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*Development as the Aim of Education**

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The authors offer an explanation of the psychological and philosophical positions underlying aspects of educational progressivism. They contrast tenets of progressivism, most clearly identified with the work of John Dewey, with two other educational ideologies, the romantic and the cultural transmission conceptions, which historically have competed in the minds of educators as rationales for the choice of educational goals and practices. Kohlberg and Mayer maintain that only progressivism, with its cognitive-developmental psychology, its interactionist epistemology, and its philosophically examined ethics, provides an adequate basis for our understanding of the process of education.

The most important issue confronting educators and educational theorists is the choice of ends for the educational process. Without clear and rational educational goals, it becomes impossible to decide which educational programs achieve objectives of general import and which teach incidental facts and attitudes of dubious worth. While there has been a vast amount of research comparing the effects of various educational methods and programs on various outcome measures, there has been very little empirical research designed to clarify the worth of these outcome

* The position presented in this paper was elaborated in a different form in *Proceedings of the Conference on Psychology and the Process of Schooling in the Next Decade: Alternative conceptions*. Washington, D.C.: U. S. Office of Education, 1971. This paper, itself, is an abridged version of a chapter in a forthcoming book by the authors, *Early Education, A Cognitive-Developmental View*. Chicago: Dryden Press (in preparation).

measures themselves. After a deluge of studies in the sixties examining the effects of programs on I.Q. and achievement tests, and drawing policy conclusions, researchers finally began to ask the question, "What is the justification for using I.Q. tests or achievement tests to evaluate programs in the first place?"

The present paper examines such fundamental issues and considers the strategies by which research facts can help generate and substantiate educational objectives and measures of educational outcomes. Three prevalent strategies for defining objectives and relating them to research facts are considered: the desirable trait or "bag of virtues" strategy; the prediction of success or "industrial psychology" strategy; and the "developmental-philosophic" strategy. It will be our claim in this paper that the first two strategies: 1) lack a clear theoretical rationale for defining objectives which can withstand logical and philosophic criticism; and 2) that as currently applied they rest upon assumptions which conflict with research findings. In contrast, we claim that the developmental-philosophic strategy for defining educational objectives, which emerges from the work of Dewey and Piaget, is a theoretical rationale which withstands logical criticism and is consistent with, if not "proved" by, current research findings.

This presentation begins by making explicit how a cognitive-developmental *psychological* theory can be translated into a rational and viable progressive *educational ideology*, i.e., a set of concepts defining desirable aims, content, and methods of education. We contrast the progressive ideology with the "romantic" and the "cultural transmission" schools of thought, with respect to underlying psychological, epistemological, and ethical assumptions. In doing so we focus on two related problems of value theory. The first is the issue of *value-relativity*, the problem of defining some general ends of education whose validity is not relative to the values and needs of each individual child or to the values of each subculture or society. The second is the problem of relating psychological statements about the actual characteristics of children and their development to philosophic statements about desirable characteristics, the problem of relating the natural *is* to the ethical *ought*. We claim that the cognitive-developmental or progressive approach can satisfactorily handle these issues because it combines a psychological theory of development with a rational ethical philosophy of development. In contrast, we claim that other educational ideologies do not stem from psychological theories which can be translated into educational aims free of the philosophic charge that they are arbitrary and relative to the values of the particular educator or school.

Subsequently, we look at the ways in which these ideologies form the basis for contemporary educational policy. We evaluate longitudinal evidence relevant to the "bag of virtues" definition of education objectives favored in maturationist models of education, and the academic achievement definition of objectives favored in environmental learning models. We conclude that the available research lends little support for either of these alternative educational strategies. More specifically:

1. The current prevalent definition of the aims of education, in terms of academic achievement supplemented by a concern for mental health, cannot be justified empirically or logically.
2. The overwhelming emphasis of educational psychology on methods of instruction and tests and measurements which presuppose a "value-neutral" psychology is misplaced.
3. An alternative notion that the aim of the schools should be the stimulation of human development is a scientifically, ethically, and practically viable conception which provides the framework for a new kind of educational psychology.

Three Streams of Educational Ideology

There have been three broad streams in the development of Western educational ideology. While their detailed statements vary from generation to generation, each stream exhibits a continuity based upon particular assumptions of psychological development.

Romanticism

The first stream of thought, the "romantic," commences with Rousseau and is currently represented by Freud's and Gesell's followers. A. S. Neill's Summerhill represents an example of a school based on these principles. Romantics hold that what comes from within the child is the most important aspect of development; therefore the pedagogical environment should be permissive enough to allow the inner "good" (abilities and social virtues) to unfold and the inner "bad" to come under control. Thus teaching the child the ideas and attitudes of others through rote or drill would result in meaningless learning and the suppression of inner spontaneous tendencies of positive value.

Romantics stress the biological metaphors of "health" and "growth" in

equating optimal physical development with bodily health and optimal mental development with mental health. Accordingly, early education should allow the child to work through aspects of emotional development not allowed expression at home, such as the formation of social relations with peers and adults other than his parents. It should also allow the expression of intellectual questioning and curiosity. To label this ideology "romantic" is not to accuse it of being unscientific; rather it is to recognize that the nineteenth century discovery of the natural development of the child was part of a larger romantic philosophy, an ethic and epistemology involving a discovery of the natural and the inner self.

With regard to childhood, this philosophy involved not only an awareness that the child possessed an inner self but also a valuing of childhood, to which the origins of the self could be traced. The adult, through taking the child's point of view, could experience otherwise inaccessible elements of truth, goodness, and reality.

As stated by G. H. Mead (1936):

The romantic comes back to the existence of the self as the primary fact. That is what gives the standard to values. What the Romantic period revealed was not simply a past but a past as the point of view from which to come back at the self. . . . It is this self-conscious setting-up of the past again that constitutes the origin of romanticism. (p. 61)

The work of G. Stanley Hall, the founder of American child psychology, contains the core ideas of modern romantic educational thought, including "deschooling."

The guardians of the young should strive first to keep out of nature's way and to prevent harm and should merit the proud title of the defenders of the happiness and rights of children. They should feel profoundly that childhood, as it comes from the hand of God, is not corrupt but illustrates the survival of the most consummate thing in the world; they should be convinced that there is nothing else so worthy of love, reverence and service as the body and soul of the growing child.

Before we let the pedagog loose upon childhood, we must overcome the fetishes of the alphabet, of the multiplication tables, and must reflect that but a few generations ago the ancestors of all of us were illiterate. There are many who ought not to be educated and who would be better in mind, body and morals if they knew no school. What shall it profit a child to gain the world of knowledge and lose his own health? (1901, p. 24)

Cultural Transmission

The origins of the cultural transmission ideology are rooted in the classical aca-

democratic tradition of Western education. Traditional educators believe that their primary task is the transmission to the present generation of bodies of information and of rules or values collected in the past; they believe that the educator's job is the direct instruction of such information and rules. The important emphasis, however, is not on the sanctity of the past, but on the view that educating consists of transmitting knowledge, skills, and social and moral rules of the culture. Knowledge and rules of the culture may be rapidly changing or they may be static. In either case, however, it is assumed that education is the transmission of the culturally given.

More modern or innovative variations of the cultural transmission view are represented by educational technology and behavior modification.¹ Like traditional education, these approaches assume that knowledge and values—first located in the culture—are afterwards internalized by children through the imitation of adult behavior models, or through explicit instruction and reward and punishment. Accordingly, the educational technologist evaluates the individual's success in terms of his ability to incorporate the responses he has been taught and to respond favorably to the demands of the system. Although the technologist stresses the child as an individual learner, learning at his own pace, he, like the traditionalist, assumes that what is learned and what is valued in education is a culturally given body of knowledge and rules.

There are, of course, a number of contrasts between the traditional academic and the educational technology variations of the cultural-transmission ideology. The traditional academic school has been humanistic in the sense that it has emphasized the transmission of knowledge considered central to the culture of Western man. The educational technology school, in contrast, has emphasized the transmission of skills and habits deemed necessary for adjustment to a technological society. With regard to early education, however, the two variations of the cultural transmission school find an easy rapprochement in stressing such goals as literacy and mathematical skills. The traditionalist sees literacy as the central avenue to the culture of Western man, the technologist sees it as a means to vocational adaptation to a society depending on impersonal information codes. Both approaches, however, emphasize definition of educational goals in terms of fixed knowledge or skills assessed by standards of cultural correctness. Both also stress internalization of basic moral rules of the

¹ The romantic-maturationist position also has "conservative" and "radical" wings. Emphasizing "adaptation to reality," psychoanalytic educators like A. Freud (1937) and Bettelheim (1970) stress mental health as ego-control, while radicals stress spontaneity, creativity, etc.

culture. The clearest and most thoughtful contemporary elaboration of this view in relation to preschool education is to be found in the writing of Bereiter and Engelmann (1966).

In contrast to the child-centered romantic school, the cultural transmission school is society-centered. It defines educational ends as the internalization of the values and knowledge of the culture. The cultural transmission school focuses on the child's need to learn the discipline of the social order, while the romantic stresses the child's freedom. The cultural transmission view emphasizes the common and the established, the romantic view stresses the unique, the novel, and the personal.

Progressivism

The third stream of educational ideology which is still best termed "progressive," following Dewey (1938), developed as part of the pragmatic functional-genetic philosophies of the late nineteenth and early twentieth centuries. As an educational ideology, progressivism holds that education should nourish the child's natural interaction with a developing society or environment. Unlike the romantics, the progressives do not assume that development is the unfolding of an innate pattern or that the primary aim of education is to create an unconflicted environment able to foster healthy development. Instead, they define development as a progression through invariant ordered sequential stages. The educational goal is the eventual attainment of a higher level or stage of development in adulthood, not merely the healthy functioning of the child at a present level. In 1895, Dewey and McLellan suggested the following notion of education for attainment of a higher stage:

Only knowledge of the order and connection of the stages in the development of the psychical functions can insure the full maturing of the psychical powers. Education is the work of supplying the conditions which will enable the psychical functions, as they successively arise, to mature and pass into higher functions in the freest and fullest manner. (p. 207)

In the progressive view, this aim requires an educational environment that actively stimulates development through the presentation of resolvable but genuine problems or conflicts. For progressives, the organizing and developing force in the child's experience is the child's active thinking, and thinking is stimulated by the problematic, by cognitive conflict. Educative experience makes the child think—think in ways which organize both cognition and emotion. Although both the cultural transmission and the progressive views emphasize "knowledge,"

only the latter sees the acquisition of "knowledge" as *an active change in patterns of thinking* brought about by experiential problem-solving situations. Similarly, both views emphasize "morality," but the progressive sees the acquisition of morality as an active change in patterns of response to problematic social situations rather than the learning of culturally accepted rules.

The progressive educator stresses the essential links between cognitive and moral development; he assumes that moral development is not purely affective, and that cognitive development is a necessary though not sufficient condition for moral development. The development of logical and critical thought, central to cognitive education, finds its larger meaning in a broad set of moral values. The progressive also points out that moral development arises from social interaction in situations of social conflict. Morality is neither the internalization of established cultural values nor the unfolding of spontaneous impulses and emotions; it is justice, the reciprocity between the individual and others in his social environment.

Psychological Theories Underlying Educational Ideologies

We have described three schools of thought describing the general ends and means of education. Central to each of these educational ideologies is a distinctive educational psychology, a distinctive psychological theory of development (Kohlberg, 1968). Underlying the romantic ideology is a maturationist theory of development; underlying the cultural transmission ideology is an associationistic-learning or environmental-contingency theory of development; and underlying the progressive ideology is a cognitive-developmental or interactionist theory of development.

The three psychological theories described represent three basic metaphors of development (Langer, 1969). The romantic model views the development of the mind through the metaphor of organic growth, the physical growth of a plant or animal. In this metaphor, the environment affects development by providing necessary nourishment for the naturally growing organism. Maturationist psychologists elaborating the romantic metaphor conceive of cognitive development as unfolding through prepatterned stages. They have usually assumed not only that cognitive development unfolds but that individual variations in rate of cognitive development are largely inborn. Emotional development is also believed to unfold through hereditary stages, such as the Freudian psychosexual stages, but is thought to be vulnerable to fixation and frustration

by the environment. For the maturationist, although both cognitive and social-emotional development unfold, they are two different things. Since social-emotional development is an unfolding of something biologically given and is not based on knowledge of the social world, it does not depend upon cognitive growth.

The cultural transmission model views the development of the mind through the metaphor of the machine. The machine may be the wax on which the environment transcribes its markings, it may be the telephone switchboard through which environmental stimulus-energies are transmitted, or it may be the computer in which bits of information from the environment are stored, retrieved, and recombined. In any case, the environment is seen as "input," as information or energy more or less directly transmitted to, and accumulated in, the organism. The organism in turn emits "output" behavior. Underlying the mechanistic metaphor is the associationistic, stimulus-response or environmentalist psychological theory, which can be traced from John Locke to Thorndike to B. F. Skinner. This psychology views both specific concepts and general cognitive structures as reflections of structures that exist outside the child in the physical and social world. The structure of the child's concepts or of his behavior is viewed as the result of the association of discrete stimuli with one another, with the child's responses, and with his experiences of pleasure and pain. Cognitive development is the result of guided learning and teaching. Consequently, cognitive education requires a careful statement of desirable behavior patterns described in terms of specific responses. Implied here is the idea that the child's behavior can be shaped by immediate repetition and elaboration of the correct response, and by association with feedback or reward.

The cognitive-developmental metaphor is not material, it is dialectical; it is a model of the progression of ideas in discourse and conversation. The dialectical metaphor was first elaborated by Plato, given new meaning by Hegel, and finally stripped of its metaphysical claims by John Dewey and Jean Piaget, to form a psychological method. In the dialectical metaphor, a core of universal ideas are redefined and reorganized as their implications are played out in experience and as they are confronted by their opposites in argument and discourse. These reorganizations define qualitative levels of thought, levels of increased epistemic adequacy. The child is not a plant or a machine; he is a philosopher or a scientist-poet. The dialectical metaphor of progressive education is supported by a cognitive-developmental or interactional psychological theory. Discarding the dichotomy between maturation and environmentally

determined learning, Piaget and Dewey claim that mature thought emerges through a process of development that is neither direct biological maturation nor direct learning, but rather a reorganization of psychological structures resulting from organism-environment interactions. Basic mental structure is the product of the patterning of interaction between the organism and the environment, rather than a direct reflection of either innate neurological patterns or external environmental patterns.

To understand this Piaget-Dewey concept of the development of mental pattern, we must first understand its conception of cognition. Cognitions are assumed to be structures, internally organized wholes or systems of internal relations. These structures are *rules* for the processing of information or the connecting of events. Events in the child's experience are organized actively through these cognitive connecting processes, not passively through external association and repetition. Cognitive development, which is defined as change in cognitive structures, is assumed to depend on experience. But the effects of experience are not regarded as learning in the ordinary sense (training, instruction, modeling, or specific response practices). If two events which follow one another in time are cognitively connected in the child's mind, this implies that he relates them by means of a category such as causality; he perceives his operant behavior as causing the reinforcer to occur. A program of reinforcement, then, cannot directly change the child's causal structures since it is assimilated by the child in terms of his present mode of thinking. When a program of reinforcement cannot be assimilated to the child's causal structure, however, the child's structure may be reorganized to obtain a better fit between the two. Cognitive development is a dialogue between the child's cognitive structures and the structures of the environment. Further, the theory emphasizes that the core of development is not the unfolding of instincts, emotions, or sensorimotor patterns, but instead is cognitive change in distinctively human, general patterns of thinking about the self and the world. The child's relation to his social environment is cognitive; it involves thought and symbolic interaction.

Because of its emphasis on ways of perceiving and responding to experience, cognitive-developmental theory discards the traditional dichotomy of social *versus* intellectual development. Rather, cognitive and affective development are parallel aspects of the structural transformations which take place in development. At the core of this interactional or cognitive-developmental theory is the doctrine of cognitive stages. Stages have the following general characteristics:

1. Stages imply distinct or qualitative differences in children's modes of thinking or of solving the same problem.
2. These different modes of thought form an invariant sequence, order, or succession in individual development. While cultural factors may speed up, slow down, or stop development, they do not change its sequence.
3. Each of these different and sequential modes of thought forms a "structural whole." A given stage-response on a task does not just represent a specific response determined by knowledge and familiarity with that task or tasks similar to it; rather, it represents an underlying thought-organization.
4. Cognitive stages are hierarchical integrations. Stages form an order of increasingly differentiated and integrated *structures* to fulfill a common function. (Piaget, 1960, pp. 13-15)

In other words, a series of stages form an invariant developmental sequence; the sequence is invariant because each stage stems from the previous one and prepares the way for the subsequent stage. Of course, children may move through these stages at varying speeds and they may be found to be half in and half out of a particular stage. Individuals may stop at any given stage and at any age, but if they continue to progress they must move in accord with these steps.

The cognitive-developmental conception of stage has a number of features in common with maturational-theory conceptions of stage. The maturational conception of stage, however, is "embryological," while the interactional conception is "structural-hierarchical." For maturational theory, a stage represents the total state of the organism at a given period of time; for example, Gesell's embryological concept of stage equates it with the typical behavior pattern of an age period, e.g., there is a stage of "five-year-olds." While in the theories of Freud and Erikson stages are less directly equated with ages, psychoanalytic stages are still embryological in the sense that age leads to a new stage regardless of experience and regardless of reorganizations at previous stages. As a result, education and experience become valuable not for movement to a new stage but for healthy or successful integration of the concerns of the present stage. Onset of the next stage occurs regardless of experience; only healthy integration of a stage is contingent on experience.

By contrast, in cognitive-developmental theory a stage is a delimited structure of thought, fixed in a sequence of structures but theoretically independent of time and total organismic state (Kohlberg, 1969b; Loevinger *et al.*, 1970). Such stages are hierarchical reorganizations; attainment of a higher stage presupposes attainment of the prior stage and represents a reorganization or transformation

of it. Accordingly, attainment of the next stage is a valid aim of educational experience.

For the interactionist, experience is essential to stage progression, and more or richer stimulation leads to faster advance through the series of stages. On the other hand, the maturational theory assumes that extreme deprivation will retard or fixate development, but that enrichment will not necessarily accelerate it. To understand the effects of experience in stimulating stage-development, cognitive-developmental theory holds that one must analyze the relation of the structure of a child's specific experience to behavior structures. The analysis focuses upon discrepancies between the child's action system or expectancies and the events experienced. The hypothesis is that some moderate or optimal degree of conflict or discrepancy constitutes the most effective experience for structural change.

As applied to educational intervention, the theory holds that facilitating the child's movement to the next step of development involves exposure to the next higher level of thought and conflict requiring the active application of the current level of thought to problematic situations. This implies: (1) attention to the child's mode or styles of thought, i.e., stage; (2) match of stimulation to that stage, e.g., exposure to modes of reasoning one stage above the child's own; (3) arousal, among children, of genuine cognitive and social conflict and disagreement about problematic situations (in contrast to traditional education which has stressed adult "right answers" and has reinforced "behaving well"); and (4) exposure to stimuli toward which the child can be active, in which assimilatory response to the stimulus-situation is associated with "natural" feedback.

In summary, the maturationist theory assumes that basic mental structure results from an innate patterning; the environmentalist learning theory assumes that basic mental structure results from the patterning or association of events in the outside world; the cognitive-developmental theory assumes that basic mental structure results from an interaction between organismic structuring tendencies and the structure of the outside world, not reflecting either one directly. This interaction leads to cognitive stages that represent the transformations of early cognitive structures as they are applied to the external world and as they accommodate to it.

Epistemological Components of Educational Ideologies

We have considered the various psychological theories as parts of educational

ideologies. Associated with these theories are differing epistemologies or philosophies of science, specifying what is knowledge, i.e. what are observable facts and how can these facts be interpreted. Differences in epistemology, just as differences in actual theory, generate different strategies for defining objectives.

Romantic educational ideology springs not only from a maturational psychology, but from an existentialist or phenomenological epistemology, defining knowledge and reality as referring to the immediate inner experience of the self. Knowledge or truth in the romantic epistemology is self-awareness or self-insight, a form of truth with emotional as well as intellectual components. As this form of truth extends beyond the self, it is through sympathetic understanding of humans and natural beings as other "selves."

In contrast, cultural transmission ideologies of education tend to involve epistemologies which stress knowledge as that which is repetitive and "objective," that which can be pointed to in sense-experience and measurement and which can be culturally shared and tested.

The progressive ideology, in turn, derives from a functional or pragmatic epistemology which equates knowledge with neither inner experience nor outer sense-reality, but with an equilibrated or resolved relationship between an inquiring human actor and a problematic situation. For the progressive epistemology, the immediate or introspective experience of the child does not have ultimate truth or reality. The meaning and truth of the child's experience depends upon its relationship to the situations in which he is acting. At the same time, the progressive epistemology does not attempt to reduce psychological experience to observable responses in reaction to observable stimuli or situations. Rather, it attempts to functionally coordinate the external meaning of the child's experiences as *behavior* with its internal meaning as it appears to the observer.

With regard to educational objectives, these differences in epistemology generate differences with respect to three issues. The first issue concerns whether to focus objectives on internal states or external behavior. In this respect, cultural transmission and romantic ideologies represent opposite poles. The cultural transmission view evaluates educational change from children's performances, not from their feelings or thoughts. Social growth is defined by the conformity of behavior to particular cultural standards such as honesty and industriousness. These skill and trait terms are found in both common-sense evaluations of school grades and report cards, and in "objective" educational psychological measurement. Behaviorist ideologies systematize this focus by

rigorously eliminating references to internal or subjective experience as "non-scientific." Skinner (1971) says:

We can follow the path taken by physics and biology by turning directly to the relation between behavior and the environment and neglecting . . . states of mind. . . . We do not need to try to discover what personalities, states of mind, feelings, . . . intentions—or other prerequisites of autonomous man really are in order to get on with a scientific analysis of behavior. (p. 15)

In contrast, the romantic view emphasizes inner feelings and states. Supported by the field of psychotherapy, romantics maintain that skills, achievements, and performances are not satisfying in themselves, but are only a means to inner awareness, happiness, or mental health. They hold that an educator or therapist who ignores the child's inner states in the name of science does so at his peril, since it is these which are most real to the child.

The progressive or cognitive-developmental view attempts to integrate both behavior and internal states in a functional epistemology of mind. It takes inner experience seriously by attempting to observe thought process rather than language behavior and by observing valuing processes rather than reinforced behavior. In doing so, however, it combines interviews, behavioral tests, and naturalistic observation methods in mental assessment. The cognitive-developmental approach stresses the need to examine mental competence or mental structure as opposed to examining only performance, but it employs a functional rather than an introspective approach to the observation of mental structure. An example is Piaget's systematic and reproducible observations of the preverbal infant's thought-structure of space, time, and causality. In short, the cognitive-developmental approach does not select a focus on inner experience or on outer behavior objectives by epistemological fiat, but uses a functional methodology to coordinate the two through empirical study.

A second issue in the definition of educational objectives involves whether to emphasize immediate experience and behavior or long-term consequences in the child's development. The progressive ideology centers on education as it relates to the child's experience, but attempts to observe or assess experience in functional terms rather than by immediate self-projection into the child's place. As a result the progressive distinguishes between *humanitarian* criteria of the quality of the child's experience and *educative* criteria of quality of experience, in terms of long-term developmental consequences. According to Dewey (1938):

Some experiences are miseducative. Any experience is miseducative that has the effect of arresting or distorting the growth of further experience. . . . An experience may be immediately enjoyable and yet promote the formation of a slack and careless attitude . . . (which) operates to modify the quality of subsequent experiences so as to prevent a person from getting out of them what they have to give. . . . Just as no man lives or dies to himself, so no experience lives or dies to itself. Wholly independent of desire or intent, every experience lives on in further experiences. Hence the central problem of an education based on experience is to select the kind of present experiences that live fruitfully and creatively in subsequent experience. (pp. 25-28)

Dewey maintains that an educational experience which stimulates development is one which arouses interest, enjoyment, and challenge in the immediate experience of the student. The reverse is not necessarily the case; immediate interest and enjoyment does not always indicate that an educational experience stimulates long-range development. Interest and involvement is a necessary but not sufficient condition for education as development. For romantics, especially of the "humanistic psychology" variety, having a novel, intense, and complex experience is *self-development* or self-actualization. For progressives, a more objective test of the effects of the experience on later behavior is required before deciding that the experience is developmental. The progressive views the child's enjoyment and interest as a basic and legitimate criterion of education, but views it as a humanitarian rather than an educational criterion. The progressive holds that education must meet humanitarian criteria, but argues that a concern for the enjoyment and liberty of the child is not in itself equivalent to a concern for his development.

Psychologically, the distinction between humanitarian and developmental criteria is the distinction between the short-term value of the child's immediate experience and the long-term value of that experience as it relates to development. According to the progressive view, this question of the relation of the immediate to the long-term is an empirical rather than a philosophic question. As an example, a characteristic behaviorist strategy is to demonstrate the reversibility of learning by performing an experiment in which a preschooler is reinforced for interacting with other children rather than withdrawing in a corner. This is followed by a reversal of the experiment, demonstrating that when the reinforcement is removed the child again becomes withdrawn. From the progressive or cognitive-developmental perspective, if behavior changes are of this reversible character they cannot define genuine educational objectives. The progressive approach maintains that the worth of an educational effect is

decided by its effects upon later behavior and development. Thus, in the progressive view, the basic problems of choosing and validating educational ends can only be solved by longitudinal studies of the effects of educational experience.

The third basic issue is whether the aims of education should be universal as opposed to unique or individual. This issue has an epistemological aspect because romantics have often defined educational goals in terms of the expression or development of a unique self or identity; "objectivist" epistemologies deny that such concepts are accessible to clear observation and definition. In contrast, cultural transmission approaches characteristically focus on measures of individual differences in general dimensions of achievement, or social behavior dimensions on which any individual can be ranked. The progressive, like the romantic, questions the significance of defining behavior relative to some population norm external to the individual. Searching for the "objective" in human experience, the progressive seeks universal qualitative states or sequences in development. Movement from one stage to the next is significant because it is a sequence in the individual's own development, not just a population average or norm. At the same time, insofar as the sequence is a universally observed development it is not unique to the individual in question.

In summary, the cognitive-developmental approach derives from a functional or pragmatic epistemology which attempts to integrate the dichotomies of the inner versus the outer, the immediate versus the remote in time, the unique versus the general. The cognitive-developmental approach focuses on an empirical search for continuities between inner states and outer behavior and between immediate reaction and remote outcome. While focusing on the child's experience, the progressive ideology defines such experience in terms of universal and empirically observable sequences of development.

Ethical Value Positions Underlying Educational Ideologies

When psychologists like Dewey, Skinner, Neill and Montessori actually engage in innovative education, they develop a theory which is not a mere statement of psychological principle, it is an ideology. This is not because of the dogmatic, non-scientific attitude they have as psychologists, but because prescription of educational practice cannot be derived from psychological theory or science alone. In addition to theoretical assumptions about how children learn or develop (the psychological theory component), educational ideologies include value assumptions about what is educationally good or worthwhile. To call a

pattern of educational thought an ideology is to indicate it is a fairly systematic combination of a theory about psychological and social fact with a set of value principles.

The Fallacy of Value Neutrality

A "value-neutral" position, based only on facts about child development or about methods of education, cannot in itself directly contribute to educational practice. Factual statements about what the processes of learning and development *are* cannot be directly translated into statements about what children's learning and development *ought to be* without introduction of some value-principles.

In "value-neutral" research, learning does not necessarily imply movement to a stage of greater cognitive or ethical adequacy. As an example, acquisition of a cognitively arbitrary or erroneous concept (e.g., it is best to put a marble in the hole) is considered learning in the same general sense as is acquisition of a capacity for logical inference. Such studies do not relate learning to some justifiable notion of knowledge, truth, or cognitive adequacy. Values are defined relative to a particular culture. Thus, morality is equivalent to conformity to, or internalization of, the particular standards of the child's group or culture. As an example, Berkowitz (1964) writes: "Moral values are evaluations of actions generally believed by the members of a given society to be either 'right' or 'wrong'" (p. 44).

Such "value-free" research cannot be translated into prescriptions for practice without importing a set of value-assumptions having no relation to psychology itself. The effort to remain "value-free" or "non-ideological" and yet prescribe educational goals usually has followed the basic model of counselling or consulting. In the *value-free consulting model*, the client (whether student or school) defines educational ends and the psychologist can then advise about means of education without losing his value-neutrality or imposing his values. Outside education, the value-free consulting model not only provides the basic model for counselling and psychotherapy, where the client is an individual, but also for industrial psychology, where the client is a social system. In both therapy and industrial psychology the consultant is paid by the client and the financial contract defines whose values are to be chosen. The educator or educational psychologist, however, has more than one client. What the child wants, what parents want, and what the larger community wants are often at odds with one another.

An even more fundamental problem for the "value-free" consulting model

is the logical impossibility of making a dichotomy between value-free means and value-loaded ends. Skinner (1971, p. 17) claims that "a behavior technology is ethically neutral. Both the villain and the saint can use it. There is nothing in a methodology that determines the values governing its use." But consider the use of torture on the rack as a behavior technology for learning which could be used by saint and villain alike. On technological grounds Skinner advises against punishment, but this does not solve the ethical issue.

Dewey's logical analysis and our present historical awareness of the value consequences of adopting new technologies have made us realize that choices of means, in the last analysis, also imply choices of ends. Advice about means and methods involves value considerations and cannot be made purely on a basis of "facts." Concrete, positive reinforcement is not an ethically neutral means. To advise the use of concrete reinforcement is to advise that a certain kind of character, motivated by concrete reinforcement, is the end of education. Not only can advice about means not be separated from choice of ends, but there is no way for an educational consultant to avoid harboring his own criteria for choosing ends. The "value-neutral" consulting model equates value-neutrality with acceptance of value-relativity, i.e., acceptance of whatever the values of the client are. But the educator or educational psychologist cannot be neutral in this sense either.

Values and the Cultural Transmission Ideology

In an effort to cope with the dilemmas inherent in value-neutral prescription, many psychologists tend to move to a cultural transmission ideology, based on the value premise of *social relativity*. Social relativity assumes some consistent set of values characteristic of the culture, nation, or system as a whole. While these values may be arbitrary and may vary from one social system to another, there is at least some consensus about them. This approach says, "Since values are relative and arbitrary, we might as well take the given values of the society as our starting point and advocate 'adjustment' to the culture or achievement in it as the educational end." The social relativist basis of the Bereiter-Engelmann system, for example, is stated as follows:

In order to use the term cultural deprivation, it is necessary to assume some point of reference. . . . The standards of the American public schools represent one such point of reference. . . . There are standards of knowledge and ability which are consistently held to be valuable in the schools, and any child in the schools who falls short of these

standards by reason of his particular cultural background may be said to be culturally deprived. (1966, p. 24)

The Bereiter-Engelmann preschool model takes as its standard of value "the standard of the American public schools." It recognizes that this standard is arbitrary and that the kinds of learning prized by the American public schools may not be the most worthy; but it accepts this arbitrariness because it assumes that "all values are relative," that there is no ultimate standard of worth for learning and development.

Unlike Bereiter and Engelmann, many social relativist educators do not simply accept the standards of the school and culture and attempt to maximize conformity to them. Rather, they are likely to elaborate or create standards for a school or society based on value premises derived from what we shall call "the psychologist's fallacy." According to many philosophical analysts, the effort to derive statements of *ought* (or value) directly from statements of *is* (or fact) is a logical fallacy termed the "naturalistic fallacy" (Kohlberg, 1971). The psychologist's fallacy is a form of the naturalistic fallacy. As practiced by psychologists, the naturalistic fallacy is the direct derivation of statements about what human nature, human values, and human desires ought to be from psychological statements about what they are. Typically, this derivation slides over the distinction between what is desired and what is desirable.

The following statement from B. F. Skinner (1971) offers a good example of the psychologist's fallacy:

Good things are positive reinforcers. Physics and biology study things without reference to their values, but the reinforcing effects of things are the province of behavioral science, which, to the extent that it concerns itself with operant reinforcement, is a science of values. Things are good (positively reinforcing) presumably because of the contingencies of survival under which the species evolved. It is part of the genetic endowment called 'human nature' to be reinforced in particular ways by particular things. . . . The effective reinforcers are matters of observation and no one can dispute them. (p. 104)

In this statement, Skinner equates or derives a value word (good) from a fact word (positive reinforcement). This equation is questionable; we wonder whether obtaining positive reinforcement really is good. The psychologist's fallacy or the naturalistic fallacy is a fallacy because we can always ask the further question, "Why is that good?" or "By what standard is that good?" Skinner does not attempt to deal with this further question, called the "open question" by philosophers. He also defines good as "cultural survival." The

postulation of cultural survival as an ultimate value raises the open question too. We may ask, "Why should the Nazi culture (or the American culture) survive?" The reason Skinner is not concerned with answering the open question about survival is because he is a cultural relativist, believing that any non-factual reasoning about what is good or about the validity of moral principles is meaningless. He says:

What a given group of people calls good is a fact, it is what members of the group find reinforcing as a result of their genetic endowment and the natural and social contingencies to which they have been exposed. Each culture has its own set of goods, and what is good in one culture may not be good in another. (p. 128)

The Fallacy of Value-Relativism

Behind Skinner's value-relativism, then, lie the related notions that: 1) all valid inferences or principles are factual or scientific; 2) valid statements about values must be statements about facts of valuing; and 3) what people actually value differs. The fact that people do value different things only becomes an argument for the notion that values are relative if one accepts the first two assumptions listed. Both assumptions are believed by many philosophers to be mistaken because they represent forms of the fact-value confusion already described as the naturalistic fallacy. Confusing discourse about fact with discourse about values, the relativist believes that when ethical judgment is not empirical science, it is not rational. This equation of science with rationality arises because the relativist does not correctly understand philosophical modes of inquiry. In modern conceptions, philosophy is the clarification of concepts for the purpose of critical evaluation of beliefs and standards. The kinds of beliefs which primarily concern philosophy are normative beliefs or standards, beliefs about what ought to be rather than about what is. These include standards of the right or good (ethics), of the true (epistemology), and of the beautiful (esthetics). In science, the critical evaluation of factual beliefs is limited to criteria of causal explanation and prediction; a "scientific" critical evaluation of normative beliefs is limited to treating them as a class of facts. Philosophy, by contrast, seeks rational justification and criticism of normative beliefs, based on considerations additional to their predictive or causal explanatory power. There is fairly widespread agreement among philosophers that criteria for the validity of ethical judgments can be established independent of "scientific" or predictive criteria. Since patterns for the rational statement and justification of normative beliefs, or "oughts," are not identical with patterns of scientific statement and justification, philosophers

can reject both Skinner's notion of a strictly "scientific" ethics and Skinner's notion that whatever is not "scientific" is relative. The open question, "Why is reinforcement or cultural survival good?," is meaningful because there are patterns of ethical justification which are ignored by Skinner's relativistic science.

Distinguishing criteria of moral judgment from criteria of scientific judgment, most philosophers accept the "methodological non-relativism" of moral judgment just as they accept the methodological non-relativism of scientific judgment (Brandt, 1956). This ethical non-relativism is based on appeal to principles for making moral judgments, just as scientific non-relativism is based on appeal to principles of scientific method or of scientific judgment.

In summary, cultural transmission ideologies rest on the value premise of social relativism—the doctrine that values are relative to, and based upon, the standards of the particular culture and cannot be questioned or further justified. Cultural transmission ideologies of the "scientific" variety, like Skinner's, do not recognize moral principles since they equate what is desirable with what is observable by science, or with what is desired. Philosophers are not in agreement on the exact formulation of valid moral principles though they agree that such formulations center around notions like "the greatest welfare" or "justice as equity." They also do not agree on choice of priorities between principles such as "justice" and "the greatest welfare." Most philosophers do agree, however, that moral evaluations must be rooted in, or justified by, reference to such a realm of principles. Most also maintain that certain values or principles ought to be universal and that these principles are distinct from the rules of any given culture. A principle is a universalizeable, impartial mode of deciding or judging, not a concrete cultural rule. "Thou shalt not commit adultery" is a rule for specific behavior in specific situations in a monogamous society. By contrast, Kant's Categorical Imperative—act only as you would be willing that everyone should act in the same situation—is a principle. It is a guide for choosing among behaviors, not a prescription for behavior. As such it is free from culturally-defined content; it both transcends and subsumes particular social laws. Hence it has universal applicability.

In regard to values, Skinner's cultural transmission ideology is little different from other, older ideologies based on social relativism and on subjective forms of hedonism, e.g., social Darwinism and Benthamite utilitarianism. As an educational ideology, however, Skinner's relativistic behavior technology has one

feature which distinguishes it from older forms of social utilitarianism. This is its denial that rational concern for social utility is itself a matter of moral character or moral principle to be transmitted to the young. In Skinner's view, moral character concepts which go beyond responsiveness to social reinforcement and control rely on "prescientific" concepts of free will. Stated in different terms, the concept of moral education is irrelevant to Skinner; he is not concerned with teaching to the children of his society the value-principles which he himself adopts. The culture designer is a *psychologist-king*, a value relativist, who somehow makes a free, rational decision to devote himself to controlling individual behavior more effectively in the service of cultural survival. In Skinner's scheme there is no plan to make the controlled controllers, or to educate psychologist-kings.

Values and the Romantic Ideology

At first sight the value premises of the romantic ideology appear to be the polar opposites of Skinner's cultural transmission ideology. Opposed to social control and survival is individual freedom, freedom for the child to be himself. For example, A. S. Neill (1960) says:

How can happiness be bestowed? My own answer is: Abolish authority. Let the child be himself. Don't push him around. Don't teach him. Don't lecture him. Don't elevate him. Don't force him to do anything. (p. 297)

As we have pointed out, the romantic ideology rests on a psychology which conceives of the child as having a spontaneously growing mind. In addition, however, it rests on the ethical postulate that "the guardians of the young should merit the proud title of the defenders of the happiness and rights of children" (G. S. Hall, 1901, p. 24). The current popularity of the romantic ideology in "free school," "de-school," and "open school" movements is related to increased adult respect for the rights of children. Bereiter (1972) carries this orientation to an extreme conclusion:

Teachers are looking for a way to get out of playing God. . . . The same humanistic ethos that tells them what qualities the next generation should have also tells them that they have no right to manipulate other people or impose their goals upon them. The fact is that there are no morally safe goals for teachers any more. Only processes are safe. When it comes to goals, everything is in doubt. . . . A common expression, often thrown at me, when I have argued for what I believed children should be taught, is 'Who are we to say what this child should learn.' The basic moral problem . . . is inherent in education itself. If you are engaged in education, you are engaged in an effort to influence the

course of the child's development . . . it is to determine what kinds of people they turn out to be. It is to create human beings, it is, therefore, to play God. (pp. 26-27)

This line of thought leads Bereiter to conclude:

The Godlike role of teachers in setting goals for the development of children is no longer morally tenable. A shift to informal modes of education does not remove the difficulty. This paper, then, questions the assumption that education, itself, is a good undertaking and considers the possibilities of a world in which values other than educational ones, come to the fore. (p. 25)

According to Bereiter, then, a humanistic ethical concern for the child's rights must go beyond romantic free schools, beyond de-schooling, to the abandonment of an explicit concern for education. Bereiter contrasts the modern "humanistic ethic," and its concern for the child's rights, with the earlier "liberal" concern for human rights which held education and the common school as the foundation of a free society. This earlier concern Bereiter sees expressed most cogently in Dewey's progressivism.

The historical shift in the conception of children's rights and human rights leading Bereiter to reject Dewey's position is essentially a shift from the liberal grounding of children's rights in ethical principles to the modern humanistic grounding of children's rights in the doctrine of ethical relativity.

Bereiter is led to question the moral legitimacy of education because he equates a regard for the child's liberty with a belief in ethical relativity, rather than recognizing that liberty and justice are universal ethical principles. "The teacher may try to play it safe by sticking to the middle of the road and only aiming to teach what is generally approved, but there are not enough universally endorsed values (if, indeed, there are any) to form the basis of an education" (Bereiter, 1972, p. 27). Here, he confuses an ethical position of tolerance or respect for the child's freedom with a belief in ethical relativity, not recognizing that respect for the child's liberty derives from a principle of justice rather than from a belief that all moral values are arbitrary. Respect for the child's liberty means awarding him the maximum liberty compatible with the liberty of others (and of himself when older), not refusal to deal with his values and behavior. The assumption of individual relativity of values underlying modern romantic statements of the child's liberty is also reflected in the following quote from Neill (1960):

Well, we set out to make a school in which we should allow children freedom to be themselves. In order to do this, we had to renounce all discipline, all direction, all sug-

gestion, all moral training, all religious instruction. We have been called brave, but it did not require courage. All it required was what we had—a complete belief in the child as a good, not an evil, being. For almost forty years, this belief in the goodness of the child has never wavered; it rather has become a final faith. (p. 4)

For Neill, as for many free school advocates, value relativity does not involve what it did for Bereiter—a questioning of all conceptions of what is good in children and good for them. Neill's statement that the child is "good" is a completely non-relativist conception. It does not, however, refer to an ethical or moral principle or standard used to direct the child's education. Instead, just as in Skinner's cultural transmission ideology, the conception of the good is derived from what we have termed the psychologist's fallacy. Neill's faith in the "goodness of the child" is the belief that what children *do* want, when left to themselves, can be equated with what they *should* want from an ethical standpoint. In one way this faith is a belief that children are wired so as to act and develop compatibly with ethical norms. In another sense, however, it is an ethical postulation that decisions about what is right for children should be derived from what children do desire—that whatever children do is right.

This position begs the open question, "Why is freedom to be oneself good; by what standard is it a good thing?"

The question is raised by Dewey as follows (1938):

The objection made [to identifying the educative process with growing or developing] is that growth might take many different directions: a man, for example, who starts out on a career of burglary may grow in that direction . . . into a highly expert burglar. Hence it is argued that 'growth' is not enough; we must also specify the direction in which growth takes place, the end toward which it tends. (p. 75)

In Neill's view it is not clear whether there is a standard of development, i.e., some standard of goodness which children who grow up freely all meet, or whether children who grow up freely are good only by their own standards, even if they are thieves or villains by some other ethical standards. To the extent that there is a non-relativist criterion employed by Neill, it does not derive from, nor is it justified by, the ethical principles of philosophy. Rather, it is derived from matters of psychological fact about "mental health" and "happiness."

The merits of Summerhill are the merits of healthy free children whose lives are unspoiled by fear and hate. (Neill, 1960, p. 4)

The aim of education, in fact, the aim of life is to work joyfully and to find happiness. (Neill, 1960, p. 297).

Freedom, then, is not justified as an ethical principle but as a matter of psychological fact, leading to "mental health and happiness." These are ultimate terms, as are the terms "maximizing reinforcement" and "cultural survival" for Skinner. For other romantic educators the ultimate value terms are also psychological, e.g., "self-realization," "self-actualization," and "spontaneity." These are defined as "basic human tendencies" and are taken as good in themselves rather than being subject to the scrutiny of moral philosophy.

We have attempted to show that romantic libertarian ideologies are grounded on value-relativism and reliance on the psychologist's fallacy, just as are cultural-transmission ideologies, which see education as behavior control in the service of cultural survival. As a result of these shared premises, both romantic and cultural-transmission ideologies tend to generate a kind of elitism. In the case of Skinner, this elitism is reflected in the vision of the psychologist as a culture-designer, who "educates others" to conform to culture and maintain it but not to develop the values and knowledge which would be required for culture-designing. In the case of the romantic, the elitism is reflected in a refusal to impose intellectual and ethical values of libertarianism, equal justice, intellectual inquiry, and social reconstructionism on the child, even though these values are held to be the most important ones:

... Summerhill is a place in which people who have the innate ability and wish to be scholars will be scholars; while those who are only fit to sweep the streets will sweep the streets. But we have not produced a street cleaner so far. Nor do I write this snobbishly, for I would rather see a school produce a happy street cleaner than a neurotic scholar. (Neill, 1960, pp. 4-5)

In summary, in spite of their libertarian and non-indoctrinative emphases, romantic ideologies also have a tendency to be elitist or patronizing. Recalling the role of Dostoevsky's Grand Inquisitor, they see education as a process which only intends the child to be happy and adjusted rather than one which confronts the child with the ethical and intellectual problems and principles which the educator himself confronts. Skinner and Neill agree it is better for the child to be a happy pig than an unhappy Socrates. We may question, however, whether they have the right to withhold that choice.

Value Postulates of Progressivism

Progressive ideology, in turn, rests on the value postulates of ethical liberalism.²

² There are two main schools of ethical liberalism. The more naturalistic or utilitarian one is represented in the works of J. S. Mill, Sidgwick, Dewey, and Tufts. The other is represented

This position rejects traditional standards and value-relativism in favor of ethical universals. Further, it recognizes that value universals are ethical principles formulated and justified by the method of philosophy, not simply by the method of psychology. The ethical liberal position favors the active stimulation of the development of these principles in children. These principles are presented through a process of critical questioning which creates an awareness of the ground and limits of rational assent; they also are seen as relevant to universal trends in the child's own social and moral development. The liberal recognition of principles as *principles* clears them from confusion with psychological facts. To be concerned about children's happiness is an ethical imperative for the educator without regard to "mental health," "positive reinforcement," or other psychological terms used by educators who commit the "psychologist's fallacy." Rational ethical principles, not the values of parents or culture, are the final value-arbiters in defining educational aims. Such principles may call for consultation with parents, community, and children in formulating aims, but they do not warrant making them final judges of aims.

The liberal school recognizes that ethical principles determine the ends as well as the means of education. There is great concern not only to make schools more just, i.e., to provide equality of educational opportunity and to allow freedom of belief but also to educate so that free and just people emerge from the schools. Accordingly, liberals also conscientiously engage in moral education. It is here that the progressive and romantic diverge, in spite of a common concern for the liberty and rights of the child. For the romantic, liberty means non-interference. For the liberal, the principle of respect for liberty is itself defined as a moral aim of education. Not only are the rights of the child to be respected by the teacher, but the child's development is to be stimulated so that he may come to respect and defend his own rights and the rights of others.

Recognition of concern for liberty as a principle leads to an explicit, libertarian conception of moral education. According to Dewey and McLellan (1895),

Summing up, we may say that every teacher requires a sound knowledge of ethical and psychological principles Only psychology and ethics can take education out of the rule-of-thumb stage and elevate the school to a vital, effective institution in the *greatest of all constructions—the building of a free and powerful character.* (p. 207)

In the liberal view, educational concern for the development of a "free

in the works of Locke, Kant, and Rawls. A modern statement of the liberal ethical tradition in relation to education is provided by R. S. Peters (1968).

character" is rooted in the principle of liberty. For the romantic or relativist libertarian this means that "everyone has their own bag," which may or may not include liberty; and to actively stimulate the development of regard for liberty or a free character in the child is as much an imposition on the child as any other educational intervention. The progressive libertarians differ on this point. They advocate a strong rather than a weak application of liberal principles to education. Consistent application of ethical principles to education means that education *should* stimulate the development of ethical principles in students.

In regard to ethical values, the progressive ideology adds the postulates of *development* and *democracy* to the postulates of liberalism. The notion of educational democracy is one in which justice between teacher and child means joining in a community in which value decisions are made on a shared and equitable basis, rather than non-interference with the child's value-decisions. Because ethical principles function as principles, the progressive ideology is "democratic" in a sense that romantic and cultural transmission ideologies are not.

In discussing Skinner we pointed to a fundamental problem in the relation between the ideology of the relativist educator and that of the student. Traditional education did not find it a problem to reconcile the role of teacher and the role of student. Both were members of a common culture and the task of the teacher was to transmit that culture and its values to the student. In contrast, modern psychologists advocating cultural transmission ideologies do not hold this position. As social relativists they do not really believe in a common culture; instead they are in the position of transmitting values which are different both from those they believe in and those believed in by the student. At the extreme, as we mentioned earlier, Skinner proposes an ideology for ethically relative psychologist-kings or culture designers who control others. Clearly there is a contradiction between the ideology for the psychologist-king and the ideology for the child.

Romantic or radical ideologies are also unable to solve this problem. The romantic adopts what he assumes are the child's values, or takes as his value premise what is "natural" in the child rather than endorsing the culture's values. But while the adult believes in the child's freedom and creativity and wants a free, more natural society, the child neither fully comprehends nor necessarily adheres to the adult's beliefs. In addition, the romantic must strive to give the child freedom to grow even though such freedom may lead the

child to become a reactionary. Like the behavior modifier, then, the romantic has an ideology, but it is different from the one which the student is supposed to develop.

The progressive is non-elitist because he attempts to get all children to develop in the direction of recognizing the principles he holds. But is this not indoctrinative? Here we need to clarify the postulates of development and democracy as they guide education.

For the progressive, the problem of offering a non-indoctrinative education which is based on ethical and epistemological principles is partially resolved by a conception that these principles represent developmentally advanced or mature stages of reasoning, judgment, and action. Because there are culturally universal stages or sequences of moral development (Kohlberg & Turiel, 1971), stimulation of the child's development to the next step in a natural direction is equivalent to a long range goal of teaching ethical principles.

Because the development of these principles is natural they are not imposed on the child—he chooses them himself. A similar developmental approach is taken toward intellectual values. Intellectual education in the progressive view is not merely a transmission of information and intellectual skills, it is the communication of patterns and methods of "scientific" reflection and inquiry. These patterns correspond to higher stages of logical reasoning, Piaget's formal operations. According to the progressive, there is an important analogy between scientific and ethical patterns of judgment or problem-solving, and there are overlapping rationales for intellectual and ethical education. In exposing the child to opportunities for reflective scientific inquiry, the teacher is guided by the principles of scientific method which the teacher himself accepts as the basis of rational reflection. Reference to such principles is non-indoctrinative if these principles are not presented as formulae to be learned ready-made or as rote patterns grounded in authority. Rather, they are part of a process of reflection by the student and teacher. A similar approach guides the process of reflection on ethical or value problems.

The problem of indoctrination is also resolved for the progressive by the concept of democracy. A concern for the child's freedom from indoctrination is part of a concern for the child's freedom to make decisions and act meaningfully. Freedom, in this context, means *democracy*, i.e., power and participation in a social system which recognizes basic equal rights. It is impossible for teachers not to engage in value-judgments and decisions. A concern for the liberty of the child does not create a school in which the teacher is value-

neutral and any pretense of it creates "the hidden curriculum" (Kohlberg, 1969b). But it can create a school in which the teacher's value-judgments and decisions involve the students democratically.

We turn, now, to the nature and justification of these universal and intrinsically worthy aims and principles. In the next sections we attempt to indicate the way in which the concept of development, rooted in psychological study, can aid in prescribing aims of education without commission of the psychologist's fallacy. We call this the developmental-philosophic strategy for defining educational aims.

Strategies for Defining Educational Objectives and Evaluating Educational Experience

We have considered the core psychological and philosophical assumptions of the three major streams of educational ideology. Now we shall consider these assumptions as they have been used to define objectives in early education.

There appear to be three fundamental strategies for defining educational objectives, which we call "the bag of virtues" or "desirable trait" strategy, the "industrial psychology" or "prediction of success" strategy and the "developmental-philosophic" strategy. These strategies tend to be linked, respectively, with the romantic, the cultural transmission, and the progressive educational ideologies.

The romantic tends to define educational objectives in terms of a "bag of virtues"—a set of traits characterizing an ideal healthy or fully-functioning personality. Such definitions of objectives are justified by a psychiatric theory of a spontaneous, creative, or self-confident personality. This standard of value springs from the romantic form of the psychologist's fallacy. Statements of value (desirability of a character-trait) are derived from psychological propositions of fact, e.g., that a given trait is believed to represent psychological "illness" or "health."

The cultural transmission ideology defines immediate objectives in terms of standards of knowledge and behavior learned in school. It defines the long-range objective as eventual power and status in the social system (e.g., income, success). In Skinner's terms, the objective is to maximize the reinforcement each individual receives from the system, while maintaining the system. In defining objectives, this focus on prediction of later success is common to those

whose interest lies in maintaining the system in its present form and those whose interest lies in equalizing opportunity for success in the system.

Within the cultural transmission school there is a second strategy for elaborating objectives which we have called the "industrial psychology" approach (Kohlberg, 1972). Psychologically, this strategy is more explicitly atheoretical than the "bag of virtues" approach; with regard to values it is more socially relativistic. Adopting the stance of the value-free consultant, it evaluates a behavior in terms of its usefulness as a means to the student's or the system's ends, and focuses on the empirical prediction of later successes. In practice, this approach has focused heavily on tests and measurements of achievement as they predict or relate to later success in the educational or social system.

The third strategy, the developmental-philosophic, is linked to the progressive ideology. The progressive believes that a liberal conception of education pursuing intrinsically worthy aims or states is the best one for everyone. Such a conception of objectives must have a psychological component. The progressive defines the psychologically valuable in developmental terms. Implied in the term "development" is the notion that a more developed psychological state is more valuable or adequate than a less developed state.

The developmental-philosophic strategy attempts to clarify, specify, and justify the concept of adequacy implicit in the concept of development. It does so through: a) elaborating a formal psychological theory of development—the cognitive-developmental theory; b) elaborating a formal ethical and epistemological theory of truth and worth linked to the psychological theory; c) relating both of these to the facts of development in a specific area; and d) describing empirical sequences of development worth cultivating.

Now we need to critically examine the three strategies. Our task is both logical and empirical. Logically, the chief question is, "Does the strategy define objectives which are intrinsically valuable or universally desirable? Can it deal with the charge that its value is relative or arbitrary?" Empirically, the major question is, "Does the strategy define objectives predicting to something of long-term value in later life?"

The Bag of Virtues Strategy

The "bag of virtues" strategy for choosing objectives is the approach which comes most naturally to educators. An example is the formulation of a Headstart list of objectives—as cited in Dr. Edith Grotberg's review (1969) offered by a panel of

authorities on child development. One goal is "helping the emotional and social development of the child by encouraging self-confidence, spontaneity, curiosity and self-discipline." We may note that development is defined here in terms of trait words. From the point of view of the philosophic-developmental, the qualification of the term "social development" by such trait words is superfluous and misleading. The developmentalist would chart universals in preschool social development empirically and theoretically with implications for later development and would indicate the conditions which stimulate such development. Such a charting of development would make trait words like "spontaneity" and "self-confidence" unnecessary.

The justification for using trait words to qualify development as an educational end has usually been that development is too vague a term. We consider this question later. Here we need only note the arbitrariness and vagueness which underlies all efforts to use the positive connotations of ordinary trait terms of personality or character to define educational standards and values. This arbitrariness and vagueness exists in lists of mental health traits such as the Headstart list and also in lists of moral virtues composing moral character, such as the Hartshorne and May (1928-1932) objectives of "honesty, service, and self-control." Arbitrariness exists first in composing the list or "bag" of virtues itself. One member of the committee likes "self-discipline," another "spontaneity"; the committee includes both. While both words sound nice, one wonders whether cultivating "self-discipline" and cultivating "spontaneity" are consistent with one another. Second, we may note that the observable meaning of a virtue-word is relative to a conventional cultural standard which is both psychologically vague and ethically relative. The behavior that one person labels "self-discipline" another calls "lack of spontaneity." Because the observable meaning of a virtue-word is relative to a conventional cultural standard, its meaning is psychologically vague, a fact which was first demonstrated by Hartshorne and May for the virtue-word "honesty." Hartshorne and May were dismayed to discover that they could locate no such stable personality trait as honesty in school children. A child who cheated on one occasion might or might not cheat on another: cheating was for the most part situationally determined. In a factor analysis, there was no clearly identifiable factor or correlation pattern which could be called "honesty." Furthermore, "honesty" measurements did not predict to later behavior. This contradicts the commonsense notion underlying the bag of virtues approach. It turns out that dictionary terms for personality do not describe

situationally general personality dispositions which are stable or predictive over development.

Related to the problem of psychological definition and measurement is the problem of the relativity of the standard of value defining "honesty" or any other virtue. Labeling a set of behaviors displayed by a child with positive or negative trait terms does not signify that they are of adaptive or ethical importance. It represents an appeal to particular community conventions, since one person's "integrity" is another person's "stubbornness," one person's "honesty in expressing your true feelings" is another person's "insensitivity to the feelings of others."

We have criticized the "bag of virtues" approach on the grounds of logical questions raised by a procedure of sorting through the dictionary for trait terms with positive meaning. We need next to question two "scientific" or *psychological* assumptions, the concept of the personality trait and the concept of mental health, as they relate to the development of children. With regard to the trait assumption, longitudinal research findings lead us to question whether there are positive or adaptive childhood personality traits which are stable or predictive over time and development, even if such traits are defined by psychological rather than lexical methods. The relatively general and longitudinally stable personality traits which have been identified in earlier childhood are traits of temperament—introversion-extroversion, passivity-activity—which have been shown to be in large part hereditary temperamental traits without adaptive significance (research reviewed in Ausubel & Sullivan, 1970; Kohlberg, 1969b; Kohlberg, La Crosse & Ricks, 1971). The longitudinal research indicates that the notions of "mental health" or "mental illness" are even more questionable as concepts defining the meaning and value of personality traits. Unlike development, the term "mental health" has no clear psychological meaning when applied to children and their education. When the clinician examines a child with reference to mental health, he records the child's lags (and advances) in cognitive, social, and psychomotor development. Occasionally such lags are indicative of "illness," e.g., of an organic brain condition. But, in general, if "illness" means anything beyond retarded development it means a prognosis of continued failure to develop. Considering the child's development as an aim of education, the metaphors of health and illness add little to detailed and adequate conceptions of cognitive and social development. This also is indicated by empirical longitudinal findings (Kohlberg, LaCrosse & Ricks, 1971).

We are led to ask whether early childhood traits with apparent negative mental health implications like dependency, aggression, or anxiety, have predictive value as indicators of adult difficulties in "life adjustment" or "mental health." The answer at present is no: the mental health traits listed among the Headstart objectives, as well as those commonly included among the goals of other early education programs, have failed to show their predictive value for positive or negative adult life adjustment. Even if the behavior changes sought in such programs were achieved, the child would be no more likely than before to become a well-adjusted adult.

Secondly, from the philosophic point of view, those who espouse the mental health bag of virtues commit the psychologist's fallacy and a related fallacy, that a panel of psychiatrists or child psychiatrists such as the one defining Headstart objectives are "experts" on ethical principles or values.

In educational practice, a concern for mental health has at least meant an ethical concern for the happiness of the child; this was neglected by cultural transmission school. But ethical principles based on a concern for the child's liberty and happiness can stand on their own without a mental health bag of virtues to rationalize them.

The Industrial Psychology Rationale

Translating educational objectives into a "bag of virtues" (skills) in the intellectual domain does not run into all the difficulties which it has encountered in the social-emotional domain. This is because reasonable precision has been attained in defining and measuring intellectual skills and achievements, because there is some degree of predictability over time in these skills, and because the questions of value-relativity raised by concepts of "moral character" and "mental health" as educational objectives are not as obvious when school aims are defined in terms of intellectual skills. But concepts of intellectual skills have only appeared satisfactory because of the high empirical overlap or correlation of these skills with cognitive development (in the developmental-philosophic sense) and because of the overlap with the non-educational or "biological" constant of general intelligence. Once cognitive skills are defined and measured by educational *achievement* measures, they have little clear use in defining educational objectives.

The "achievement skills" conception is a joint product of the "bag of virtues" and "industrial psychology" approach to educational aims. We have noted that the industrial psychology approach rests on identifying and measuring relative individual success in meeting the task demands of a current job or work-position,

and on identifying characteristics predicting to later success or mobility in the job-system. Its major application in education has been the development of achievement tests. While not originally developed to define operational educational goals, achievement tests have frequently been used for this purpose. The massive Coleman Report (1966) rested its entire analysis of the quality and effects of schooling on variations in achievement test scores. A number of academic early education programs, including the Bereiter and Engelmann program (1966) previously quoted, essentially define their objective as the improvement of later achievement scores.

From the ethical or philosophic point of view, the use of achievement tests to measure educational objectives rests on a compounding of one type of relativism on another. The items composing an achievement test do not derive from any epistemological principles of adequate patterns of thought and knowledge, but rather represent samples of items taught in the schools. The information taught in the schools is relative and arbitrary: Latin and Greek for one hour, computer programming for another. There is no internal logical or epistemological analysis of these items to justify their worth. Another relativistic aspect of achievement tests is "marking on the curve." This leads to what Zigler has called "defining compensatory education objectives as raising the entire country above the 50th percentile in achievement tests" (unpublished comment).

Finally, and most basically, the relativism underlying achievement tests involves predicting to success in a system without asking whether the system awards success in an ethically justifiable manner, or whether success itself is an ethically justifiable goal. The original ethical impulse in constructing the achievement test was to equalize educational opportunity by a more impartial selection system than teachers' grades, recommendations, and the quality of schools the child has previously attended. This was done with relativistic acceptance that the content and demands of the school serve as social status gating mechanisms. It is hardly surprising that the whole desire to equalize opportunity, or increase educational and occupational justice through raising educational achievement scores, has failed in every possible sense of the word "failure" (Jencks, *et al.*, 1972).

On the psychological and factual side, there have been two basic and related flaws in the assumption that achievement tests represent something of educational value. The first is the notion that correlation or prediction can be substituted for causation. The second, related notion is that success within an

arbitrary system, the schools, implies success in other aspects of life. With regard to the first assumption, advocates of the industrial psychology strategy and achievement tests based on it feel that the relation between causation and prediction is unimportant. We can efficiently select those who will do well in college, become successful salesmen, or become juvenile delinquents without facing the causation issue. But if we shift from using a test or a measure of behavior as a selector to using it as the criterion for an educational objective, the problem is quite different. Unless a predictor of later achievement or adjustment is also a causal determinant of it, it cannot be used to define educational objectives.

As an example of the confusion between correlation and causation, we know that grades and achievement scores in elementary school predict to comparable scores in high school which in turn predict to comparable scores in college. The assumption is then made that the *cause* of particular achievement scores is the earlier achievement. It is assumed that a child who does not attain a second grade level of performance on reading achievement will not attain an adequate level of reading later because he is low in reading achievement at second grade.

In fact, the prediction of early to later achievement is mainly due to factors extraneous to achievement itself. Longitudinal studies show that the stability or predictive power of school achievement tests is largely due, first, to a factor of general intelligence and, second, to social class. Achievement scores correlate with I.Q. scores and both measures predict to later school achievement; early elementary achievement does not predict to later achievement any better than does I.Q. alone. In other words, bright children learn what they're taught in school faster, but learning what they're taught in school does not make them brighter nor does it necessarily mean that they will learn later material faster.

Achievement tests also fail to predict to success in later life; in fact, longitudinal studies indicate that school achievement predicts to nothing of value other than itself.

For example, in terms of future job success, high school dropouts do as well as graduates who do not attend college; high school graduates with poor achievement scores and grades do as well as those with good scores; and, college graduates with poor grades do as well as those with good grades (see Kohlberg, LaCrosse & Ricks, 1971; Jencks, *et al*, 1972).

In summary, academic achievement tests have no theoretical rationale. Their

practical rationale is primarily an industrial psychology "prediction for selection." But even by industrial psychology standards the tests do not do well since they fail to predict to later life achievement.

These criticisms do not imply that schools should be unconcerned with academic learning. They do suggest: (1) a heavy element of arbitrariness in current school objectives in academic learning; (2) the inability of educational testing methods endorsed by the industrial psychology school to make these objectives less arbitrary; and (3) the invalidity of assuming that if academic achievement is good, early achievement is best. Schools should teach reading, writing, and arithmetic, but their goals and success in teaching these subjects should not be judged by skill or achievement tests.

The Developmental-Philosophic Strategy

The developmental-philosophic strategy, as opposed to the other two, can deal with the ethical question of having a standard of non-relative or universal value and with factual questions of prediction. The concept of development, as elaborated by cognitive-developmental theory, implies a standard of adequacy *internal* to, and governing, the developmental process itself. It is obvious that the notion of development must do more than merely define what comes later in time. It is not clear that what comes later must be better. As an example, if anal interests mature later in time than oral interests, this in itself is no reason for claiming that the anal interests are better than the oral interests.

Cognitive-developmental theory, however, postulates a formal internal standard of adequacy which is not merely an order of events in time. In doing so it elaborates the ordinary-language meaning of the term "development." Webster's Dictionary tells us that to develop means "to make active, to move from the original position to one providing more opportunity for effective use, to cause to grow and differentiate along lines natural of its kind; to go through a process of natural growth, differentiation, or evolution by successive changes." This suggests an internal standard of adequacy governing development; it implies that development is not just any behavior change, but a change toward greater differentiation, integration, and adaptation. Cognitive-developmental psychological theory postulates that movement through a sequential progression represents movement from a less adequate psychological state to a more adequate psychological state. The existence of this "internal standard of adequacy" is suggested by studies which show that the child prefers thinking at the next

higher moral or logical stage to thinking at his own stage (or at lower stages) (Rest, 1973), and that he moves in that direction under normal conditions of stimulation.

The concept of development also implies that such an internal standard of adequacy is different than notions of adaptation based on culturally relative success or survival. As a case, we may take stages of morality. Being at the highest moral stage led Socrates and Martin Luther King to be put to death by members of their culture. Obviously, then, moral development cannot be justified as adaptive by standards of survival or of conformity to cultural standards. In terms of developmental psychological theory, however, King's morality was more adequate than the morality of most people who survive longer. Formally, King's morality was a more differentiated and integrated moral system than that of most people. It was more adequate because if all people adopted King's morality, it would resolve for everyone moral problems and conflicts unresolved by lower-stage moralities.

As the example of King suggests, the formal standard of cognitive-developmental psychological theory is not itself ultimate, but must be elaborated as a set of ethical and epistemological principles and justified by the method of philosophy and of ethics. The distinctive feature of the developmental-philosophic approach is that a philosophic conception of adequate principles is coordinated with a psychological theory of development and with the fact of development.

In contrast to "value-free" approaches, the approach suggested by Dewey and Piaget considers questions of value or adequacy at the very start. Piaget begins by establishing epistemological and logical criteria for deciding which thought structures are most adaptive and adequate for coping with complexity. Similarly, our work on ethical stages has taken a philosophic notion of adequate principles of justice (represented especially in the work of Kant and Rawls) to guide us in defining the direction of development. Epistemological and ethical principles guide psychological inquiry from the start. Thus, the strategy attempts to avoid the naturalistic fallacy of directly deriving judgments of value from judgments about the facts of development, although it assumes that the two may be systematically related. It takes as an hypothesis for empirical confirmation or refutation that development is a movement toward greater epistemological or ethical adequacy as defined by philosophic principles of adequacy.

The progressives' philosophical method differs from the approaches of philosophers of other persuasions in that the progressive or developmental method is partly empirical rather than purely analytic. It combines a prior

conception of development with a prior notion of an ethical standard of adequacy; but these notions can be revised in light of the facts, including the facts of development. If the facts of development do not indicate that individuals move toward philosophically desired principles of justice, then the initial philosophic definition of the direction of development is in error, and must be revised. The analytic and normative "ought" of the developmental philosopher must take into account the facts of development, but is not simply a translation of these facts.

This method of "empirical" or "experimental" philosophy is especially central for an educational philosophy prescribing educational aims. Philosophical principles cannot be stated as ends of education until they can be stated psychologically. This means translating them into statements about a more adequate stage of development. Otherwise the rationally accepted principles of the philosopher will only be arbitrary concepts and doctrines for the child. Accordingly, to make a genuine statement of an educational end, the educational philosopher must coordinate notions of principles with understanding of the facts of development.

Development as the Aim of Education

We have attempted to clarify and justify the basic claim that developmental criteria are the best ones for defining educationally important behavior changes. We need now to clarify how the psychological study of development can concretely define educational goals. A common criticism is that the concept of development is too vague to genuinely clarify the choice of the curricular content and aims of education. A second, related criticism is that the concept of development, with its connotation of the "natural," is unsuited to determine actual educational policy.

With regard to the issue of vagueness, if the concept of development is to aid in selecting educational aims and content, this assumes that only some behavior changes out of many can be labeled developmental. We need to justify this assumption and to clarify the conditions for developmental change.

Our position has been challenged by Bereiter (1970), who claims that determining whether or not a behavior change is development is a matter of theory, not an empirical issue. For example, Piagetian research shows that fundamental arithmetical reasoning (awareness of one-to-one correspondence, of inclusion of a larger class in a sub-class, of addition and subtraction as in-

verse operations), usually develops naturally, without formal instruction or schooling, i.e., it constitutes development. Such reasoning can also be explicitly taught, however, following various non-developmental learning theories. Accordingly, says Bereiter, to call fundamental arithmetical reasoning developmental does not define it as a developmental educational objective distinct from non-developmental objectives like rote knowledge of the multiplication tables.

In answer, the cognitive-developmental position claims that developmental behavior change is irreversible, general over a field of responses, sequential, and hierarchical (Kohlberg, 1970). When a set of behavior changes meets all these criteria, changes are termed stages or structural reorganizations. A specific area of behavioral change like fundamental arithmetical reasoning may or may not meet these criteria. Engelmann claims to have artificially taught children the "naturally developing" operation of conservation, but Kamii (1971) found that the children so taught met Engelmann's criteria of conservation without meeting the criteria of development, e.g., the response could be later forgotten or unlearned, it was not generalized, and so forth.

When a set of responses taught artificially do not meet the criteria of natural development this is not because educational intervention is generally incompatible with developmental change. It is because the particular intervention is found to mimic development rather than to stimulate it. The issue of whether an educational change warrants the honorific label "development" is a question for empirical examination, not simply a matter of theory.

We have claimed that development can occur either naturally or as the result of a planned educational program. As was discussed earlier, development depends on experience. It is true, however, that the way in which experience stimulates development (through discrepancy and match between experienced events and information-processing structures) is not the way experience is programmed in many forms of instruction and educational intervention. It is also true that the kinds of experience leading to development must be viewed in terms of a stimulation which is general rather than highly specific in its content or meaning.

Because the experiences necessary for structural development are believed to be *universal*, it is possible for the child to develop the behavior naturally, without planned instruction. But the fact that only about half of the adult American population fully reaches Piaget's stage of formal operational reasoning and only 5% reach the highest moral stage demonstrates that natural or

universal forms of development are not inevitable but depend on experience (Kuhn, Langer, Kohlberg & Haan, 1971).

If this argument is accepted, it not only answers the charge that development is a vague concept but helps answer the charge that there are kinds of development (such as growth in skill at burglary) which are not valuable.

Such questionable types of "development" do not constitute development in the sense of a universal sequence or in the sense of growth of some general aspect of personality. As stated by Dewey (1938): "That a man may grow in efficiency as a burglar . . . cannot be doubted. But from the standpoint of growth as education and education as growth the question is whether such growth promotes or retards growth in general" (p. 75).

While a coherent argument has been made for why universal developmental sequences define something of educational value, we need to consider why such sequences comprise the ultimate criteria of educational value. We also need to consider how they relate to competing educational values. How does universal structural development as an educational aim relate to ordinary definitions of information and skills central to the educational curriculum? It seems obvious that many changes or forms of learning are of value which are not universals in development. As an example, while many unschooled persons have learned to read, the capacity and motivation to read does not define a developmental universal; nonetheless, it seems to us a basic educational objective. We cannot dispose of "growth in reading" as an educational objective, as we could "growth in burglary," simply because it is not a universal in development. But we argue that the ultimate importance of learning to read can only be understood in the context of more universal forms of development. Increased capacity to read is not itself a development, although it is an attainment reflecting various aspects of development. The value or importance of reading lies in its potential contribution to further cognitive, social, and aesthetic development. As stated by Dewey (1898):

No one can estimate the benumbing and hardening effect of continued drill in reading as mere form. It should be obvious that what I have in mind is not a Philistine attack upon books and reading. The question is not how to get rid of them, but how to get their value—how to use them to their capacity as servants of the intellectual and moral life. To answer this question, we must consider what is the effect of growth in a special direction upon the attitudes and habits which alone open up avenues for development in other lines. (p. 29)

A developmental definition of educational objectives must not only cope with competing objectives usually defined non-developmentally, but with the fact that the universal aspects of development are multiple. Here, as in the case of evaluating non-developmental objectives, the progressive educator must consider the relation of a particular development to development in general. As an example, Kamii (1971) has defined a program of preschool intervention related to each of the chapter headings of Piaget's books: space, time, causality, number, classification, and so on. Kamii's intent in making use of all the areas of cognitive development discussed by Piaget is not to imply that each constitutes a separate, intrinsic educational objective. Rather, her interest is to make use of all aspects of the child's experience relevant to *general* Piagetian cognitive development. Such a concept of generalized cognitive-stage development is meaningful because Kohlberg and DeVries (1971) and others have shown that there is a general Piagetian cognitive-level factor distinct from psychometric general intelligence.

In contrast to the psychometric concept of intelligence, the developmental level concept of intelligence does provide a standard or a set of aims for preschool education. It does not assume a concept of fixed capacity or "intelligence quotient" constant over development. In this sense, developmental level is more like "achievement" than like "capacity," but developmental level tests differ from achievement tests in several ways. While the developmental level concept does not distinguish between achievement and capacity, it distinguishes between cognitive achievement (performance) and cognitive process (or competence). Developmental tests measure level of thought process, not the difficulty or correctness of thought product. They measure not cognitive performance but cognitive competence, the basic possession of a core concept, not the speed and agility with which the concept is expressed or used under rigid test conditions.

Psychometric and developmental level concepts of intelligence are quite different. In practice, however, the two kinds of measures are highly correlated with one another, explaining why clear theoretical and operational distinctions between the two concepts of intelligence have not been made until recently. Factor-analytic findings now can provide an empirical basis for this distinction (Kohlberg & DeVries, 1971). While psychometric measures of general intelligence and of "primary mental abilities" at mental age six correlate with Piagetian measures of cognitive level, there is also a common factor to all developmental level tests. This factor is independent of general intelligence or of any special psychometric ability. In other words, it is possible to distinguish

between psychometric capacity and developmental level concepts or measures of intelligence. Given the empirical distinction, cognitive stage measures provide a rational standard for educational intervention where psychometric intelligence tests do not. This is true for the following reasons:

1. The core structure defined by stage tests is in theory and experiment more amenable to educational intervention—Piagetian theory is a theory of stage movement occurring through *experience* of structural disequilibrium.
2. Piagetian performance predicts later development independent of a fixed biological rate or capacity factor, as demonstrated by evidence for longitudinal stability or prediction independent of I.Q. Because Piaget items define invariant sequences, development to one stage facilitates development to the next.
3. Piagetian test content has cognitive value in its own right. If a child is able to think causally instead of magically about phenomena, for instance, his ability has a cognitive value apart from arbitrary cultural demands—it is not a mere indicator of brightness, like knowing the word "envelope" or "amanuensis." This is reflected in the fact that Piaget test scores are qualitative; they are not arbitrary points on a curve. The capacity to engage in concrete logical reasoning is a definite attainment, being at mental age six is not. We can ask that all children reason in terms of logical operations; we cannot ask that all children have high I.Q.'s.
4. This cognitive value is culturally universal, the sequence of development occurs in every culture and subculture.

The existence of a general level factor in cognitive development allows us to put particular universal sequences of cognitive development into perspective as educational aims. The worth of a development in any particular cognitive sequence is determined by its contribution to the whole of cognitive development.

We must now consider the relation of developmental aims of education to the notion of developmental acceleration as an educational objective. We indicated that a concept of stages as "natural" does not mean that they are inevitable; many individuals fail to attain the higher stages of logical and moral reasoning. Accordingly, the aim of the developmental educator is not the acceleration of development but the eventual adult attainment of the highest stage. In this sense, the developmentalist is not interested in *stage-acceleration*, but in avoiding *stage-retardation*. Moral development research reviewed else-

where suggests that there is what approaches an optimal period for movement from one stage to the next (Kohlberg & Turiel, 1973). When a child has just attained a given stage, he is unlikely to respond to stimulation toward movement to the next stage. In addition, after a long period of use of a given stage of thought, a child tends to "stabilize" at that stage and develops screening mechanisms for contradictory stimulation. Accordingly, it has been found that both very young and very old children at a given stage (compared to the age-norm for that stage) are less responsive or less able to assimilate stimulation at the next higher stage than children at the age-norm for that stage. The notion of an "open period" is not age-specific, it is individual. A child late in reaching Stage 2 may be "open" to Stage 3 at an age beyond that of another child who reached Stage 2 earlier. Nevertheless, gross age-periods may be defined which are "open periods" for movement from one stage to the next. Avoidance of retardation as an educational aim means presenting stimulation in these periods where the possibility for development is still open.

We need to consider a related distinction between *acceleration* and *decalage* as an aim of education. Piaget distinguishes between the appearance of a stage and its "horizontal *decalage*," its spread or generalization across the range of basic physical and social actions, concepts, and objects to which the stage potentially applies. As a simple example, concrete logic or conservation is first noted in the concept of mass and only later in weight and volume. Accordingly, acceleration of the stage of concrete operations is one educational enterprise and the encouragement of *decalage* of concrete reasoning to a new concept or phenomenon is another. It is the latter which is most relevant to education. Education is concerned not so much with age of onset of a child's capacity for concrete logical thought, but with the possession of a logical mind—the degree to which he has organized his experience or his world in a logical fashion.

It is likely that the occurrence of such horizontal *decalage*, rather than age of first appearance of concrete operations, predicts to later formal operational thought. Formal reasoning develops because concrete reasoning represents a poor, though partially successful, strategy for solving many problems. The child who has never explored the limits of concrete logical reasoning and lives in a world determined by arbitrary unexplained events and forces, will see the limits of the partial solutions of concrete logic as set by intangible forces, rather than looking for a more adequate logic to deal with unexplained problems.

We have so far discussed development only as general cognitive develop-

ment. According to cognitive-developmental theory there is always a cognitive component to development, even in social, moral, and aesthetic areas. Development, however, is broader than cognitive-logical development. One central area is moral development, as defined by invariant stages of moral reasoning (Kohlberg & Turiel, 1971, 1973). On the one hand, these stages have a cognitive component; attainment of a given Piaget cognitive stage is a necessary, though not sufficient, condition for the parallel moral stage. On the other hand, moral reasoning stages relate to action, principled moral reasoning has been found to be a precondition for principled moral action (Kohlberg and Turiel, 1973). For reasons elaborated throughout this paper, the stimulation of moral development through the stages represents a rational and ethical focus of education related to, but broadening, an educational focus upon cognitive development as such (Kohlberg & Turiel, 1971). Programs effective in stimulating moral development have been successfully demonstrated (Blatt & Kohlberg, 1973).

While developmental moral education widens the focus of cognitive-developmental education beyond the purely cognitive, there is a still broader unity, called ego-development, of which both cognitive and moral development are part (Loevinger, Wessler & Redmore, 1970). Particularly in the earlier childhood years, it is difficult to distinguish moral development from ego-development. Cognitive development, in the Piagetian sense, is also related to ego development, since both concern the child's core beliefs about the physical and social world. Much recent research demonstrates that the development of the ego, as attitudes and beliefs about the self, involves step-by-step parallel development of attitudes and beliefs about the physical and social world. Further, it indicates definite stages of ego-development, defined by Loevinger *et al.* (1970), van den Daele (1970) and others, which imply step-by-step parallels to Piaget's cognitive stages, although they include more social emotional content. In general, attainment of a Piagetian cognitive stage is a necessary but not sufficient condition for attainment of the parallel ego stage. All children at a given ego stage must have attained the parallel cognitive stage, but not all children at a cognitive stage will have organized their self-concept and social experience at the corresponding ego stage. Thus, a general concept of ego-development as a universal sequential phenomenon is becoming an empirically meaningful guide to defining broad educational objectives. Furthermore, experimental educational programs to stimulate ego-development have been piloted with some definite success at both the preschool and the high school levels (van den Daele, 1970; Sprinthall & Mosher, 1970).

Thus, education for general cognitive development, and perhaps even education for moral development, must be judged by its contribution to a more general concept of ego-development. In saying this, we must remember that "ego-development" is the psychologist's term for a sequence which also must have a philosophic rationale. One pole of ego-development is self-awareness; the parallel pole is awareness of the world. Increasing awareness is not only "cognitive," it is moral, aesthetic, and metaphysical; it is the awareness of new meanings in life.

Finally, we need to note that in the realm of ego-development, a focus upon "horizontal *decalage*" rather than acceleration is especially salient. The distinction reflects in a more precise and viable fashion the concern of maturational or romantic stage-theorists for an educational focus upon "healthy" passage through stages, rather than their acceleration. In maturational theories of personality stages, age leads to a new stage regardless of experience and reorganizations at previous stages. As a result, education and experience become valuable not for movement to a new stage, but for healthy or *successful integration* of the concerns of a stage. Onset of the next stage occurs regardless of experience; it is only healthy integration of the stages which is contingent on experience and which should be the focus for education. Without accepting this contention, cognitive-developmental theory would agree that premature development to a higher ego stage without a corresponding *decalage* throughout the child's world and life presents problems. In psychoanalytic maturational terms, the dangers of uneven or premature ego development are expressed as defects in ego-strength with consequent vulnerability to regression. In cognitive-developmental terms, inadequate "horizontal *decalage*" represents a somewhat similar phenomenon. While the relation of "ego-strength" to logical and moral *decalage* is not well understood, there are many reasons to believe they are related. A child who continues to think in magical or egocentric terms in some areas of cognition and morality is likely to be vulnerable to something like "regression" under stress later in life.

In conclusion, if a broad concept of development, conceived in stage-sequential terms, is still vague as a definer of educational ends, it is not due to the inherent narrowness or vagueness of the concept. Rather, it is due to the fact that researchers have only recently begun the kind of longitudinal and educational research needed to make the concept precise and useable. When Dewey advocated education as development at the turn of the century, most American educational psychologists turned instead to industrial psychology or to

the mental health bag of virtues. If the results of the cognitive-developmental research of the last decades are still limited, they indicate real promise for finally translating Dewey's vision into a precise reality.

Summary and Conclusions

The present paper essentially recapitulates the progressive position first formulated by John Dewey. This position has been clarified psychologically by the work of Piaget and his followers; its philosophic premises have been advanced by the work of modern analytic philosophers like Hare, Rawls, and Peters. The progressive view of education makes the following claims:

1. That the aims of education may be identified with development, both intellectual and moral.
2. That education so conceived supplies the conditions for passing through an order of connected stages.
3. That such a developmental definition of educational aims and processes requires both the method of philosophy or ethics and the method of psychology or science. The justification of education as development requires a philosophic statement explaining why a higher stage is a better or a more adequate stage. In addition, before one can define a set of educational goals based on a philosophical statement of ethical, scientific, or logical principles one must be able to translate it into a statement about psychological stages of development.
4. This, in turn, implies that the understanding of logical and ethical principles is a central aim of education. This understanding is the philosophic counterpart of the psychological statement that the aim of education is the development of the individual through cognitive and moral stages. It is characteristic of higher cognitive and moral stages that the child himself constructs logical and ethical principles; these, in turn, are elaborated by science and philosophy.
5. A notion of education as attainment of higher stages of development, involving an understanding of principles, was central to "aristocratic" Platonic doctrines of liberal education. This conception is also central to Dewey's notion of a democratic education. The democratic educational end for all humans must be "the development of a free and powerful character." Nothing less than democratic education will prepare free people for factual

and moral choices which they will inevitably confront in society. The democratic educator must be guided by a set of psychological and ethical principles which he openly presents to his students, inviting criticism as well as understanding. The alternative is the "educator-king," such as the behavior-modifier with an ideology of controlling behavior, or the teacher-psychiatrist with an ideology of "improving" students' mental health. Neither exposes his ideology to the students, allowing them to evaluate its merit for themselves.

6. A notion of education for development and education for principles is liberal, democratic, and non-indoctrinative. It relies on open methods of stimulation through a sequence of stages, in a direction of movement which is universal for all children. In this sense, it is natural.

The progressive position appears idealistic rather than pragmatic, industrial-vocational, or adjustment-orientated, as is often charged by critics of progressivism who view it as ignoring "excellence." But Dewey's idealism is supported by Piagetian psychological findings which indicate that all children, not only well-born college students, are "philosophers" intent on organizing their lives into universal patterns of meaning. It is supported by findings that most students seem to move forward in developmentally oriented educational programs. Furthermore, the idealism of the developmental position is compatible with the notion that the child is involved in a process of both academic and vocational education. Dewey denied that educational experience stimulating intellectual and moral development could be equated with academic schooling. He claimed that practical or vocational education as well as academic education could contribute to cognitive and moral development; it should be for all children, not only for the poor or the "slow." Our educational system currently faces a choice between two forms of injustice, the first an imposition of an arbitrary academic education on all, the second a division into a superior academic track and an inferior vocational track. The developmental conception remains the only rationale for solving these injustices, and for providing the basis for a truly democratic educational process.

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Highlander Folk School: Getting Information, Going Back and Teaching It

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If our judgments about educational change were based only on conventional histories, our vision of alternative futures would be constrained. We would probably come to the conclusion that a small number of school professionals and prominent social reformers have alone been responsible for initiating and maintaining worthwhile reforms.

Yet there are other histories. There is a history of modest or regional successes which do not meet the historians' standards of significance. There is a history of leaders and groups who are ahead of their time, who resist prevailing trends, but who appear in the official accounts as misinformed or malintentioned obstacles to the main direction of historical development. There is a history of "commonfolk" struggling to become, and becoming, their own leaders. There is a history of alternative educational perspectives, from utopian visions to practical classroom applications—developments too often known only to the few directly involved.

The neglect of these histories makes it difficult for those who today seek more humane alternatives to find reasonable connections with the past. Since they have little sense of the partial but significant successes of this tradition, reformers again and again see themselves in the despairing position of being the "first" to take on the collective legacy of centuries of Western education. The effort to record and

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