In the Esalen Institute Transformation Project we are developing an archive of scientific studies concerned with exceptional psychophysical capacities that appear in sport, contemplative practice, the performing arts and other disciplines. In a related and recent study of sport participants, a colleague, Rhea White, and I (Murphy & White, 1978) collected several thousand incidents of altered mental states, paranormal experiences and extraordinary physical feats. Many of these incidents resemble stories and reports of yogis, Zen masters, Sufis and other adepts of the contemplative traditions. It seems fair to say that any serious student of such traditional yogic disciplines who considers reports by athletes of their interior states can find clear correspondences between the two fields of experience.

Our survey described several kinds of experience resembling accounts in the ancient transformative disciplines-states of peace and calm, of inner freedom, of extraordinary detachment from self and environment, of great self-control, of deeply felt mystery and awe, of a sense of immortality, of unity and ecstasy. Reading through the thousands of examples we collected, I became convinced that there are deep structural similarities between these two worlds of experience, yogic and athletic. Further careful comparison indicates that we may be able to learn much from both of them about human reserves and capacities.

More recently, our survey has grown to include other fields of human endeavor that seem fertile in this regard. We are looking for patterns that connect events as disparate as championship performance in sport, spontaneous remission from

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The purpose of the study is to identify the personality patterns, environmental conditions and disciplines that may have the capacity to extend the limits of human organismic development. In this we are guided by the notion that the limits of human psychophysical development have not yet been reached.

Biofeedback research results are also guided by the assumption that self-awareness is an essential component in physical and psychophysical self-mastery. Biofeedback research, for example, has shown us that nearly any aspect of a person's chemistry or physiology that can be brought to awareness, either directly or through monitoring instruments, may become accessible to conscious control, either in whole or in part. Heart rate, muscle tension, lymph flow, blood flow, blood pressure, gastrointestinal functions, air flow in bronchial tubes, and various electrical characteristics of skin and brain have been brought under conscious self-direction by many research subjects in Europe, the Soviet Union and the United States (Brown, 1974). Such techniques of voluntary psychophysiologic control have been effectively applied to the treatment of Reynaud's disease, Parkinson's disease, migraine headaches, hypertension, asthma, epilepsy and cerebral palsy (Green & Green, 1977). Basmajian (1963, 1967) has reported on the voluntary control of a single motor unit through auditory and visual feedback from electrodes placed in a thumb muscle; subjects in his experiments learned to produce nerve impulses such as doublets, triplets, gallop rhythms and drum rolls at will after sixty to ninety minutes of training. Engel (1975) has shown that some people can learn to control individual sections of the heartbeat. Recent unpublished pilot studies in California have demonstrated a person's ability to influence blood sugar levels at will (Schmitt, 1979). Green & Green (1977) have documented some of these findings and other related reports.

There is a large and growing literature about similar research in other self-awareness procedures. Autogenic Training (Luthe, 1963) and Psychical Self-Regulation (Romen, Inyushin, et al., 1973; Romen, Beyasheva, et al., 1974), for example, have been used to relieve dozens of human afflictions and to increase athletic excellence, Gestalt Therapy (Perls, Hefferline, & Goodman, 1977), Sensory Awareness (Brooks, 1974) and other psychosomatic methods developed during the last fifty years have been applied usefully in the treatment of mental and physical disorders,
In 1967 and 1968 Esalen Institute sponsored a comprehensive cataloguing of self-awareness disciplines (Peterson, 1973). These ranged from ancient methods such as Hatha Yoga and Tai Chi Chuan to contemporary approaches like psychoanalysis. More than two hundred such disciplines in use at the time were identified. These two hundred approaches included more than ten thousand specific techniques such as the dream association of psychoanalysis or a particular asana (meditative posture) of Hatha Yoga. A review of this inventory has led to a preliminary comparative analysis of these self-awareness disciplines to find their most essential psychophysical processes. At this stage of our analysis I have found some sixteen or seventeen such processes, or "transformational modalities," that may be inherent in human functioning. These essential processes, for the most part, appear to operate normally in everyday life but in a tentative, half-conscious way. At this time my analysis includes: visualization, the imaginative picturing of a desired behavior or state of mind; something we might call "inner seeing," an apparent direct perception of bodily structures or processes that are usually invisible to us; mental detachment, the distancing we can effect from our own feelings, imaginings, ideas, perceptions, pains or pleasures; "inner hearing" (of rhythms, melodies or background noise that convey information and pleasure); enhanced kinesthesis; rapport with one's environment (both internal and external); emotional release and catharsis; self-actualizing will; quieting of the mind and emotions; concentration; surrender to emotions and ideas that enlarge the personality; empathy; and identification with the object of perception.

These processes, and perhaps three or four others, could constitute a table of the psychic elements from which we might construct more effective methods for developing awareness and self-transformation, building upon organismic processes already at work within us. The literature of the past suggests that nearly all of these processes were cultivated somewhere, at some period in human history. And nearly all of them arise spontaneously in people who do not expect or do not welcome them. Apparently they cannot be suppressed completely, even in cultures that are generally blind to their existence.

In our time, interest in such phenomena is increasing. This is indicated in the development of psychophysical training and therapeutic procedures, in the scientific investigation of altered states of consciousness, and in the infusion of Eastern psycho-spiritual disciplines into the West. The project described briefly in this paper takes cognizance of these developments. Though we are primarily concerned with basic theoretical issues, we also recognize practical applications that might
practical applications

be derived from such research, such as increased athletic performance, creative work in the arts, more effective education and treatment of disease. We are also aware that the study of higher levels of psychophysical integration may reveal new knowledge about the fundamental structure of the mind. Such knowledge could help us to develop more effective approaches to self-transformation.

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