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This paper examines the relationship of educational goals to some fundamental beliefs. Four research findings judged as well-substantiated but not yet having full effect on educational thinking were considered: (1) The breadth and magnitude of human capacities and resources far exceed present levels of actualization within persons or societies; (2) world and self-perceptions are strongly conditioned by familial and social learning, as well as by personal needs and motives; (3) unconscious processes comprise a major portion of significant human experience (perceiving, learning, thinking); (4) basic attitudes and beliefs (self and world views), conscious and unconscious, tend to be self-fulfilling. Educational policy implications of these findings are discussed and it is suggested that their interpretation depends upon basic philosophical assumptions which underlie the specific research and the research methodology. A classification is made of sets of basic assumptions. A 46-item bibliography is included. (Author/MLF)

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BELIEF SYSTEMS, SCIENTIFIC FINDINGS, AND EDUCATIONAL POLICY

by

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POLICY RESEARCH REPORT

A Policy Research Report is an official document of the Educational Policy Research Center. It presents results of work directed toward specific research objectives. The report is a comprehensive treatment of the objectives, scope, methodology, data, analyses, and conclusions, and presents the background, practical significance, and technical information required for a complete and full understanding of the research activity. The report is designed to be directly useful to educational policy makers.

RESEARCH MEMORANDUM

A Research Memorandum is a working paper that presents the results of work in progress. The purpose of the Research Memorandum is to invite comment on research in progress. It is a comprehensive treatment of a single research area or of a facet of a research area within a larger field of study. The Memorandum presents the background, objectives, scope, summary, and conclusions, as well as method and approach, in a condensed form. Since it presents views and conclusions drawn during the progress of research activity, it may be expanded or modified in the light of further research.

RESEARCH NOTE

A Research Note is a working paper that presents the results of study related to a single phase or factor of a research problem. It also may present preliminary exploration of an educational policy issue or an interim report which may later appear as a larger study. The purpose of the Research Note is to instigate discussion and criticism. It presents the concepts, findings, and/or conclusions of the author. It may be altered, expanded, or withdrawn at any time.

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PART 6

BELIEF SYSTEMS, SCIENTIFIC FINDINGS, AND EDUCATIONAL POLICY

Willis W. Harman

I GOALS, BELIEFS, AND BASIC ASSUMPTIONS

Educational policy inevitably reflects an underlying belief system. When positions are taken on issues of curriculum content, or on special programs for the economically and culturally disadvantaged, or on the tolerance of segregated schools, or on the automation of education--all of these choices imply some belief system. The policy choice can be seen with more clarity if its relationship to these more basic belief issues can be clarified. In this research task we have attempted to take a particular policy issue, namely what the goals of education should be, and to trace this down to more basic belief issues.

It is our contention that one of the important functions of an Educational Policy Research Center--not a major one in terms of total resources spent, perhaps, but an essential one--is to ferret out and illuminate the "issues behind the issues." The existence of this kind of inquiry in the Center is prerequisite to its being able to do a sound job on the more visible kind of systems analysis and alternative futures research. The aim of this "backup" research is to challenge basic assumptions and to show the relationship of such challenging to practical educational problems and choices; to raise the questions that lie beneath the issues being debated in the public forum; to seek out the covert, implied choices which predispose toward or even predetermine the overt choices.

It has been said that democracy can function only by virtue of the existence of a certain amount of ambiguity. Political groups with diverse aims and quite different interpretations of a policy statement may none-

theless find in the ambiguous words of that statement a basis for working together. Thus at the level of political action, ambiguity may be functional. At the level of policy making, it is a hindrance. An appropriate aim of policy research is to move from ambiguity to clarity, from vagueness to precision, from apparent issues to hidden ones.

The relevance of this kind of inquiry to policy research can perhaps best be illustrated by an example. Suppose we take as a typical policy issue the problem of dealing with juvenile delinquency. Among the many questions involved is that of the kind of educational experience most likely to produce contributing members of society. One approach is based on the theory that desired behavior patterns as decided by society can be conditioned by providing suitable positive reinforcement. A quite different approach depends primarily upon intrinsic rather than extrinsic motivation and eschews external rewards and prods; it would put more emphasis on trying to understand the message the deviant is communicating with his behavior. The basic assumptions as regards "What Makes Sammy Run" seem at odds, and yet both types of programs are apparently capable of producing similar results (the former at the National Training School for Boys, the latter at the Advancement School).

Turning to the scientific literature fails to resolve the question of whether one will do better placing his bets on extrinsic or intrinsic motivation. On the one hand there is the large body of experimental research on motivation centering around the concept of primary or physiological motivation, and secondary or learned motivation. This picture strongly suggests the efficacy of operant conditioning to produce desired behavior change. But in contrast to this is the literature in such fields as child development, psychotherapy, creativity, etc. which assumes or implies some inner motivation to accomplish the next normal stage of growth and to actualize latent potentialities. Since programs for change are built around conceptual models of how change takes place, this would seem to be a not unimportant issue. Perhaps either conceptual model produces results if the practitioners believe in it. Or perhaps some crucial experiment will eventually show that one model--physiologically based motivation or growth motivation--"fits the facts" and the other does not. To evaluate these conjectures requires probing deeper still.

Thus we propose to examine the relationship of educational goals to some fundamental beliefs. It seems self-evident that educational aims and methods will vary radically depending on whether man is viewed as being wholly conditioned and determined, or as driven by asocial and instinctual drives which require restraint, or as possessing a basic growth motivation to become his highest potentialities, or as basically a sinner in a universe of unrelenting spiritual law. Such beliefs are, of course, constantly being formed, substantiated, and changed by the findings of on-going research in the behavioral sciences. It is to the somewhat reciprocal relationships between basic beliefs and research findings that we wish to direct our attention. Reciprocal, because it is uncertain to what extent the beliefs shape the interpretation of the findings, even as the findings shape the beliefs.

In what follows we are attempting to:

1. List four important and education-relevant research findings which at this point are well substantiated but have probably not yet had their full effect on educational thinking;
2. Discuss briefly their implications for educational policy, and suggest how their interpretation depends upon basic philosophical assumptions which underlie the specific research and even the research methodology;
3. Attempt a classification of sets of basic assumptions which will facilitate further examination of the interpretations; and
4. Discuss briefly the implications for educational policy of the existence in society of these diverse sets of assumptions.

II SOME WELL ESTABLISHED FINDINGS WITH IMPORTANT IMPLICATIONS

Four sets of findings will be discussed. These all would seem to have important implications for educational policy and also are sufficiently well documented as to command some degree of general acceptance. These findings are summarized in four propositions, listed below and also in Table I.

1. The breadth and magnitude of human capacities and resources far exceed present levels of actualization within persons or societies.
 - a. The ratio of latent to manifest capacity indicates that only a small fraction of human potentialities is currently being actualized.
 - b. Latent-manifest discrepancies (underdevelopment) is particularly apparent regarding perceptual and emotional sensitivity/awareness, empathic communication, altruistic love (toward persons, materials, objects), creative imagination, and creative life styles.

The research areas which support these conclusions are varied indeed. They include studies of creativity, hypnosis, and psychotherapy; data on sensory deprivation, psychopharmacology, small-group processes, educational technology, stress research, and expectancy-set studies. In addition, depending on the interpretation of the data, the areas of parapsychology and of consciousness expansion through both drug and nondrug procedures, might also be included.

These research areas, which also furnish evidence relating to the other three listed propositions are summarized briefly in Appendix A. The following partial list of specific substantiation indicates the richness of the supporting data.

- Demonstrated increased access to and utilization of (through intervention, technique, or change process) conscious processes, e.g., eidetic perception, memory, intelligence, will power, divergent thinking, reading ability, problem solving ability, etc.
- Demonstrated increased access to and utilization of (again through intervention, technique, or change process) unconscious processes, e.g., imaginal thought; hypnagogic imagery; expanded

TABLE I

SOME WELL-ESTABLISHED FINDINGS
WITH IMPORTANT EDUCATIONAL IMPLICATIONS

1. The breadth and magnitude of human capacities and resources far exceed present levels of actualization within persons or societies.
 - a. The ratio of latent to manifest capacity indicates that only a small fraction of human potentialities is currently being actualized.
 - b. Latent-manifest discrepancies (underdevelopment) is particularly apparent regarding perceptual and emotional sensitivity/awareness, empathic communication, altruistic love (toward persons, materials, objects), imagination, and creative life styles.
2. World- and self-perceptions are strongly conditioned by familial and social learning as well as personal needs and motives.
 - a. The nature and scope of self-expectations constitute a major determinant of actualized potential.
 - b. The expectations of others strongly influence self-expectations and may impair or enhance actualization of potentialities.
 - c. Self-expectations are generally lower and narrower than optimal (or maximal) and as a result severely limit full actualization of one's capacities.
3. Unconscious processes comprise a major portion of significant human experience (perceiving, learning, thinking)
 - a. Access to unconscious processes is facilitated by attention to feelings and emotions.
 - b. Access to unconscious processes is facilitated by imaginal thought (visual imagery) in contrast to verbal-associative thought.
4. Basic attitudes and beliefs (self- and world-views), conscious and unconscious, tend to be self-fulfilling.

B. The Basis for Preference

A major concern of the scientific and scholarly enterprise is to establish which among competitive conceptual models is most true to human experience, and hence most appropriate to be transmitted by education and to guide the policies of society.

There is as a consequence some tendency to assume that the choice among these sets of assumptions is either settled by science, or ultimately will be settled through some sequence of crucial experiments. It is important to note that this may not be the case--that crucial experiments to choose between two sets of basic assumptions may conceivably be impossible even in principle. Consider, particularly, the dichotomy between the positivist and transcendentalist positions with regard to the epistemological question of how does man acquire knowledge. To ask for a crucial experiment to decide between these may be a bit like asking for a crucial experiment to demonstrate whether it is better to picture light as particles or waves.

Take for example the alleged and debatable phenomena of extrasensory perception. If there is any one demonstrated finding in this area, it is that the greater are the precautions and meticulousness utilized in seeking a more controlled experiment, the more the phenomenon being pursued seems to fly out the window. From the positivistic frame of reference, and probably to most scientists, this fact makes it extremely doubtful that there is any new phenomenon here at all. The basic criterion of reproducibility for valid scientific evidence appears to be unmet. But in examining the questions of crucial experiments, it is essential to view the experiment from both contending frames of reference. If we hypothesize that transcendentalist premises are true, then it is not at all surprising that there might be a pronounced "observer effect," such that the skepticism of observers might negatively affect experimental results.

Thus, a negative result on a rigidly controlled ESP card-guessing experiment may not be so conclusive as might appear at first glance. The phenomena described in the volume of anecdotal data on supposed ESP

Here again the supporting research comes from a variety of areas and is summarized in Appendix A. We present here only a few highlighting substantiations:

- Anthropological studies indicating that perceptions of self, others, and the environment are highly influenced by the culture in which one is immersed
 - Clinical data from psychotherapy indicating the extent to which each individual has his own set of distorting lenses (e.g., the paranoid "sees" the world in a vastly different way from the majority of his neighbors)
 - Research on visual perception indicating the extent to which what is perceived depends on past orderings of perceptions (e.g., the Ames demonstrations), on felt needs, on expectations, and on the influence of important others (e.g., the Asch experiments)
 - Studies of authoritarianism and prejudice, indicating the extent to which other persons are seen in terms of stereotypes
 - Examples from the history of science illustrating how new conceptualizations have resulted in new ways of perceiving the world
 - Research on the role of self-expectations in limiting academic achievement of underperforming children
 - Hypnosis research demonstrating the effect of suggestion-induced expectations
 - Anecdotal data relating to behavior changes induced by self-image change following plastic surgery
 - Research on performance level as related to expectancy set
 - Athletic coaching practices utilizing deliberate enlargement of self-expectations
 - Effects of experimenter expectations in research on animal learning
 - Studies of student performance enhancement through teacher expectations (e.g., the Rosenthal-Jacobson study)
 - Expectation-performance relationships in studies of conquered peoples, prison-camp populations, etc.
 - Anecdotal data from executive training seminars based on the principle of altering self-expectations through autosuggestion
3. Unconscious processes comprise a major portion of significant human experience (perceiving, learning, thinking)
- a. Access to unconscious processes is facilitated by attention to feelings and emotions.

- b. Access to unconscious processes is facilitated by imaginal thought (visual imagery) in contrast to verbal-associative thought.

Here again there is supporting evidence in all the research areas summarized in the Appendix. A few specific examples will be listed here:

- Clinical data from the field of psychotherapy (in which a significant if not a major portion of the conceptual models used imply the importance of unconscious processes)
 - Studies of dreaming, of the hypnagogic state, of the hypnotic retrieval of "forgotten material," of subliminal perception, etc.
 - Studies of the effects of sensory deprivation, hallucinogenic and psychedelic drugs, etc.
 - Studies of repression and recall
 - Anecdotal data from creative persons, "Synectics" groups, etc.
4. Basic attitudes and beliefs (self- and world-views), conscious and unconscious, tend to be self-fulfilling.

This again is supported by a great deal of data, experimental and anecdotal, including the following:

- The sociological theorem of W. I. Thomas, "If men define situations as real, they are real in their consequences."
- Research on expectancy set, experimenter beliefs, and placebo effect in studies of psychotropic drugs, hypnotic phenomena, hypnotic susceptibility, sensory deprivation, etc.
- Anecdotal data and case studies in psychotherapy
- Anecdotal data from executive training courses exploiting positive expectations
- Work of the Nancy school of psychology (Émile Coué et al).

III RELATIONSHIP TO EDUCATIONAL POLICY

Let us suppose, as seems indicated thus far in research relating to these four findings, that continued research continues to substantiate these four propositions to greater and greater extent. What then would be some of the implications for educational policy?

It seems clear enough that if a major or even significant component of significant human experiences is made up of unconscious processes, that a significant task of education might well be to learn more about those processes. This is particularly true if, as seems indicated, the role of the unconscious processes is not only involved with the basic dynamics of action and the control and socialization of those forces, but also with the highest forms of creative, imaginative, intuitive, altruistic, moral artistic, and intellectual insight and behavior. Furthermore, if access to and utilization of unconscious processes is intimately related to attention to feelings and emotions, these (the much-talked-about "affective domain") would require increased emphasis. Again, if self-expectations and self-image are as important as seem indicated, the deliberate development of a high self-image would seem to command almost central attention in curriculum and program planning. And surely, there would be the most pervasive educational implications if the situation with regard to degree of actualization of potentialities is assumed to be literally as William James described it:

I have no doubt whatever that most people live, whether physically, intellectually or morally, in a very restricted circle of their potential being. They make use of a very small portion of their possible consciousness, and of their soul's resources in general, much like a man who, out of his whole bodily organism, should get into a habit of using and moving only his little finger... The so-called "normal man" of commerce, so to speak, the healthy philistine, is a mere extract from the potentially realizable individual whom he represents, and we all have reservoirs of life to draw upon, of which we do not dream. (In "Letter to W. Lutoslawski," William James on Psychical Research, Gardner Murphy, ed.)

If any of these changes in educational programs were to be instituted, the requirements as regards characteristics and capabilities of staff would be markedly altered. This would imply drastic changes in recruitment and training of teachers, and this in turn in the faculties and programs of teacher-training institutions. It would also require considerable changing of the expectations of parents and community as to what the schools and colleges are about.

The purpose of this discussion is definitely not to specifically recommend such sweeping changes. It is rather, to examine the relationship between scientific findings and conceptualizations, on the one hand, and educational policies on the other. The link upon which we shall concentrate is the basic belief system within which the research findings are interpreted and such interpretations lead to policies.

It is worth noting, however, that some of the discontent of contemporary college students with conventional course offerings, which has resulted in some cases in the setting up of student-run "free" or "experimental" universities, relates to these four findings. Their expressed concern is with such matters as actualizing human potentialities, reducing cultural distortions in the perception of themselves and the world, exploring the reaches of consciousness, and increasing awareness and inner freedom. This is reflected in the kinds of courses offered by these organizations to fill the perceived lack. Some typical examples are:

Painting as a Journey into One's Self
The Free You; The Undiscovered Self
Human Contact
Zen Meditations
To be Gentle (teaching methods include sensory awareness,
sensitivity training, encounter groups, music,
dancing, massage, woodsing and beaching)
Religion and Radical Politics
Poetry Underground
Nonverbal Personal and Interpersonal Exploration
Explorations in Consciousness.

Before moving on to develop a methodological tool for examining these matters, we may pause to note that the four propositions chosen are not new discoveries to mankind. They have comprised an essential set

of beliefs in practically all the known major religious and esoteric philosophies, as is evidenced by the following brief selection of quotations from classical religious writings:

Man is made by his belief. . .As he believes, so he is

Bhagavad-Gita

All things are possible to him that believeth.

Mark 9:23

All that we are is the result of what we have thought:
It is founded on our thoughts, it is made up of our thoughts.

Dhammapada (Buddha)

Therefore I tell you, whatever you ask in prayer,
Believe that you receive it, and you will.

Mark 11:24

For truly, I say to you, if you have faith as a grain
of mustard seed, you will say to this mountain,
"Move hence to another place," and it will move;

Matthew 17:20

It is wisdom to know others;
It is enlightenment to know one's self.

Lao Tzu

Know this Atman
Unborn, undying,
Never ceasing,
Never beginning,
Deathless, birthless,
Unchanging forever.

Bhagavad-Gita

Jesus said: Let him who seeks not cease in his seeking
until he finds; and when he finds. . . he will marvel,
and will be a king over the All.

The Gnostic Gospel of Thomas

More than that, this set of beliefs was at issue in the case of the Gnostic heresies and played a role in the Inquisition. The same set of beliefs was involved in the attacks on early scientific work in hypnotism, "genius" (now creativity), and psychoanalysis. Research in these directions, except under the direct control of the State, was outlawed in Soviet Russia in 1922 and in Nazi Germany in 1934. These propositions clearly represent a not-very-neutral set of "facts."

IV SOME UNDERLYING BASIC ASSUMPTIONS

In attempting to trace this down to more basic issues, we will follow the lead of F. Kluckhohn in making the assumption that:

...there is a limited number of common human problems for which all peoples at all times must find some solution. This is the universal aspect of value orientations because the common human problems arise inevitably out of the human situation. The second assumption is that while there is variability in solutions of all problems, it is neither limitless nor random but is definitely variable within a range of possible solutions. The third assumption . . . is that all alternatives of all solutions are present in all societies at all times but are differentially preferred. Every society has, in addition to its dominant profile of value orientations, numerous variant or substitute profiles.

Of the crucial belief- and value-issues singled out by Kluckhohn as crucial, we will take a subset which appears to be adequate for our purposes. If we take a list of the major controversies through the centuries in the areas of science, philosophy, education and social thought, and attempt to reduce them down to the underlying basic philosophical issues, the number of these is relatively few. A useful degree of simplification is obtained by making a taxonomy of basic assumptions around the answers to only three major philosophical issues:

1. How does man acquire knowledge? Is all knowledge in the last analysis shaped exclusively from the inputs of his physical senses, or is there some kind of intuitive knowledge which is also valid? Or can he gain knowledge by revelations or instinctual heredity or extrasensory perception?
2. What is the direction of ultimate "explanations" of phenomena? Do we feel that we are moving closer to understanding a phenomenon when we relate it to elemental events of which it is apparently composed? Or when we experience it fully and existentially? Or when we attribute it to God's will?

3. What is the direction of ultimate "explanations" of motivations, needs, goals, values? Do we feel that we are moving closer to understanding a man's action when we relate it to elemental biochemical tensions? Or to his conscious decision? Or to an unconscious conflict between the id and super-ego? Or to some evolutionary cosmic force?

It is unnecessary to note that opinions on these matters differ. Bitter battles have been fought through the ages over issues which are reducible to these questions. Educational policy in all societies has assumed some position with regard to these questions--not always, of course, the same one. Our present educational practice is semipluralistic, tending to support some divergent answers and to suppress others.

A. Five Sets of Basic Assumptions

Probably the most significant point of division among sets of answers to these three questions is the positivist-transcendentalist dichotomy. The positivist position is that positive knowledge is based solely upon empirical observation, having as elemental data the inputs to the physical senses. The transcendentalist position asserts the primacy of the existential, spiritual, and transcendental over the material and empirical.

The positivist position can be subdivided into the mechanist position that life processes are mechanically determined and explainable by the laws of physics and chemistry, and the instinctivist position that human strivings can be understood as expressions of a basic set of irreducible instinctual energies and desires. These in turn subdivide into a myriad of schools of thought, with varying degrees of self-consistency. Similarly, the basic transcendentalist position subdivides into a vast number of humanistic and religious positions.

A preliminary sorting of the literature and comparison of various conceptual formulations has led to the tentative conclusion that most contemporary belief systems are built around one of five sets of fundamental assumptions ("basic beliefs" in the sense defined by Rokeach, 1960, "which in the ordinary course of events the person does not feel it

necessary to question "). These are listed below and defined in terms of their answers to the three fundamental philosophical issues in Tables II-VI:

<u>Positivist-behaviorist</u>	Dominated the mechanistic science of the 19th century and has a strong influence in modern behavioral science
<u>Dynamic psychology</u>	Basically a 20th-century post-Freudian point of view
<u>Humanistic-existential</u>	A persistent mainstream in the humanities; significant in science only in about the last two decades
<u>Creationist</u>	Dominant in the Middle Ages and in early science; an important influence in education at virtually all times and places in Western civilization
<u>"Perennial philosophy"</u>	(The appellation is the title of Aldous Huxley's defining treatise.) Found sporadically, as in the Platonic tradition, in Meister Eckhart and the Rhineland mystics, in R.W. Emerson and the Transcendentalists, etc.

That such a formulation is of more than purely academic interest is indicated by the fact that it is not difficult to find schools and school systems which are clearly identifiable as operating on one or another of these sets of premises:

<u>Behaviorist</u>	National Training School (for delinquent boys)
<u>Dynamic psychology</u>	Psychoanalysis training schools
<u>Humanistic-existential</u>	National Training Laboratories; Advancement School (for delinquent boys), Adlerian schools, Summerhill, "humanistic schools" as listed by the American Society of Humanistic Education
<u>Creationist</u>	Parochial schools, theological seminaries
<u>"Perennial philosophy"</u>	Waldorf Schools.

TABLE II

MECHANIST-BEHAVIORIST ASSUMPTIONS

1. Knowledge is acquired through the physical senses.
2. Ultimate explanations are in terms of quantitative relationships among elementary events.
3. Motivations are ultimately physiologically based.

WORDS USED--experimental, operational, operant conditioning, stimulus-response, deterministic, prediction and control, etc.

JOURNALS--Journal of the Experimental Analysis of Behavior, Journal of Experimental Psychology, Psychonomics, etc.

TABLE III

DYNAMIC PSYCHOLOGY (NEO-FREUDIAN) ASSUMPTIONS

1. Thoughts, strivings, feelings, percepts are all in some sense basic data. These may include the products of inferred unconscious processes.
2. These all may be irreducible to physical and chemical phenomena, in practice if not essentially.
3. Motivations may be understood as transmutations or elaborations of physiological needs and as expressions of a basic set of instinctual energies and desires.

WORDS USED--libido, ego, id, psychoanalytic, psychosexual development, homeostasis, unconscious, etc.

JOURNALS--American Journal of Psychoanalysis, Psychiatry, Sociometry, Psychoanalytic Review, etc.

TABLE IV

HUMANISTIC-EXISTENTIAL ASSUMPTIONS

1. Knowledge is acquired by looking within as well as without, and one cannot, a priori, set limits as to how far intuitive, extrasensory knowledge may reach.
2. Fundamental to all else in the human experience is awareness. This is not ultimately explainable in terms of physical and chemical processes.
3. The fundamental motivation in man is his tendency to actualize his potentialities, his basic dynamic tending toward growth.

WORDS USED--phenomenology, self-actualization, being and becoming, self-awareness, intentionality, inner experience, etc.

JOURNALS--Journal of Individual Psychology, Journal of Applied Behavioral Science, Journal of Existential Psychology and Psychiatry, Journal of Humanistic Psychology, etc.

TABLE V

CREATIONIST ASSUMPTIONS

1. Knowledge comes not only through sensory experience but includes intuitive access to knowledge of the good, the true, and the beautiful.
2. Ultimate explanations are in terms of the ultimate purpose of the creator.
3. Man's behavior is a consequence both of causality and of human freedom: hence man has moral responsibility.

WORDS USED--revelation, morality, divine Absolute, God's Will, etc.

JOURNALS--Journal for the Scientific Study of Religion, etc.

TABLE VI

"PERENNIAL PHILOSOPHY" ASSUMPTIONS

1. It is possible for man to attain to a higher awareness, a cosmic consciousness, in which state he has immediate knowledge of a reality behind the real, a higher self behind his personal self.
2. Ultimate explanations are in terms of all beings united in one being, one single reality.
3. Behavior is directed by a higher consciousness of which the person is ordinarily unaware. Other explanations of motivation-physicalistic, instinctual, "free will"--are partial only.

WORDS USED--transhumanistic, metaphysical, the One, unity, monist, Vedantist, divinity in man, mystical union, Atman-Brahman, etc.

JOURNALS--International Journal of Parapsychology, Psychedelic Review, Newsletter-Review of R. M. Bucke Memorial Society, etc.

experiences could conceivably be completely valid, and this would not necessarily be inconsistent with the negative result on the controlled experiment.

Is the whole concept of a crucial experiment, then, a futile one? Perhaps so, in a strict sense, but this is a matter of degree and certainly does not imply a futility of doing anything. If nothing better, we can at least order the data that fit most congenially into the various sets of premises and clarify which model is most useful where. Our present situation is that this ordering has been done fairly thoroughly for some of the sets of premises and much less thoroughly for others.

This line of argument leads to a sixth possibility with regard to basic assumptions, a reconciliatory position. This is analogous to the situation in physics where there are experimental data that suggest a wave picture of light and also data that suggest a particle picture of light. These two sets of data have been reconciled by the position that any conceptual model expresses only an aspect of the reality, and that light as waves and light as particles are complementary rather than contradictory pictures. With this as a model, basic motivations for a specific human action can be described in different ways, for different purposes, without mutual contradiction. It is possible to describe a motivation as being a completely deterministic effect due to physiological tensions, or as a consequence of instinctual unconscious psychic forces, or as the result of a free human decision to act, or as a response to direction from a transcendental Overself (Emerson's Oversoul) without necessarily implying either mutual exclusion or mutual contradiction.

Some support for this position may be found in the doctrine, found in some contemporary psychological writings, that characteristic of those who are psychologically most whole, or "individuated" (Jung), or "self-actualizing" (Maslow), or "fully functioning" (Rogers), is a transcendence of opposites and of partial models. The following quotes are apropos:

The more we understand the whole of being, the more we can tolerate the simultaneous existence and perception of inconsistencies, of oppositions and of flat contradictions. These seem to be products of partial cognition, and fade away with cognition of the whole.

A. H. Maslow, Toward a Psychology of Being

Since the psychological self is a transcendental concept, expressing the totality of conscious and unconscious contents, it can be described only in antinomial terms (just as the transcendental nature of light can be expressed through the image of waves and particles). . . Attributes must be supplemented by their opposites if the transcendental situation is to be characterized correctly.

C. G. Jung, Aion

IV BASIC ASSUMPTIONS AND ALTERNATIVE FUTURES

It may seem that this is a great deal of fuss over an issue about which there exists little disagreement. Do we not have and intend to maintain in this country a tolerant pluralistic attitude toward different belief systems, and is not that pretty much the end of the matter? We think not.

There seems adequate reason to assume that a society is affected by, and perhaps even characterized by, the prevailing assumptions about the nature of man and his environment. An important part of the task of education in a society is precisely to pass on those assumptions which are embedded in the overall culture. If one of these sets of basic assumptions is dominant, or if there is a permissive pluralism which allows several of them to co-exist, this will affect the society and the educational system in various ways:

1. The structure of society is affected. The democratic political structure, our legal and criminal structure, our rehabilitative approach to deviant behavior, all are based on a preconception regarding the extent to which man is free to make a conscious choice. They would be far different if the predominant belief in this regard were to be altered.

2. The goals of education are affected. This becomes clear if we examine the nature of educational goals for each of the five sets of assumptions:

- Under the Behaviorist assumptions, the goals of education are to make men "happy, informed, skillful, well-behaved, and productive"* by acknowledging "that action is initiated by forces impinging upon the individual" and then by providing for the control of these forces by a behavioral technology.

* Skinner, B. F.; "Freedom and the Control of Men," American Scholar, No. 25 (1955), pp. 47-53.

- The Dynamic-Psychology point of view with its emphasis on the role of the unconscious and on instinctual forces tends to see education as largely a matter of socialization in the sense of necessarily learning to control instinctual needs, to exercise restraint, to delay satisfaction.
- The Humanistic Existentialists would see being and becoming, growth and self-actualization as goals of education, and they would tend to bring intrinsic motivation to bear on the growth tendencies of the individual.
- In the Creationist framework, we would expect education to place great emphasis on moral and spiritual development.
- In the Perennial Philosophy picture, educational goals would tend to have to do with enlightenment, with de-hypnotizing or escaping from the hypnotic effects of the culture--transcending the culture rather than becoming inculturated.

3. The interpretation of research findings is affected. Research findings relating to what lies behind men's actions are interpreted quite differently in a strict behaviorist framework and in a humanistic framework. The research findings on hypnosis in the last century were interpreted very differently by two embattled groups. The findings out of which modern evolutionary theory was constructed were interpreted very differently by other competent scholars (such as Lamarck, Agassiz, and Lord Kelvin) with different basic assumptions. In fact the history of science is in considerable measure a chronicling of conflicts over alternative interpretations of research findings.

4. Research undertaken is affected. With certain kinds of basic assumptions, McConnell's experiment involving the apparent transmission of memory through flatworms eating their trained brethren would hardly have appeared worth trying. With other assumptions, one would be unlikely to conceive of the research at Maimonedes Hospital involving apparent telepathic induction of dreams.

5. Research methodology is affected. Coombs (1964) has made the point persuasively that even what one perceives as data is affected by his basic assumptions. The Indian psychologist in Vedantist tradition, or even the phenomenology-oriented psychologist in Western world, takes as basic data a quite different set from the strict positivist-behaviorist

scientist. Another conspicuous difference arises regarding determinism as a methodological postulate.

A. Basic Assumptions and Educational Policy Issues

On the basis of the above arguments, we might feel justified in coming to the following conclusions:

- The shape of the future society and of its educational system is affected by the "dominant paradigm"--that is, by the set of underlying basic assumptions around which the prevailing belief system (with regard to the nature of man, his environment, and the good society) is built.
- Hence, controversy regarding these basic assumptions may be expected to underlie many educational policy issues of the future.
- Since choices with regard to these basic assumptions intimately affect educational goals, they affect every aspect of the educational system--curriculum, teacher recruitment, teacher training, administrative structure, physical structures, program design and flexibility.
- The collective decisions as to which of these shall be allowed to have a dominant role and which shall be subordinated to the role of deviant positions will be made (for the near future at least) on some basis other than crucial experiments which clearly show up one conceptual framework to be more in accord with human experience than the others.

Let us mention just two more educational policy issues where these choices among basic assumptions clearly play a part.

One example is in the matter of competing school systems. More and more frequently talked about is the hypothesis that a superior educational output, on the whole, might be brought about by encouraging the development of competing schools and school systems. There is some evidence (A. Rosenthal, 1967) to indicate that because of having different motivating forces, vested interests, and expectations, outside agencies are more successful than regular school systems in dealing with the education of the poverty group. Some European countries offer subsidization of education carried on by private and parochial schools up to a very high percentage of the total cost. There are some powerful arguments in support of the government, in effect, contracting out a portion of the educational task--both from the standpoint of probable increased effectiveness in

adapting educational processes to individual need levels and life styles, and from the standpoint of preservation of a wholesome degree of pluralism. But if we do move in this direction, we run head on into the conflict between sets of basic assumptions. For of the five sets of basic assumptions delineated, our present stance is to allow federal funds to be used in support of education oriented toward the first three, but not the last two.

The other example has to do with the problem of students from middle and upper-middle class homes "dropping out" as regards the conventional values of the Establishment. To greater or lesser degree, they may be activists and protestors, join Peace Corps or VISTA, be consciously unconventional in their sexual mores, or experiment with the drug scene. But mainly they want it known that they are rejecting what they perceive to be the values of conventional middle-class society around them, and espousing values such as self-awareness, meaningfulness, and intolerance of hypocrisy (see Table VII).

These students are saying as clearly as they know how that they have not found their educational experience relevant to life as they perceive it. We know how to give them what they will take to be relevant education, if we wish--through improved methodology in handling what Frazier (1967) terms "the lesser learning" or conventional curriculum of facts and skills and through a variety of approaches to "the larger learning" of awareness and self-actualization (Drews, 1967). (In fact we may be making some significant moves in this direction. The newly adopted "Aims of General Education" for San Francisco State College include encouragement of "creativity and aesthetic experience," "awareness of the sensory and motor functioning of the human body," "understanding of the concept of leisure," "development of expressive abilities--both verbal and nonverbal.") But the society is clearly not at all sure it approves of the new values.

The problem of the "generation gap" and the "creative dropouts" and the "hippie movement" (and, more recently, what might be termed the "post-hippie" movement involving "dropping in" to service activities) can hardly be handled creatively unless we can understand what the younger population

TABLE VII

VALUES OF THE "NEW BREED" OF COLLEGE STUDENTS*

Rejecting

Meaning centering around activity and achievement in a profession or business

Present experience shaped to career requirements, pursuit of status goals; self-discipline and hard work. Emotional life regulated and rationalized. Life orderly, well-housed, well-dressed, well-groomed, well-behaved.

High motivation to read and discuss material seen as related to status and professional achievement.

High level of consumption of material goods, largely in the context of the family. Strict separation between work and play.

Responsibility exclusively to one's own family, loyalty to one's firm.

Espousing

Meaning centering around authentic behavior, self-development and expression, human values, quality of relationships

Spontaneous response to the world, self-expression, individual autonomy, integrity, free flow of feelings and ideas as conducive to personal growth. (Pursuit of status goals, submission to impersonal authority, seen as hypocrisy, incompatible with personal integrity.)

Concern with beauty, sensitivity toward realm of feelings and emotions, enjoyment in free intellectual discussion.

Small concern with material goods; much with wholeness, integration of work, growth, and play.

Responsibility to the total human community

* Based on studies by J. Katz, P. Heist, and R. Flacks and on student interviews.

are saying. And this in part involves the matter of fundamental assumptions again. Their rejection of the Protestant Ethic involves a rejection of the instinctivist and creationist assumptions on which it is based. And their adoption into their way of life of psychedelic drugs and The Tibetan Book of the Dead and "transcendental meditation" involves espousal of humanistic-existential and "Perennial Philosophy" assumptions. The Protestant Ethic is not the only ethic which could derive from the Creationist assumptions, nor are the Hippie Ethic and the Seek-Nirvana-and-Let-the-World-Go-to-Hell Ethic the only ones derivable from the "Perennial Philosophy" assumptions. Nonetheless, concern over the use of psychedelic drugs and marihuana seems to be composed, at least as much, of alarm over espousal of "Perennial Philosophy" assumptions, with supposed accompanying abdication of social responsibility and gullible anti-scientific attitudes, as of alarm over physiological consequences.

B. The "Dominant Paradigm" a Dimension of Alternative Futures

Finally let us examine briefly the use of these sets of basic assumptions as a tool for examining alternative futures. More directly relevant to the educational undertaking than the more easily quantifiable economic and social indicators which serve as partial descriptions of the state of society are the dominant beliefs, values and attitudes. They comprise, in a sense, a more fundamental description than the economic and social indicators for they include the values and attitudes which will influence the society's acquisitiveness, law abiding tendencies, attempts to provide equality of opportunity, even population and migration tendencies.

If Rokeach (1960) is correct in his assertion that men's total belief-and-value systems tend to form around, and be more or less determined by, a rather small set of "basic beliefs," some suitable summary of these basic assumptions should be a useful descriptor of the state of society, both now and in various conceived alternative futures as affected by alternative educational policies.

To explore the utility of the five sets of basic assumptions in this respect, let us look at one of the more ambitious (and controversial) attempts to formulate the grand sweep of history. The sociologist Pitirim Sorokin has described the dominant value system in Western culture as alternating somewhat irregularly between sensate--predominantly materialistic, rational, empirical--and ideational, with more emphasis on the spiritual, intuitive, revealed and supersensory. Our present state, he argues, has some of the characteristics of the late sensate, characterized by elements of cynicism and nihilism. According to this analysis we might be headed either for another ideational stage, or for an integral stage characterized by a creative synthesis of sensate and ideational values. (See Table VIII)

The point we wish to note is that the sensate-ideational dichotomy is directly related to the positivist-transcendentalist division in basic assumptions. Furthermore, Sorokin's integral value system is essentially the sixth or reconciliatory position in our analysis of sets of basic assumptions.

John Radar Platt has argued, in The Step to Man (1966) (as have Kenneth Boulding (1966) and Teilhard de Chardin before him (1959)) that the present point in the history of man may be better viewed as a sudden step than as a point on an exponentially increasing curve. Platt's contention is that, as regards the major effects of the expanding technology on man's subjective existence, there will be a leveling off. The major features of the change are that man recognizes his role, as in Julian Huxley's phrase, "a trustee of evolution on this earth," and that mankind is evolving into an interdependent whole of which every person is called upon to become a vital part. The new man, "homo progressivus" in Teilhard de Chardin's words, is described by Lancelot Law Whyte as "unitary man," by Lewis Mumford as the "new person," and by Henry A. Murray as an "ally of the future."

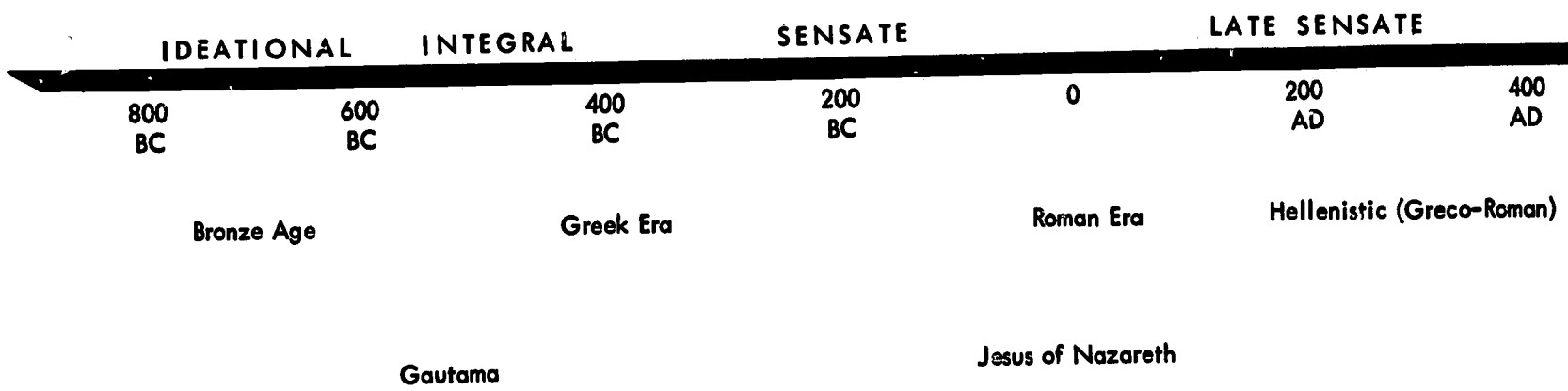
Characteristics of the new future (Sorokin's "integral culture," Teilhard de Chardin's "future man") as described by Platt include:

TABLE VIII

FOUR TYPES OF VALUE SYSTEMS

(After Sorokin)

<u>SENSATE</u>	<u>IDEATIONAL</u>	<u>LATE SENSATE</u>	<u>INTEGRAL</u>
Materialistic	Spiritual	Cynical	Rational-intuitive
Rational	Intuitive	Disillusioned	Scientific-religious
Scientific	Religious	Nihilistic	Sensory-suprasensory
Empirical	Revealed	Atheistic	Empirical-supraempirical
Agnostic	Dogmatic		
Positivist	Idealistic		
Sensory	Supersensory		
Utilitarian	Salvational		
Hedonistic	Moral		



CTIC

IDEATIONAL

INTEGRAL

SENSATE

LATE SENSATE

600
AD

800
AD

1000
AD

1200
AD

1400
AD

1600
AD

1800
AD

1900
AD

2000
AD

Middle Ages

Crusades

Renaissance

Reformation

The Industrial Revolution

The Atomic Age

Byzantine/Gothic

Romanesque

The Age of Discovery

Romantic Victorian

The Book of Kells
Mohammed

The Gutenberg Bible

- Travel, science, education, creative arts activities widespread
- High standard of social justice; elimination of unemployed, underprivileged, underdeveloped
- Acceptance of change, new ways of creative leisure and interaction, as interesting and satisfying way of life
- One coordinated world society
- Education conceived as a lifelong undertaking, a rewarding and deeply human experience.

Progression to this state is by no means automatically assured.

Various forces threaten the "step to man," including:

- Rebellion of "have-not" groups--Negro, poor, underdeveloped
- "Drop-out" tendencies of youth disillusioned with success-achievement
- Authoritarian thinking and tendencies
- International conflict

One can easily imagine a scenario in which the outcomes are quite other than those described by Platt. One such would involve more and more militant civil disorder and increasing demands for police action to quell the riots; increasing ghetto power and increasing opposition to the rise in ghetto power from other elements of society; gradual movement in the direction of an authoritarian police state and the lessening of individual freedoms; reduction in tolerance for other than the dominant belief-and-value system.

Education has a key role to play in determining which of these possible alternative futures comes to pass. In a sense, the major challenge to educational policy might be said to be to bring about the fulfillment of Arnold Toynbee's prophecy:

Our age will be well remembered. . . because it is the first generation since the dawn of history in which mankind dared to believe it practical to make the benefits of civilization available to the whole human race.

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Appendix A

RESEARCH BEARING ON THE "FOUR WELL-ESTABLISHED FINDINGS" OF TABLE I

Appendix A

I RESEARCH BEARING ON THE "FOUR WELL-ESTABLISHED FINDINGS" OF TABLE I

Research areas in which specific findings support the four propositions of Table I are varied, and include creativity, hypnosis, psychotherapy, sensory deprivation, EEG conditioning, sleep-dream cycles, psychopharmacology, small-group processes, educational technology, stress research, and expectancy-set studies. Brief reviews of these fields follow.

A. Creativity

A number of techniques including brainstorming (e.g. Osborn; Parnes & Meadow), divergent thinking tasks (Guilford), discovery methods (Bruner; Montessori), programmed learning (Anderson; Olton), free-association training (Maltzman; Mednick), Synectics (Gordon), psychotropic drugs (Krippner) have been reported to facilitate creative behavior. Subject samples employed in this extensive body of research range from pre-school children to college and adult education groups, from subjects at the retarded level to the gifted level, with both "high" and "low" creatives, and from such diverse groups as military officers, educators, and industrial personnel. Abilities and capacities enhanced include increased perceptual and emotional sensitivity (e.g. lower inhibition and anxiety, greater visual imagery and fantasy, higher empathy with external processes and objects, increased socialibility and empathy with people, greater accessibility to unconscious processes) and enhancement of cognitive functions (e.g. greater ability to concentrate, capacity to structure problems in a larger context, higher fluency and flexibility of ideation, ability to associate seemingly dissimilar elements in meaningful ways, capacity to visualize the completed solution in its entirety and increases in intellectual functioning i.e., IQ). Three conditions are common to all interventions: (1) subjects self-expectations are directed toward creative behaviors by verbal instructions,

(2) the environmental variables are facilitative, (3) the experimenter has expectations that creative activity will occur. Recent and representative reviews which substantiate these findings have been reported by Parnes (1967), Parnes & Brunelle (1967), Ray (1967) and Torrance (1967).

B. Hypnosis

Innumerable procedures have been effective in inducing the hypnotic state such as, direct suggestion (e.g., Barber), role-taking (Sarbin), conditioning (Salter), sensorimotor-ideation deprivation (Gil & Brenman), goal-directed striving (White) including an assortment of mechanical, electrical, and pharmacological agents. Two factors are characteristic of all approaches: these are (1) relaxation and reduction of sensory input, and (2) the presence of an operator who administers the suggestions. The interaction of set and expectancies of subject and operator can inhibit or facilitate the induction process. These techniques have been applied to subjects ranging from neurotic to medical patients, various normal samples (e.g., college students, executives and children), to subjects with superior talents. Capacities enhanced include lowered sensory thresholds, increased sensory acuity and control over autonomic functions (e.g., pulse rate, galvanic skin response, pupillary reflexes, gastric contractions, tolerance for pain, increased muscular strength and resistance to fatigue). Other abilities increased are learning, memory, memory recall and age regression; extrasensory acts of perception and intelligence. This evidence has been extensively evaluated and confirmed in critiques by Hilgard (1965a,b), Moss (1965), and Weitzenhoffer (1963).

C. Psychotherapy

A wide range of psychotherapeutic methods including one-to-one techniques (e.g., Psychoanalytic, Neo-Freudian, Rogerian, Existential, and Operant methods) and group procedures (e.g., Analytic, Marathon, Synanon) have demonstrated relatively permanent enhancement of capacities such as greater access to and utilization of both conscious and unconscious processes (see above), as well as increased emotional and perceptual sensitivity especially toward self and others. Interestingly,

the similarity between client-therapist interactions and optimal student-teacher relationship has been noted by a number of investigators. Representative critiques of extensive empirical evidence on effective psychotherapies may be found in Goldstein & Dean (1966), and Stollak et. al. (1966).

D. Sensory Deprivation

In addition to extensive anecdotal evidence, a number of isolation procedures (e.g. water tank immersion, isolation rooms and tank-like respirators) have been employed to alter perceptual and cognitive functioning. Groups of subjects studied range from psychiatric patients, college students, and normals from various sub-populations. Capacities reportedly enhanced in this work include lowered sensory thresholds for kinesthetic stimuli, heightened visual imagery and auditory awareness, and increased attention to feelings and emotions. Subjects' experiences of positive or negative affects have been interpreted as the result of subject variables (e.g. set and expectations, personality structure, and level of personal integration) and experimenter variables (e.g. expectations, instructions) or interaction of these variables. Cross-validated findings of capacity enhancement have been extensively reviewed by Brownfield (1965), Solomon (1961), and Zuckerman (1964).

E. Alpha Conditioning and Sleep Dream Cycles

A relatively recent development in psychological research is the conditioning and self-control of Alpha EEG activity in order to achieve "expanded" states of consciousness. Interventions that have been effective in altering and controlling cortical activity, such as meditation (Deikman; Maupin), yoga (Anand; Gastaut), and operant conditioning (Kamiya), have been studied with such diverse groups as soldiers, artists, bus drivers, zen disciples, college students, and other normal samples. The subjective effects of these experiences are similar to those described by Maslow as "peak experiences." "Peak experiences" are characteristic of self-actualized people and their capacity to experience moments of great happiness and fulfillment such as love, parenthood, mystical and oceanic feelings, orgasm, and moments

of artistic, creative and intellectual achievement. Subjects report long term enhancement of attentional and perceptual processes (e.g. awareness of internal and external stimuli) and overall personal functioning. Physiological effects associated with these procedures include increased amounts of Alpha activity, even with eyes open; slowing of respiratory rate, in some cases to 2-3 per minute; remarkable decreases in metabolic rate, as much as 20-30% below the basal rate. Summaries of these techniques and their effects have been made by Deikman (1966), Hart (1967), Kamiya (1964) and Maupin (1962).

Studies on the nature of sleep and dream activity have been conducted (e.g. by Dement, Schonbar, and Singer); in addition, extensive experimental work in these areas is now in progress. The findings suggest that interruption of sleep-dream cycles results in adverse effects on behavior and over-all personal functioning.

F. Psychopharmacology

A variety of psychotropic drugs (e.g. LSD-25, Ribaminol, amphetamines) have been administered to a number of diverse groups ranging from neurotics and schizophrenics to normals, including prisoners, college students and creative artists. Application of various psychotropic agents have reportedly resulted in both immediate and fairly long term enhancement of recall, access to unconscious process, greater emotional sensitivity to self and others, distal memory (Glasky & Simon), greater intellectual capacity (higher IQ), increased sensory-physical awareness, and greater fluency and flexibility of ideation. Overviews and critiques of research findings have been made by Hoffer (1965), Mogar (1965), and Abrahamson (1967). Anecdotal data on subjective experiences is found in Masters (1966) and Cohen (1965).

G. Small Group Processes

A wide range of techniques (e.g. basic encounter groups, psychodrama, sensitivity training, and TORI process groups) have enhanced over-all functioning of individuals and groups i.e., improved intra- and interpersonal behavior. These techniques have also been effective in facilitating organizational change. Group procedures have been

successfully applied with subject samples ranging from elementary school children to college and adult education students, executives, managerial, and industrial personnel, high level scientists and engineers, architects and artists, educators and embassy personnel. In large part, the findings in small group research match the major outcomes of creativity-enhancement studies (see above). Evaluation of these procedures and their positive effects have been reviewed by Altman and McGrath (1966), Malamud and Solomon (1965), Schein and Bennis (1965).

H. Educational Technology

The development of technological procedures to enhance learning (e.g. teaching machines, and audio-visual materials like recordings, films, closed circuit television and computer-simulation devices) have been successfully used with subjects at all grade levels, including pre-school children. Capacities enhanced include attentional and cognitive functions (e.g. greater ability and willingness to concentrate, improved memory and recall ability, increases in IQ on verbal and non-verbal factors, greater verbal and ideational fluency and flexibility) and improved personal-social adjustment. Extensive summaries of technological innovations and their impact upon learning and education have been reported by Jones (1967), and Rossi and Biddle (1967).

I. Self-and Other Expectations

If one were to seek a unifying principle in the areas reviewed, it would be the interaction effect of self and experimenter expectations. The expectations of others strongly influence self-expectations and may impair or enhance the actualization of human potentialities. Maximum congruence of these two social-psychological factors, in terms of positive expectations, can result in the enhancement of capacities and abilities that might otherwise remain untapped. Thus, basic attitudes and beliefs, conscious and unconscious tend to be self-fulfilling. Robert Rosenthal, in a forthcoming book (in press), summarizes the dramatic effects and implications of this principle in relation to education and human development.

J. Parapsychology

While the experimental data in the fields of extrasensory perception and psychokinesis are inconclusive according to Hansel (1966) and Sudre (1960), the issues raised would seem to be of the utmost philosophical importance according to Murphy (1961) and Beloff (1964). Russian work is reported in Vasiliev (1965), and is of interest because of the long-standing ban on research in this field. Anecdotal data of a startling nature, with careful attempts at substantiation, continues to appear as it has over the more than a century during which it has been systematically collected, e.g. Myers (1961) and Eisenbud (1967).