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ATOMISM, PRAGMATISM, HOLISM

JOHN P. MILLER, *The Ontario Institute for Studies in Education*

All of us have some world view which is held either consciously or unconsciously Once we develop a world view, we both live it and teach it What, then, are some world views that underpin curriculum? This article examines three world views—atomism, pragmatism, and holism First, I consider the basic tenets of each position as well as their influence on curriculum theory and practice. For example, atomism underpins competency-based education, and pragmatism is at the root of many inquiry-based approaches. In the concluding section I discuss the inadequacies of atomism and pragmatism and why ultimately holism is the most appealing position

ATOMISM

The atomistic view of reality can be traced to Greece, where Democritus conceived of Nature as empty space and atoms. He saw atoms as small, indivisible units piled upon one another, the indivisible atom, then, lay at the core of all substance. Democritus was a deterministic atomist, who saw the motion of atoms not as random events but as the consequence of specific causes that would have yielded no other event.

Today the Greek view has been replaced by a more sophisticated atomism. Contemporary atomism can be characterized by the following principles.

1 Reality is based in materialism.
2. This reality can be reduced to logical components or atoms.
3. We know through our senses.
4. We can use the findings of empiricism to develop a technology to control the material world
5. It is possible to approach inquiry from a value neutral perspective

Reality Is Based in Materialism

Thomas Hobbes, a seventeenth century philosopher, was a materialist who argued that nature consisted of an aggregate of things outside our mind Hobbes focused, then, on natural philosophy, which is concerned with the properties of bodies Today materialism has been modified into various forms

of positi .sm wherein science is seen as the basis for understanding matter and discovering the laws that regulate the interaction of bodies Modern day materialism has been called physicalism, the idea that all sciences can be reformulated in the language of physics According to Ayer, physicalism "is held by those who believe that the physical world is a closed system, that everything that happens can be accounted for in physical terms "[1]

Reality Can Be Reduced to Logical Components or Atoms

Barrett summarized this view of logical atomism

Logic analyzes statements into two kinds complex or molecular statements, on the one hand, and, on the other, the atomic statements into which these are resolved The world must ultimately be made up of atomic facts that correspond to the atomic statements with which logical analysis terminates And the various groupings of these atomic facts make up the complex facts that constitute our experience We thus arrive at the full-fledged doctrine of Logical Atomism [2]

Wittgenstein took logical atomism to its most radical conclusion In Wittgenstein's universe the atoms, or facts, are not connected Leibniz also atomized the universe into his monads These monads, however, are linked through Leibniz's conception of God, the ultimate Monad Wittgenstein's "facts" do not enjoy a unity of any kind

We Know Through Our Senses

Empiricism, which regards observations by the senses as the only reliable source of knowledge, has been developed most fully in the English philosophical tradition—in the seventeenth and eighteenth century by John Locke and David Hume and in this century in analytic philosophy Hume was the most radical of the enlightenment empiricists, and his work is still a reference point for empirical thinking. Hume argued that the contents of consciousness are perceptions, which he divides into impressions and ideas Impressions are our immediate sensations and emotions, ideas are copies or images of impressions Hume claims that all ideas are derived from impressions, if one cannot link an idea with an original impression, then the idea is meaningless According to Lavine, "Hume has presented a view of our experience as made up of atomic elements, of distinct and separable impressions and ideas, each an atom constituting our experience."[3] Hume's empiricism is similar to Wittgenstein's atomism because there is no link or causal connection between the impressions Lavine claims:

But not only are metaphysics and science impossible, so too is the common sense knowledge of everyday life, with its accounts of the necessary causal connections

[1]A. J Ayer, *Philosophy in the Twentieth Century* (New York Vintage Books, 1984), p 13

[2]William Barrett, *The Illusion of Technique* (New York Anchor Press, Doubleday, 1978), p 39

[3]T Z Lavine, *From Socrates to Sartre The Philosophic Quest* (New York Bantam Books, 1984), p 155

between fire and the burning of a finger held to it, between smoking cigarettes and lung cancer, between the planting seeds and the growth of plants These necessary connections of common sense are reduced to psychological associations of ideas; there is no justification for their providing explanations or predictions of events [4]

Just as logical atomism and analytic philosophy make us skeptical of our common sense knowledge, so Hume's empiricism makes us skeptical of causality in everyday life. Hume's empiricism and Wittgenstein's analytical philosophy leave us in a disconnected universe of atoms Barrett states·

But this ordinary practical freedom of ours becomes a theoretical impossibility in the fragmented world of Hume and Wittgenstein In that world there is no continuity of becoming at all—no causal influx of the present into the future One atomic fact follows another without connection. I reach out to grasp my pen in order to put these words down, and what I thus perform as the simple and continuous act of my will is now supposed, in the Humean view, to fall apart into disjointed fragments [5]

Positivists such as Auguste Comte and Rudolph Carnap rejected the random atomism of Hume and instead developed a deterministic atomism For these positivists, causality is not a connection of sense impressions, but is rooted in the physical world and discoverable through scientific investigation Comte believed that empirical science is the only reliable source of knowledge and thus should clear away all ideas that cannot be verified through scientific investigation He also thought that scientific knowledge should be extended to make technology "no longer excessively geometrical mechanical, or chemical, but also primarily political and moral."[6]

Logical positivism consists of two distinct worlds: the world of everyday existence and the world of scientific verification. In this latter world we supposedly have access to "truth" or at least "objective reality" The former world is suspect, as we learn not to trust our everyday sense of how things are but instead accord scientific verification a higher status as a source of understanding and relating to the world This view encourages us to deny our intuitive insight into how things are in favor of a more abstract view validated by mechanistic science

We Can Use Empiricism to Develop a Technology to Control Our Behavior and the Environment

Skinner's behavioral psychology extends the Comtean notion of technological control to human behavior. In 1968, he published *The Technology of Teaching,* in which he asserts that "recent improvements in the conditions which control behavior in the field of learning are of two principal sorts," both of which result from recognition and applications of the law of effect· First, we can use this law to shape "the behavior of an organism almost at

[4]Ibid , p 168.

[5]William Barrett, *The Illusion of Technique* (New York Anchor Press, Doubleday, 1978), p 45

[6]Donald A. Schon, *The Reflective Practitioner How Professionals Think in Action* (New York Basic Books, 1983), p 32

will"; and, second, we can use it to "maintain behavior in given states of strength for long periods of time."[7] Skinner refers here to the use of reinforcers, which is the central component in his theory of operant conditioning Education, in Skinner's view, is a matter of choosing and using reinforcement techniques; teaching is "the arrangement of contingencies of reinforcement under which students learn."[8] By arranging reinforcers in specific ways, the teacher can increase certain desired behaviors. Clearly, Skinner's psychology is atomistic: His programmed learning techniques break down behavior into small bits that can be manipulated, small identifiable components are used to organize student progress by means of sequential steps.

It Is Possible to Approach Inquiry from a Value-Neutral Perspective

In an atomistic universe, where all elements are more or less equal, values are not a central consideration In pursuing inquiry, the empiricist focuses not on ethical concerns but on generating new knowledge that science can validate. Thus, positivists and empiricists have not been generally concerned with values questions We turn now to how the atomistic and empirical traditions are manifested in educational practice.

ATOMISM AND THE CURRICULUM

Atomism in the curriculum has stressed segmentation and reduction of the curriculum to small, separate units. Franklin Bobbitt articulated an atomistic perspective in the first part of this century. He wrote, "Let us discover what the activities are which make up man's life and we have the objectives of education."[9] The objectives of Bobbitt's curriculum correspond to the daily activities of adults. Since these activities are almost infinite in number, the objectives and the curriculum are reduced to twenty or thirty thousand specific mechanical skills or behaviors. Clearly, this is curriculum that is atomistic at its core. Except for some broad categories, there is no attempt to conceptualize or draw a link among these large numbers of objectives Bobbitt's categories include:

1 Language activities, social intercommunication.
2 Health activities.
3. Citizenship activities.
4. General social activities—meeting and mingling with others
5. Spare-time activities, amusements, recreations.
6. Keeping one's self mentally fit—analogous to the health activities of keeping one's self physically fit.
7. Religious activities.
8 Parental activities, the upbringing of children, the maintenance of a proper home life.[10]

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[7]B F. Skinner, *The Technology of Teaching* (New York Appleton Century Crofts, 1968), p 10.

[8]Ibid , p 64

[9]Franklin Bobbitt, *How to Make a Curriculum* (Boston Houghton Mifflin, 1924), p 24

[10]Ibid , pp 7–8

David Snedden was a sociologist who supported Bobbitt's views. He divided the large number of objectives into production and consumption categories. According to Tanner and Tanner, this led to "further compartmentalization of vocation and culture," as the effect of the Bobbitt-Snedden approach was to "atomize subject matter in the mind of both teacher and learner"[11] The Bobbitt-Snedden view is based on a mechanistic view of science, as the universe is reducible to separate, isolate components. Atomistic approaches to education are still with us. Clearly, competency-based education and related approaches such as mastery learning reflect an atomistic conception of the curriculum. Competency-based education involves· (1) the selection of competency statements, (2) the specification of evaluation indicators to assess competency achievements, and (3) the development of an appropriate instructional system. According to McAshan, competency-based education is based on behavioral learning theory.

> Learning theory indicates that learning begins when stimuli (either internal or external) and their reinforcement cause an organism to react. Learning occurs through this process, and the more complex cognitive, psychomotor, and affective motivational systems develop. Thus, all learning can be said to begin when the learner is sensitized to the existence of stimuli. These stimuli may be thought of as occurring from the result of teaching strategies (or enabling activities) that are part of the instructional delivery system in CBE programs.[12]

Behaviorism, then, provides the psychological context for atomistic approaches to curriculum and instruction.

Today mastery learning can also be seen as an example of the atomistic paradigm. Joyce and Weil define a central component of mastery learning as "the curriculum is then divided into a larger set of relatively small learning units, each one accompanied by its own objectives."[13] In mastery learning it is essential that the curriculum be reduced to small units so that the student can proceed in a sequential way until a designated level of mastery is achieved

PRAGMATISM

John Dewey was critical of the atomistic perspective, as he and other pragmatists such as William James rejected a philosophy that segmented experience. In contrast, pragmatism focuses on the following principles:

1. The universe is in process; all things are changing.
2. Experimental science is the best model for interpreting and acting upon experience.
3. Hypotheses tested by experience, then, constitute the best form of knowledge.

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[11]Daniel Tanner and Laurel N. Tanner, *Curriculum Development Theory into Practice*, 2d ed (New York: Macmillan, 1980), p. 336.

[12]H. H McAshan, *Competency-Based Education and Behavioral Objectives* (Englewood Cliffs, NJ. Educational Technology Publications, 1979), p 51

[13]Bruce Joyce and Marsha Weil, *Models of Teaching*, 2d ed. (Englewood Cliffs, NJ : Prentice Hall, 1980), p. 447

4. The scientific method can also be applied to social problems and social experience.

5. Values arise from particular contexts and consequences

The Universe Is in Process—That Is, All Things Are Changing

John Childs, a colleague of Dewey, believed that the world is characterized by process and change. To the pragmatist, the world is like an ongoing stream in which everything is in a state of flux. Related to this notion is the idea that the world is incomplete and indeterminate. William James spoke of an open universe with its lid off, whereas the positivist views the universe as a closed system functioning as a machine.

Experimental Science Is the Best Model for Interpreting Experience

Dewey argued that the scientific method is the best model for intelligent behavior.

> It means that scientific method is the only authentic means at our command for getting at the significance of our everyday experiences of the world in which we live It means that scientific method provides a working pattern of the way in which and the conditions under which experiences are used to lead ever onward and outward Adaptation of the method to individuals of various degrees of maturity is a problem for the educator, and the constant factors in the problem are the formation of ideas, acting upon ideas, observation of the conditions which result, and organization of facts and ideas for future use [14]

Dewey developed a problem-solving method for analyzing experience based on the scientific method. The method consists of five steps.

> (i) perplexity, confusion, doubt due to the fact that one is implicated in an incomplete situation whose full character is not yet determined,
>
> (ii) a conjectural anticipation—a tentative interpretation of the given elements, attributing to them a tendency to effect certain consequences,
>
> (iii) a careful survey (examination, inspection, exploration, analysis) of all attainable consideration which will define and clarify the problem at hand,
>
> (iv) a consequent elaboration of the tentative hypothesis to make it more precise and more consistent, because squaring with a wider range of facts;
>
> (v) taking one stand upon the projected hypothesis as a plan of action which is applied to the existing state of affairs. doing something overtly to bring about the anticipated result, and thereby testing the hypothesis [15]

The first step indicates that we are confronted with a problem or an "indeterminate situation." Dewey characterizes the indeterminate situation as "disturbed, troubled, ambiguous, confused, full of conflicting tendencies "[16]

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[14]John Dewey, *Experience and Education* (New York Macmillan/Collier Books, 1938, 1963), p 88

[15]John Dewey, *Democracy and Education* (New York Macmillan/Free Press, 1916, 1966), pp 150–151

[16]John Dewey, *Experience and Education* (New York Macmillan/Collier Books, 1938, 1963), p 105.

Next, we examine the elements and the possible consequences associated with these elements in this particular situation.

Third, we attempt to clear up any confusion by defining the problem The next step is to formulate the problem so that it can be solved without excessive trial and error and busywork.

Fourth, we begin mentally to try out possible solutions to the problem in order to develop a tentative hypothesis

In the final step we test the hypothesis against experience and then develop a new hypothesis if needed.

Dewey's problem-solving sequence applies the scientific method to reflective experience Pragmatism overcomes the division that atomism developed between science and everyday experience. Science is not elevated above everyday experience but instead is applied to pluralistic contexts

Hypotheses Tested by Experience Constitute the Best Form of Knowledge

Pragmatism, in general, and John Dewey specifically reject the atomistic concern for the collection and categorization of factual knowledge Although the content of the observation is important to the pragmatist, the method of observation and reflection as outlined above is even more critical Reflective experience, then, becomes the organizer of facts.

Dewey and the pragmatists also were critical of the passive view of the mind associated with empiricism. Locke and other empiricists viewed the mind as a blank slate that receives data as sense impressions Pragmatists view knowledge in a more active mode. Sense impressions are gathered, but they are used to develop hypotheses, which are then tested against experience The mind, then, is not just passively receiving data but is generating meaning through experience. The person engages the world through experience, and this engagement allows the person to test out hypotheses and ideas in an active manner.

Butler makes the following claim about the epistemology of pragmatism

> It can be seen that the precise word for describing knowledge for pragmatism is not the adjective, *experiential,* which might be acceptable to many idealists, but rather the descriptive, *experimental* Because what is known is always known on the way to achieving a satisfactory outworking of a given unit of experience What is known is a hypothesis working satisfactorily, the resolving course of action in an experiment, not just an item of knowledge but an item of value in addition being made actual in experience [17]

The Scientific Method in the Form of Reflective Intelligence Should Be Applied to Social Experience

Dewey was a strong advocate of democracy that allows for the growth of each person and the exercise of intelligence The development of intelligence,

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[17] J Donald Butler, *Four Philosophies and Their Practice in Education and Religion* (New York Harper and Row, 1951), p 449

in Dewey's view, is fundamental to democracy and is the main goal of education. The school's main function, then, is to foster reflective intelligence, as students should learn to reflect on social experience and to test out hypotheses in terms of this experience.

Kaplan links pragmatism and liberalism when he says that the method of pragmatic liberalism is "the application of intelligence to social problems."[18] The basic assumption of pragmatism is that reflective intelligence and the scientific method can resolve most problems.

Values from a Pragmatic Perspective Arise from Particular Contexts and Consequences

In pragmatism a value judgment assesses whether a specific action will have certain consequences of experienced satisfaction or frustration. It declares whether something will help attain a specific goal or end. Value judgments must also assess whether the context is appropriate for the desired end. Pragmatists view means and ends and contexts and consequences in relation to each other. Pragmatism, then, is relativistic. However, pragmatists reject a total relativism in favor of an objective relativism. The reflective method helps the individual avoid making moral choices solely on the basis of whim. Again the scientific method in the form of reflective experience is the critical reference point for the pragmatic perspective.

PRAGMATISM AND THE CURRICULUM

Pragmatism with its emphasis on reflective intelligence has formed the theoretical bases for many inquiry approaches to curriculum. These approaches can be viewed as variations on Dewey's five-step method. For example, Massialas has developed a six-step sequence in social studies.

1. Defining and categorizing concepts and distinguishing between ideas.
2. Clarifying values underlying positions.
3. Collecting and analyzing evidence.
4. Using evidence to validate or evaluate hypotheses or positions
5. Exploring logical consequences of positions
6. Generalizing.[19]

Herbert Thelen also developed what he called a group investigation approach, which reflects a Deweyean conception of inquiry. This model has six steps.

1. Encounter puzzling situation.
2. Explore reactions to the situation.
3. Formulate main task and organize to study the task.
4. Independent and group study.

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[18]Abraham Kaplan, *The New World of Philosophy* (New York: Random House, 1961), p 42

[19]Bryon G. Massialas, Nancy F Sprague, and J. B. Hurst, *Social Issues Through Inquiry* (Englewood Cliffs, N.J.: Prentice Hall, 1975), p. 31.

5. Analyze progress and process.
6 Begin a new cycle with a problem arising from the investigation [20]

Although the methods of inquiry vary from project to project, most follow the model of the pragmatic inquiry developed by Dewey.

HOLISM

Holism is based on the "perennial philosophy," which holds that all things are part of an indivisible unity or whole. In brief, the basic principles of the perennial philosophy and holism are as follows:

1. There is an interconnectedness of reality and a fundamental unity in the universe.

2. There is an intimate connection between the individual's inner or higher self and this unity.

3. In order to see this unity we need to cultivate intuition through contemplation and meditation.

4. Value is derived from seeing and realizing the interconnectedness of reality.

5 The realization of this unity among human beings leads to social activity designed to counter injustice and human suffering.

These principles have been articulated in different spiritual and intellectual traditions in both the East and West. In the West the perennial philosophy can be traced to early Greece. For example, Pythagoras made the connection between the inner person and the universe. He designated the word *psyche* to represent this "inner self," which corresponds to the highest principles of the universe. The individual must attend to the pysche to realize this connection. According to Jacob Needleman, Pythagoras felt that "the cosmos, the deep order of nature is knowledgeable through self-knowledge—man is a microcosm."[21] Thus, the individual must contemplate or meditate to gain access to this understanding. Pythagoras suggested that certain techniques, such as "the use of parable and symbol, of meditation, of the discipline of silence, of the study of music and sacred dance,"[22] as well as other methods be used in the search for self-knowledge.

It is possible to identify the perennial philosophy or at least aspects of the philosophy with Eastern spiritual traditions (Hinduism, e g , Gandhi), Western idealism (Calkins), transcendentalism (Emerson), some forms of existentialism (Heidegger), and Christian mysticism (Merton) We turn now to the five principles.

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[20]Bruce Joyce and Marsha Weil, *Models of Teaching*, 2d ed (Englewood Cliffs, NJ Prentice Hall, 1980), p 240.

[21]Jacob Needleman, *The Heart of Philosophy* (New York Alfred A. Knopf, 1982), p 59

[22]Ibid , p 45

The Interconnected Nature of Reality and the Fundamental Unity of the Universe

In atomism the universe is viewed as a collection of atoms; in pragmatism, as an ongoing process, in holism, the universe is seen as harmonious and interconnected Holism acknowledges the individual part and that things are in process; however, underlying process and connecting the parts is a fundamental unity. This unity, however, is not monistic; instead, the emphasis is on the *relations* between the whole and the part According to Mary Whiton Calkins, the American idealist philosopher.

> The ultimately real relations are those of whole and part, of including and being included The beings of the universe are, from this point of view, all of them parts of some including entity, and are thus related to each other indirectly [23]

Ralph Waldo Emerson repeatedly emphasized the relation between the individual person and the Oversoul or "the great soul "

> I am somehow receptive of the great soul, and thereby I do overlook the sun and the stars and feel them to be the fair accidents and effects which change and pass More and more the surges of everlasting nature enter into me, and I become public and human in my regards and actions So come I to live in thoughts and act with energies which are immortal Thus revering the soul, and learning, as the ancient said, that "its beauty is immense," man will come to see that the world is the perennial miracle which the soul worketh, and be less astonished at particular wonders, he will learn that there is no profane history, that all history is sacred, that the universe is represented in an atom, in a moment of time He will weave no longer a spotted life of shreds and patches, but he will live with a divine unity [24]

By seeing this relation between ourselves and "the great soul," we become whole.

For Mahatma Gandhi, this unity reveals itself in the immediacy of daily life. He also claimed that this unity lies behind all religions. "The forms are many, but the informing spirit is one. How can there be room for distinctions of high and low where there is this all-embracing fundamental unity underlying the outward diversity? For that is a fact meeting you at every step in daily life. The final goal of all religions is to realize this essential oneness "[25] Gandhi's position that this unity is evident in everyday life reflects the notion that the interconnectedness of reality should not be relegated to remote forms of mysticism.

The German philosopher Martin Heidegger refers to this fundamental unity as Being, and he attempts to awaken in us our relationship to Being

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[23]Mary W Calkins, "The Philosophical Credo of an Absolutistic Personalist," in *Contemporary American Philosophy,* ed G P Adams and W P Montague (New York Macmillan, 1930), pp 210–211

[24]Ralph W Emerson, *Selected Writings,* ed W H Gilman (New York New American Library, 1965), p 295

[25]Mahatma Gandhi, *All Men are Brothers Autobiographical Reflections,* ed Krishna Kripalani (New York Continuum, 1980), p 63

Heidegger felt that modern philosophy separates us from primal "ground of Being", by seeing our relation to Being we can realize a basic unity in our lives. According to Heidegger, an awareness of Being leads to "astonishment" or a sense of awe. This astonishment is integral to Holism and is a spur to scientific work and artistic creation, as Albert Einstein suggested.

Einstein spoke of a cosmic religion that involves an awareness of the harmony of nature.

> The individual feels the sublimity and marvelous order which reveal themselves both in nature and in the world of thought. Individual existence impresses him as a sort of prison and he wants to experience the universe as a single significant whole [26]

There is disagreement among holistic thinkers as to how much science can contribute to an understanding of this fundamental unity Einstein spent his life in search of a unified field theory. Now some physicists are claiming that a Grand Unified Theory of Nature is close at hand For example, Davies claims that for the "first time in the history of science we can form a conception of what a complete scientific theory of the world will look like "[27] This statement is based on the discovery of supergravity or the force that holds the neutron and proton together in the nucleus of the atom. Davies states:

> Supergravity is the crowning achievement in the long search for unity in physics Although still in its formative stages, it undoubtedly holds out great hope for solving three major outstanding problems of theoretical physics, i e, how to unify all four forces of nature into a single superforce, how to explain the existence of all these fundamental particles—they are needed to maintain supersymmetry—and why gravity is so much weaker than the other forces of nature [28]

At the center of the vision of the new physics is the idea that a "noncausal, holistic order" exists in the universe.[29] Using subatomic physics we can define the position of a subatomic particle (e.g., an electron) only in relation to other particles and in relation to the observer and the method of observation According to Davies, "There is no hope of building a full understanding of matter from the constituent particles alone. Only the system as a whole gives concrete expression to microscopic reality."[30]

However, some of the individuals responsible for the development of modern physics claim that science cannot be expected to reveal the true nature of the fundamental unity of existence. Erwin Schroedinger, who discovered a form of "wave mechanics" that became central to quantum mechanics, stated that "science is reticent too when it is a question of the great Unity—the One of Parmenides—of which we all somehow form part, to which we

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[26]Albert Einstein, "Cosmic Religious Feeling," in *Quantum Questions*, ed Ken Wilber (Boulder, Colo.· Shambhala, 1984), p 102

[27]Paul Davies, *Superforce The Search for a Grand Unified Theory of Nature* (New York Simon and Schuster, 1984), p 149

[28]Ibid, p 148

[29]Ibid, p 220

[30]Ibid, p 39

belong."[31] Werner Heisenberg, who developed the Uncertainty Principle, also claimed that "the language of poetry may be more important than the language of science" in interpreting the "one" or "the unitary principle behind the phenomena."[32]

The Intimate Connection Between the Individual's Inner or Higher Self and This Unity

In his journal Emerson stated:

A man finds out that there is somewhat in him that knows more than he does Then he comes presently to the curious question, Who's who? which of these two is really me? the one that knows more or the one that knows less: the little fellow or the big fellow.[33]

Emerson's "little fellow" is our personal ego, which strives to impose its will on the universe. The "big fellow," or our higher self, realizes the futility of such endeavors and merely seeks to be in tune with the Universal Mind. When we are in touch with the "big fellow," we "are not to do, but let do, not to work, but to be worked upon." With the little fellow, we strive and manipulate, with the big fellow, we listen and see and according to Emerson are subject to a "vast and sudden enlargement of power."[34] Emerson refers to the creative power that is similar to Einstein's cosmic religion that inspires the artist and the scientist.

Thomas Merton, the American Trappist monk, spoke of the "inner self," which is similar to Emerson's "big fellow."

Instead of seeing the external world in its bewildering complexity, separateness, and multiplicity; instead of seeing objects as things to be manipulated for pleasure or profit, instead of placing ourselves over against objects in a posture of desire, defiance, suspicion, greed, or fear, the inner self sees the world from a deeper and more spiritual viewpoint. In the language of Zen, it sees things "without affirmation or denial"; that is to say, from a higher vantage point, which is intuitive and concrete and which has no need to manipulate or distort reality by means of slanted concepts and judgments It simply "sees" what it sees, and does not take refuge behind a screen of conceptual prejudices and verbalistic distortions.[35]

Heidegger had a unique vision of the human being. He did not see the person as a skin encapsulated ego, but a "force field," or what he called Dasein. Dasein, then, is intimately connected with the surrounding environment. Barrett comments:

Heidegger's theory of man (and of Being) might be called the Field Theory of Man (or the Field Theory of Matter), provided we take this purely as an analogy, for

[31]Erwin Schroedinger, "Why Not Talk Physics," in *Quantum Questions*, ed Ken Wilber (Boulder, Colo : Shambhala, 1984), p 82

[32]Werner Heisenberg, "The Debate Between Plato and Democritus," in *Quantum Questions*, ed. Ken Wilber (Boulder, Colo : Shambhala, 1984), p 54

[33]Ralph W Emerson, *The Complete Works*, Vol 9 (Boston Houghton Mifflin, 1909), p 190

[34]Ibid.

[35]Thomas Merton, "The Inner Experience" (unpublished manuscript, fourth draft), p 17

Heidegger would hold it a spurious and inauthentic way to philosophize to derive one's philosophic conclusions from the highly abstract theories of physics But in the way that Einstein took matter to be a field (a magnetic field, say)—in opposition to the Newtonian conception of a body as existing inside its surface boundaries—so Heidegger takes man to be a field or region of Being.[36]

Cultivation of Intuition and Insight Through Contemplation and Meditation

.A consistent thread in the perennial philosophy is that the rational or analytic mind, which focuses on discrimination, cannot fully grasp the wholeness of existence. Instead intuition should be cultivated in order to see more clearly the interrelatedness of reality. Frances Vaughn has identified levels of intuition. The lowest levels are the physical and emotional levels, at which the individual experiences a "gut" reaction. At the next level, the mental, we develop "hunches" or insights into problems that can be tested through forms of verification. The highest level of intuition is the spiritual level, at which we can perceive the fundamental unity of existence.[37] Emerson refers to this level of intuition when he says:

> The inquiry leads us to that source, at once the essence of genius, of virtue, and of life, which we call Spontaneity or Instinct. We denote this primary wisdom as Intuition, whilst all later teachings are tuitions. In that deep force, the last fact behind which analysis cannot go, all things find their common origin For, the sense of being which in calm hours rises, we know not how, in the soul, is not diverse from things, from space, from light, from time, from man, but one with them, and proceeds obviously from the same source whence their life and being also proceed.[38]

Gandhi refers to intuition as that "still small voice within" that prods him to social action. "There are moments in your life when you must act, even though you cannot carry your best friends with you. The 'still small voice' within you must always be the final arbiter when there is conflict of duty."[39] While Gandhi claims that intuition can stimulate social consciousness, Teilhard de Chardin states that it leads to personal transformation. He said: ". deeper still. a transformation had taken place for me in the very perception of being Thenceforward being had become, in some way, tangible and savorous to me; and as it came to dominate all the forms which it assumed being itself began to draw me and intoxicate me."[40] Heidegger distinguished between two modes of thinking—rational, calculative thinking and intuitive, meditative thinking The calculative mode predominates in Western technological society It attempts to objectify things in order to classify and control them. In contrast, meditative

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[36]William Barrett, *Irrational Man. A Study in Existential Philosophy* (New York: Doubleday Anchor Books, 1962), pp. 217–218.

[37]Frances E. Vaughn, *Awakening Intuition* (New York. Doubleday Anchor Books, 1979)

[38]Ralph W. Emerson, *Selected Writings*, ed. W. H Gilman (New York. New American Library, 1965), p 267.

[39]Mahatma Gandhi, *All Men are Brothers. Autobiographical Reflections*, ed. Krishna Kripalani (New York: Continuum, 1980), p 62

[40]Pierre Teilhard de Chardin, *The Divine Milieu* (New York. Harper and Row, 1968), p 129

thinking is based on an openness to Being It allows for a direct intuitive encounter with what is.

Specific approaches to cultivate intuition have been advocated within the perennial philosophy. These methods, such as contemplation and meditation, help one to "see." Again, this seeing is usually a gradual awakening to the interconnectedness of things

Emerson, for example, suggested that it was helpful to be quiet and to listen. In this quiet, we can gain access to the "infinitude" within each person. Gandhi believed that silence was helpful in seeking God. He said

> It [silence] has now become both a physical and spiritual necessity for me Originally it was taken to relieve the sense of pressure Then I wanted time for writing After, however, I had practiced it for some time, I saw the spiritual value of it It suddenly flashed across my mind that that was the time when I could best hold communion with God. And now I feel as though I was naturally built for silence [41]

Heidegger also felt contemplation was useful in realizing Being Heidegger himself spent much time in his Black Forest retreat hut, where he could contemplate and reflect. The contemplation of Heidegger and Emerson, however, is different from Gandhi's meditation In Eastern practices meditation (e.g., repeating a mantra and counting one's breath) tends to be more focused than contemplation, which is less structured.

Values Are Derived from Seeing and Realizing the Interconnectedness of Reality

Values are derived from realizing the fundamental connectedness between individuals; in other words, values are linked to relatedness. Positive values enhance or realize that the relatedness and negative values foster separateness and paranoia. Caring, for example, is a central value in the perennial philosophy. Heidegger concluded that caring is the "primordial state of being" Noddings has developed an ethic of caring She claims that caring is characterized by a receptivity or engrossment, meaning that when we care we receive the concerns of others. If as teachers we care about our students, then we tend to take on their problems as our own. Noddings claims, "I can lecture to hundreds, and this neither is consequential nor unimportant, but this is not teaching. To teach involves a giving of self and a receiving of others."[42]

For Noddings, caring is rooted in a basic relatedness between people (e.g., teacher and student), and this relatedness is a fundamental source of joy. In referring to the mother/child relationship, she claims, "When I look at my child—even one of my grown children—and recognize the fundamental relation in which we are each defined, I often experience a deep and over-

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[41]Mahatma Gandhi, *All Men are Brothers Autobiographical Reflections*, ed Krishna Kripalani (New York: Continuum, 1980), p 101

[42]Nel Noddings, *Caring A Feminine Approach to Ethics and Moral Education* (Berkeley, Calif : University of California Press, 1984), p 113

whelming joy It is the recognition of longing for relatedness that forms the foundation of our ethic."[43]

This relatedness provides the basic context for morality. Noddings is suspicious of abstract rules and formulas as a basis for moral decision making She tends to equate analytic and abstract approaches to moral education with masculinity, while a feminine approach to morality has to do with concrete situations in which the individual is concerned with caring and human relatedness

At the center of Noddings' approach is what she calls the ethical ideal of caring. She avoids relativism by arguing that caring is the fundamental ethical ideal that sustains us What is "right" is that which helps maintain caring and relatedness.

The Realization of the Fundamental Unity of Existence Leads to Social Action to Counter Injustice and Human Suffering

If human beings realize they are part of a fundamental unity, then, they naturally feel a connectedness and responsibility to others However, perennial philosophers are not necessarily social activists. Most important is the idea that social reform would start from within. According to Emerson.

> The origin of all reform is in that mysterious fountain of the moral sentiment in man, which, amidst the natural, ever contains the supernatural for men That is new and creative That is alive That alone can make a man other than he is.[44]

Emerson's moral sentiment is analogous to his "big fellow," which is connected to the Oversoul. Although Emerson was not a social activist, he spoke out against slavery and particularly against Daniel Webster's support of the Fugitive Slave law. He also opposed the exclusion of the Cherokee Indians from Georgia and supported women's rights.

Gandhi, of course, was a social activist who used *ahimsa* (non-violence) and *satyagraha* (soul force) as vehicles for social change For Gandhi, religion and politics could not be compartmentalized:

> I could not be leading a religious life unless I identified myself with the whole of mankind, and that I could not do unless I took part in politics The whole gamut of man's activities today constitutes an indivisible whole. You cannot divide social, economic, political and purely religious work into watertight compartments I do not know any religion apart from human activity It provides a moral basis to all other activities which they would otherwise lack, reducing life to a maze of "sound and fury signifying nothing "[45]

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[43]Ibid , p 6

[44]Ralph W Emerson, *The Complete Works*, Vol 1 (Boston Houghton Mifflin, 1903), p 272

[45]Mahatma Gandhi, *All Men are Brothers. Autobiographical Reflections*, ed Krishna Kripalani (New York. Continuum, 1980), p 63

HOLISM AND EDUCATION

Atomism can be linked with competency-based education and pragmatism with inquiry-oriented approaches to curriculum; holism can be connected to approaches such as confluent education and Waldorf education. For example, confluent education first focused on the integration of the cognitive and affective. According to George I. Brown, the affective domain econompasses feelings, emotions, attitudes, values, intuition, and creativity, and the cognitive domain includes intellectual functioning.[46] However, confluent education has moved beyond this more limited definition; it now also refers to the integration of the intrapersonal, interpersonal, extrapersonal, and transpersonal.

Intrapersonal refers to the person's internal space-feelings and self-perceptions. The intrapersonal also refers to each person's subpersonalities, such as aggressive or passive, masculine and feminine. Confluent education attempts to facilitate awareness of the different subselves and eventually bring them into harmony. The *interpersonal* dimension consists of relations with others. It involves how students perceive other people and how they communicate with them. *Extrapersonal* refers to the context or social structures that encompass the experiences of the student. These include the structure of the school, the community, and the society. The most desirable education is one in which all three dimensions are integrated:

> For example, if a curriculum is designed to teach democratic processes, and individual students share in decisions affecting them, work in small groups in a decision-making process, and participate with the teacher in setting classroom rules, a confluence exists among intrapersonal needs, interpersonal relations, and the extrapersonal setting If the teacher governs the class autocratically, however, the situation is not confluent [47]

The last element in confluent education is the *transpersonal* or spiritual context.

Waldorf education was developed by Rudolph Steiner in 1919 in Europe.[48] Waldorf schools do not fragment the curriculum, as many activities are integrated around the arts. For example, language arts is explored through drama and even movement.

Holistic programs also facilitate the student's relatedness with the community. Some educators advocate that the school should encourage student involvement in community service. For example, Noddings suggests that students have opportunities to practice caring. She recommends assigning students to "hospitals, nursing homes, animal shelters, parks and botanical gar-

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[46]George I. Brown, *Human Teaching for Human Learning. An Introduction to Confluent Education* (New York: Viking Press, 1971)

[47]George I. Brown, Mark Phillips, and Stewart Shapiro, *Getting It All Together Confluent Education* (Bloomington, Ind.· Phi Delta Kappa Educational Foundation, 1976), pp 11–12

[48]Rudolph Steiner, *Education of the Child in the Light of Anthroposophy* (London Anthroposophic Press,1975).

dens where the primary focus is on developing competence in caring."[49] Newmann's primary focus is engaging the student in social change, as his aim is to develop in the student an ability to effect his or her social environment. Some of the social action projects Newmann advocates include: "telephone conversations, letter writing, participation in meetings, research and study, testifying before public bodies, door-to-door canvassing, fund-raising media production, bargaining and negotiation, and also publicly visible activity associated with the more militant forms."[50]

CONCLUSION

The atomistic world view can be viewed as a source of alienation because it promotes fragmentation and compartmentalization.

In academia, Kaplan has referred to the way the analytic philosopher separates his or her trade from more fundamental concerns Value commitments "belong to the personal life of the philosopher but are not integrated with his professional concerns. What he identifies as philosophy is not something that he lives by, but a purely intellectual pursuit, like the study of mathematics or physics with which it is so intimately associated "[51] Academic philosophy, then, has contributed to fragmentation by compartmentalizing our deepest concerns and separating them from academic endeavors

Ibsen described this fragmentation in *A Doll's House,* in which a "respectable citizen" keeps his wife and family totally separate from his business activities. This fragmentation leads to the collapse of his artificial existence—the doll's house.

The hidden curriculum of atomistic approaches in advocating mastery learning and competency-based education also promotes fragmentation One result is that the student must focus on particulars of a given subject rather than explore relationship between subjects. In the words of Tanner and Tanner, "But perhaps the most damaging result of breaking down the curriculum into minute particles is that it must, of necessity, lead away from an understanding of the unity of all knowledge. Obviously also, a disintegrated curriculum is not likely to help the student develop an integrated outlook or philosophy or lead to transfer of learning."[52] In fact a by-product of the atomistic curriculum is alienation. In the world of mastery learning and competency-based education, the spiritual or inner life of the child is ignored In general, this segmented approach to learning contributes a spiritual vacuum in the world of atoms.

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[49]Nel Noddings, *Caring. A Feminine Approach to Ethics and Moral Education* (Berkeley, Calif.. University of California Press, 1984), p. 187

[50]Fred W. Newmann, *Education for Citizen Action Challenge for Secondary Curriculum* (Berkeley, Calif.: McCutchan, 1975), pp. 54–55

[51]Abraham Kaplan, *The New World of Philosophy* (New York. Random House, 1961), p 88

[52]Daniel Tanner and Laurel N. Tanner, *Curriculum Development Theory into Practice,* 2d ed (New York: Macmillan, 1980), p 337.

In the segmented curriculum we have created our own doll's house In this house we have separated the head and heart We detach the head from the heart because we want to hide behind the illusion that we may have created for ourselves. An illusion in education is the back-to-basics movement By suggesting that we must focus solely on the three Rs, we are continuing to perpetuate the split between the heart and head. By stressing cognitive skills over affective and spiritual integration, we reinforce our sense of separateness

Dewey and Childs also recognize the limitations of the atomistic world view.

> The assumption implicit in the method of much of the work referred to is that processes and functions with which education deals are isolable, because they are independent of one another This involves the philosophical notion that character, mental life, experience, and the methods of dealing with them, are composed of separable parts and that there is no whole, no integralness in them, that what seems to be a unity is in reality nothing but an aggregate of parts This philosophy once dominated physical science. In physics and biology its inadequacy from a scientific point of view is now realized Yet it has been taken over by that school of educational "science" which denies the importance of a philosophy in conducting education [53]

But does pragmatism offer a satisfying alternative to atomism? Pragmatic inquiry is an improvement over educational alternatives associated with an atomistic perspective. The universe is no longer a random set of atoms or a closed deterministic system. Instead, pragmatism offers a more optimistic view of experience in which the person can act in an intelligent manner However, there are problems with the pragmatic model of intelligence. In most cases pragmatic inquiry is what Howard Gardner calls logical-mathematical intelligence. Gardner argues for a theory of multiple intelligences and claims that pragmatic inquiry dismisses other forms of human experience [54] Although Dewey bridged the dichotomy of atomism (science and everyday experience), he created a monistic approach to problem solving. There is little room for nonlinear or holistic forms of thinking and perception in pragmatic inquiry. For example, various forms of intuition that are so fundamental to both scientific and aesthetic thinking are not acknowledged. Einstein claimed that fantasy was critical to his discovery of the theory of relativity He said, "When I examine myself and my methods of thought I come to the conclusion that the gift of fantasy has meant more to me than my talent for absorbing positive knowledge."[55] In contrast to pragmatic inquiry we can examine the creative process as proposed by Wallas.[56] The first element in his model is *preparation*—the individual gathers information relevant to the problem or project. At the second stage, *incubation*, the individual relaxes and does not make an effort to work consciously on the problem Instead, it

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[53]John Dewey and John L Childs, "The Underlying Philosophy of Education," in *The Educational Frontier*, ed William H Kilpatrick (New York Century, 1933), p 289

[54]Howard Gardner, *Frames of Mind* (New York Basic Books, 1983)

[55]Ronald W Clark, *Einstein, the Life and Times* (New York Avon Books, 1971), p 118

[56]George Wallas, *The Art of Thought* (London Watts, 1926)

is suggested that ideas or solutions realign themselves in the individual as he or she consciously attends to something else In the *illumination* stage, the solution will occur, often spontaneously and unexpectedly The final stage is *verification,* or revision, when the individual puts the idea into use and consciously works with the idea in a more detailed manner.

Incubation apparently occurs in the right hemisphere of the brain, and imagery is a necessary ingredient to the process. For example, many artists and scientists have reported how imagery is central to the creative process In general, incubation, intuition, and imagery are not part of pragmatic inquiry or logical-mathematical intelligence.

Another difficulty with pragmatism is that there is no over-reaching unity, as we are basically left with problem solving in indeterminate situations. In other words, our main source of connectedness is through reflective experience. This is not enough because reflective experience is only a partial connectedness that denies the wholeness of existence. Connectedness that transcends reflective experience can be found in poetry, music, myths, and spiritual insight, these forms are not given adequate scope in pragmatic inquiry Although Dewey writes of aesthetics, what is missing is a sense of awe and mystery. Einstein said, "The most beautiful experience we can have is the mysterious. It is the fundamental emotion which stands at the cradle of true art and true science."[57]

Another problem with pragmatic inquiry is the ethical relativism Values in pragmatism are always rooted in a particular context or problem We miss, then, transcendent values such as caring. Transcendent values allow humans to feel a fundamental connectedness with others and with the universe Again, in pragmatic inquiry we have a rational cognitive approach to morality Noddings points out the problems with this form of morality·

> A difficulty arises when we approach the teaching of morality or ethical behavior from a rational-cognitive approach. We fail to share with each other the feelings, the conflicts, the hopes and ideas that influence our eventual choices We share only the justification for our acts and not what motivates and touches us [58]

The model of rational intelligence and pragmatic inquiry leaves us in a spiritual vacuum. We have moved beyond the world of atoms to a world that is dominated by pragmatic inquiry and rational intelligence One of the reasons for this dominance is Dewey's rejection of Hegelian philosophy

> Dewey transforms the Hegelian emphasis on Reason or Spirit into an emphasis on science and its works. Absolute Spirit is replaced, in Dewey's philosophy, by the operation of the scientific intelligence It is science that develops from problematic stage to problematic stage, unifying progressively the tensions and difficulties that give birth to its motivating questions It is a science, also, that transforms the world through

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[57]Albert Einstein, *Einstein, a Portrait* (Corte Modera, Calif Pomegranate Artbooks, 1984), p 40

[58]Nel Noddings, *Caring A Feminine Approach to Ethics and Moral Education* (Berkeley, Calif University of California Press, 1984), p 8

its revision of inherited concepts of nature and practice, setting the stage for new conditions of social life.[59]

In atomism there is a fundamental tension between randomness and determinism. In pragmatism there is tension between contextualism and the monism of the scientific method. However, as Scheffler points out, the monism of the scientific method tends to predominate. This is certainly the case in education, where pragmatic inquiry models have tended to predominate over more pluralistic approaches to inquiry that include aesthetic and spiritual experience.

Holism, however, overcomes many of the limitations of pragmatism. First, thinking is not reduced to a monistic conception. Divergent approaches to problem solving are accepted and encouraged through the use of metaphor, imagery, and incubation. Holism, then, tends to avoid reifying procedures. Yes, procedures or linear methods are employed, but they are usually linked with intuitive methods so their full benefits can be realized. Another important criterion for holistic education and what helps separate it from the other two positions is an acceptance of the wholeness of the child and seeing the child in relation to his or her surroundings. Competency-based education focuses on behavior, and inquiry approaches tend to emphasize cognitive processes. The holistic curriculum recognizes these elements but acknowledges fundamental ground of being of which these elements are a part. In the holistic curriculum the student is not reduced to set of competencies that must be "performed" or an abstract set of mental processes; instead, there is an acceptance of the richness and wholeness of human experience. Gandhi put this very well.

> I hold that true education of the intellect can only come through a proper exercise and training of the bodily organs, e g., hands, feet, eyes, ears, nose, etc. In other words an intelligent use of the bodily organs in a child provides the best and quickest way of developing his intellect. But unless the development of the mind and body goes hand in hand with a corresponding awakening of the soul, the former alone would prove to be a poor lopsided affair. By spiritual training I mean education of the heart A proper and allround development of the mind, therefore, can take place only when it proceeds pari passu with the education of the physical and spiritual faculties of the child. They constitute an indivisible whole. According to this theory, therefore, it would be a gross fallacy to suppose that they can be developed piecemeal or independently of one another.[60]

The teacher's wholeness also cannot be ignored. The personal growth of the teacher is central to the holistic curriculum. The teacher is aware that his or her consciousness is connected and has an effect on students' consciousness. However, the teacher is not a role model in the traditional sense; he or

[59]Israel Scheffler, *Four Pragmatists A Critical Introduction to Peirce, James, Mead, and Dewey* (New York. Humanities Press, 1974), p 195

[60]Mahatma Gandhi, *All Men are Brothers Autobiographical Reflections*, ed Krishna Kripalani (New York. Continuum, 1980), p 138

she attempts to open more fully to Merton's "inner self" and Emerson's "moral sentiment" within. Emerson advised teachers:

> According to the depth from which you draw your life, such is the depth not only of your strenuous effort, but of your manners and presence The beautiful nature of the world has here blended your happiness with your power Consent yourself to be an organ of your highest thought, and lo! suddenly you put all men in your debt, and are the fountain of an energy that goes pulsing on with waves of benefit to the borders of society, to the circumference of things.[61]

In competency-based education, the teacher is a trainer, in pragmatism a facilitator of inquiry, and in the holistic curriculum a potential source of relatedness and wholeness.

Holism avoids the relativism of pragmatism and the artificial value-neutrality of atomism. Values are accepted as having a central role in the curriculum. A value-neutral role is not advocated for the school or teacher, but values and principles that are central to the program are made explicit. The holistic curriculum does not shun controversy Noddings claims, "God, sex, killing, loving, fear, hope, and hate must all be open to discussion. It is absurd to suppose that we are educating when we ignore those matters that lie at the very heart of human existence."[62] In short, the holistic curriculum is not sanitized to remove potential controversy.

The holistic curriculum is not without problems. First, the perennial philosophy alienates some because the language associated with it is not as precise as the language of atomism and logical positivism. Terms such as Oversoul and Universal Mind are attempting to convey something that is beyond concept. In this sense poetry, imagery, music, and spiritual insight are more appropriate vehicles for holism than empiricism and analytic methodologies. In many cases, the poetry of Wordsworth or the music of Bach and Mozart can convey more powerfully the harmony of the universe than the prose of Gandhi, Emerson, and Merton.

Because the perennial philosophy is difficult to articulate and thus to understand, holistic programs are often difficult to sustain in schools. Programs such as confluent education are also difficult to evaluate and thus are the first to be attacked in periods of retrenchment. Despite these difficulties, we should remember the paradigmatic roots of the approaches we use in school and the links between these roots and our atomic age By fragmenting the curriculum we contribute to our disconnectedness, by approaching curriculum from an integrated and interdependent perspective we begin to counter our alienation.

Perhaps what is most appealing in holism is the vision of an intercon-

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[61]Ralph W Emerson, *Selected Writings*, ed. W H. Gilman (New York New American Library, 1965), p. 437.

[62]Nel Noddings, *Caring. A Feminine Approach to Ethics and Moral Education* (Berkeley, Calif University of California Press, 1984), p 183.

nected universe of which we all are a part. A particularly compelling vision of this unity comes from Mark Helperin, in his book *Winter's Tale*

> Nothing is predetermined: it is determined, or was determined, or will be determined No matter, it all happened at once, in less than an instant, and time was invented because we cannot comprehend in one glance the enormous and detailed canvas that we have been given—so we track it, in linear fashion, piece by piece Time, however, can be easily overcome; not by chasing the light, but by standing back far enough to see it all at once. The universe is still and complete. Everything that ever was, is, everything that ever will be, is—and so on, in all possible combinations Though in perceiving it we imagine that it is in motion, and unfinished, it is quite finished and quite astonishingly beautiful In the end, or, rather, as things really are, any event, no matter how small, is intimately and sensibly tied to all others All rivers run full to the sea; those who are apart are brought together; the lost ones are redeemed, the dead come back to life, the perfectly blue days that have begun and ended in golden dimness continue, immobile and accessible; and, when all is perceived in such a way as to obviate time, justice becomes apparent not as something that will be, but as something that is [63]

In the holistic world view, we are no longer atomized or confronted with endless problems, which can be resolved only through a monistic strategy, we are whole. This vision of wholeness can be traced as far back as Pythagoras in the West and is found in most Eastern cultures. It is now being articulated by scientists in such diverse fields as medicine and subatomic physics Educators should consider restoring the compelling vision of wholeness as a guiding image for the curriculum.

JOHN P. MILLER is Niagara Field Center Head, The Ontario Institute for Studies in Education, 28 Prince Street, Saint Catharines, Ontario L2R 3X7, Canada

[63] Mark Helperin, *Winter's Tale* (New York. Harcourt, Brace, Jovanovich, 1983), p 360