VOLITIONAL COMPETENCE
AND THE
PROCESS CURRICULUM OF THE ANISA MODEL

Patrick W. Conway
Oregon College of Education

Introduction

Ever since psychology severed its ties with philosophy and began setting up its own household, the topics of intention, will, and volition have been sources of controversy, largely because psychology adopted a mechanistic view of the universe which would not accommodate such concepts. It was not until an organismic view of the universe was developed by the process philosophers of the late 19th and early 20th centuries that the conceptual means of accommodating such notions was established. To understand the Anisa point of view, it is helpful to review some of the historical developments leading up to present day philosophical and scientific perspectives on volition and the purposive action of higher organisms.

Eager to extricate itself from the often fruitless and immobilizing debates plaguing philosophy and establish its credibility as an empirical science, psychology sought to emulate the model of nineteenth century classical physics. As a result of its new-found identity and the adoption of new methods, psychology was able to move on to different problem areas. The emphasis turned from the study of mind to the quantification of behavior, the measurement of reflexes and reactions. The position that overt behaviors are the only valid data of scientific psychology was first advanced by John Watson over 50 years ago:

> . . . all schools of psychology except that of behaviorism claim that "consciousness" is the subject matter of psychology. Behaviorism, on the contrary, holds that the subject matter of psychology is the behavior or activities of the human being. Behaviorism claims that "consciousness" is neither a definable nor a usable concept; that it is merely another word for the "soul" of more ancient times (Watson, 1924, p. 3).

However, there was a price to pay for taking this position. By adopting the model of classical physics,

psychology was investing in three basic assumptions about the nature of reality:

1. That experience and the reality to which it refers can be fully understood by reducing it to its smallest common elements;

2. That these elements are completely independent units whose properties are definable without reference to any other element or aggregate of elements;

3. That the activity of these elements can be accounted for entirely by basic physical forces impinging upon them in a given space-time context.

But physics in the late nineteenth century was on the verge of a series of major reformulations which were to challenge all three of these assumptions and alter radically the primary axioms upon which the natural sciences were based. In particular, such advances as the quantum theory of atomic structure and the Pauli exclusion principle indicate that the final reality of things is their existence as an organized process engaged in cycles of continual creation and re-creation. As Whitehead expressed it:

For the modern view process activity and change are the matter of fact. At an instant there is nothing . . . all interrelations of matter of fact involve transition in their essence. All realization involves implication in the creative advance (Whitehead, 1938, p. 146).

The Pauli exclusion principle makes explicit the requirement of science to analyze the system of things as a whole. Margenau wrote:

The essence of mechanistic reasoning is seen to cluster around two beliefs: first, that entities are divisible into parts, and second, that these parts are localizable in space and time. . . . Prior to [the exclusion principle], all theories had affected the individual nature of the so-called "parts"; the new principle regulated their social behavior. With respect to the single particle it has nothing to say. . . . It is as though here, for the first time, physics had discovered within its own precincts a purely

social law, a law that is simple in its basic
formulation and yet immense in its collective
effects. Mechanistic reasoning, already far
behind, has gone out of sight as a result of
this latest advance. In the Pauli principle
is a way of understanding why entities show
in their togetherness laws of behavior different
from the laws which govern them in isolation.
. . . The emergence of new properties on com-
position is a rather general phenomenon in
modern physics and owes its occurrence to the
exclusion principle [emphasis ours] (Margenau,
1950, pp. 442-444).

In the phrase "the emergence of new properties on com-
position" we find a key to resolving the controversy over the
meaning of purpose. When approaching scientifically a com-
plex organism such as a human being, one may stake out the
problem on a number of levels, depending upon the interests
of the observer. Since all of the basic chemical elements of
which the human body is made can be found in the non-living
environment, it would be true to say that our life-functions
are indeed explainable in terms of chemical laws and in fact
exhibit no chemical processes which violate such laws. Such
knowledge may satisfy a chemist that his laws are safe and
secure, but would probably not appease the biologist who is
concerned with discovering those properties or patterns which
distinguish chemical activities within living tissue from
those found outside in the inorganic world. Likewise, the
student of zoology will wish to know more than the basic
differences between organic and inorganic chemical processes
but will seek to understand those powers unique to animal
existence: the powers of automobility (locomotion) and per-
ception. However, for the psychologist who is studying
problem-solving behavior in human beings, these powers in
themselves give no reason or explanation for the phenomenon
of intelligence. The point to be stressed here is that man
as a subject has taken many different paths of inquiry in the
systematic study of himself as an object and each of these
inquests represents a legitimate perspective on the phenomo-
non of man. However, all of these perspectives are not
equally adequate in their elucidation of the distinctive
qualities of human nature. Certainly the kind of psycho-
logical theory most useful to education would be that which
yields insight into the emergence of those new properties
associated with the higher levels of human experience,
properties such as purpose, foresight and will.

Krikorian (1943) attempts to put in perspective the variety of ontological approaches taken by psychologists in their study of man. As can be seen the interpretation he suggests is consistent with the view put forth by Margenau (1950): all life presupposes the basic physico-chemical processes and functions described by mechanism, but it also entails additional principles. In other words, mechanistic principles provide no adequate explanation for the emergence of life and its developmental processes. In fact, life as construed in terms of strictly physical and chemical laws presents an insoluble contradiction. The principles of physics and chemistry are bounded by the second law of thermo-dynamics which states that the universal tendency of energy systems is to regress from higher complex energy states to lower simpler energy states--a tendency exemplified in the slow physical decay in nature. Uranium degenerates into lead, sugar is converted to $CO_2 + H_2$, the tertiary structure of protein molecules are denatured into strings of amino acids, and cells are attacked by less advanced viral organisms. Life, on the other hand, is a counter-trend to the persistent entropy exhibited by the inorganic universe. In that counter-trend we witness instead the rise of complex organisms in defiance of entropy. As Whitehead concludes:

> The moral to be drawn from the general survey of
> the physical universe with its operations viewed
> in terms of purely physical laws and neglected
> so far as they are inexpressible in such terms is
> that we have omitted some general counter-agency
> (Whitehead, 1925, p. 25).

This general counter-agency is, according to modern biologists like Waddington, the lure of purpose. In view of this rather basic shift in perspective within the mother-science of psychology, it is somewhat remarkable that mechanistic thinking has maintained its foothold on empirical psychology for so long. Several attempts have been made to account for the functional qualities of purpose by positing complex mechanistic systems. Most notable among these has been the science and technology of cybernetics. Cybernetics is concerned with the study and design of self-governing goal-directed systems, both natural and man-made. Of particular importance to the cybernetic paradigm of explanation is the concept of feedback. Feedback refers to the ability of a system to monitor its own output and use this information as a determining variable of subsequent performance. A simple example of such a system is the thermostat. When the temperature falls below a pre-set point, a temperature sensitive element (usually a piece of metal) contracts, making contact

with an electrical switch. The switch activates a heater and as the temperature of the surrounding environment rises to the preset level, the sensitive element then expands thereby breaking the electrical contact which activated the heater. The heater is thus switched off. If and when the temperature again drops below the critical point, the switch will once more be activated. Such a system exhibits a very primitive form of goal-directed behavior, yet relies only on simple mechanical principles cleverly integrated into a system. And notice the absence of any need to posit the existence of foresight or consciousness to account for this apparently purposive operation.

Cybernetics, of course, has been used to design much more complex self-guiding machines, ranging from automatic pilots in airplanes to robots that play chess. All, however, rely upon feedback systems whose basic operational pattern is not unlike that of the thermostat. Such feedback systems are limited to "cyclical causality." The exact goals or conditions toward which these systems are oriented (and the means for reaching them) are fixed in number and kind by agents external to the systems (usually a programmer or designer). This limitation turns out to be critical in distinguishing man from machine, however, since life is characterized not by mere cyclical causality but by an "open-ended" development of new goals and new pathways to goal achievement --the emergence of complex structures from simple precursors--in a word, creativity. Consequently, the cybernetic model, though an invaluable heuristic in explaining limited kinds of goal-directed activity, such as exhibited by some machines and certain biological processes such as homostasis, is decidedly inadequate to serve as a scientific explanation of life's purposive and creative qualities. Although some thinkers would maintain that the inadequacy of the mechanistic model is minor in comparison with its achievements and could be remedied by further refining the theory, we would assert the difficulty is not one of incompletion but rather stems from deficiencies in the fundamental first principles on which it is based. To be specific, cybernetic theory, in spite of its success, is founded on the mechanistic assumption that all forms of activity can ultimately be accounted for in terms of extrinsic physical, chemical, electro-magnetic forces impinging upon an entity, an assumption that has been seriously discredited by recent findings in physics and biology.

What McDougall said in 1923, long before much of the recent evidence was assembled, seems even more timely today than when it was originally written.

In no single branch or corner of biology has it
[mechanistic theory] justified itself hitherto;
and the more we know of organisms, the more im-
probable does it appear that the dogma will ever
find justification (McDougall, 1923, p. 286).

McDougall's statement is not entirely surprising because
he was well aware of the discrepancy between the direct evi-
dence of experience and the abstractions used by mechanistic
psychologists. As he put it:

Mechanical psychology is of no practical value
[and] has no bearing on real life . . . if you
turn from mere intelligence testing to the
study of personalities even from the most strictly
practical point of view . . . then you must at
once be deeply concerned with such qualities as
energy, endurance, initiative, perseverance,
foresight, ambition, prudence, and idealism
(ibid.).

If you want a psychology which will help you
understand the life of men in society, a psy-
chology which will enable you to give aid to
those in mental distress or disorder, to direct
wisely the development of your children, to
discuss profitably the problems of ethics, of
politics, or economics, or of history, then
you must acquire a purposive psychology. For
in all these great fields of human interest
you have to do chiefly and primarily with
human volition, human desires, human ideals,
in a word, with human motives . . . (ibid.,
p. 287).

Even within the narrowly defined purview of strict ex-
perimental behaviorism, there is evidence that simple
"stimulus-response" activity cannot be explained unless one
is willing to admit that the organism's foresight, or idea of
what the stimulus is to be, is a major determinant in its
behavior (Mowrer, et al, 1940).

Because behaviorism had gathered such massive inertia as
a scientific doctrine within psychology, it wasn't until the
late fifties and early sixties that the mainstream of scien-
tific psychology began to reexamine in earnest the host of
issues connected with purposive behavior, such as attention,
curiosity and perseverance. Significantly, the first signs
of reassessment came from investigators in the field of

motivation. As an example, Harlow's findings (Harlow, _et al_, 1950) demonstrate unequivocally the failure of mechanistic physico-chemical theories of motivation to account for a broad range of primate behaviors, particularly exploratory or problem-solving activity. Later, Robert White (1959) and J. McV. Hunt (1965) further developed this theme, arguing that higher primates, man in particular, possess an intrinsic motivation to process information, to learn and to achieve mastery. Hunt brings to bear an impressive assemblage of research to substantiate the position that such motives are in no way derivative of or similar to physiological deficits or stresses such as pain, fatigue, hunger and thirst. Rather he suggests they are expressions of plans and intentions developing within the organism and exerting a thrust toward realization.

Moreover, the entire cycle of creating and realizing plans is considered to be intrinsically motivated, meaning that the creation and consummation of plans and intentions is an activity undertaken for its own sake, though it may (and often does) serve as a means to other ends (Miller, _et al_, 1960).

Our point of arrival thus seems to be a view of man as an essentially purposive being whose inherent creativity tends toward the apprehension and organization of unrealized possibilities and their eventual expression in actuality. Hunt's view, in particular, stresses that the child's conception of the world develops in terms of intentional schema or plans which emerge from the child's interaction with the environment. Put another way, our grasp of the immediate present becomes partially defined in terms of our awareness of the unrealized conditions toward which we aspire. This insistence that consciousness is intentional and contains a bit of the future was once expressed by Whitehead (1920, p. 73) in the well-known phrase, "What we perceive as present is only the vivid fringe of memory tinged with anticipation."

The pervasive presence of purpose in experience is the empirical justification for developing a conceptual foundation for understanding the phenomenon of volition. Typically, the theme of volition evokes such notions as choice, free-will, ideals and conscience, all of which are considered to be highly abstruse and ineffable issues beyond the range of scientific psychology. Because of their remoteness from basic empirical problems, such notions tend to be reserved for moral philosophers to ponder in their seminars. Our position is that volition can never be fully understood unless it is taken seriously as a psychological event of real

importance in determining behavior. And this in turn can come only when our abstract philosophical categories can be related to more fundamental modes of biological and psychological activity. As Whitehead points out, consciousness represents the iceberg tip of mental activity which is sustained by an integration of countless levels of more primitive experience. Thus until the conscious experience of intention can be shown to have a traceable lineage to more primitive purposive operations, then we indeed risk building our castles upon the sand. From within this broad framework, volition can be viewed as one of the highest expressions of purpose in the living world. In its most developed and refined form, volition introduces purpose into the ongoing flow of experience and integrates one's various impulses and tendencies into operable plans. Because volition involves man's capacity to envision potentiality yet unrealized, to develop ideals and then to translate those ideals, those potentialities, into concrete expressions, man has become the chief agent in the direction of his own destiny.

Volition as Defined by the Anisa Model

Our analysis of the relevant research suggests volition can be differentiated into three basic processes: attention, goal-setting, and will. Briefly defined, attention is the process by which a person purposively selects (differentiates) and structures (integrates) emotions, sensory input, and conceptual activity into a unified focus of conscious experience that usually leads to some kind of action. Attention is seen as the most fundamental level of volition since any act of will presupposes a selective awareness and recognition of the goal object or possibility in question. As Rollo May points out:

> When we analyze will with all the tools modern
> psychoanalysis brings us, we shall find ourselves
> pushed back to the level of attention or intention
> as the seat of the will. The effort which goes
> into the exercise of the will is really the
> effort of attention; the strain in willing is the
> effort to keep the consciousness clear, i.e., the
> strain of keeping the attention focused (May, 1969,
> p. 220).

The three basic attributes of attention--its selectivity, its organization and purpose--all point toward its character as a constructive rather than a passive process. Ulric Neisser (1967) characterized attention as a process of "analysis by synthesis," which he likens to the work of a paleontologist who reconstructs a dinosaur by carefully extracting a few fragments of bone from a maze of rubble. As he selects the

bones and begins to construct the skeleton, the emerging structure itself provides information for deciding which additional bones should be selected and which should be excluded thereby remaining part of the rubble. In a similar manner we attend to the world around us by differentiating critical features of experience and integrating those differentiated features into an organized whole which in turn becomes the "object" of our attention and helps to guide the selection process as it continues. Another advantage in regarding attention as an act of constructive synthesis is that it helps clarify the reciprocal interdependence between the emerging structure and the selection process, both of which are guided by purpose. This interdependence operates in two directions: (1) the elements selected in a situation will determine what is integrated, and (2) the limits of the organized whole determine what must be excluded, i.e., if the structure cannot accommodate the elements into a unified system those which are incompatible must be rejected.

Goal-setting is the process by which a person anticipates and organizes his future by making a conscious decision about future events or conditions toward which he will strive. It requires the individual to bring into clear figure alternative courses of action by which the goal may be realized, to project the consequences which the various possibilities hold in terms of one's larger life aims, to determine the priorities of the possible alternatives and to integrate the final decision into a coherent plan of action. Finally, the individual must develop some degree of commitment to the decision. This is most important since commitment protects nascent plans and intentions from fragmentation.

Edwin Locke (1966) has made a number of significant contributions to the experimental study of goal-setting. One of his more important findings concerns the effect of goal-setting on one's level of motivation. Generally speaking, theories of motivation attempt to explain what initiates and maintains human behavior. As we have already indicated, many of the currently dominant answers to the question of human motivation have followed the mechanistic tradition. In the field of experimental psychologies in particular, the drive theory of Clark Hull, anticipated in the writings of Ralph Barton Perry (1921), and Skinnerian behaviorism represent two important schools in twentieth century American psychology that are heavily mechanistic. Although very few psychologists would claim strict adherence to these theories, a great majority of current research and speculation in the field of motivation is derived from problems and issues posited by these two systems. One example is the large body of research

associated with behavior modification. The basic pre-
supposition underlying behavior modification is that patterns
of human action can be precisely correlated with a cor-
responding pattern of stimulus input. The problem for the
behavioral technologist who wishes to elicit a certain be-
havior then becomes one of simply furnishing the appropriate
stimulus condition. Little, if any, weight is given to the
subject's own intentions which are regarded as inert by-
products of a complex central nervous system reacting to the
stimulus. As a result, behavior modification programs con-
sist of an elaborate system of incentives and rewards which
are presumed to be the critical agents for changing a person's
behavior. Skinner states this thesis in the following way:

> An experimental analysis shifts the determination of
> behavior from the autonomous man to the environment
> --an environment responsible for both the evolution
> of the species and the repertoire acquired by each
> member. Environmental contingencies now take over
> the function we once attributed to autonomous man . . .
> (Skinner, 1971, p. 76).

Skinner's system thus shifts the source of control to
the environment. But nowhere does he clearly specify those
conditions which constitute the environment. If the environ-
ment is qualified in terms of those elements (stimuli) which
evoke responses then clearly one must include the inner ex-
perience of one's thoughts, feelings, and fantasies. Without
question those have important roots in our encounters with
the environment, but as Piaget and Bruner have shown, actions
involve the integration of traces of past experience (memory)
with intentions; memory and intention are matters basically
internal to the organism. Thus we must admit that the in-
dividual does indeed exercise a measure of self-determination
or control in shaping his actions. Skinner's failure to make
a qualitative distinction between the different levels of ex-
perience or "environment" to which the person responds leads
him to make deceptive conclusions about the nature of freedom
and the self-directed control of behavior. Although this ob-
jection is made on logical grounds, Locke (1967) offers em-
pirical evidence which substantiates the direct effect of
goal-setting on behavior. He conducted a series of studies
which analyzed performance by varying the extrinsic in-
centives and the goals independently of each other. Among the
extrinsic incentives most commonly used to increase per-
formance are such factors as money, competition, praise, re-
proof, and knowledge of results. Contrary to the assumption
of behaviorism, Locke found that incentives are effective in
increasing performance only to the degree that they affect a

person's goals or intentions. He notes that a well-run incentive system will encourage workers to accept tasks and set goals that they would not accept or set on their own for the intrinsic enjoyment of the work itself.

In another series of experiments, Locke and his associates (1967) studied the effect on performance of such variables as goal specificity and goal difficulty. Four different groups were formed in which the subjects were equally distributed with respect to ability and task interest. Group I was assigned difficult goals and received knowledge of results. The experimenters set goals for this group based on the best performance of each subject plus an increase of ten percent on subsequent trials. Group II was also assigned difficult goals but received no knowledge of results (KR). Group III was not assigned specific goals to aim for. Rather, they were told to do their best, but were given knowledge of results, i.e., they were informed of the number of problems they had correctly answered at the end of each trial. Group IV was given the same instructions as Group III but received no knowledge of results(KR).

By the fifth trial, Group I (difficult goal KR group) had scored highest, followed by Group II (difficult goal no KR group), with Group III and IV trailing respectively. Two major findings of this study are (1) when goals are articulated in specific, concrete terms, a subject's performance will be superior to conditions where the goal is conceived in rather vague generalized dimensions, and (2) feedback or knowledge of results boosts performance insofar as it provides an important basis upon which subsequent goals are formulated. Usually the effect is to stimulate the subject to set goals which represent an increment of challenge over previous levels of performance.

This introduces another variable--the relation between the level of difficulty of the goal which an individual sets and his performance on that task. The evidence so far indicates that achievement increases when higher goals are set. Even in cases where the goal is set at an unreasonably difficult and unattainable level, achievement is superior to conditions in which specific goals are set at lower but more realistically attainable levels. However, if there is a price to be paid--if an individual consistently sets goals which exceed his capacity to succeed, his liking for the task is apt to decrease. Dislike is apt to result in apathy and discouragement. Therefore some compromise with task difficulty must be made in order to optimize both achievement and satisfaction.

We have already noted briefly the effects of goal specificity and level of difficulty on performance. Although the effects seem clear enough, the question remains concerning the means by which difficult and specific goals elicit higher achievement. How can these effects be explained? One possibility which has received some empirical support (Bryan and Locke, 1967) is that specific goals, particularly specific goals which present a challenge to one's capabilities, arouse higher levels of interest. If we accept interest as indicating a reflection of the intensity of conscious effort focused on an object, then it is clear that interest will be a critical factor in determining the level of motivation brought to a task. There is a further point that may be raised about the relation of goal-specificity to achievement. When a goal is clear, concrete and explicit, one can make decisions and use energy more efficiently since the kinds of ambiguities and irresolutions which needlessly dissipate energy are minimized. A study by Winter, Kolb, and Griffith (1968) points up the importance of a clearly articulated goal-focus for successful achievement. They note that individuals who seem ineffective in initiating and consummating self-directed activities were unable to postulate clearly for themselves behaviors or feelings which represented possible goal states. Moreover, they could not differentiate the steps or actions which lay between their present condition (actuality) and the goal condition (potentiality). Indeed, an important part of adequately conceptualizing any goal is to differentiate the incongruity between where one is and where one wants to be. If we think of goal-setting as a contemplated transition from one set of conditions to another, then until the actions that mediate this transition can be represented in operational terms the individual has no definitive focus around which to organize his efforts.

Will is the third process-component of volition. It is the process of realizing a goal or intention through action and is manifested in three phases: (1) the self-initiation of activity; (2) perseverance or the maintenance of efforts toward the fulfillment of a goal; and, (3) effectance of closure--bringing a task to its conclusion.

Because of the self-imposed moratorium on teleological concepts in experimental psychology during the past 45 years, there is a dearth of direct research on will. Nonetheless, a considerable amount of empirical study both directly and indirectly relevant to the problem of voluntary control along with significant philosophical and theoretical work concerning the phenomenon of will provides sufficient groundwork for advancing some speculations. Few will deny that the

study of the will in modern psychology received its most comprehensive treatment in the works of William James. His treatise on will in Principles of Psychology remains a classic yet to be equaled and is indispensable for every student who would seek a basic introduction to the topic.[1]

James begins his account with what he considers to be the most elementary instance of will: ideo-motor action.

> Whenever movement follows unhesitatingly and immediately the notion of it in the mind, we have ideo-motor action. We are, then, aware of nothing between the conception and the execution. All sorts of neuro-muscular processes come between us, of course, but we know absolutely nothing of them. We think the act and it is done. . . . (James, 1890, Vol. 2, p. 522).

Examples of ideo-motor action permeate everyday life: walking, talking, driving, writing. It is rare that any of these activities demand a distinct effort of will. They most often occur on the heels of the mere intention. The eliciting condition of ideo-motor action is frequently not self-evident because the mind entertains so many ideas which do not result in behavior. Competing ideas make direct action difficult if not impossible.

> Every representation of a movement awakens in some degree the actual movement which is its object; and awakens it in maximum degree whenever it is not kept from doing so by an antagonistic representation present simultaneously in the mind (ibid., p. 526).

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[1]
Kimble and Perlmutter (1970) make an excellent attempt to relate many of the recent trends in research to the classical theory of will propounded by James and others. Their analysis is typical of a more liberalized approach that is growing rapidly in experimental psychology. The approach is characterized by (a) an open acceptance of inner experience (purpose, and other mental experiences) as fair game for experimental treatment; (b) the application of cybernetic principles to the explanation of such phenomena. The main hazard of this approach concerns a lack of coherence between (a) and (b), i.e., the incompatibility of accepting consciousness and purpose as real causes of behavior, yet attempting to explain such causes in terms of mechanistic models which leave not logical place for purpose in their system.

Through this statement one can glean the thread of continuity which unites James' psychology with the broad organismic perspective championed by Whitehead: ideas and purposes are not inert elements forever marooned in a dualistic world of mental abstraction and denied intercourse with the body. As was already argued in the case of attention, consciousness is intrinsically impulsive, directional, and characterized by intensity. James says:

> We do not have a sensation or a thought and then have to add something dynamic to get a movement. Every pulse of feeling which we have is the correlate of some neural activity that is already on its way to instigate a movement. Our sensations and thoughts are but cross-sections as it were, of currents whose essential consequence is motion [emphasis ours] (ibid.).

It is worth pausing to explore for a moment James' use of the word "idea" (or thought) since it plays such a crucial role in the ideo-motor conception of will. It is quite obvious from his writings that "idea" stands for more than just an abstraction of which one is introspectively aware. To find its parallel in the current lexicon of psychological terminology one might refer to the word "schema." Such schema can be seen as an ascending and descending hierarchy of psycho-physiological processes co-ordinated by the presiding purpose. The articulated focus of intention is itself merely the top level of this hierarchy. Beneath this top level and sustaining it is a massive number of subsidiary operations, stratified according to the level of integration each represents. For example, the goal of hammering a nail into a plank presupposes well-established patterns of execution within certain muscles and refined hand-eye co-ordination. Such patterns in turn rely upon processes of muscle innervation and the utilization of reafferent feedback from innervated muscles. These operations depend upon proper neural functioning, muscle tissue response, and so on, down to the molecular processes within the cells. In Whiteheadian terms, the subsidiary levels can be considered the immanent aspect of an intentional schema while the focal conscious level can be regarded as its transcendant aspect. The lower levels become progressively less accessible to direct conscious intervention. However, without the coordinated involvement and corroboration of these subsidiary processes the will is impeded.

Bzhalava's study (1964) is an interesting and unusual illustration of what occurs when the focal level of an

intentional schema is incongruous with the subsidiary levels. His subjects experienced great difficulty in voluntarily asserting an intended response over an opposing task tendency acquired during previous trials. Before the new intention can be actualized the subsidiary levels must be re-oriented so the residual competing tendencies are removed. This readjustment may require reafferent feedback to enable the brain to determine the disparity between the subsidiary aspects of the already established intention and those which correspond to the newer intention. Without knowledge of this disparity the extent of reorientation cannot be accurately adduced. An example which illustrates this more clearly is the inexperienced carpenter who having nailed with a two-pound hammer suddenly changes to a four-pound hammer. His initial strikes will likely miss the mark, not because of carelessness but because the immanent muscular tendencies have not been adjusted to the new task conditions. With repeated experience in making the transition between hammers, reafferent feedback becomes less essential since the adjustment can be anticipated (retrieved from kinesthetic memory) before any movement actually occurs.

Up to this point, our treatment of will has been limited to a discussion of the autonomous initiation of intentions. Another dimension which needs to be considered is the maintenance of goal-directed efforts over an extended period of time--perseverance.

In one sense, it is useful to think of perseverance as an extension of self-initiation, the difference being that perseverance is the process of sustaining and reinforcing initiation over a span of time and in the face of whatever difficulty may be encountered. Feather's (1962) review of the literature classifies experimental conceptions and approaches to perseverance as (1) a stable personality trait, (2) a circumstantially evoked behavior-pattern, and (3) as a motivational disposition which is both a stable character-based quality and yet varies with the kind of task and contingencies with which a person is faced. The latter category is the most satisfactory for understanding how perseverance is manifested in non-laboratory, "real-life" situations. Also, it is most consistent with our organismic perspective since it recognizes the essential interrelatedness between the person and the environment as the formative basis of personality and action.

Among the factors which Feather cites as important determinants of perseverance are:

(1) the expectancy of success (one is more
    likely to persevere on a task if he
    expects to be successful); and,

(2) the degree of control an individual
    believes he possesses over a set of
    circumstances (if the person perceives
    the source of control over the situation
    to be beyond himself, he will less readily
    persist than if he feels himself to be
    somewhat in control of the consequences
    of his actions).

An educational implication which may be drawn from these
findings would underscore the importance of building a strong
sense of confidence within the child. One way of ensuring
such healthy confidence is to provide the child with ex-
periences in which his efforts to reach a goal can be success-
ful so that he will come to expect success when he undertakes
a new task and will feel his own actions can and do make a
critical impact on the outcome of events.

One point which is not directly mentioned in the litera-
ture but is remotely suggested by the work of Kurt Lewin
concerns the role of fantasy in sustaining perseverance.
Fantasy is a mode of attention in which the object attended
to is a potentiality rather than an actuality. In this case
the potentiality attended to is equivalent to James' willed
"idea." According to the ideo-motor interpretation, the
cultivation of such intentional schema is an antecedent to
purposive action. Fantasy in this sense is very much like a
rehearsal; it not only prepares one for the actual perfor-
mance but it consolidates the expectation that the perfor-
mance will ultimately take place and helps organize the
massive number of subsidiary operations which corroborate and
support every conscious effort made to achieve the goal in
mind. Rehearsals lead to familiarity and familiarity is a
close ally of security, confidence, and hope. Thus, fantasy
as a mental rehearsal of achieving the goal state is an im-
portant element in perseverance.

With regard to the final expression of will, effecting
closure, there is an even greater scarcity of contemporary
research. Most all of the published empirical studies were
carried out by Kurt Lewin's students, Ovsiankina and
Zeigarnik. Their investigations focused on the effects of
task interruption upon the tendency to recall and/or resume
the interrupted task. Ovsiankina (1928) interrupted her
subjects in the middle of an assigned activity and found in

the majority of cases that subjects went back at their first opportunity to the uncompleted task. Zeigarnik (1927) found that when students were presented with a series of comparable tasks, some of which were interrupted, they were much more likely to remember the uncompleted rather than the completed tasks when tested. (The phenomenon has since been dubbed the "Zeigarnik effect.") At present there is painfully little empirical evidence on specific developmental changes in either the Zeigarnik effect or the tendency to spontaneously resume unfinished tasks. Consequently, it is difficult to draw any direct inferences from the literature about the nature of the processes underlying these observed results. As it stands now, the facts merely indicate that people generally show a propensity to remember unfinished tasks. However, there is one connection which offers a basis for speculation. The fact that subjects show a dual tendency toward both remembering and resuming the uncompleted task suggests an intimate inter-dependency between the prominence of the representation of a task (attention toward the goal fantasy) and its actuali-zation. Thus the act of effecting closure is animated by the same underlying process that is responsible for the self-initiation and persistence of a voluntary act--the direction of attention toward the image of what the act is to be and what it is to accomplish.

Before considering curricular and pedagogical issues, a brief summary may be useful. The three main processes of volition--attention, goal-setting, and will--may be seen as progressively more actualized expressions of purpose through making decisions; that is, will presupposes intention (a decision to do something, which necessarily includes com-peting possibilities), while intention presupposes attention. The character of this relation can best be visualized under the familiar analogy of a set of three Chinese boxes, each box contained within a larger box. The outermost box is analogous to the process of attention, the most fundamental expression of purpose. Within this box, a more specialized and deter-minate form of attention is distinguishable: goal-setting and planning. Within the domain of goal-setting, the even more specific expression of 'will' is generated. This more specialized process does not repudiate the more fundamental context within which it occurs. As seen earlier, the later process presupposes the more general process and yet con-tributes to it an additional dimension of definiteness and value.

One implication of this model is that when an individual is engaged in a more advanced process such as goal-setting, this process influences reciprocally the subsequent operation

of the more basic process, attention. This implication is
corroborated by an extensive body of research literature on
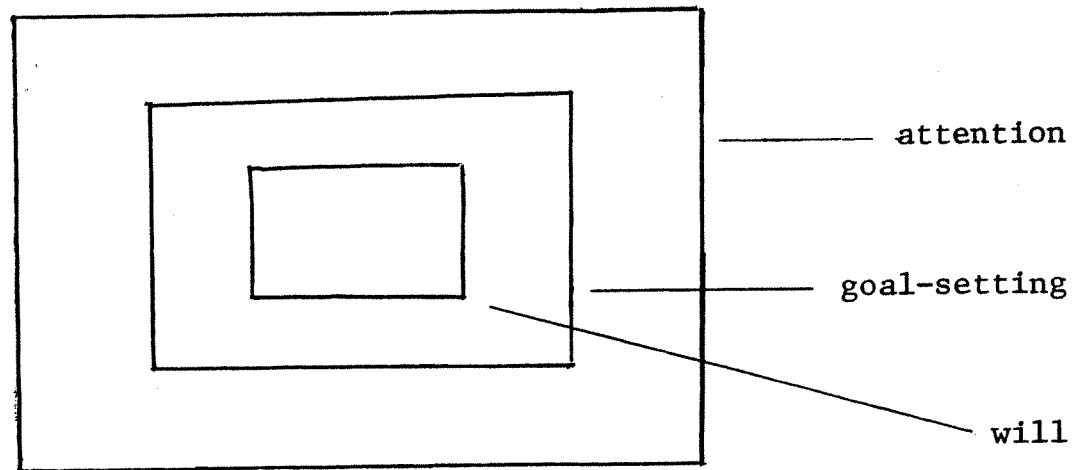
intentional learning which demonstrates clearly that an in-
dividual's intentions or task with respect to a situation
largely, though not wholly, determine the focus of attention,
what data are selected for perceptual processing, and how they
are interpreted.

Similarly, when an individual is in the midst of ac-
tualizing an intention, the development of subsequent plans
and goals tends to conform with the tradition of realized in-
tentions. The cumulative tradition of actualized potential-
ities constitutes the immanent basis of personal identity and
explains the means by which the past participates in the
creation of the present and transmits itself into the future.

At the heart of the Anisa Model is the idea of self-
actualization, itself a process of constructive synthesis
carried forward by learning. As we learn something new, a
potentiality is actualized. Actualized potentialities ac-
cumulate and constitute the past held in the present largely
through memory. Immanence means "indwellingness." The im-
manent basis of personal identity, then, refers to the
"indwellingness" of the past in the make-up of personality.
Whatever has accumulated then forms the basis for the next
effort at learning, thereby determining the future.

Curricular and Pedagogical Implications

One criticism which is often leveled at stratospheric

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theoreticians is that their theories are like desert clouds which bear no rain--they look impressive but do little or nothing to promote the growth or improvement of educational practice. Lest we, too, be guilty of this charge, we now suggest how the foregoing abstractions might contribute to and enrich not only education proper but other such human service endeavors as counseling, rehabilitation and psychotherapy.

One of the supreme ironies of the current age is that while we possess an unprecedented and awesome degree of power to alter and control the environment, at the same time we suffer an unprecedented degree of anxiety from a sense of helplessness and powerlessness to determine our own destinies. In Future Shock, Alvin Toffler (1971) articulates what is intuitively obvious to nearly every observer of western civilization: the transcience of current lifestyles, the serialized parade of crises which greet us daily, the disintegration of time-honored institutions and values and the incredible rate at which the unanticipated consequences of our actions come to haunt us. As if the accelerated rate of social change weren't problem enough, the psychological reaction of helplessness and anxiety compound the difficulties by decreasing the likelihood of constructive, rational responses.

Yet, society collectively will be incapable of devising a remedy for its current ills until its constituent members are able to consciously take stock of their individual futures. Such a prescription may sound disappointingly simplistic and naive, yet our review of the research leads us to conclude that this indeed may be one extremely important antidote to "future shock." Although the basic principles themselves may be simple, it is quite another matter to translate them into a practical scheme for curriculum and pedagogy.

The Anisa process-curriculum which addresses the development of learning competence in five categories of potentialities (psycho-motor, perceptual, cognitive, affective, and volitional) sets forth in precise terms the educational objectives pertaining to the attainment of volitional competence and describes the kinds of experiences children must have if they are to achieve them. The Anisa theory of pedagogy explains how to arrange particular environments and guide the child's interaction with them to achieve the objectives specified in the curriculum. Detailed presentations of the process-curriculum pertaining to volitional competence and how to implement this aspect of the Anisa curriculum is beyond the scope of this paper. However, the following illustrations suggest at least the general directions the development of the Anisa process-

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curriculum has taken.

The Anisa theory of development identifies attention as the primary process in volitional development. It is also clear from the research that the early years of childhood mark the most important period in the growth of a child's attentional capacities. Thus, fostering the development of attention is one of the first orders of business for the Anisa teacher. Because childhood attention is much more delicate and sensori-motor in character than that of adulthood, the teacher must give special consideration to how the environment can be arranged to facilitate the development of attentional capacities. Classroom space and materials that occupy it should suggest an order and clarity which will in turn lead the child to differentiate and integrate his actions with respect to the environment in a coherent and purposive fashion. Excessive cluttering and careless placement of materials, which many modern educators mistakenly regard as "enriching" the environment and making it "open," can in fact limit the child to superficial, capricious levels of involvement. In such cases, the environment functions as a powerful distractor to whatever the child may be doing, particularly in the case of quiet, contemplative activity.

A second implication may be derived from our developmental perspective of attention as an essentially overt, active process in early childhood. It is unreasonable to expect a youngster to attend for an extended length of time to something with which he cannot interact. As Piaget so cogently points out in his numerous studies, thought originates in the sensori-motor schemata of primitive experience and ultimately is elaborated, abstracted, and internalized until it assumes the dimension of mature adult thinking. Similarly, attention in the child, which is nothing other than the centering of thought and the integration of perception, feeling, and action around the centered thought must begin with overt, concrete forms of activity and then progress to more abstract levels. Early education classrooms must take this into account by providing children with a diverse range of materials which invite manipulative activity. At the same time, the environment should generally allow for the wide variety of postural options that must necessarily accompany children's explorations. If the child cannot move his body as he feels he needs to, attention will be interrupted as he deals with the discomfort due to having maintained the same body position too long.

Goal-setting, as a more specialized form of attention, embodies a determinate resolution with respect to a set of future possibilities. Congruent with this perspective, the

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Anisa model incorporates learning experiences which provide
ample opportunities for the children not only to fantasize
goal possibilities, but to generate their own plans and
methods for achieving them. Such exercises provide multiple
benefits: besides strengthening competence in self-management
the child cultivates and extends an awareness of his own un-
realized potentialities, thus acquiring a sense of himself as
a transcendent being.

The training of the will has been one of the most em-
barassing voids in both theory and practice of education. Yet,
if we accept that the human organism is fundamentally pur-
posive and if we acknowledge that development is the aim of
education, then education is clearly ignoring a critical aspect
of its mission. The Anisa theory of development attempts to
clear up much of the conceptual murkiness which has so far
impeded systematic efforts to integrate this important di-
mension into a comprehensive paradigm of curriculum and
pedagogy.

In staking out the foundation for practical implemen-
tation of our theoretical scheme, a promising direction is
suggested by William James' insight that the effort of willing
is the effort of maintaining the focus of attention upon a
particular goal-object or inclination. When one attends to a
possibility as opposed to something which is actual, one is
fantasizing and fantasy is a mode of attention in which the
data are potential rather than actual. If a child is able to
fantasize (i.e., direct his attention toward a desired goal
state) he can often overcome distractive tendencies and in-
fuse his immediate activity with added energy and determin-
ation, particularly when the goal is remote in one way or
another. This transcendent quality of fantasy is especially
important in resolving conflicts between competitive ten-
dencies that inhibit the will because it exceeds attention
beyond the realm of the immediate present--the sphere in
which psychological conflict is operative. Because fantasy
obeys the selective laws of attention, the tendencies pre-
cipitated by immediate perceptual experience are displaced
from consciousness by the conceptual entertainment of un-
realized possibilities. Therefore, the Anisa teacher, rather
than viewing fantasy as a recreational or enrichment activity,
will instead recognize its essential role in the emergence of
self-determination and encourage its healthy expression in a
variety of ways.

Although the study of human development continues to un-
cover ever more remarkable vistas of human potentiality, much
of one's potential will remain dormant unless each gains the

capacity to forge his own destiny. For in the acts of volition, the world of possibilities—one's aims and ideals—becomes integrated with the world of actuality.[1] Through the infusion of these elements into immediate experience, the human organism is capable of endless creativity.

Conclusion

In this article, we have sought to frame the basic outline of an aspect of human potential which has often been overlooked in the scientific study of human behavior, namely, volition, intention, and will as elements of intrinsic motivation. While many particulars concerned with these issues have been accounted for in several of the more traditional approaches to motivation, they have, as yet, been treated in no coherent fashion. It is our hope that by viewing such particulars as interrelated agents within a larger context of purposive operations inherent in human experience, a deeper insight into the nature of volition and an increased sense of its importance will be gained. Such a widened perspective as provided by the Anisa Model may well profit scientists, educators, and clinicians whose efforts to find means of helping persons to improve the quality of life in this difficult time were never more urgently needed. For our continued survival, collective as well as individual (and the two are ultimately inseparable) depends on the fullest realization of the potentialities of every person.

The distinguished biologist, Julian Huxley, points out that evolution in its broadest sense is a history of the

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[1]
Whenever these two vital aspects of the self (ideal and actual) which mutually require one another, become dissociated —the aims and ideals do not participate in the construction of reality—potentiality eventually loses its meaning and ceases to lure growth. Devoid of these higher-order transcendent considerations, the individual's actions may be reduced to mere reaction towards a situation on the basis of superficial impulse that represents either pursuit of pleasure or escape from pain. Such patterns of behavior preclude genuinely creative levels of expression because they tend to lack consistency, vision, and originality. The implications of will as an integrating agent in the personality structure have also been discussed by Viktor Frankel (1958) and Leslie Farber (1965). These writers provide clinical testimony that the dissociation of ideality from actuality can lead to a disintegration of character which if extreme may result in a wide spectra of mental disorders.

realization of new possibilities by the stuff which we call life. That wonderful visionary, Tielhard de Chardin, elaborates the point by showing how the evolutionary pulse no longer functions solely in the sphere of biological operations but beats most intensely within the heart of human consciousness, vivifying and transforming the body of science and aesthetic sensitivity which fuels the advancement of civilization. This evolutionary thrust depends upon volition, for it is through volition that man is able to fulfill the present by transcending it and perpetually becoming something new. To perpetually be in the process of becoming something new presupposes an infinite progressiveness for beings that are finite. Whitehead saw the tension between the finite and the infinite as the principle of unrest that keeps us alive:

> This relationship between the infinite and the finite is what I was coming to. Our minds are finite, and yet even in these circumstances of finitude we are surrounded by possibilities that are infinite, and the purpose of human life is to grasp as much as we can out of that infinitude. I wish I could convey this sense I have of the infinity of the possibilities that confront humanity. The limitless variations of choice, the possibility of novel and untried combinations, the happy turns of experiment, the endless horizons opening out. As long as we experiment, as long as we keep this possibility of progressiveness, we and our societies are alive; when we lose them, both we and our societies are dead, no matter how externally active we and they may be, no matter how materially prosperous they and we may appear. And nothing is easier to lose than this element of novelty. It is the living principle in thought, which keeps all alive (Price, p. 134).

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APPENDIX
A Summary Statement on the Anisa* Model

The Anisa model represents a comprehensive educational system functionally defined by specifications which insure its replicability, evaluation, and refinement. The specifications set forth educational objectives pertaining to the actualization of human potential and explanations of how to achieve them. These objectives and explanations are derived from a coherent body of theory which has been deductively generated from a philosophical base and inductively validated to whatever extent possible by findings from empirical research.

The philosophy underlying the model is organismic in nature; it defines man as a spiritual as well as a material being; explains his reality in terms of the process of his becoming (actualization of potentiality), accounts for his qualities of transcendence and immanence, and sets forth fundamental ontological principles which explicate man's relationship to the universe.

The body of theory derived from the philosophy includes:

A *Theory of Development* which defines development as the translation of potentiality into actuality and equates that translation with creativity; establishes two broad categories of potentialities — biological and psychological; identifies proper nutrition as the essential element in the development of biological potentialities and learning as the key factor in the release of psychological potentialities; establishes five categories of psychological potentialities—psycho-motor, perceptual, cognitive, affective, and volitional; establishes interaction with the environment as the means by which development is sustained; fixes three basic categories of environment (physical, human and the unknown) and establishes the Self as the micro-cosmic reflection of the three environments and the most constant aspect of the environment it experiences; and, categorizes interactions in terms of their power to facilitate development and safeguard survival.

A *Theory of Curriculum* which fixes the overarching goal of education as the actualization of human potentialities and their structuring into identities around ideals which guarantee survival and perpetually im-

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prove its quality; establishes two categories of goals or objectives of the formal educational system — content goals and process goals; specifies the substance of the former as the information culture has accumulated organized in terms of the classification of environments, including the symbol systems used to convey that information, and the substance of the latter as formation of internal structures on which learning competence depends (i.e., content goals may specify what to think about, while process goals concentrate on how to think); accounts for the emergence of personal identity (character formation) in terms of value formation and defines values as the relatively enduring structurings of potentialities (process) as they are actualized and integrated with information (content) assimilated about the various environments; and, specifies three value sub-systems (material, social, and religious/aesthetic) on which three higher order competencies rest (technological, moral and spiritual/philosophical) and which combine to form the total values system that constitutes the personality — the Self.

A Theory of Pedagogy which defines teaching as arranging environments and guiding the child's interaction with them for the purpose of achieving the goals specified by the curriculum theory; outlines the diagnostic, prescriptive, speculative, experimental, and improvisational aspects of arranging environments and guiding interaction so that instruction is individualized and learning particularized thereby guaranteeing equality of educational opportunity.

A Theory of Administration which identifies two basic functions of administration which must remain in dynamic equilibrium — leadership and management — and defines them in terms of service consistent with purpose as specified by the philosophy; provides the rationale for differentiating the staff, maintaining morale, establishing institutional priorities, assessing needs, identifying resources, determining feasibility, and allocating resources to achieve objectives as efficiently as possible; provides the means for institutional self-renewal; and, accounts for the necessity and nature of community and home involvement.

A Theory of Evaluation which designates comparative analysis of children's interactions with particular environments and their developmental consequences as the focal point of inquiry; seeks to relate means to ends, distinguishing efficient from final causes; and

allies the purpose of evaluation with the heuristic, explanatory, and predictive functions of research and science.

Because the model rests on the universal processes of growth and development, it has cross-cultural applicability and addresses directly the problem of how to achieve equal educational opportunity.

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*Anisa is both a word and an acronym. As a word, it has Greek and Latin roots which refer to a flowering tree whose fragrance has made it attractive as a symbol. It has been adopted to represent "the tree of life" — an ancient symbol connoting shelter, beauty and grace, and the perpetual growth and fruition of organic life. The tree of life is reflected in the Anisa logogram. As an acronym, Anisa stands for American National Institutes for Social Advancement, an incorporated not-for-profit organization under whose auspices the efforts to formulate the model were undertaken.