has investigated auditory driving effects produced by drumming. The spectral envelope of each individual drumbeat typically shows large amounts of acoustic energy at low frequencies and the beat frequencies

themselves characteristically range over the low frequency portion of the EEG spectrum. Thus, drumming seems *a priori* likely to provide a powerful stimulus rhythmically inundating the cortex at physiologically significant rates via the auditory afferent pathways. In his laboratory study, Neher (1961) was able to demonstrate an auditory driving effect of drumming on scalp-recorded EEG.

Percussive instruments are particularly conspicuous elements of ASC induction techniques (Needham, 1967). It will be interesting to look for convergences in the physical characteristics and patterns of use of such instruments across relatively independent and diverse social contexts, which may already point toward partial physiological optimization of the techniques. Such optimization can also be pursued further in the laboratory, however, not only by deeper exploration of auditory effects, but also through extensions into other stimulus domains that, for purely technical reasons, have been unavailable to premodern groups. Rhythmic photic stimulation, for example, has already been studied in some depth in other contexts, thus providing a large amount of potentially relevant information. Possibilities of both global and highly selective stimulation of brain structures through application of electrical fields and currents are also receiving increasing attention in various quarters. Thus, if stimulus entrainment of cortical rhythms is, in fact, a critical ingredient underlying the undeniable success of the ASC induction rituals observed in anthropological settings, it seems highly likely that, by drawing appropriately upon the resources of modern technology, we will eventually be able to devise still more potent ingredients of our own. It goes without saying that investigation of such weighty possibilities demands the utmost in caution and responsibility, as well as scientific competence.

SF3. Pharmacological Factors: ASCs induced through ingestion of hallucinogenic agents such as LSD and psilocybin are well documented. Their possible connection with psi phenomena received a mild boost in the 1960s through such semi-scientific works as Masters and Houston (1966) and Leary (1970) and, again, popularized anthropological accounts of ostensible psi events occurring during drug-induced ASCs. As usual, ritual use of psychotropic agents typically occurs in a complex matrix which also involves psychological and social augmentation of the induction (e.g., driving procedures,

group action, supportive presence, etc.). The physical setting (e.g., isolation, heat, cold, etc.) may also interact in important ways with other dimensions. Thus, while the pharmacological basis for induction of ASCs and psi phenomena is intrinsically important, it is equally significant to map ingestion and effects of chemical agents against other situational and predisposing variables (Tart, 1977). A ready illustration is the socially patterned consumption of mescaline among Central and North American Indians. A supportive group context is required, with appropriate symbolic sanctification, before exploration with the drug is attempted. In addition, there is typically a complex longitudinal interplay between individual and group dimensions of experience and communication as the neophyte learns "control" of drug effects.

Although far from providing the whole story, therefore, the pharmacological dimension itself is of great interest for what it may reveal about specific neurobiological substrates of ASC experiences. For example, a recent summary argues that various aspects of visionary and quasi-mystical experience arising from high doses of hallucinogens, amphetamines, and cocaine have as a final common pathway an uncompensated suppression of serotonin synthesis or release, resulting in temporary disinhibition of certain hippocampal and limbic temporal lobe structures (Mandell, 1980). This provides another example of how contemporary research in various areas of psychophysiology can be brought to bear on the interpretation and analysis of anthropological field observations.

SF4. Group-Ritual versus Individualistic Factors: The mescaline example is interesting because it emphasizes both unique and collective aspects of transcendental experience. To elaborate this point, cultural recipes often call for strictly prescripted methods of achieving ASCs, whereupon individual freedom of expression may be tolerated, e.g., once one is recognized as a medium. The relationship between spontaneous and ritualized inductions is complex and it is often extraordinarily difficult to determine necessary and sufficient elements of induction procedures. Among Spiritualist mediums, for example, one finds a perennial ideological struggle between ritual form and personal autonomy. However, the distinction is not quite so radical empirically. As in many other social groups, trance induction and appropriate forms of trance behavior are learned over a

long period of time in a novice position. Established mediums provide guidance and support along with appointed spiritual helpers, largely along the strictly hierarchical lines described by Nelson (1968) among British Spiritualists and by Rogler and Hollingshead (1955) among Puerto Rican Spiritualists. The social learning process involves teaching the novice control over trance and possession trance in particular. An ideal pattern involves gradual mastery of acceptable behaviors (no convulsion or hyperventilation, but a barely visible tremor of transition, for example), including meeting and establishing a strong relationship with high spirit guides approved by the teaching medium and the medium's guides. Once having "passed" as a medium, the former novice proceeds to regular, controlled entrancement in a variety of settings—church services, healing, séances, and "readings" (divination). However, two peak periods of spontaneous trance, possession, and ostensible psi phenomena are recognized which qualify this ideal pattern of learning mediumship: (1) During the early stages of exposure *to* séances, the novice is defined as open and vulnerable to "external agents"—occult forces, malevolent spirits, and the ills and "low" thoughts of others. In this period, the novice is considered to be particularly prone to possession which, unless it is controlled by the group *and* the novice, may lead to permanent possession and debilitation of mind and body. However, this very vulnerability and its spontaneous expressions, especially clairvoyance and precognition, also establish the promise (or lack thereof) of the novice's future as a medium. (2) Once an individual has graduated to recognized mediumship and passed into the demure activities of Spiritualism, a second set of tensions often arises. The new medium may be energetic, impressive in public performance, and convinced of the "evidential" quality of her mediumship. But at the same time established mediums jealously guard their charisma and their following by implementing selectively applied rules. The new medium's effervescence and appeal is circumscribed so that the resulting pressure may produce a burst of spontaneous mediumistic behavior (prophecy, proselytization, inspirational spirit possession, e.g.) which is socially schismatic. New mediums seek a demonstration of the power of the old and an increase in their own power and/or a separate group of followers. Trance and possession trance

manifestations arise, in other words, partly as a matter of relative autonomy and contain elements of political motivation. Social and psychological stresses interact with more subtle, learned induction procedures such as paradoxical injunction sometimes in parallel, synchronically. These issues tie in with the next category.

SF5. Physical and Mental Stress and Illness: A paradigm case of the relationship between "mental illness" and possession trance is provided in Horton's (1969) study of the Kalabari. Of thirty-six members of a random sample of mediums, all but one reported their call to mediumship as beginning with an unpleasant disturbance of health or fortune. Many reported what are usually called "psychological" symptoms: e.g., fugues, withdrawals, ungovernable temper tantrums, persecution feelings, migraines, apparent schizophrenic episodes. Many reported physical symptoms, occurring either alongside psychological disturbances or by themselves (*ibid*, p. 34). These symptoms and problems are interpreted as signs, i.e., signifying that the "victim" has been chosen or "called" for mediumship. So reported, the Kalabari circumstances are more like predisposing factors, in terms of our model. However, spontaneous possessions and ostensible psi phenomena do sometimes directly accompany these "call" experiences. Furthermore, within specific induction rituals, focal physical and psychological stresses are often a part of the recipe for achieving an ASC in specific individuals. Drumming and dancing, for example, may involve extreme effort, hyperventilation, hypoglocemia, and physical pain (!Kung trancers sometimes dive into a fire and sustain burns during the early part of entrancement). Psychological stress may also be imposed through sustained status ambivalence (the neophyte is liminal—literally between worlds and social roles), humiliation which is socially sanctioned, and social isolation. The manner and form of stress production (i.e., physical or psychological) deserves attention, also. Societies vary in the amount of pressure they exert upon their members in terms of the strains inherent in institutionalized behavior—e.g., role conflicts, oppression, performance demands. As described previously (*PF1*), at a macro-level stress derives from social-structural and physical-environmental factors. The effects of such chronic stress may be focally amplified in particular social gatherings or interactional settings, e.g., as in Nguni Bantu society

among women at certain times in their life-cycle (Gussler, 1973). Constant background and situational-specific tensions may both contribute significantly, in other words, to the incidence of clearly identifiable behavior patterns, including ASCs. Involuntary or spontaneous trance, for example, may reflect interaction of macro-level and micro-level (personality, subcultural and situational) factors. Analytically, these kinds of phenomena should be distinguished from voluntary stress elevation and other procedures which may be a part of voluntary, deliberate ASC induction. Processes of self-inflicted physical pain, mortification, and deprivation (social isolation, fasting, etc.), for example, are instrumental in eliciting ecstasies in several traditions of the major world religions. Self-induced physical and psychological discomfort in this case amounts to a career option within a religious organization and the wider society where each social arena may involve separately identifiable pressures. Finally, it is clear that, in some cases, the involuntary appearance of an ASC may be a necessary condition, in social terms, for later participation in voluntary trance performances, say, as in Kalabari society.

SF6. Miscellaneous Somatic and Psychological Factors: The variety of other ASC induction practices and circumstances is quite large. It includes sensory deprivation; violence (committing violent acts such as killing an animal, whipping penitents, etc., and being tortured—as in the ecstatic transformations sometimes reported by victims of the Inquisition); toxic deliria; environmental factors again such as temperature, color, and irradiation; and other conditions like deprivation of sleep, water, and food, endocrinological disturbances, narcolepsy, preseizure auras in epilepsy, and state changes associated with orgasm (Ludwig, 1968).

2. *Resulting ASCs*

The second main section of our model attempts to provide descriptive and conceptual apparatus by means of which to characterize the principal features of an ASC. Three convergent sources of data—behavioral, physiological, and phenomenological—can in principle be utilized to provide a basis for analyzing both overall patterns and specific characteristics of ASCs. In practice,

unfortunately, it must be acknowledged at once that the existing anthropological literature presents us with recurrent difficulties in this part of the model. The most common descriptive protocol for ASC episodes is a crude behavioral inventory to which psychological depth is added by speculating about the relevance of personality and physiological dimensions, often from a superficial psychiatric perspective. Thus, trance, possession trance, and related states of awareness are commonly represented simply as "dissociations" which have pathological connotations at the individual level and functional properties at the group level, i.e., individual psychopathology in the service of collective adjustment (see, for example, Silverman's (1967) comparison of the shaman and the schizophrenic). There is also, in general, far too little attention to phenomenological description of ASC episodes. Part of the difficulty here for the field observer is that of mastering language, particularly the kind of metaphoric structures by means of which the experience of an ASC is likely to be expressed. Metaphor presents a unique problem in that it is a profoundly rich, but compact form of representing or talking about experience. It is not experience, but a mediation of it which represents the intersection of idiosyncratic and shared (group) meanings (see also section on Distal Factors, p. 56). Finally, very little systematic attention has so far been paid to possible physiological indicators and concomitants of ASCs. This is due in part simply to lack of interest and relevant training on the part of most anthropological field workers and in part to the difficult technical problems associated with collection of physiological data in the field.

With these reservations in mind, let us now indicate in more detail the content of this section of the model.

2.1. Pattern

The combination of the three kinds of data in relation to predisposing and situational factors should provide for each society studied one or more profiles of modal ASC *episodes*, i.e., extending from preparation, direct induction, amplification, peaking, tailing off, recovery, and return to the social group in a mundane sense. An extremely good prototype of this kind of profiling is given by Henney (1974) in her study of the Shakers of St. Vincent. There are

numerous other descriptions of ASC episodes, but Henney attempts an unusually detailed behavioral and phenomenological analysis which gives some credibility to the trance pattern she derives. It is important to bear in mind here that many societies display more than one type of ASC induction ritual, with differing structures and aims (Bourguignon, 1973).

A second important aspect of patterning in ASCs is their developmental history within particular individuals over repeated episodes. ASC induction does not appear to result in some simple mechanical way, even within a single individual, from institution of a fixed set of necessary and sufficient physiological preconditions. Rather, the character of the necessary induction maneuvers often changes systematically over time and usually in the direction of becoming considerably less drastic. This suggests a learning process in which both disruption of the normal state and entry into the desired target state come under increasingly voluntary control. Close attention to these developmental aspects may, therefore, help to identify ASC induction techniques which are particularly promising for laboratory work.

2.2. Descriptive Components

2.2.1. Behavioral: The most obvious and traditionally emphasized method of characterizing an ASC is simply to describe in some fashion what the person experiencing the ASC *does.* Unfortunately, there is at present no generally agreed-upon system for such description and hence no guarantee that different field workers at different times and places have approached their task with anything resembling a common set of descriptive categories. Nevertheless, there are recurrent mentions in the existing reports of many kinds of interesting and unusual behavioral manifestations, some deliberate and dramatically appropriate to socially learned roles, some apparently involuntary concomitants of the ASC. The kinds of phenomena involved here include gross motor patterns (such as changes in posture and rhythm, spasmodic movements or convulsions, exaggerated motility, and other abnormal patterns of locomotion, etc.); fine motor patterns (such as tremors, changes in physiognomy, voice, and speech patterns, etc.); and dramaturgic shaping of individual and group behavior patterns in accordance with shared

expectations about the nature of the ASC (for example, according to the "known" personality characteristics of a possessing god or spirit, etc.). One of our objectives in this area will be to assemble a composite inventory of behavioral effects to be looked for in conjunction with the ASC phenomena of the societies we study. Among other things, such an instrument could prove useful in future research involving either field or laboratory observation of ASCs.

2.2.2. *Physiological:* There are really two fairly distinct classes of observation involved here. The first overlaps considerably with behavioral observations and includes external or overt indicators of physiological state such as unusual sweating, pallor or flushing, piloerection, tremor, and eye-rolling. Phenomena of this type can be integrated with the behavioral inventory mentioned previously. It is worth observing in passing that simple video recording of ASC episodes would greatly improve the prospects for comprehensive and reliable analysis of all their behavioral aspects, including many of these overt physiological signs. For some cases, such as the trance dance of the !Kung, useful amounts of film record are already available.

The second class of physiological observations involves covert physiological indicators, such as could in principle be revealed by direct physiological recording of EEG, EKG, EMG, skin potentials, etc. Although such observations could be of the greatest value in classifying ASCs and elucidating their physiological properties, formidable difficulties stand in the way and to our knowledge no report of direct recording in a field setting has yet appeared in the anthropological literature. The difficulties have in the past been both technical and social. The technical situation, however, has greatly improved with the advent of radiotelemetry methods (Klein, 1976; Prince, 1968; Dunseath, Klein, and Kelly, 1981). Although there remain difficult problems of overcoming muscle and motion artifact, it is clear that potentially critical observations could, in principle, readily be made during at least some portions of many kinds of ASC episodes. Thus, the greater problem at this time is the social one of obtaining cooperation from the potential sources of such observations. Although there is little likelihood of obtaining such data in the short-term future, one of the longer-term aspects of our work will be to seek opportunities for collaboration with

appropriate field workers through provision of the necessary technical devices. In the meantime, we are not entirely helpless, as there already exists a large number of physiological studies of meditation, hypnosis, and other ASC induction procedures which can provide some interpretive perspective for psychophysiological analysis of states and patterns elicited from anthropological data.

2.2.3 Phenomenological: William James (1929) noted that "our normal waking consciousness is but one special type of consciousness, whilst all about it, parted from it by the filmiest of screens, there lie potential forms of consciousness entirely different." With this statement and his investigation of experiential "fringes" he in effect set the tone for phenomenological investigations which gained impetus early in the twentieth century. The principal, founding contribution to phenomenology lies in the work of Husserl (1931) who offered a programmatic alternative to positivist science. Although Husserl's initial work is seriously flawed, the core of his position on "descriptive science" is crucial for any study of consciousness. It represents an attempt to return to appreciation and rigorous delineation of the content and construction (constitution) of consciousness—the phenomena (things) themselves. The focus of this descriptive approach to consciousness is the *natural attitude,* the fundamental set of assumptions which define "reality" assumed to be "out there" and accessible in relatively the same manner for all individuals (an assumption open to immediate investigation). Phenomenology makes the natural attitude into a fundamental data resource, e.g., in describing a culture from "within" (ethnoepistemology). The issue here is: What does it mean to be a cultural member in general and especially in terms of culturally relevant role categories and situations? At the same time that phenomenology makes the natural attitude a topic of investigation, this very attitude is considered problematic insofar as it must be transcended and converted into data. This is particularly pertinent to the study of ASCs in most cultures, since ASCs are treated in some measure as atypical states. They are benchmarks of the strange and the familiar, the ordinary and the novel, the real and the unreal, and so on. In this way, they reflect the routine and extraordinary senses of embodiment, personal identity, feeling tones, imagery—the total

range of phenomena which make up the content of consciousness in relation to a more or less shared reality (e.g., see Ludwig, 1968). So, the phenomenological description of ASCs seeks to reveal the moments of experience which define states of consciousness from the perspective of the experient and prior to any application of abstract scientific terms and concepts. In this way, the restoration of the contents of consciousness for a typical cultural member in a typical and relevant context is theoretically always possible.

The limitations of studies of ASCs not informed by a phenomenological approach are pointed out by Richard Lee (1968) who notes that Ludwig's (1968) inventory of ASC characteristics has serious limitations in the case of the !Kung Bushmen trance dance. He points out, for example, that one of Ludwig's dimensions, "change in meaning" or "ineffability" associated with ASCs, simply does not apply to the !Kung. Trance in !Kung society is a group phenomenon wherein the experiences of trance induction, trance, and recovery are widely understood and expectable. Within the !Kung then, "strangeness" or "ineffability" have to be interpreted against the matrix of shared experience which "normalizes" trance. From the ethnographies surveyed so far, we can conclude that phenomenological analysis is rare in the literature, but that at least some aspects of ASCs from this perspective can be recovered. More detailed and careful phenomenological description of ASCs remains an important goal for future field and experimental research.

3. *Psi Events*

Comprehensive field reports of ASC episodes at least occasionally incorporate ostensible psi phenomena insofar as these are recognized, labeled, and communicated by cultural members and/or the field observers themselves. Again, much of the fieldwork which deals with ASCs is framed by anthropological theory dealing with institutional structure and function, which often leads to deletion or obscuring of "reductionist" psychological material. Accounts of psi in particular often have to be "dug out" of marginal notes or "fieldwork reflections," although more recent psychological and anthropological observation is somewhat more liberal in such matters. Two excellent examples of reports which include descriptions of

possible psi events are those of Katz (1979) and the previously mentioned study by Lee (1968). Both researchers studied the !Kung Bushmen and provided brief phenomenologies of both trance itself *(!kia)* and correlated psi-like events—"x-ray vision," remote viewing, precognition, and possible PK (as defined below) in healing. Classical ethnographic monographs unfortunately provide very little of this kind of material. In the first half of the twentieth century, prevailing positivist attitudes in anthropology militated against not only serious consideration, but even mere reporting of this material unless it was in a conceptually disguised form ("superstition," "delusion," "hearsay," etc.). Fortunately, transformations within Western societies apparently have led to a modest expansion of anthropological worldviews. Surely an amazing irony for "the study of man"!

To characterize reports of possible psi events one can initially apply two overlapping systems of categories, each arranged in a hierarchical or "tree" structure. At the top of each, events can be broadly and logically characterized, following Thouless and Wiesner (1948), as either psi-gamma (input-side phenomena) or psi-kappa (output-side phenomena). At the lower levels of the first system we roughly follow the more detailed classification that has (for good or ill) become traditional in the parapsychological literature. Here psi-gamma (collectively, "ESP") is further broken down into telepathy, clairvoyance, and precognition. Psi-kappa ("PK") is broken somewhat arbitrarily into two forms, one involving psychic healing with direct contact and the other everything else in this category. Psychic healing with direct contact is split off as a special case because of the inherent impossibility of separating "normal" psychosomatic factors from paranormal ones in such contexts.

The lower levels of the second categorization system will be constructed by drawing upon the anthropological materials themselves. That is, rather than imposing *a priori* a theoretical organization of the material based upon our own Western research tradition, we will try to utilize whatever classification schemes and conceptual distinctions exist within the cultures studied themselves. One of the many interesting questions that can be addressed by anthropological inquiry concerns the degree to which such conceptual systems as can be adduced may prove consistent with each

other and with our own, scientifically self-conscious version. The underlying structure of psi events remains poorly explored. Although there is precious little direct evidence supporting the notion, it has become increasingly common to suppose that psi really involves just one fundamental process which can take on a variety of superficially distinct forms. This view has, in fact, gained its most articulate expression in the form of the so-called "observational theories," which reduce all psi events to a single PK-like process (Millar, 1978). This basic idea is certainly open to direct empirical study, for example, through factor analysis of a battery of tests spanning a broad range of possible psi performances. The cross-cultural material can also bear strongly on the issue, however, particularly if it turns out that there is some consistency in the breakdowns and that particular subtypes of phenomena are consistently associated with particular types of ASC. It is of great interest in this connection that there are at least a few societies (e.g., Ojibwa) in which particular shamanistic capacities are parceled out to distinct individuals, occasions, and/or ritual forms.

Finally, we emphasize that our concern in this area is not to verify the occurrence of psi in any strict scientific sense, but to take its occurrence essentially at face value in the interests of generating potentially testable hypotheses about the forms and circumstances in which it occurs, particularly as regards its relation to ASCs.

4. *Social Incorporation*

This section of the model brings us full circle to issues focused on how psi and ASC phenomena are interpreted and related to worldviews, values, and sentiments and also what befalls the experient of ASCs and psi who is publicly visible. An interesting and relevant problem here is a comparison of personal and social integration of "gifted psychics" in this society and the corresponding conditions for shamans, mediums, diviners, and healers in other societies.

Note, finally, that the arrows interconnecting the first three sections of the model are drawn bidirectionally. This is meant to indicate a further level of complexity, in that the various processes and events that make up an ASC episode typically do not unfold in a linear, causally transparent, and analytically simple fashion. Rather,

emerging ASCs and psi effects involving particular individuals typically feed back immediately into the evolving episode, augmenting the induction of further effects both in themselves and in other participants. Likewise, the relevant predispositional and situational variables are in practice closely interrelated in the composition of an induction recipe. All these factors are analytically separated in the model for comparative purposes and to maximize the visibility of relatively context-independent components.

Application of the Model

We turn now to a brief discussion of the further steps to be taken in refining and exercising this preliminary model as a tool for analysis of the anthropological material on altered states and psi. The amount of potentially relevant material is vast. There are upwards of 4000 known societies, approximately 90 percent of which have one or more institutionalized forms of ASC induction (Bourguignon, 1973). Our general task is to attempt to wrest from this enormous mass of material both a clearer overall picture of relationships between ASCs and psi and also specific principles of ASC induction potentially applicable in laboratory settings. In approaching this task, two main interrelated strategies can be pursued. Just as with other kinds of field observation—such as spontaneous cases and cases of the reincarnation type—one can carry out detailed investigation of individual cases on the one extreme and statistical analysis of overall patterns in the complete case collection on the other. These two levels of analysis are not independent, since valid and fruitful analysis of generic patterns presumes valid and usefully comprehensive data at the level of the individual case.

We foresee this as a long-term project in which we will start small and (resources permitting) gradually extend to more and more societies as the increment of useful data and analytical leverage through increased sample size appears to warrant. In this kind of cumulative effort, the adequacy of the basic model is particularly critical since it shapes both one's overall perception of individual cases and also the specific framework for encoding their characteristics in computer-readable form for ultimate statistical analysis. Therefore, our current efforts (in addition to steady collection of

additional bibliographic materials) are being directed primarily toward intensive study of a small sample of carefully selected settings, with a view to extending and polishing the basic model presented above.

Selection of appropriate cases remains somewhat problematic since it is not possible or desirable to completely delineate a comparative (selection) framework *a priori.* What is needed initially is a strategy which preserves the flavor of the "lived world" of indigenous populations ("emics") and yet provides sufficient analytical dimensions for comparative study ("etics"). Following a modification of Glaser and Straus's (1967) theoretical sampling approach, useful criteria for case selection and analysis include the following: (1) the current set of distal and proximal factors should serve as a "map" for orientation and organization of case material—i.e., as "sensitizing concepts" which, as limited hypotheses, are open to successive modification (expansion, contraction, deletion, etc.); (2) there should be adequate range, depth, and recency of documentation, especially with respect to ASCs and ostensible psi phenomena and preferably with a wide range of coverage of relevant factors, viz, interdisciplinary perspective including nutrition, epidemiology, geography, etc.; and (3) there should be a diversity of social, cultural, economic, political, and religious factors internally and historically, as well as in the physical and social ecologies of the groups studied.

Two cases which satisfy these criteria are Haitian Voodoo and the !Kung Bushmen healing trance. Additional examples will be selected from Brazilian Umbanda, Puerto Rican Spiritualism, Pentecostalism in Mexico and Central America, and North American Indian ecstatic expressions.

Intensive study of these initial cases should not only produce deepened substantive understanding, but may also permit refinement of the preliminary model to the point where we can construct a useful computer codebook and begin more extensive and systematic sampling of at least some aspects of the material, without fear of encountering major gaps and problems in the basic structures further down the road. It bears emphasis here that we are well aware of the limitations that necessarily attend this kind of reductive analytical effort. No coding scheme however elaborate

can do adequate justice to the full complexity and richness of any individual case. However, precisely by deliberately ignoring idiosyncratic details of each pattern in favor of a representation in terms of abstracted and thus partly fictionalized elements, we may be enabled to see common features and underlying principles that would otherwise remain hidden in an excess of detail. As in other areas, the case study and statistical summary approaches are likely to have complementary strengths and weaknesses.

Some further comments about methodological issues are also in order here. At various points in the discussion of the model—in particular in the section on ethnoepistemology and in discussing the available literature on ostensible psi events in anthropological settings—we touched upon a set of interrelated problems that are universal in anthropological investigations, but particularly aggravated in the areas we are setting out to study. In effect, in using anthropological sources to study altered states and psi we are looking at the phenomena through at least double filters of partly unknown and variable characteristics. The original observer in the field may be confronted with a mass of phenomena which are exceptionally subtle, complex and—from the point of view of his own education and experience—strange or even disturbing, which he must somehow first assimilate in terms of his available perceptual and conceptual capacities and then report to the larger scholarly community in the currently fashionable academic idiom. In studying these reports we are clearly going to have to do a substantial amount of translation and "reading between the lines," particularly as regards the nature of ASCs and their possible psi concomitants. This process is obviously fraught with possibilities of omission, distortion, and other kinds of error. Nevertheless, we have already gone far enough to feel strongly that the effort can be worthwhile, particularly if we bear constantly in mind that it is primarily an hypothesis-generating exercise. What is needed in approaching this material is any combination of scientific imagination, analytical technique, and perhaps even good guesswork that can lead us to identify underlying principles and relationships accessible to subsequent investigation and verification in laboratory or field environments. For this purpose, the material on ASC

induction procedures is probably the most important and it is, fortunately, also the most detailed and reliable.

Recognizing then that whatever analytical devices we bring to bear are only aids to understanding and not ends in themselves, let us indicate the kinds of approaches we are considering. If we succeed in developing a good computer codebook, then ultimately the case collection should contain sufficient material to permit useful amounts of several kinds of quantitative analysis. The primary aim of such analysis is of course to explore patterns of structure and relationship within and among the three sets of phenomena, i.e., induction procedures, ASCs, and psi phenomena, as described in the main body of this monograph. The initial burden of this exploratory analysis will be carried by traditionally appropriate methods involving contingency tables and associated statistical measures. However, we will also explore–objections from methodological purists notwithstanding–the utility of certain correlational methods that would normally demand more stringent psychometric assumptions about the underlying data. Our hope is that these methods may prove helpful in revealing both the dimensionality of each set of phenomena and the relationships among the sets (Kelly, 1980). Practically speaking, the primary objective of this project is to find effective methods for controlled production of possible psi-conducive ASCs. To this end, once we have obtained an adequately stable *factual* picture of the overall structure and content of ASC induction procedures, we will attempt an analytical summary that seeks to identify more precisely the psychological and physiological principles which underlie their effectiveness in producing the various types of altered states. In substantial part, such analysis will be a matter of bringing to bear general psychological and physiological knowledge in assessing the known or predictable effects of particular induction maneuvers. But we should also be able to gain substantial interpretive leverage from a variety of related situations, some also involving ASCs and/or psi phenomena, which have already been at least partially explored in other clinical, laboratory, or field researches. The general setting and strategy for this kind of comparative study is outlined in greater detail in the "Research Prospectus" section of the main text, and several specific examples of what we have in mind have been provided in preliminary form

above, particularly in our discussions of situational factors in ASC production.

We believe that systematic cross-cultural analysis has the potential to yield significant advances in understanding and control of psi and altered states. A key feature of the approach we have outlined is its strongly interdisciplinary character. Precisely by breaking out of the academically traditional one-dimensional approach to the anthropological material, we seem to be reaching a perspective from which its essential dimensions as related to both consciousness research and psi research are becoming more readily visible. Although the project has grown considerably in scope since we first conceived it, it looks to be well worth the added effort.

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❖ *Biographical Notes*

EDWARD F. KELLY is currently a Research Professor in the Division of Perceptual Studies (DOPS), a unit of the Department of Psychiatry and Neurobehavioral Sciences at the University of Virginia in Charlottesville, and President of Cedar Creek Institute, a Virginia nonprofit research institute. He received his Ph.D. in psycholinguistics and cognitive science from Harvard in 1971, and spent the next 15-plus years working nearly full-time in parapsychology, initially at J. B. Rhine's Institute for Parapsychology in Durham, North Carolina; then through the Department of Electrical Engineering at Duke University; and finally through Spring Creek Institute in Chapel Hill, North Carolina. During this period, he published papers on a variety of experimental, methodological, and theoretical topics in parapsychology and a book on *Computer Recognition of English Word Senses* (with P. J. Stone, Elsevier-North Holland, 1975). Between 1988 and 2002, he worked with a large neuroscience group at UNC-Chapel Hill, mainly carrying out EEG and fMRI studies of human somatosensory cortical adaptation to natural tactile stimuli. He returned full-time to psychical research in 2002, serving first as lead author of *Irreducible Mind: Toward a Psychology for the 21st Century* (with Emily Williams Kelly, Adam Crabtree, Alan Gauld, Bruce Greyson, and Michael Grosso, Rowman and Littlefield, 2007), which systematically updates and reinforces the classic work of F. W. H. Myers in light of the subsequent century of relevant empirical and theoretical effort on mind-brain issues. He has now returned to his central long-term research interest—application of modern functional neuroimaging methods to detailed psychophysiological studies of altered states of consciousness and psi in exceptional subjects.

RAFAEL G. LOCKE is currently the National Director of Ikon Institute, which he founded in Australia in 1988. He obtained his Ph.D. at the University of Western Australia and then undertook postdoctoral research at Harvard and MIT. He was a member of the team conducting research on altered states of consciousness and psi through the Department of Electrical Engineering at Duke University and the Spring Creek Institute in the 1980s. Since 1988, he has undertaken extensive research in cross-cultural medicine and psychiatry and, out of this, has developed a number of therapeutic innovations for the treatment of alcoholism in indigenous people, details of which have been published in a number of papers and research reports. In the last 20 years, he has developed a set of professional education programs ranging from diploma to doctoral levels in transpersonal psychotherapy and offered through Ikon. He also founded a national medicine society in 1989 which is dedicated to the preservation and teaching of traditional healing methods and which is complementary to Ikon. Much of his anthropological work since 1981 is contained in the volume, *The Gift of Proteus: Shamanism and the Transformation of Being* (1999), which extends and consolidates the Monograph's research model and direction. He is currently preparing a new volume, *Throwing the Bones: A Handbook of Shamanic Practice,* which is a detailed analysis of shamanism and its relation to contemporary healthcare practice, while working in cooperation with the Cedar Creek Institute to further joint research aims. His current research focus is on the phenomenology of altered states of consciousness and the adaptation of research findings into new therapeutic and human development technologies.

❖ *Index*

❖ *Parapsychology Foundation*

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