

THE HARMONIES AND CONFLICTS OF PRINCIPLES OF
TOPOLOGICAL AND VECTOR PSYCHOLOGY WITH
THE TENETS OF THREE EDUCATIONAL
PHILOSOPHIES

by

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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

The science of education has reached the stage where educational philosophers are striving to state carefully their philosophies of education by describing their positions in regard to various significant issues. Educational philosophers, in the process of crystallizing their philosophies, soon come to a realization of the need for a carefully conceived psychology.

A student, in studying philosophy of education with experts in education and simultaneously studying systematic psychology with experts in psychology, finds a gulf between these two areas in which there is great misunderstanding and under-appreciation. One might envisage a situation on a university campus in which the closest ally to a system of psychology would be a correlative philosophy of education yet, because of close departmental organization, there would be no communication between the two allies.

The group of individuals specializing in systematic psychology and that made up of individuals concerned with the philosophy of education tend to be mutually exclusive. Philosophies of education sometimes have been developed somewhat independent of the psychologies involved and, in turn, systems of psychology have emerged quite independent

of systematic philosophy. Modern psychologies take pride in the statement that psychology no longer depends in any way upon philosophy. It is recognized by psychologists that psychology emerged as mental philosophy and that the early psychologists were also very definitely philosophers. However, great effort has been exerted to make psychology a science in its own right. Modern psychology, in becoming "scientific" and thinking of philosophy as metaphysics completely detached from science, has made little attempt to harmonize psychology with any basic philosophical point of view.

Regardless of these recent trends in psychology and education, it would seem that, in order to make the science of psychology adequately useable in the field of education, it is necessary that students of education make careful studies of the approaches and methods of the several contemporary psychological outlooks.

THE FUNCTION OF PHILOSOPHIES OF EDUCATION

Since education is by nature a process of change,¹ it has a peculiar need of philosophical guideposts by which to

¹ John S. Brubacher, A History of the Problems of Education (New York: McGraw-Hill Book Company, Inc., 1947), p. 96.

direct its activities. Any progressive movement in education needs a philosophy of education;² a system of education concerned with maintaining the status quo shies away from a careful statement of its tenets in regard to a philosophy of education. An educational philosopher tends to align himself with some recognized school or system of philosophy. His philosophizing consists, to some degree, of applying the tenets of his chosen philosophical approach to the broader problems of education. Many of those who have developed educational policies and procedures during the first half of the present century have pointed their guns toward being "scientific." They have assumed that being scientific means to follow the procedures of the physical sciences which had been developed earlier than those of education. They have written and spoken of "evidence," "adequate data," "empirical research," and "objective measurement"; and they have used many other similar expressions which they deemed to characterize education as a scientific procedure. The function of a contemporary educational philosopher is to aid an educator in crystallizing his thinking into a harmonious outlook. It is insufficient that the educator merely cater to

² John P. Wynne, Philosophies of Education from the Standpoint of the Philosophy of Experimentalism (New York: Prentice-Hall, Inc., 1947), p. 9.

the shibboleth of "science," with no clear understanding of the procedures implied by the expression, scientific method.

It is recognized that philosophy of education is not everywhere held in high esteem and that, in some institutions, philosophy of education has little in common with philosophy. Geiger observes that "Plato and Aristotle, Locke and Rousseau, Mill and Dewey and Russell, and other major figures in the history of ideas, made education of supreme significance in the philosophic enterprise."³ In spite of this, the educational philosophies of some professional departments and colleges of education regard philosophy of education as no more than an addendum to the curriculum. This state of affairs does not detract from the importance that a serious student of the philosophy of education must attach to the philosophy involved and its relationship to a sound psychological approach.

CONTEMPORARY EDUCATIONAL PHILOSOPHIES

Several major systems of educational philosophy have emerged as the fruits of persistent endeavors to find some consistency in theory underlying educational practice.

³ George R. Geiger, Philosophy and the Social Order (Boston: Houghton Mifflin Company, 1947), p. 349.

Contemporary educational philosophers have classified educational viewpoints into rather specific philosophical categories. Brubacher⁴ presents a summary of each of the philosophies of education which is in opposition to pragmatism. He states that Robert M. Hutchins and Mortimer J. Adler attack the romantic and anti-intellectualistic character of naturalism. Hutchins defines education, as Aristotle did, as the habituation of native capacity in virtue. His confidence in the universal has led him to assert that the aim of education should be the same for all men at all times and in all places. Catholics object to predicating educational theory exclusively on nature. The Papal Encyclical of 1929, "The Christian Education of Youth," carried supernaturalism to an extreme, in that infallibility was claimed for the church as the teacher of faith and morals. Frederick S. Breed, with his New Realism, was more scientific than had been Herbart but he was just as stubborn in insisting on the independent nature of reality apart from a learning mind. The views of the essentialists, headed by William C. Bagley, are also presented by Brubacher as in opposition to the ideas of Dewey.

⁴ Brubacher, op. cit., p. 132.

Rugg⁵ states as the thesis of his book that the present split in policies on education is merely a continuation of the cleavage between two philosophies of life -- the philosophy of authority and the philosophy of experience. The irreducible concept of the philosophy of experience is, "I can and shall think things out for myself." That of the philosophy of authority is, "The greatest thinking has already been done. You lack the capacity to think; I shall therefore guide you in mastering the thinking of the past."

Wynne⁶ reduces all important philosophies of education to three general positions; educational authoritarianism, educational laissez faire, and educational experimentalism.

The Forty-First Yearbook of the National Society for the Study of Education⁷ selects for comparison five major schools of educational philosophy. These schools are pragmatism, realism, idealism, Aristotelianism, and scholasticism or Catholicism. They are chosen because of their generally admitted prominence in contemporary educational

⁵ Harold Rugg, Foundations for American Education (New York: World Book Company), 1947, p. 30.

⁶ Wynne, op. cit., p. 4.

⁷ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 5.

thought and practice.

THE PLACE OF PSYCHOLOGY IN EDUCATION

Psychologists seek to provide a basic science of human thinking,⁸ character, skill, learning, motives, and conduct which will serve all the sciences of man (e.g., anthropology, sociology, economics, medicine, and education) in much the same way and to the same extent that biology now serves the agricultural and medical sciences.

The Harvard study finds that,

Another consideration transcends every other aspect of psychology in an ideal university: the contribution a proper development of psychology could make to the whole field of education. . . . Do not the motivations and personality of the student matter in education? Are we wise or even safe in relegating as negligible or unmanageable the varieties of student capacities, tastes, and temperaments? Does not this aspect of education in a free society need much more attention and explicit care? We insist that it does. Psychology should, and eventually will, supply a major part of the scientific foundation for the slowly evolving art of education. Dependable knowledge of the aptitudes and capacities of the pupil, and

⁸ Harvard University Commission, The Place of Psychology In an Ideal University (Cambridge: Harvard University Press, 1947), pp. 2-14.

more important, his interests and enthusiasms, are incomparably more important for effective education of the individual from birth to maturity than are the so-called "subjects" now "taught" in our schools from nursery to university. Until we apply what we know of the psychology of learning to the individual we shall be evading the essential issue, whether the evasion be via a free elective system or the mass exposure of all students in common to the same curriculum.⁹

There would be scientific value in a careful analysis of each of the principal philosophies of education and of each of the principal psychologies, in an attempt to harmonize where harmony is possible and to note the nature of the differences in case of conflicts. This study, however, is delimited to an analysis of topological and vector psychology and comparison with the educational philosophies -- idealism, realism, and pragmatism.

STATEMENT OF THE PROBLEM

How do the implicit philosophical principles of topological and vector psychology harmonize or conflict with the tenets of each of the educational philosophies -- idealism, realism, and pragmatism?

⁹ Ibid., pp. 13 f.

This study makes no attempt to outline the historic development of any outlook. Historical background is given only as it seems necessary to elucidate positions in regard to problems involved. The method which will be followed is to determine the views of a protagonist of each of the three philosophies of education and of the systematic psychology in regard to four specific issues. No attempt will be made to present a complete analysis of any of the philosophies or of the psychology, and comparisons will be limited to four specific criteria. The positions of the psychology in regard to each of the four criteria will then be contrasted with the views of each of the three philosophies of education.

The bases for comparison of the psychology with the philosophies to be studied are reduced to four major areas.

They are:

1. Assumptions regarding the nature of reality, and the nature of, and tests for, truth.
2. Theory of motivation.
3. Interpretation of perception.
4. Treatment of learning and thinking.

These areas are listed in an order which seems logical to a student of educational philosophy. The views of each philosophy will be studied in this order.

The philosophical aspect of the study will be centered on the works of Herman H. Horne, Frederick S. Breed, and

Boyd H. Bode, because of the leadership of each in formulation of the view which he supports. Horne, up to his death in 1946, was the foremost American leader in developing and promulgating a systematic idealistic philosophy of education. Breed has worked diligently, not only in developing the implications of realism for education but also in exposing the presumed inadequacies and internal inconsistencies of idealism and pragmatism as appraised by a realist. Bode has been a foremost American leader in expansion of the pragmatic outlook in education. In some cases reference is made to the contributions of John Dewey, particularly to his Democracy and Education. The Dewey-Bode line of thought is closely knit. Bode writes as a follower of Dewey and thus, at times, we shall resort to Dewey in developing a position. It is recognized that other philosophers might well be considered as leaders in the philosophical outlooks studied, provided they were to be studied as general philosophical outlooks. However, the works of these educational philosophers are pertinent to the purpose at hand.

In analyzing each philosophy of education, it is necessary that the study be limited to education in its most generalized aspects. Topics to be analyzed are those widely recognized as fundamental in the field of educational philosophy. This study is not expanded to cover particularized principles and practices implicit in educational

philosophies. Some important problems not included are those centering around the content of the curriculum, specific methods of teaching, the role of the school in society, and the definition of democracy.

The psychological aspect of this study is confined to topological and vector psychology as developed by Kurt Lewin and his associates and students. The study is suggestive of several future studies which may well be made in regard to the harmonies and conflicts of each major psychology with philosophies of education. The writer has chosen the works of Lewin because of his own particular interest in topological and vector psychology. It is not assumed that this psychology is the dominant one. It is chosen rather as one of several contemporary psychologies.

Lewin's greatest emphasis is given to the problem of motivation. He does not explicitly and intentionally outline his basic, systematic philosophy in any one place. Therefore, it is necessary that the underlying philosophy implicit in his outlook and approach be deduced from his psychological contributions. Consequently, chapters pertaining to the philosophy implicit in Lewin are arranged in an order harmonious with the approach of a psychologist. Treatment of the problems of reality and truth is delayed until more basic psychological issues have been considered.

The purpose is to find wherein the psychology supports or parallels each philosophy and wherein contradiction is evident.

It may seem presumptuous for one person to attempt to conduct research covering two separate fields of knowledge. It is recognized that the expanse of this study is a complicating factor, yet it is felt that the barrier is not insurmountable. Some present-day scientists feel that science in its present stage is in dire need of studies to bridge the chasms between the various fields. Norbert Wiener in Cybernetics states,

For many years Dr. Rosenbluth and I had shared the conviction that the most fruitful areas for the growth of the sciences were those which had been neglected as a no-man's land between the various established fields.¹⁰

Professor Harold Rugg states in his foreword to Foundations for American Education,

I have long been convinced that although the prime research tasks of the nineteenth century were explorations in analysis, those of the twentieth would be enterprises in the building of new syntheses of knowledge. Among the students of man and his culture, educators are especially called upon to integrate man's knowledge of his world, for their primary function is to teach others what the scholars have learned. The most significant products of their learning have come,

¹⁰ Norbert Wiener, Cybernetics (New York: John Wiley & Sons, Inc., 1948), p. 8.

not from their narrow academic compartments of knowledge, but from broad integrations of several fields.¹¹

Thus, the boundary regions of science appear to offer copious opportunities to investigators.

¹¹ Rugg, op. cit., Foreword, p. xiv.

CHAPTER II

THE TENETS OF IDEALISM IN EDUCATION

Broadly interpreted, idealism consists of any theoretical or practical view which emphasizes mind, soul, or spirit. In a negative sense, it is the alternative to materialism or realism. To be useful in other than pointing a general direction of thought toward idea, mind, or spirit, an idealism must be delimited or qualified through some specific approach such as subjective idealism, objective idealism, personal idealism, or absolute idealism. Dr. Horne in 1942 described himself as a neo-Hegelian;¹ in his earlier writings he had identified himself as an objective idealist. The representatives of neo-Hegelianism have remained rather indifferent to the formal aspect of Hegel's dialectic and have emphasized its spirit. They commit themselves to the method but not to the categories of Hegel.

Idealism: Assumptions regarding the nature of reality, and the nature of, and tests for, truth

" . . . The cosmic order is moral, spiritual, personal."²

¹ Herman H. Horne, "Valedictory," School and Society, Vol. LVI - July-December, 1942 (Lancaster, Pa: The Science Press), p. 154.

² Ibid., p. 154.

The universe is an expression of intelligence and will. The enduring substance of the world is of the nature of mind. The material is explained by the mental rather than the mental by the material. Idealism centering in mind stands in contrast to naturalism centering in nature, and humanism centering in man.

"To be is to be experienced by an absolute self."³

The order of the world is due to the manifestation in space and time of an eternal, spiritual reality. All environments, including the social and the physical, exist for a purpose. The eternal order is spiritual in character and changeless in nature. It is a world of essential ideas and ideals.⁴

Reality, of which man is a part, is unity. Any asserted division in reality implies a whole divided. When one asserts any multiplicity of real principles, he implies a corresponding multiplicity of inter-relationships between them. These principles and their inter-relationships reduce themselves to one system.⁵ Man can only know through

³ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 139.

⁴ Ibid., p. 140.

⁵ Herman H. Horne, The Philosophy of Education (New York: The Macmillan Company, 1904), p. 264.

immediate experience that energy which his own consciousness exerts when he voluntarily or involuntarily attends. Other energy, for example electricity, appears as second-hand in what it does; not as first hand in what it is.⁶ The energy of the world in final analysis is held to be the attentive aspect of the consciousness of God.

"God is the self-conscious unity of all reality."⁷

"The true doctrine of immanence is not that God is in nature and man, but that man and nature are in God."⁸ Within the life of God falls the life of nature and of man. Anything to be must be experienced by God. All which exists in the heavens above or on the earth below are the content of the consciousness of God; thus all that man knows is a part of this consciousness of God. ". . . All is God's."⁹ This view, "All is God's," distinguishes objective idealism from pantheism which teaches that "All is God."

"Ideas are themselves ultimate and the ultimate."¹⁰ Mind, personalities, and selves are absolute. Since mind

⁶ Ibid., p. 269.

⁷ Ibid., p. 269.

⁸ Ibid., p. 270.

⁹ Ibid., p. 270.

¹⁰ Herman H. Horne and others, An Introduction to Modern Education (Boston: D. C. Heath and Company, 1937), p. 450.

thinks nature, the view is rejected that nature is all. Idealism further rejects the view that reality exists independent of any thought about it, for that very reality is itself the object of thought. Idealism presents a philosophy which in its frame of reference seems effective. One cannot reject a universal without implying its validity. When one affirms change, his affirmation is stated as a universal, so not everything changes. In other words, the view that all things change itself implies that change is a constant, and thus the principle of change would not change but be a constant itself. Idealism denies that mechanism, relativity, and change are final; however, it does not deny that they are useful viewpoints for the realization of patterns within idealism. An ideal social order for man is real in the sense of subsistence; that is, in the sense that perfect circles are real. Subsistence stands in contrast to existence. It refers to a kind of being that is supposedly expressed by essences and universals. This ideal does not exist completely anywhere on earth but it holds the imagination of man and it gives him a goal toward which he grows during his mundane life.

The universe exists for the purpose of manifesting under finite conditions Infinite Mind. Operations of the universe, that is, universal mind, are purposive, thus teleological. The universe does not operate mechanically

as assumed by naturalism and realism. "The cosmos is interested in man, who is not an orphan in his world,"¹¹ but rather is a manifestation of God. Like that free being, the Infinite, man has a measure of freedom in his choice and he has the hope of immortality. It takes time eternal, both now and hereafter, to develop man into all he is capable of becoming. Nature, which we see about us, is an illustration of the purpose of the universe. The environment, being purposive, may be properly regarded as spiritual. The social environment may be regarded as purposive because the individuals composing it have purposes, different political and social groups have purposes, and the course of development of human society seems to be realizing the purpose of developing higher types of individual and social living.¹² "The universe itself exists for the purpose of manifesting, under finite conditions, the Infinite Mind."¹³

In the last analysis, the cause of any phenomenon is reduced to the statement of the relation in which that phenomenon stands to the whole of which it is a part. "Nothing

¹¹ Ibid., p. 453.

¹² "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 155.

¹³ Herman H. Horne and others, An Introduction to Modern Education (Boston: D. C. Heath and Company, 1937), p. 451.

short of the whole absolute reality is the complete cause of the fall of a sparrow or the loss of a hair."¹⁴ The sum total of all things that are furnishes the sole, invariable, and necessary antecedent of any phenomenon. This cannot be found isolated from the whole truths.

Self-activity of man is a clear expression within the limits of time of the immanent and transcendent self-activity of reality. "It is as though in man realizing his destiny through self-activity, the Absolute beheld himself reflected. The Absolute is; the finite becomes."¹⁵

Truth is absolute, ultimate, and final. Truth is a characteristic of ultimate reality which is a unity. It is the nature of the moral, spiritual, and personal cosmic order. Since all is God's consciousness, truth is the nature or content of this consciousness.

"It is the truth and truth alone that makes the mind of man free. 'Let there be light' was the first creative act."¹⁶ Original truth is obtained by man through discovery. The process of arriving at truth is through contemplation

¹⁴ Herman H. Horne, The Philosophy of Education (New York: The Macmillan Company, 1904), p. 267.

¹⁵ Ibid., p. 268.

¹⁶ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, p. 177.

and revelation, or intuition. Ideas work because they are true. Once original truth is gained through contemplation, other truths may be derived through a process of deduction. Ultimate truth consists of ideas, and thus the essential nature of all truth is ideality. The test of truths is their correspondence to the ultimate spiritual reality or their deduction from truths which do correspond to ultimate reality.

Idealism: Theory of motivation

Horne emphasizes three points about the nature of man: "The origin of man is God, the nature of man is freedom, and the destiny of man is immortality."¹⁷ These basic assumptions as to the nature of man set the stage for much of his theory of motivation.

In saying that his origin is deity, he means that man comes from God. But he not only comes from God; he is growing into the image of God. Man is a finite being, he is limited; but he is growing into the image of the Infinite.

Man's nature is freedom means freedom in the sense that God is free. The basic assumption of a free being in regard to God is that God can do anything he wants -- he is

¹⁷ Herman H. Horne, The Philosophy of Education (New York: The Macmillan Company, 1904), p. 284.

all-powerful; so God, by exercising his will, can do anything he so desires. Man, being a part of God, also operates as a free man; his basic nature is freedom. This freedom is the opposite of determinism. Determinism means that everything is set according to the laws of nature, and that man, by exercise of will, can do nothing about it.

Man's destiny is immortality. Like an eternal being, he, of course, has immortality because God is immortal. This whole pattern makes man a finite being in the presence of the Infinite and growing in the direction of the Infinite. In a sense this humbles man because it makes him finite in the presence of the Infinite -- he is a lesser being. At the same time it exalts man because he is akin to the Infinite and he is growing in the direction of the Infinite.¹⁸

In a philosophy of idealism, it is assumed that there is an immanent and universal principle of things making for progress which uses great men, group action, and economic and social forces to express itself in the course of history.

A point of emphasis is that man is an educable being. Horne means something quite specific by that expression; that is, that only man is educable. Animals can be trained but they cannot be educated; there is a difference between

¹⁸ Herman H. Horne and others, An Introduction to Modern Education (Boston: D. C. Heath and Company, 1937), p. 451.

education and training. By that he means that man is an actualized, self-active mind¹⁹ -- a mind that is self-active, in the same way that God is self-active. God can exercise free will; anything that has free will is self-active. A person has something to say about his own destiny.

A correct psychology leaves us no less amazed than does physiology. The person seems endowed with unlimited capacities for growth in the attainment of knowledge and wisdom, in the production and enjoyment of the beautiful and in the acquisition of the ideal virtues of understanding, sympathy, cooperation, forgiveness, and self-sacrifice.²⁰

Idealism predicates a substantive mind. Mind is immaterial and metaphysical, yet it is real. In fact, it is the most real of all things. What is meant by mind is that which men introspectively know themselves to be. Each individual has something about him which is unique and irreplaceable. This mind is essentially creative and seems to demand unity. An idealist says that that which makes a whole a whole is mind. "Mind has a remembered past and an anticipated future."²¹

Mind is the source of its own reaction on its world.

¹⁹ Herman H. Horne, The Philosophy of Education (New York: The Macmillan Company, 1904), p. 273.

²⁰ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 154.

²¹ Ibid., p. 143.

It has power within itself, and it sets itself to work when occasion arises. This process of setting itself to work is termed self-activity. The principle of self-activity in consciousness is the root of all knowledge, feeling, and will.²² Without mind's response to its world, there is no world. Thus, through mind's response to its world, all science, art, and action result. Mind reacts by means of its own nature upon the sensuous material presented to it and upon its own conscious states. However, in addition it must be remembered that mind is growing through immaturity into maturity. It is manifested by states of brain and body, and it reacts in its true nature through contact with fellow minds.²³

The mind has conscience, a sense of right and wrong, and experiences satisfaction in doing the simple right and experiences remorse in doing the devious wrong, but matter is indifferent to right and wrong.²⁴

Horne thus describes conscience as a trait of mind. Unselfish acts are not necessarily motivated by consequences for the self.

²² Herman H. Horne, The Philosophy of Education (New York: The Macmillan Company, 1904), p. 170.

²³ Ibid., p. 170.

²⁴ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 143.

Contrasted with mind, matter is insensate. "The mind experiences pleasures and desires to repeat them, experiences pains and desires to avoid them, but matter is insensate and feels neither pleasures nor pains."²⁵

"We think with our minds, using our bodies as aids. . . . Space itself as we conceive it is an idea in our own minds."²⁶

Although thought does to some extent determine life, life determines thought rather than thought determines life.²⁷ "If we continue to grow with the years, there is a constant interplay between actions and beliefs, each modifying to some extent the other."²⁸

As instruments of motivation, effort and interest are mutually complementary. Immediate interest must hold sway in young students until the powers of voluntary attention are developed.²⁹ Interest arises from any unified variety.³⁰ Neither variety alone nor unity alone is satisfactory, because variety is distracting and unity is tiring. The secret

²⁵ Ibid., p. 143.

²⁶ Ibid., p. 142.

²⁷ Ibid., p. 141.

²⁸ Ibid., p. 141.

²⁹ Herman H. Horne, The Philosophy of Education (New York: The Macmillan Company, 1904), p. 203.

³⁰ Ibid., p. 195.

of interesting or motivating a student or mind is to present it with a variety of unity. Knowledge is the basis of further interest. Adults should realize that a child knows something, and new material should be presented so that it makes connection with what is already in the minds of youths. Motivation arises through presentation of new subjects as an extension of old interests. The essence of securing interest is to make the subject reflect the self of the student.³¹

Since the energy of the world, in final analysis, is the attentive aspect of the consciousness of God, the goal of child-rearing should be to develop the powers of voluntary attention. Interest is used to motivate a child's mental growth to a stage where effort can be relied upon, and the person voluntarily attends with his own consciousness in the direction of self-realization. The acquired habits of childhood and early adolescence give a certain trend to an individual's thinking, so that he is predisposed to accept a certain line of thinking. Thus, children reared in a religious home and religious atmosphere tend to accept idealism.

In general, the qualities of an educated mind are to

³¹ Ibid., p. 196.

know, to feel, and to will.³² The outcomes of knowing, feeling, and willing are the possession of truth, beauty, and goodness, respectively.

The mind's power of judging can be directed to that which is good as well as to that which is true and to that which is beautiful. The goodness of man's individual and social life is conformity of the human will to the moral administration of the universe.³³ "The final test of the value of any economic, political, social or educational system is the effect it has on individual personality."³⁴ "In content my philosophy holds that personality has supreme worth."³⁵ Respect for personality in feeling and behavior is a lofty virtue. It is the virtue which is looked to for the solution of human problems.

All human values are the temporal expressions of an eternal order which has value in itself.³⁶ This eternal

³² Ibid., p. 226.

³³ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 140.

³⁴ Ibid., p. 147.

³⁵ School and Society. Published weekly for the Society for the Advancement of Education, Inc. (Lancaster, Pa.: The Science Press), Vol. LVI - July-December, 1942.

³⁶ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, p. 183.

order is spiritual and changeless. It is a world of essential ideas and ideals. The object of living and learning is to develop natural man into ideal man.³⁷ The philosophy of idealism conserves many of the values for which the past of the race has stood. Goodness is not expedient action, for "morality of man has a sanction in the nature, purpose, and will of the Infinite mind."³⁸

Progress, or change for the better, is conceived as increasing realization of the values of life.³⁹ Progress is also conceived as growth in freedom; that is, control which an individual exercises over his own affairs. It is man's increasing mastery of nature in the sense of increasing victory of the spirit over matter. In general, progress consists in increasing enrichment of human life.⁴⁰

Idealism: Interpretation of perception

Horne at no time discusses perception per se. He does allude to perceptual processes from time to time in making his points. He sees perception as a process secondary

³⁷ Ibid., p. 194.

³⁸ Herman H. Horne and others, An Introduction to Modern Education (Boston: D. C. Heath and Company, 1937), p. 452.

³⁹ Ibid., p. 414.

⁴⁰ Ibid., p. 414.

to real human learning. His view is that a mind has a body to expedite its learning.

The body is the home of the mind. In the central nervous system, the body and the mind come into closest intimacy.⁴¹ It is through the means of the central nervous system that the body most influences the mind. The basic psychology is that out of sensation and movement develop the highest mental powers of abstract thought and involuntary action. Abstract thought is mind operating. Movement, voluntary action, is tied up with man's central nature, freedom. "The mind possesses, or may possess, a knowledge of the truth, but matter, though it may be known, itself knows nothing."⁴²

Although Horne does use the terms stimulus and response and mentions the laws of readiness, exercise, and effect, he defines habit formation in terms of sensation and movement. He applies a mental states psychology to the physical aspects of learning and living. He insists that although matter is known through the senses, its idea or principle is grasped by the mind.

⁴¹ Herman H. Horne, The Philosophy of Education (New York: The Macmillan Company, 1904), p. 59.

⁴² "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 143.

To be is to be experienced by an absolute self.⁴³

This implies that experience is basically a function of the Infinite. Man's progress consists in realizing more and more the eternal values in the temporal order. Man transcends the realm of nature in this mystic, more or less religious experience. The growth of personality, a major goal of idealism, is a result and function of experience. Mind or self rather than things or matter is the essential factor in experience. Self is active whereas environment is passive. Self is primary; things are secondary. Mind and self furnish the standards and ideals which give to experience its structure and aims. In classrooms or other teaching situations, the less mature self is stimulated to participate in the experience of the more mature self. The growth of personality through experience emphasizes self-consciousness, self-direction, self-hood, and inner spiritual growth.

Consciousness is something apart from nature. All knowledge is arrived at by intuition, inspiration, or deduction. Experience is useful only as a cue for the intuition of self-evident, eternal principles.

The learner is not only an individual, he is also a person. . . . Organisms may have individuality, but our pupils have personality. . . . Personality refers to

⁴³ Ibid., p. 139.

the state or quality of being or self, or a conscious center of experience.⁴⁴

Mind interprets sensations and directs movement as it learns. "Mind perceives the qualities of the world, such as colors, tones, tastes, odors, but matter, though it may be composed of waves, perceives no qualities."⁴⁵ Sensation is a function of an organism or body. Perception is a function of a mind.

Man's interpretation of physical science must be supplemented by insight into the nature and function of mind as pure intelligence. Only when he sees the reality behind physical phenomena does he have knowledge. Sensation interpreted becomes knowledge, and knowledge directed becomes will. Interpretation and direction are a function of mind; thus, knowledge arises as a product of mind. An educated man has wide knowledge of the essential facts of man and things, and exact knowledge of some field of fact where he proposes to devote his life. His knowledge is sufficiently general to make him feel at home in the universe and yet specific enough to make his work in the world a pleasure to himself and a profit to others.⁴⁶

⁴⁴ Ibid., p. 153.

⁴⁵ Ibid., p. 143.

⁴⁶ Herman H. Horne, The Philosophy of Education (New York: The Macmillan Company, 1904), p. 229.

In our conception of the learner we may progress from the atomic organization of the naturalist to the selective nervous system of the realist, then to the behaving organism of the pragmatist, and then on to the growing, finite personality of the idealist. In our conception of the responses of the pupil, we may progress from the mechanical reactions of naturalist and realist to the creative response of the pragmatist and then to the personal, chosen, response of the idealist.⁴⁷

Idealism: Treatment of learning and thinking

Idealism is quite vocal in regard to education, whereas very little is written specifically on learning. Learning is mentioned from time to time but is not precisely defined. It is necessary to infer much of the idealistic explanation of learning from the general tone of the idealistic position. Since idealism assumes a reality which is mental, learning is centered about mind. Learning, psychologically considered, is mental development.⁴⁸ Learning takes place through contemplation, imitation, and reasoning. It is a process of growth in which a self or personality grows in the development of self-hood, self-consciousness, and self-direction. An educable being or human learner, as distinguished from an animal to be trained, is an actualized, self-active mind. Mind has a body to expedite its learning

⁴⁷ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 154.

⁴⁸ Herman H. Horne, The Philosophy of Education (New York: The Macmillan Company, 1904), p. 170.

but mind is not body and in no case does the body of a human being have a mind. A learner is a finite personality growing into the likeness of an Infinite ideal.⁴⁹ Mind, in interpreting sensations and directing movement, learns or grows in knowledge.

Learning takes place through contagion of personality.⁵⁰ It is intercourse in which a less mature self participates in the experience of a more mature self. There is no learner without a teacher. However, one may teach oneself. Learning is a process of sensing the presence of the eternal in the temporal.

Man's possibility of development through learning is unlimited since learning in the final analysis is the up-building of humanity in the image of divinity.⁵¹

The learner becomes the educated person. The educated person is not just a complicated mechanism, not just a set of conditional reflexes, not just another, though higher, animal, not even a cultivated vocation-

49 "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 154.

50 Herman H. Horne, "Valedictory," School and Society, Vol. LVI - July-December, 1942 (Lancaster, Pa.: The Science Press), p. 154.

51 "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 185.

alist. He is a cultivated personality, ever becoming more cultivated and more of a person.⁵²

"Pupils and teachers are more than vital mechanisms or behaving organisms; they are living spirits."⁵³ Children are not merely little animals. Although they can learn as animals learn, animals cannot learn as children can. Children can and do learn by the laws of effect, exercise, and readiness. However, if they learned only by these, they could become only "attenuated hedonists."⁵⁴ Many unselfish acts of devotion are not motivated by consequences for the self at all, but for the welfare of others; thus, children must also learn in some other way, in addition to that described by the law of effect. The essential difference between man and animals is that animals cannot share in the uses or the appreciation of the activities in which they engage. The superior brain capacity of a child, giving him imaginative and conceptualizing ability, is the reason for a child's difference from the lower animals. Man has a measure of freedom and can create, yet not all life is

⁵² "The Psychology of Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II, 1942, p. 156.

⁵³ Herman H. Horne and others, An Introduction to Modern Education, (Boston: D. C. Heath and Company, 1937), p. 453.

⁵⁴ Herman H. Horne, The Democratic Philosophy of Education (New York: The Macmillan Company, 1932), p. 18.

creative activity and man must conform to a world that is already created. The learning process to an idealist is a harmonious synthesis of conformity and creativity.⁵⁵ Conformity and creativity together make man a finite, free being, growing into conscious resemblance of the Infinite. There is a "transcendent reach of the human intelligence to which no behavioristic law of learning can do justice."⁵⁶ Since children can think abstractly, it is not necessary that every item of knowledge grow out of some social activity; only low-grade intelligences require activities alone as bases of learning.

Idealism, after assuming that mind has body, then assigns the phenomena of habit formation to body. Horne affirms the law of association which is implied by psychologies which center on "mental states." ". . . If any two mental states be called up together or in succession, with due frequency and vividness, the subsequent production of one of them will suffice to call up the other."⁵⁷

"The educational period is the habit-forming epoch

⁵⁵ Herman H. Horne and others, An Introduction to Modern Education (Boston: D. C. Heath and Company, 1937), p. 452.

⁵⁶ Herman H. Horne, The Democratic Philosophy of Education (New York: The Macmillan Company, 1932), p. 19.

⁵⁷ Herman H. Horne, The Philosophy of Education (New York: The Macmillan Company, 1904), p. 44.

in life."⁵⁸ Learning, thus, is a process in which useful and desirable reactions are made habitual. Thus, habit formation would be explained in terms of sensation and movement rather than of stimulus and response. Habit sets mind free for new action and thought. Deliberate, voluntary action requires functioning of the cerebral hemispheres whereas involuntary, habit-level action can be mediated by the lower brain centers. Frequent repetition makes action habitual, mediated by the lower brain centers.

From a psychological point of view, all education and learning are the equipping of a nervous system for proper and best habitual reactions. Systematic thinking, aesthetic appreciation, and human virtues are first of all elements of spiritual mind. However, they may also be considered as elements of man's physical being, developed through habit formation. A plastic nervous system is of such nature that bad as well as good habits can be learned.

Since idealism depends primarily upon inspiration, intuition, and contemplation as a source of truth, it places only minor emphasis upon the processes of thinking or reasoning. Horne states, "Living is more influential in deter-

⁵⁸ Ibid., p. 45.

mining thinking than thinking is in determining living."⁵⁹

The acquired habits of childhood and early adolescence give a trend to a child's thinking which tends to determine his thinking in the future. Thought does determine life to some extent, and thinking does influence beliefs and conduct after the period of adolescence.

Idealists constantly hark back to the position that we live our way into a system of thinking rather than think our way into a system of living. Aristotelian logic is preserved as an essential method of thinking and discovery. This method cannot be avoided in the thinking process. Rational man, in studying his world, uses both inductive and deductive methods.⁶⁰ The mind in reasoning vacillates between particular and general, or between the concrete and the abstract. Children and adolescents can find their own answers when stimulated by an idealistic teacher or parent who does not attempt to impose his views on his pupils; rather, guidance and stimulation are given with the hope that the youth will arrive at his own answers. Respect for personality and intelligence gives basis for the assumption that each pupil will see the weaknesses in his position and

⁵⁹ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 141.

⁶⁰ Ibid., p. 166.

thus wish to make the necessary correction.

The imaginative powers of consciousness are called into action by the sciences, the arts, and the volitions.⁶¹ The imagination plays an active part in science in framing hypotheses to be verified through observation and experimentation. In the field of art, imagination enables the mind to come into sympathetic appreciation of the object of beauty. The imagination makes combination of old elements in new forms possible. Man is not just another animal; he is ruled in part by purposes. He is transcendental to the realm of nature in his power of conceptual thought as well as in artistic ideals and his feeling of obligation for the exercise of will. Based on the conviction that ideas or ideals are real and cannot finally fail,⁶² an idealist expects to learn more perfectly in the eternal world that which he had learned imperfectly in the temporal.

⁶¹ Herman H. Horne, The Philosophy of Education (New York: The Macmillan Company, 1904), p. 230.

⁶² "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 194.

CHAPTER III

THE TENETS OF REALISM IN EDUCATION

Realism is a philosophical outlook which in its growth has been opposed to idealism. A realist denies that the universe can be reduced to mind or thought. He finds himself faced with a reality which he is not conscious of having created and which he believes is a truly fundamental datum of experience. He asserts or implies that the universe has independent or real existence which is in no way dependent on perception or consciousness. Webster defines realism as "The conception that objects of sense perception (and, sometimes, of cognition in general) are real in their own right, existing independently of their being known or related to mind."¹ To a realist, the world that impinges on the senses of man is the real world. He holds a stern regard for fact accompanied by complete avoidance of sentimentality.

A realist holds to the epistemological position of claimed monism. Epistemological monism implies the belief that knowing takes place in a world composed of one kind of stuff. Full recognition is given to the fact that "one's

¹ Webster's New International Dictionary, 2nd edition (Springfield, Massachusetts: G. & C. Merriam Co., 1934), p. 2072.

body is just another complex physical object."²

A realist claims to avoid any dualistic hypothesis in describing mind-body relationships. A self emerges when an organism with a well developed brain and nervous system responds to stimulation from the physical environment. The factors which, taken together, constitute a self are all physical. The conditions under which these factors come together are also physical, and the resulting complex in every detail is physical. A realist, however, recognizes a distinction between a thing and an individual. The conditions in every case are physical, but they vary greatly in complexity. An immature person primarily is a plastic nervous system to be molded along lines set by a scientifically ascertained reality.

Realism in education applies to several modern variant positions, of which new realism perhaps is the most prominent. New realism primarily is a doctrine concerning the relation between the knowing process and the thing known.³ Professor Breed identifies himself as a new realist; thus the descriptions in this chapter are within the scheme of new realism.

² Frederick S. Breed, Education and the New Realism (New York: The Macmillan Company, 1939), p. 85,

³ David R. Major, An Introduction to Philosophy (Garden City, New York: Doubleday, Doran & Company, Inc., 1933), p. 371.

Realism: Assumptions regarding the nature
of reality and the nature of,
and tests for, truth

Realism assumes that reality consists of a rational world, one which operates according to natural law. Roughly, the content of the physical sciences supposedly is the essence of reality. Truths are to be observed and perceived. The action of a realist implies that he knows, and knows what he knows, and treats it as such.

Breed states, "The whole realistic position depends first on the doctrine of independence; second, on the doctrine of external relations."⁴ The theory of independence means that, although objects of consciousness are related to consciousness, it does not follow that they are dependent on consciousness. It is denied that the relation between a thing to be known and a knower is responsible for the character of the thing known. Being known is something that happens to pre-existing principles and things, and the knowing process is of such nature that principles and things are not affected in any way by the mere fact of becoming known. A realist recognizes that the truth of the principle of

⁴ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 110.

independence cannot be asserted. However, he does not claim to prove its truth in this impossible way. Rather than being an established generation from fact, this principle of independence is an assumption which supposedly is based on experience.

Natural laws of the physical world also are taken to be independent existents. Ways of behavior of entities are, in no way, dependent upon knowledge. The laws of the physical world are statements, including mathematical formulas, which reflect the nature of, and the inter-relations among, independent existents. These independent existents compose a vast concourse of entities with which our personal entities must live and about which they must know if they are to live effectively.

The theory of external relations ties very closely to the theory of independence. Its pivotal idea denotes that two things may be related in one or more ways and yet be independent of one another in the sense that neither affects or modifies, in any way, the other. A realist holds that reality is and that relations are external and objective. Although two things may be related in some ways, it does not follow that they are dependent upon one another. Relationship between two actions does not imply that either affects or modifies the other. It is recognized that qualities of separate components differ markedly from the

qualities of a compound. This merely means that two things in a given relation may exhibit qualities that are not exhibited by either when not in this relation.⁵

A realist believes that the process of knowledge is not constitutive of its objects. Any object is the totality of its qualities. Things can and do exist independent of a knowledge process. Things may be, without being cognized.⁶ A realist argues that the notion that things exist independent of knowledge puts him in tune with the world of science and of common sense, and broadens as well as solidifies the basis of his thought.⁷

Since a realist accepts scientific facts and laws as the core of the relatively unchangeable foundation upon which he builds his enterprises, he assigns great importance to the laws of nature. These laws are more than mere laws of thought or of personal behavior. They are objective modes of reaction of entities, personal or otherwise, throughout the whole extent of the known world.⁸ A law -- reality -- is completely independent of any statement

⁵ Ibid., p. 208.

⁶ Frederick S. Breed, Education and the New Realism (New York: The Macmillan Company, 1939), p. 115.

⁷ Ibid., p. 51.

⁸ Ibid., p. 225.

or impression of that law. The best laid schemes make or break to the degree that they are in conformity with these laws. Realism thus implies determinism. An individual is the result of the totality of his sensuous experiences -- stimuli impinging upon him, a passive organism.

Physical causation is the universal concept of the realistic outlook. Physics is the queen of the sciences, not only as contrasted with other sciences of matter but also when compared with sciences of life and mind. The real, objective world can be and needs to be directly known in perception; thus, subjectivism in all its forms is rejected. Vigorous use of the analytic method is observed in perceiving a world, in which all phenomena are the result of matter in motion and can be explained by its laws.

A realist recognizes a difference between truth and reality. "Reality is; truth is a quality of an idea or proposition referring to reality."⁹ Truth is something to be discovered by objective means, as free as possible from the subjectivity of the experimenter. Truth is closely related to knowledge in that to a realist all knowledge is scientific, to be ascertained and proved by the method of science, that is, the method of objective observation. "A true idea in its pattern sketches faithfully, and in its symbolic representation expresses accurately,

⁹ Ibid., p. 51.

what will happen as the plan unfolds."¹⁰ A realist's truth, as a product of observation, is contrasted with other notions of truth, as products of creation or revelation. Truth in its broadest meaning constitutes an important element of the general social tradition. This social tradition includes constitutions and statutes, institutions and conventions, customs and manners, precedents and prejudices.¹¹

The test of truth is conformance to the laws of the universe. Truth inheres in things, and we must go to things in order to find it. As science advances, law or truth is found where lawless action seemed to reign before. The underlying assumption of a realist is that there are basic, observable entities upon which we may build our knowledge. A realistic scientist is interested in describing relations between physical objects rather than in describing relations between objects and the mind of man.¹² The search for truth is a matter of receiving through our physical senses all that we possibly can experience, and experiencing it as

¹⁰ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 116.

¹¹ Ibid., p. 133.

¹² Frederick S. Breed, Education and the New Realism (New York: The Macmillan Company, 1939), p. 195.

accurately as possible. The use of the physical senses is aided by many scientific devices to make the senses more acute, more discerning, and more accurate. A realist emphasizes observation as the method of obtaining truth. Observation denotes not only seeing with the eyes but also experiencing with any or all of the senses. The ultimate outcome of this search for truth, if ever resolved, would consist of conceptions which would be final, ultimate, and absolute. A quality in last analysis becomes an event coordinated with another event.¹³ Measurement of objective data is interpreted as a concise statistical approximation. It is realized that actual measurement lacks perfection, yet it is posited that the real thing is there, waiting to be measured. Breed states, "I believe quantitative measurement carries the only ultimate hope of a genuine science of education."¹⁴ Scientific truth thus consists of generalizations about the nature and the inner relations of events, achieved through competent and persistent observation.

A realist, even in dealing with psychology, tends to confine himself to external observation of physical behavior, especially in so far as it can be registered and measured by physical precision instruments. The value of conscious-

¹³ Ibid., p. 196.

¹⁴ Ibid., p. 206.

ness as a source of truth is minimized or discredited. Realistic social scientists pattern their approach after the methods of physical science. Economics, sociology, psychology, education, and other social sciences, if they are to be sciences, must determine by observation the principles upon which they shall rest -- the fundamental laws that apply to the things and relations with which they shall deal. The test of truth is correspondence to reality -- something not of one's own creation.¹⁵ "If the meaning of an idea conforms with existents found in the perceptual process, the idea is said to have the quality of truth."¹⁶

A realist interprets philosophy as continuous with science. He subjects philosophy to the same tests as those by which scientific knowledge is measured. Breed asserts,

In sum, nothing is exempt in the drive for scientific knowledge. Things and their relations, man and his reactions, including the purposive and the ethical, all come within the comprehensive grasp of science. It evaluates human procedures in terms of results, and these results in terms of criteria set up on the basis of what is favored or should, with wider knowledge, be favored by humans. In this sense educational objectives are determined by scientific investigation.¹⁷

15 "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 126.

16 Frederick S. Breed, Education and the New Realism (New York: The Macmillan Company, 1939), p. 217.

17 Ibid., p. 19.

An outlook is realistic when the determinant of the truth of an idea is regarded as something beyond mere personal satisfaction, as something external to the personality and not dependent upon it, and as something that can be definitely referred to as objective fact. "Ideas are true when they work, but when they work they do so because they conform to a definite order of things beyond them."¹⁸ In final analysis, the test of truth is correspondence to something not of one's own creation. An idea works when the pattern it carries fits a pattern which it later finds, or could find if the right methods were used. Truth stands as a basis for belief. Such truth may be relinquished tomorrow with further objective study; nevertheless, until it is disproved, it will persist as part of the organization upon which a realist builds. Disproof means discovery of error -- what was thought to be truth did not turn out to be so. The use of hypotheses is minimized and is considered legitimate when and only when nothing better can be found. Hypotheses are to be carefully labeled as such and not confused with verified results or truths. Implicit in the pattern of realism is the idea that although realists perform experiments and employ experimental data,

¹⁸ Frederick S. Breed, Education and the New Realism (New York: The Macmillan Company, 1939), p. 88.

they look upon experimentation as (basically) merely a device by which observation is more capably achieved. Thus, scientific investigation is, for them, exclusively inductive.

Realism: Theory of motivation

A realist, because of the very nature of his outlook, leaves small place and little importance for the problem of motivation. In his attempt to escape supernaturalism he denies purpose in a teleological sense, and continues his derogation to cover purpose in any sense of the word. Anything eternal or timeless is omitted from the space-time frame of reference. The alternative is an assumed mechanistic, non-purposive conception of man as well as of the universe.

It is realized that man is faced with problems which to date, have not been answered. Yet a realist insists that none of the answers is hidden in mysterious riddles of superhuman or supernatural character. Regardless of his wishes or desires, an individual must conform to the external world. There is no place for supernaturalism of the psyche of man. A realist posits the existence of laws of personal and social phenomena as well as laws of natural science.

In a stubbornly objective world, one's physical and social environment has veto power on human interests. Man proposes, but it (the objective world), like God, disposes. Man projects an idea, but the constitution of

the external world finally determines its validity.¹⁹

The origin of morals is in the folkways and mores. Social motives arise from these folkways and mores. Conscience is the echo or reflection of social custom.

Breed sometimes mentions personalities and purposes of men, but attributes little more to them than concepts for vague verbalization. Men are considered a relatively insignificant factor in a world that acts in its own way. "What the personality can do is determined in part by its own purposes and in part by the manner in which the surrounding world concurs."²⁰ A realist keeps in the forefront of his thinking two fundamental considerations, "the complex object known as the individual personality and the vast organization of objects constituting its environment."²¹

A realist posits that objects have reality independent of mental phenomena. Mind is reduced, in turn, to an aspect of matter. The mind of man is conceived as a comparatively recent addition in the evolutionary history of nature. Mind or intelligence emerged as an instrument of adaptation to a changing environment. Mind thus is a

¹⁹ Ibid., p. 55.

²⁰ Ibid., p. 213.

²¹ Ibid., p. 213.

part of the natural order of things. Mind connotes the physical relationship of the nervous system with the physical environment.

Stripped to essentials, a mind may be defined as a manifold of terms selected from the environment and related by association. This definition should be as acceptable to a behavioristic psychologist as to a realistic philosopher.²²

A realist supposedly leaves explanations and theories to others and assumes that mind as well as body is essentially a physical phenomenon. Mind, so defined, is passive in so far as its relationship to a human body is concerned. Reduced to its lowest terms, it consists of both activity and content. "There is no perception without perception of something, no memory without remembering something. This condition prevails in every mental function."²³ Since mind is nothing more than a manifold of terms in certain relationships, mind is measured when all types of content and activity are measured. This connection of the nervous system with the physical environment is a purely physical relationship. "Mind reduced to its lowest terms is subject-matter plus reaction, content plus activity, terms plus relations."²⁴

²² Ibid., p. 84.

²³ Ibid., p. 135.

²⁴ Ibid., p. 228.

Modern realism consistent with its mechanistic outlook is committed to a stimulus-response concept of learning and human behavior. Men are the product of various physical forces impinging upon their organisms, plus the physical reactions of these organisms. "The reflex arc, with its receptor, conductor, and effector, is generally regarded as the unit mechanism of human behavior."²⁵ A personality is a complex entity. Its reactions represent relationships executed with other entities constituting its environment. The other entities are known as external stimuli. A lay observer describes them simply as the objects that surround him. The qualities of a person are to be observed or measured in his reactions. The sum of effects and the sum of the qualities of a personality amount to the same.

A realist considers attention in perception simply another name for the function of selection. It is observed that an organism reacts selectively. However, no explanation of this behavior is attempted.

When one entity or organization of entities reacts selectively to another, the process is describable but not explainable. Selective reaction is ultimately a brute fact.²⁶

²⁵ Ibid., p. 123.

²⁶ Ibid., p. 86.

Breed recognizes two types of interest -- intrinsic and extrinsic, direct and indirect. Direct interest is a response to an object as an end in itself; indirect interest is a response to an object as a means to an end. "Situations to which one attends are either intrinsically or extrinsically attractive."²⁷ It is further stated that "since no pupil ever consciously responds to a situation without interest of one or the other sort, one can still say that the school must operate entirely on the basis of interest ..."²⁸

This conscious interest has its special realistic connotation. In the case of a stimulus-response situation, awareness is a mere subjective by-product of the physical situation.

"Consciousness is but a name for the fact that one thing can mean another."²⁹ This term signifies a relation; it signifies that one experience points to another, leads to another, or is associated with another.

Purposefulness is scarcely mentioned in Breed's

²⁷ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 102.

²⁸ Ibid., p. 103.

²⁹ Frederick S. Breed, Education and the New Realism (New York: The Macmillan Company, 1939), p. 80.

pattern of realism. When mentioned, it is implicitly defined as the ideation of a mechanistic process of selection.

Purposive action is nothing more than the identification of the personality with one of the ideas or plans of action "projected" in the process of thought. . . . Thought. . . is simply a name for the idea formation described.³⁰

Realism: Interpretation of perception

The external world of physical reality is the most fundamental thing in experience. It is objective and factual. Regardless of his desires, a realist asserts that he must accept and conform to this world. That which he wants or feels, he considers merely subjective and secondary. The external world transcends the experience of any given moment. Its elements transcend life experience and supply the original content of mental life. The perceptual data simply are there as brute facts. Since no giver is postulated, it is incorrect to say that they are "given."³¹ Therefore, logically, realists should not use the word "data." A realist concedes this external world to be the real world. He contends that this outlook places him in harmony with the world of science and of common sense. Although the common world transcends knowledge, it does include knowledge. The positing of a common world of thought is based on a common world of sense.

³⁰ Ibid., p. 218.

³¹ Ibid., p. 101.

A realist contends that physical events can be directly apprehended. Activity possesses form in its own right prior to entering a human mind. Forms of things may be carried into our experience as aspects of the things themselves. When things impinge on man's senses, he recognizes their existence; however, their existence is not dependent upon his recognition.

A realist envisages the connections of the nervous system with the physical environment as purely physical. The environment simply impinges physically upon a physical organism.

An individual is regarded primarily as so much nervous tissue with its characteristic receptor and motor organs and central brain through which it responds to the physical environment. The mechanism of a sense organ is analogous to the transmitter of a telephone. Vibrations -- impulses -- are transferred from one medium to another without compromise of identity. Sensations readily may be carried to the central nervous system in the form of neural impulses without loss of character.

Constancy of the character of things is a function of their behavior, rather than of man's. It is understood that the device underlying sensation is one of transmitted motions. Selection is the basic activity in perceiving.

Attention is regarded as simply a name for the function of selection. Modern realism holds "that the physical and the psychical intersect in sensation."³² Sensations are regarded as selections of existents that dwell in environment. That which is sensed is a form of experience that can appear either inside or outside of a human body. Realism holds that a part of an object may be perceived without the rest, and that the rest may exist without being perceived. It insists, however, that the part perceived and the perception of the part have indistinguishable content.³³

Experience denotes the activity of thought, plus its content. Activity is the experiencing, content the experienced. Content is not manufactured by mental functioning. There is always the act of perceiving plus something perceived. Matters-of-fact are analyzed into elements which are given in experience and are called sense-data. A realist holds that a perception is a complex of sensations whereas conception is a basically different process. "In perception reality is given; in conception it is described. Through perception comes the stuff of which our world is constituted; through conception (ideation, intellection)

³² Ibid., p. 85.

³³ Ibid., p. 77.

the nature of this stuff is indicated."³⁴ Perceptual experience is essential in the development of conceptual experience. Perception, in truth, is a process of measuring in amount the qualities of objects. The object of perception is a combination of qualities. To measure these qualities one must measure them in amount. Every quality exists in some amount and thus can be measured. It possesses magnitude, either extensive or intensive.

Realism: Treatment of learning and thinking

A realist's position is that learning is a process of physical response of an organism to a physical environment. It is the impressing of new reaction-patterns upon a plastic nervous system. We learn by doing, by formation of bonds in the nervous system. Learning is a motor process in which reaction is constitutive of thought and learning.³⁵ The mechanism of a sense organ acts much like the transmitter of a telephone. Vibrations of sound are carried in the form of neural impulses to the central nervous system without loss of character. Activity possesses form in its own right, and thus the forms of things are imported into the experience of man as aspects of the things them-

³⁴ Ibid., p. 76.

³⁵ Ibid., p. 84.

selves.³⁶ A realist attempts to banish the hypothesis that, in learning, mind acts upon mind through the mediation of non-physical ideas.

The reflex arc, with its receptor, conductor, and effector, is generally regarded as the unit mechanism of human behavior. The simple reflex-arc is thought of as composed of a minimum of two nerve cells or neurones, one on the receptor side, the other on the effector side. In the S-R bond theory, as commonly taught, learning is represented as a connection between a stimulus and a response, which suggests, on the structural side, a connection between two neurones of the types mentioned. Such can still be the theoretic unit of learning and the simple reflex can still be the theoretic unit of behavior, even though neither be regarded as an adequate explanation of any human behavior observable.³⁷

This reflex-arc, connectionistic idea is taken by Breed to be the fundamental concept in explaining ordinary learning situations. He does not supplant the bond theory of learning although he supplements it with a theory of patterns of integration in the simultaneous occurrences of reflexes. He finds in all human behavior "a compounding of reflexes, 'co-ordination of reflexes simultaneously proceeding, and co-ordination of reflexes successively proceeding.'"³⁸

From the standpoint of realism, learning is a

³⁶ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 112.

³⁷ Frederick S. Breed, Education and the New Realism (New York: The Macmillan Company, 1939), p. 151.

³⁸ Ibid., p. 152.

stimulus-response, conditioning process. Learning is the acquisition of a connective reaction to an object, stimulus, or situation. The two phases of intellectual behavior which seem to constitute the fundamental factors of mental life are revealed by analysis of the more complex functions of the mind. These phases are (1) selective reactions to external data and (2) connective reactions by which these data are associated, integrated, and interpreted in experience. Breed states that "teaching is the guidance of learning."³⁹ By this he means that a teacher directs learning through intelligent guidance of the processes of learning, in light both of the present status of the learner and of the ends to be achieved.

Breed rounds out his theory of learning by taking into account the integrative action of the central nervous system. He includes, in the concept of reaction to impulses from without, the organization of these impulses. "Integration of impulses takes place as a result of the connective activity of the organism, selectivity and connectivity being the chief aspects of its intellectual operations."⁴⁰

³⁹ "Philosophies of Education," The Forty-First Yearbook of the National Society for the Study of Education, Part 1, 1942, p. 126.

⁴⁰ Ibid., p. 115.

Without contradiction one may speak of the functional unit of human behavior in terms of an alliance of reflexes (Sherrington), a pattern of excitation (Lashley), a mode of organization (Judd), a configuration (Koffka), or supplement the simple connectionism of a passing era with the concept of "belonging" (Thorndike). The various forms of expression all point to a type of patternism that we shall regard as the basic feature, the precious substance, as it were, of integration of mental processes, which in turn is associated with integration of neural processes. In other words, there is a psychology of integration as well as a physiology of integration. There is also a philosophy of integration.⁴¹

A realist constantly emphasizes objectivity in his study of human behavior and in his method of acquiring knowledge. Learning is at its best when objective information is objectively expressed and is assimilated by a dispassionate student. A child learns by being trained in the methods of acquiring knowledge as well as by acquiring knowledge which has been accumulated through the scientific method.

Breed in the pattern of new realism places considerable emphasis on habituation, in that it is considered a means of inestimable value for adjusting to the external world. This adjustment is a case of "biological conformity to practical uniformity."⁴²

The scientific student, more objective and less of a doctrinaire, offers a plan of education that recognizes

⁴¹ Frederick S. Breed, Education and the New Realism (New York: The Macmillan Company, 1939), p. 154.

⁴² Ibid., p. 66.

stability as well as instability in experience, habituation as well as reflection, knowledge as well as thought. He loves intelligence not less, but habit more.⁴³

The essence of habit formation is the formation or wearing of pathways in a nervous system. Bonds are formed. The prime mover of activity is the stimulus. It sets off the nervous action which in turn sets off the response. Breed does recognize that experiments show that the stimulus for a habitual reaction may vary considerably without interfering with the adequacy of the response. "Experiments show that no habit can be ascribed to conduction paths in a limited cerebral area."⁴⁴ The harmonious organization of varied activities is provided for in the network of the central nervous system.

Neural arcs are interconnected in such a way that they discharge as a system into a final common path. The receptor portion of the system corresponds to the wide inlet of a funnel; the final common path, to the narrow outlet.⁴⁵

The social demands and the individual need require the acquiring of hundreds of skills. An act of skill is a reaction of the whole child focused in definite adjustment to selected elements of the environment. Habit is a product

⁴³ Ibid., p. 66.

⁴⁴ Ibid., p. 153.

⁴⁵ Ibid., p. 164.

of learning, and it harmonizes with the principle of integration in learning.

Intellectual action is a process of disclosure; not of creation. This process is asserted to be analogous to, or a prototype of, scientific investigation. Intellection does not create its objects, it discloses them. Breed iterates and reiterates the thesis that there is an external world demanding conformity and that true ideation consists of formulating concepts which perform a guiding function among existences -- the existences being completely independent of any ideation. A realist believes that the laws of science rest on something much more stable than the facts of human behavior. Human behavior is recognized as a factor in the discovery of these laws, but an idea or plan of action achieves the stamp of truth only by conformity with something external to it and not of its own creation.⁴⁶ With repeated use, ideas are less and less frequently carried out to their verification; hence thought (including ideation, intellection, and consciousness-of) is defined as unfinished action.

The subtlest incipency comes to stand for the finished product, the inception of a train of action for the whole. The activity sequence, partial or total, is

⁴⁶ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 101.

conceived as a series of related terms that have their original home in the environment, some of them under the epidermis.⁴⁷

The method of analytical thinking is a probing which fundamentally consists in selective reaction to, or appropriation of, the smallest elements possible. A research scientist explores the frontier of his science to the realm of the infinitesimal.⁴⁸ All of the processes of thought from the simplest association to the most complex generalization can be described in terms of the simplest functions.⁴⁹

A realist identifies thinking and reasoning with the processes of natural science. Breed emphasizes that the best thinking has been in pursuance of the method of systematic analysis. "Man has come to his present intellectual estate by studying the world now mathematically, now chemically, now astronomically."⁵⁰ It is recognized that the study of a new topic is begun by looking at the world or the problem en masse. Nevertheless, it is argued, scholars have progressed by concentrating on the quantitative

⁴⁷ Frederick S. Breed, Education and the New Realism (New York: The Macmillan Company, 1939), p. 84.

⁴⁸ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 103.

⁴⁹ Ibid., p. 115.

⁵⁰ Frederick S. Breed, Education and the New Realism (New York: The Macmillan Company, 1939), p. 217.

reaction of things, on the relations which exist among the atoms of different elements, and on the relations which the celestial bodies maintain one to another. A realist concludes that a scientist, or one doing scientific thinking, is in contact with the facts from the beginning to the end of a process. His role is to analyze phenomena into simple ideas and into relations of identity and difference. Any constructed syntheses are factual and objective, and thus matters of knowledge. Sense-data are the basis of all matters-of-fact, and all ideas of relation are based on the relation of identity and difference. A realist recognizes the existence of problematic situations. He considers them as indistinctivenesses that further research may cause to disappear. As a process of investigation proceeds, the material of study is disclosed in smaller and smaller units, working from the general form of the material down to protons and electrons. A realist dogmatically builds on the belief that knowledge of the world is fundamentally the disclosure of pre-existent, independent events or entities of the physical world.⁵¹

The essence of reasoning is selective response to

⁵¹ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 108.

identical elements in numerically different experiences.⁵²

"Just as selection is the basic activity in perceiving, so association is the basic activity in thinking."⁵³ In the process of knowing about something, an individual reveals only bodily reactions to an object. Linguistic reactions are obvious and prominent. The relation from item to item is one of association. Reactions consist of relating items of content, "some of which lie in the field of general observation, others under the skin."⁵⁴ To a realist, perception and conception are entirely different processes.

"Stress has been placed on the importance of perceptual experience in the development of conceptual experience."⁵⁵

Conceptual experiences are derivatives of those which are perceptual. However, in last analysis, all is perception. Derivation of concepts from precepts typifies the development of knowledge. Knowledge later serves the practical function of guidance of activities in the stream of life's experience.⁵⁶ Breed acknowledges that "thinking may proceed on an infrahuman level without the use of general terms,

⁵² Frederick S. Breed, Education and the New Realism. (New York: The Macmillan Company, 1939), p. 210.

⁵³ Ibid., p. 83.

⁵⁴ Ibid., p. 83.

⁵⁵ Ibid., p. 136.

⁵⁶ Ibid., p. 161.

but not at its best on the human level."⁵⁷ When one faces an experience in which a solution has not already been charted in previous experience and preserved by a habit, he thinks in order to find his way out.⁵⁸

Creative imagination to a realist is the formation of new relationships out of old stuff -- new combinations of old bonds. Emphasis is given to the assumption that the stuff or the material of imagination is not new. Imagination is not conceived as manufacturing its material. Rather, it is interpreted as merely taking what has been provided by the other processes and weaving it into a new pattern. These items may be combined in ways fantastic, either true or untrue to life.

⁵⁷ Ibid., pp.135 f.

⁵⁸ "Philosophies of Education," Forty-First Yearbook of the National Society for the Study of Education, Part I, 1942, p. 98.

CHAPTER IV

THE TENETS OF PRAGMATISM IN EDUCATION

Pragmatism, like realism and idealism, is a name for a basic outlook which colors the thought, ideas, and actions of all who hold to this philosophy. Pragmatism is also described under the titles experimentalism, philosophy of experience, and instrumentalism. Webster¹ identifies pragmatism with emphasis upon the application of ideas or upon the practical bearings of conceptions and beliefs. Thought functions as a guide to action. Truth is to be tested by its practical consequences. Pragmatism emphasizes critical, intellectual activity as opposed to metaphysical formulation. The principle of relativity is taken seriously.

A thesis of relativity applied to human behavior is that a human mind cannot deal with things in isolation, but only with them as related to other objects. A pragmatist thinks of a proposition or conception as a product of human minds. He does not deny independent existence of objects, or even of other persons' ideas, but simply notes that a person sizes up his world as he finds it in a way which makes things fall into a pattern.

¹ Webster's New International Dictionary, op. cit., p. 1938.

Bode emphasizes that the assumptions underlying any form of absolutism are essentially undemocratic. In turn, the principle of democracy, because of its very nature, is not an absolute. Democracy, as he sees it, represents the best insight that men have, up to date, as to what is required for fullest development of an individual. The distinctive characteristic which prevents democracy from becoming absolutistic is that, whenever human insight is improved, human standards will vary accordingly.²

Within this pragmatic, relativistic outlook democracy comes into the place of functioning as the frame of reference which, for the United States of America, determines or should determine much of the nature of education.

A pragmatic approach to the study of man and behavior develops within a frame of reference of the field concept. The field concept leaves no room for division of human life into a natural and a supernatural realm. The reorganization of experience in harmony with the field concept concerns this present life.

The only thing that counts is the foreseeable consequences of a proposed line of conduct, in terms of their bearings on human relations. "By their fruits shall ye know them." This is sometimes called humanism or naturalism, because it by-passes all theological and metaphysical questions, such as the existence of

² Boyd H. Bode, Progressive Education at the Crossroads (New York: Newson & Company, 1938), p. 110.

God or a life after death.³

Democracy as a way of life is committed to the proposition that man must place sole reliance on his unaided intelligence both for the discovery of methods for the exercise of control over his material and social environment and for construction of the ends to be achieved.⁴

Pragmatism: Assumptions regarding the nature of reality, and the nature of, and tests for, truth

The term "reality" in its historical sense is an absolutistic term. The assumption back of such use of the term is that there is a pre-existent, transcendental reality. The problem of philosophy within this absolutistic frame of reference is to determine the nature of this reality -- not to question the meaningfulness of the concept. Pragmatism inveighs against those historical, absolutistic outlooks and consequently makes no attempt to define transcendental reality which, if it exists, cannot be known.

A pragmatist does not assert that there is, or that there is not, a supernatural. His system of thinking, since it is not dependent upon supernatural existences, simply does not assume and is not based upon the existence of a

³ Boyd H. Bode and others, Modern Education and Human Values, Pitcairn-Crabbe Foundation Lecture Series, Vol. I (University of Pittsburgh Press, 1947), p. 9.

⁴ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 275.

supernatural being. He feels that he can best deal with the world by assuming it as all of one piece. A pragmatist feels that the historical outlook in which men have pictured a fixed, absolute reality -- a reality avowed to exist, independent of any perception of it -- has been a great stumbling block to progress in the modern world.

Bode states, "The creation of this transcendental world was at the same time one of the most brilliant achievements and one of the major tragedies of human civilization."⁵

Being obliged to have recourse to a transcendental reality is a stiff price to pay, and unfortunately we do not get our money's worth. The irony of the situation is that this transcendental reality refuses to help us out, even after we have sacrificed intelligibility in order to secure its cooperation.⁶

A pragmatist assumes that what one takes to be reality is the only reality with which he may deal. This pragmatic approach to reality escapes from the disagreeable alternative of either providing a definite, absolute place for everything or else having recourse to dualism.⁷ Pragmatism, in viewing a human being as an organism in interaction with its biological and social environment, empha-

⁵ Boyd H. Bode, Progressive Education at the Crossroads (New York: Newson & Company, 1938), p. 22.

⁶ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 72.

⁷ Ibid., p. 222.

sizes rights and responsibilities of the individual in gaining knowledge and personally testing beliefs.⁸

It is recognized that each of us is unique, both in purpose and in experiential background. The only reality we can experience is what we make of the objects around us. It is upon such a basis that we design intelligent action, and this is unique for each of us. In any field -- science, social relations, morality, and even religion -- each individual is the maker, not of the world but of his notion of the world.

Reality is taken to be what makes a difference to our behavior; that is, what we make of what comes to us, through our senses or otherwise. That which comes to us -- light rays, sound waves, and the like -- we interpret in the light of our experience, and act accordingly. The names and positions we ^scribe to such objects and ideas and the way we act with reference to them lie not in the objects and ideas themselves, but in what we ascribe to them.

A pragmatic theory of truth stands in contradistinction to theories of truth expounded in absolutistic philosophies. In harmony with the general outlook of pragmatism, truth is considered a relative thing. Truth is something

⁸ John Dewey, Democracy and Education (New York: The Macmillan Company, 1916), p. 344.

which people are seeking in trying to build a better life. To a pragmatist, truth is formulated, not discovered.

Bode neither affirms nor denies the existence of absolute truths. If they do exist, how are we to know if and when we have them? To assume that they were known to the ancients and are still known today, is merely to bow down before a sacred past. There must be some other way of arriving at standards for the true, the good, and the beautiful other than simply borrowing from the past. "Eternal verities" have no labels by which they can be perceived and they have the habit of colliding with one another. The notions of men in regard to what constitutes these eternal verities do not remain constant.⁹ It is granted that history has many important lessons to teach, yet there is always room for lessons on these lessons.¹⁰

It is understandable that a theory such as Plato's doctrine of Ideas should be evolved when the world was still young. It is less understandable that a modern man should pass by all that science and racial experience may have to say on the subject and lightheartedly assume that this ancient theory makes sense or that these absolutes are anything but human prejudices invested with a halo and put on ice.¹¹

⁹ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 72.

¹⁰ Ibid., p. 293.

¹¹ Boyd H. Bode, Progressive Education at the Crossroads (New York: Newson & Company, 1938), p. 34.

Truth is taken to be that body of reliable knowledge or insights by means of which man can predict the consequences of his present and future acts with a significant degree of accuracy. Truth, as proven insight, enables us accurately to anticipate behavior. The truth or falsity of a proposition is judged by what it does, or would do if tried, to consequent behavior. Each human idea represents a possible truth, to be tried. Its truthfulness is measured in terms of the consequences of the action implied by the proposal. A true idea is one which takes into consideration all available data and harmonizes it into an action-pattern which will achieve what it is designed to achieve. Thus, truth is an insight which serves as a successful guide to conduct. A pragmatist recognizes that we often become sufficiently confident of certain truths to place great dependence upon them, but he recognizes that such truths may give way to others at any time, as new data are developed and brought into one's outlook.

Workableness is both the nature and structure of truth and the test of truth. The pragmatic test of truth is the scientific method, the essence of which is understanding or accuracy in prediction. In finding his way out of present confusion, modern man needs to face the challenge that comes from science and the scientific method. "The refusal to consider how far we can go in sole reliance

on scientific knowledge and scientific method is an invitation to disaster."¹²

A systematic study of science is necessary in order to understand the methods and the point of view of the scientist. Such study should be made with special reference to the purpose of gaining an appreciation of what is meant by the statement that for science the world is all of one piece, that the concept of mechanism is an artificial simplification of the facts in the interests of convenience, that the concepts of science generally are tools with which the scientist does his work, and that truth is a relative thing.¹³

Science, therefore, is first of all, a refinement of the procedures of the practical man. But in its bearings or implications it is vastly more than that. Since it shuts the door on absolutes, it makes all truth subject to the same test. It brings truth, goodness, and beauty down from the clouds and sets the stage for a reinterpretation of them in terms of a better associated or democratic living. . . . The whole drift of modern science is toward the conclusion that the point of reference in every investigation falls within our three-dimensional world; and that our tests and standards are not derived from elsewhere but are constructed as we go along. . . . This general tendency. . . maintains that man's future is in his own hands; that social and ethical and esthetic principles are neither handed to him ready-made nor so embedded in the structure of things that he need but look in order to discover them. He must create and recreate them for himself, in the course of racial history, out of the raw material of experience, just as, through the centuries, he has created, out of his cumulative experience, an industrial order and systems of money and credit.¹⁴

¹² Boyd H. Bode and others, Modern Education and Human Values, Pitcairn-Grabbe Foundation Lecture Series, Vol. 1 (University of Pittsburgh Press, 1947), p. 22.

¹³ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 275.

¹⁴ Boyd H. Bode, Progressive Education at the Crossroads (New York: Newson & Company, 1938), pp. 33-35.

The reality on which one bases what may be called intelligent action may, or may not, be truthful. If it is not, one is likely to encounter difficulties or failures. Thus man's notions of the world, to be utilized in a fruitful manner, must be developed in cooperation with that world, and they must be held in continual readiness to be experimentally tested and retested throughout the lifetime of the person.

Pragmatism: Theory of motivation

A pragmatist assumes that all human action is purposive and must be interpreted in light of the goal it is designed to achieve. An individual acts in such a way as to achieve his goal or goals -- satisfy his wants or desires -- in the quickest and easiest way that he comprehends or senses as possible under existing conditions. When one is motivated toward doing something, his description is that he wants or desires to do it. A conscious activity is carried forward to a goal by a process of constantly searching out the conditions for the next step all along the way.¹⁵

A pragmatist uses mind to mean a function of pointing or leading. "The function of pointing or leading is nature's way of introducing foresight, purpose, intention into

¹⁵ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 231.

behavior."¹⁶

Mind is capacity to refer present conditions to future results, and future consequences to present conditions. And these traits are just what is meant by having an aim or a purpose.¹⁷

The motivating-affective aspects of behavior are feelings in form of wants, desires, or cravings. Values, ideals, or interests, with which the self is identified, arise within the context of experience. They are patterns or objectives for the improvement of living and are related to the situations in which an experiencing organism lives and moves and has its being. Motivation means that a condition of tension or disequilibrium arises between an individual (representing the want aspect) and some feature or phase of the environment which represents the goal. The individual then seeks insight into ways in which the wants may be satisfied, the goal achieved, the tension released or relieved. The insight opens the way for resolving the condition of disequilibrium and relieving the tension.

Bode recognizes that there are differences in the motivation of children due to their native endowments, as well as to environmental influences. He also notes that, in

¹⁶ Ibid., p. 225.

¹⁷ Dewey, op. cit., p. 120.

addition to original tendencies differing with different individuals, motivations vary with the same individual, "with growth and opportunity."¹⁸ New interests are built on native endowment. "The child is father to the man."¹⁹

All patterns or ideals "spring from the soil of experience";²⁰ they are creations of man and they serve as guides for the continuous reorganization of experience. These values or ideals are subject to continuous reconstruction as new conditions develop. A person adjusts himself to the social order through identifying himself with certain activities or concerns that are present in the environment.²¹ The development of ideals is the same process as the development of self, since the content of the self is taken to consist of one's cherished ideals and interests. "Interest, concern, mean that self and world are engaged with each other in a developing situation."²²

Self is taken to be that body or configuration of matters with which we become identified or to which we

¹⁸ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 113.

¹⁹ Ibid., p. 113.

²⁰ Ibid., p. 256.

²¹ Ibid., p. 262.

²² Dewey, op. cit., p. 147.

give allegiance.

The self is not ready made, but something in continuous formation through choice of action. . . . Self and interest are two names for the same fact; the kind and amount of interest actively taken in a thing reveals and measures the quality of selfhood which exists.²³

A person's real self is his major body of allegiances or commitments.

"The wider or larger self which means inclusion instead of denial of relationships is identical with a self which enlarges in order to assume previously unforeseen ties."²⁴ The self is a kind of storehouse or depot, where life collects experience and redistributes it to life.²⁵

A self is not a fixed quantity or static thing. It is in the making constantly. It is an achievement as contrasted with the idea of an inherited possession. Human nature is not fixed. Man is not considered as originally an enfoldment of potentialities, to be permitted later to unfold. Human nature is developed through social relationships as well as personal growth. By means of such instrumentality an individual acquires language, capacity for conceptual thinking, and moral, social, and religious pre-

²³ Ibid., p. 408.

²⁴ Ibid., p. 409.

²⁵ M. C. Otto, Things and Ideals (New York: Henry Holt and Company, 1924), p. 135.

dispositions and insights.

The self takes its rise from the development of independent interests. These interests may be things, schemes, secrets, or whatnot. It is the activity of appropriation, of adoption as one's own, and the consequent feeling of proprietorship, which mark the genesis of the self.²⁶

The self is a center of energy, a going concern which is acting and being acted upon. It gradually came into existence as the native, impulsive life of the individual was organized into meaningful habits under stress of a social and physical environment.

It is a fluctuating collection of desires, memories, aptitudes, hopes, and the like, which, as a result of the give-and-take relationship of an active organism and an active environment, have come to keep house together in the same body and are there felt to be members of one family.²⁷

Pragmatism: Interpretation of perception

Perception, to a pragmatist, is thought of as an interpretation based on a kind of statistical average of a great many clues. The nature and position which we assign to an object lies, not in the object as a thing in itself, but in what we attribute to it out of our own experience -- what consequences we sense as likely to grow out of our dealings with it. "It seems, therefore, that the location

²⁶ Ibid., p. 142.

²⁷ Ibid., p. 143.

of a thing is a practical matter; we locate a thing at the point where we may act with reference to it."²⁸

Perceptions are based on the insights developed by a purposive organism acting or proposing to act in anticipation of the consequences of his acts. These perceptions come not simply from the objects surrounding one, but also from one's experience with the objects in terms of one's own acts and purposes. Nothing can be perceived as a thing in itself -- it can be perceived only in relationship to other things. The relationships of an object to its background, as they appear to its viewer, are as essential as the so-called objective nature of the object itself.

A person sees things in terms of the responses he is to make to them. Speaking in high metaphor, Bode says, "We locate things by seeing them with our muscles."²⁹ Experience is achieved when, and only when, we note the relationships between what we do (or might do) and what we expect to come of the doing.

On the active hand, experience is trying. . . . On the passive, it is undergoing. When we experience something we act upon it, we do something with it; then we suffer or undergo the consequences. We do something to the thing and then it does something to us in return; such is the peculiar combination. The connection of these two phases of experience measures the fruitfulness

²⁸ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 221.

²⁹ Ibid., p. 219.

of value of the experience.³⁰

Bode in treating perception does not discard the terms stimulus and response, although he hardly uses them in the active-passive sense of their behavioristic origin. Behavior, for him, is not a passive response to an activating environmental factor called a stimulus. He redefines stimulus and response to mark a distinction within a larger field. Since an entire field operates as a unit, stimulus and response cannot be separated from each other temporally but can only be contrasted in terms of function.

The reason why we speak of a stimulus at all is that the coordination or situation is inadequate; there is a drive or pressure towards a better coordination or adaptation. The stimulus is that phase of the situation which requires to be made more definite or explicit; the response is constituted by the reactions which create the need for a more adequate determination of the conditions for further activity. A stimulus, then, is a stimulus, in a psychological sense, only as long as there is this need of greater definiteness. When this definiteness is achieved, there is no longer any purposiveness at this point; the resultant action becomes an element in the next co-ordination.³¹

Events such as seeing and hearing take place because already action is going on. "The response is not a consequence of a sensory experience but is an antecedent or condition of it."³² "The reflex-arc concept, in which the

³⁰ Dewey, op. cit., p. 163.

³¹ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 230.

³² Ibid., p. 227.

activity is a pure sequence, is all wrong."³³ Stimulus and response operate concurrently and simultaneously. In any perceptual situation, the whole field, including the body, is active from the start. "All sense perception involves a field; which is to say that the physiological processes involved in sense perception involve corresponding changes in the field outside the body."³⁴ To account for flaming sunsets or noisy streets, "we need to assume nothing beyond a physical organism in relation to its 'field!'"³⁵ As has always been taken for granted by common sense, perceptual qualities have an environmental status. Sensory denotes an important condition of the occurrence of qualities, not the nature of the qualities themselves. Every sense quality belongs to a field. In no case is a sense quality located in a mind. There is no one objective color or size by which the perceptions of various observers are to be measured.³⁶

Lower animals tend to respond to situations as gross undefined wholes. Human beings are superior in the capacity to analyze complex situations into aspects which can be

³³ Ibid., p. 226.

³⁴ Ibid., p. 217.

³⁵ Ibid., p. 217.

³⁶ Ibid., p. 218.

dealt with separately. "This breaking up of situations eventually becomes the source of 'ideas' and of those processes which we call reasoning."³⁷ Each total situation has a unique "feel" which distinguishes it from others. Human beings through reasoning may single out various aspects of the differences. This process is often called analysis.

Experience is primarily an active-passive affair; it is not primarily cognitive. But. . . the measure of the value of an experience lies in the perception of relationships or continuities to which it leads up. It includes cognition in the degree in which it is cumulative or amounts to something, or has meaning.³⁸

Since no two organisms and no two events or phenomena are ever exactly the same, every perceptual field is different from every other perceptual field. Thus, there is basis for endless variety in the perceptual experiences of different perceiving organisms.³⁹ "The perceived object necessarily appears in some kind of context, and all the elements in the situation modify one another reciprocally."⁴⁰ The field concept leaves no basis for the theory that our

³⁷ Ibid., p. 185.

³⁸ Dewey, op. cit., p. 164.

³⁹ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 218.

⁴⁰ Ibid., p. 222.

experiences are composites of sensations, images, and feelings. The unit of a given experience is not a product of blending or of mental chemistry but rather "an aboriginal quality or characteristic of the situation."⁴¹

Pragmatism: Treatment of learning and thinking

A pragmatist's definition of learning hinges directly upon his definition of mind. Bode defines mind as a function of understanding or foresight, a process of pointing or leading.

The function of pointing or leading is what is meant by mind. This function is not anything separate; it is something that things do. Through the medium of our responses future events or possibilities get themselves translated into present fact, and thus they become effective for the control of behavior.⁴²

The term mind is a name for a combined, person-environment function as contrasted with a substantive entity or mental state. In the transformation of a perception through experience of the individual lies the meaning of mind. Dewey defines mind as "the power to understand things in terms of the use made of them."⁴³ "Mind is the capacity to refer present conditions to future results, and future consequences

⁴¹ Ibid., p. 222.

⁴² Ibid., p. 225.

⁴³ Dewey, op. cit., p. 39.

to present conditions."⁴⁴

A theory of mind must have as a correlate a theory of matter.⁴⁵ For mind to be identified with a function of the environment, the environment in which a human organism is placed must be conceived in terms other than mechanistic. The historical concepts of mind and matter represent achievements in thinking. They have not been the starting points of thinking, and neither are they the last word.

In dealing with mind-matter assumptions, it seems impossible to arrive at an adequate theory of mind and of learning by considering mind and matter together or by taking either mind or matter separately. To get out of the woods it seems necessary to revise dualistic conceptions. Facts of physiology indicate that acts like perceiving, remembering, willing, and reasoning "are only responses in which the whole nervous system is directed toward a particular situation, with such shiftings and permutations as the circumstances of the moment may require."⁴⁶ The mechanistic concept of matter has been the basis for the historic

⁴⁴ Ibid., p. 120.

⁴⁵ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 285.

⁴⁶ Ibid., p. 105.

concept of mind-substance.⁴⁷ With the change from this mechanistic idea of matter, it is essential that the concept of mind be redefined.

In pragmatic theory this dualism is superseded by the unity of the "field." Mind takes the form of a function within this field. It is a function of "leading" or "pointing," and the exercise of this function has to do with the transformation or reconstruction of the experiential situation. This process of reconstruction goes on inevitably; the school does not invent it, but undertakes rather to speed it up and to give it direction.⁴⁸

A pragmatist arrives at a definition of learning by first recognizing the inadequacy of mechanistic connectionism such as that propounded by Thorndike.

We are obliged to insist that the responses are integrated in a distinctive, nonmechanistic fashion, which is a learned and academic way of saying that we do not know what goes on in the nervous system.⁴⁹

Bode points to the fact that the reflex-arc, trigger-action hypothesis is altogether too simple. He refers to studies of K. S. Lashley and others which seem to heap doubt upon the validity of the reflex-arc hypothesis even when applied to spinal reflexes. Bode hypothesizes that in some way the nervous system acts as a unit. The terms "integration" and "dynamic patterns" are used in rejection of any mechanistic

⁴⁷ Ibid., p. 215.

⁴⁸ Ibid., p. 254.

⁴⁹ Ibid., p. 289.

explanation.⁵⁰ A pragmatist sees hearing, seeing, and feeling as events taking place. "This response is not a consequence of the sensory experience but is an antecedent or condition of it."⁵¹

Stimulus and response mark a distinction within a larger co-ordination or "field." The entire field operates as a unit, and so stimulus and response cannot be separated from each other temporally. But they can be contrasted in terms of function.⁵²

Learning is not a matter of training hypothetical "faculties" nor yet of producing "conditioned reflexes" in order that the affairs of every-day living may be carried on with a minimum of attention and reflection. Stated in positive terms, learning is a process by which experiences are changed so as to become more serviceable for future guidance.⁵³

Logical organization, social insight, appreciation, information, and skill -- all blend in the same process of learning. Distinctions represent only differences of emphasis. All forms of learning have a common element. "They all involve a change in the experiential situation which gives greater control in relation to subsequent behavior."⁵⁴ "To 'learn from experience' is to make a backward and forward connection between what we do to things and what we

⁵⁰ Ibid., pp. 210 f.

⁵¹ Ibid., p. 227.

⁵² Ibid., p. 230.

⁵³ Boyd H. Bode, Progressive Education at the Crossroads (New York: Newson & Company, 1938), p. 41.

⁵⁴ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 242.

enjoy or suffer from things in consequence."⁵⁵ Learning as reconstruction of experience combines thinking, skill, information, and appreciation in a single unitary process. This concept of learning shows flexibility in that it constantly must adapt itself to the circumstances of any situation. The significant point of the pragmatic definition of learning is that all learning is conceived to be the development of insight, insight being one's sense of relationships involved, or one's feeling for pattern.

The clear perception of relationships is what is sometimes designed as insight. . . . It seems safe to assume that all learning involves some perception of relationship, however dim.⁵⁶

The result may be achieved without any knowledge of how it was done. But, even so, the learning is a process of getting the "feel" of the thing; which is to say that the experience is changed so as to provide better control for behavior.⁵⁷

Meaning is not regarded as a fixed thing. Emphasis is placed not on fixed reactions but on synthesis or reconstruction.

All learning is a matter of making over experiences in terms of what we can do with things and situations or in terms of what they will do to us; and so this conception of learning links up directly with the doctrine of "operational concepts," which is a denial of

⁵⁵ Dewey, op. cit., p. 164.

⁵⁶ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 241.

⁵⁷ Ibid., p. 241.

all absolutes.⁵⁸

The theory that learning is a matter of reconstructing experience in the interest of better adaptation creates an insistence that the principle of the continuity of experience must be respected at all times.⁵⁹

Pragmatism places conceptualization at the heart of the learning process. A student learns by getting the idea or feeling the pattern of a life situation. "While immature students will not make discoveries from the standpoint of advanced students, they make them from their own standpoint, whenever there is genuine learning."⁶⁰ A pragmatic teacher co-operates with a student in establishing generalized patterns and then looking for exceptions. The idea of transfer is not repudiated, but is redefined in terms decidedly different from those of mechanistic or idealistic outlooks. Transfer involves the power to deal with new situations. It is facilitated through improvement of the quality of the concepts that are developed.⁶¹

Learning as a process of adjustment means that there is a problem of some kind to be solved; or, in other

⁵⁸ Boyd H. Bode, Progressive Education at the Crossroads (New York: Newson & Company, 1938), p. 42.

⁵⁹ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 248.

⁶⁰ Dewey, op. cit., p. 354.

⁶¹ Boyd H. Bode, Modern Educational Theories (New York: The Macmillan Co., 1927), p. 204.

words, that the environment makes a demand which must be met. . . . The experience of inventors and research men is all to the effect that the solution of problems is a matter of catch-as-catch-can. If learning is related to problem-solving, then pupils are in precisely the same position as inventors and research men. . . . All genuine learning, whether in or out of school, is much more like the process by which an inventor finally arrives at his goal. The inventor clearly has no sequence of steps for solving his problem. He tries one thing after another, he makes detours, he mixes up the steps in all conceivable ways. He has to do this in order to be "creative." To the pupil a lesson that is well learned has an element of "creativity" in it, no matter how familiar the thing learned may be to others. It is as preposterous to concoct a recipe for learning as for invention.⁶²

Although in school the process of reorganization or reinterpretation of experience takes place under the guidance of a teacher, it is something that a pupil must do for himself.

A school, according to pragmatism, is simply a place which is especially designed to facilitate the business of securing desired transformations of experience. Pupils go to school to carry on certain activities from which certain reconstructions or reorganizations of experience are expected to result. All learning, regardless of where it takes place, involves the transformation of experience in the interest of better control.⁶³ "Learning does not

⁶² Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), pp. 154 ff.

⁶³ Ibid., p. 245.

normally come to a dead stop under any circumstances."⁶⁴ A sound conception of learning entails that the process of learning is guided by an equally sound conception of social progress. The problem of transfer is a problem because of defects in our educational aims and ideals. When the school is brought into proper relations with life outside of school, the problem of transfer will take care of itself. If people devote themselves to the proper development of concepts, transfer of training will cease troubling them. The problem of transfer has arisen because there has been failure to develop concepts in such a way that they can be adequately useful outside of classrooms. Education should be toward generalizations or insights which have transfer value. Students need opportunity to use their insights in varieties of situations.

"There is no surer guarantee of transfer than the cultivation of social context and logical organization."⁶⁵ The course of training starts on the level of everyday living and it has to do with the changes made in things by our responses. Through the process of development of insights, we speed up these changes and make them more exten-

⁶⁴ Ibid., p. 247.

⁶⁵ Boyd H. Bode, Modern Educational Theories (New York: The Macmillan Company, 1927), p. 205.

sive.

With familiarity this relationship of pointing drops out; the new elements become increasingly absorbed into the original experiences; recognition takes the place of inference. The experiences as thus modified become the basis for a repetition of the process; and thus experience continues to grow or to become enriched without any assignable limit.⁶⁶

Habits do not function in isolation in fixed, unvarying ways but in a context of other matters to which they somehow become adjusted. Since the pragmatic outlook implies no such thing as exact repetition in behavior of any kind, it follows that the ordinary notion of habit formation must be revised. "The essence of habit-formation is not repetition but smoothness of co-ordination."⁶⁷ Evidence indicates that "repetition" of even the simplest behavior involves a reorganization of some range. Habits are the outcome of previous experience. They are acquired traits and they normally have a degree of flexibility. Man forms habits as a means of dealing with the environment and giving expression to his impulses. He has a capacity for varying his mode of response which is shared by no other member of the animal world.

It appears that habit is not a fixed sequence of

⁶⁶ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 243.

⁶⁷ Ibid., p. 249.

acts and thus is not to be explained by pre-formed pathways in the brain. Bode, in discussing habit formation, draws a contrast between the activity of a living body and the behavior of a sheet of paper that has been folded. The sheet of paper shows a tendency to be folded only when the paper is handled by someone. An unfolded piece of paper does not try to fold itself when it is let alone. The habits of a living body do try to express themselves apart from any external stimulus. Habit is fluid, effective, efficient action arising through an organism operating on the basis of the insight which he possesses. Habit, like all other human activity, is assumed to be goal-directed.

Bode emphasizes "that all normal behavior is controlled by ends, in some sense and to some degree."⁶⁸

Dewey states,

Thought or reflection, as we have already seen virtually if not explicitly, is the discernment of the relation between what we try to do and what happens in consequence. No experience having a meaning is possible without some element of thought.⁶⁹

Man's thinking is largely responsible for the great difference between the world of the savage and the world of civi-

⁶⁸ Ibid., p. 250.

⁶⁹ Dewey, op. cit., p. 169.

lized man. "Thinking is the method of intelligent learning."⁷⁰ Intelligent learning is learning that employs and rewards mind. The pragmatic theory of learning grows out of the concept of continuity of experience. Thus, thinking tends to receive great emphasis within the pattern of pragmatic philosophy.

The field approach of pragmatism supersedes the idea of a dualism of mind and matter. The leadings or pointings which are identified with mind are relationships between present acts and future possible experiences. The accurate prediction or anticipation of these relationships is the role of thinking. Thinking is a process of working out truths when a person does not immediately see what is true in a situation which confronts him.

Democracy as a way of life is committed to the proposition that man must place sole reliance on his unaided intelligence both for the discovery of methods for the exercise of control over his material and social environment and for construction of the ends to be achieved. A systematic study of science is necessary in order to understand the methods and the point of view of the scientist.⁷¹

Bode thinks of a classroom, conducted according to pragmatic theory, as somewhat like a scientific laboratory

⁷⁰ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 251.

⁷¹ Ibid., p. 275.

where research is eventualized. The teacher is analogous to the head scientist or director of the laboratory. The assistants, and in like manner the pupils, cooperate in effecting the investigations. "The investigation of the scientist is frequently of great complexity, but in type of principle the procedure is the same as in everyday life."⁷² "But all thinking is research, and all research is native, original, with him who carries it on, even if everybody else in the world already is sure of what he is still looking for."⁷³ "Thinking is as much an individual matter as is the digestion of food."⁷⁴

A pragmatist, in defining thinking, tends to use thinking and reflective thinking as synonymous terms. He avoids using the term thinking when alluding either to recollection or to on-the-spot recognition. Bode quotes Dewey's definition of reflective thinking -- "Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends."⁷⁵ He

⁷² Boyd H. Bode, Fundamentals of Education (New York: The Macmillan Company, 1921), p. 111.

⁷³ Dewey, op. cit., p. 174.

⁷⁴ Ibid., p. 353.

⁷⁵ John Dewey, How We Think (Boston: D. C. Heath and Company, 1933), p. 9.

then states,

We think because our former habits of response are inadequate, and the results of thinking show themselves in the modification of our habits. Thinking may be defined as a process of finding and testing meanings. In terms of bodily reaction, it is a process of reorganizing habits.⁷⁶

A man or a child gains a sense of his own duties and privileges through reconstruction of his old notions or habits of thought. The process of reconstruction of old notions or thoughts is the process of thinking. Mental development requires continuous reconstruction of past experience to provide place for new experience. As a result of the process of thinking, the new becomes harmonized with the old and the old takes on meaning deeper than before. "Unless there is such a process of reconstruction, through the medium of thinking, learning degenerates into memorizing."⁷⁷

Knowing is the outcome of thinking and thus thinking (in the sense of reflection) represents a prelude to action, rather than action itself. One thinks when one is not quite sure how to act; thus, thinking is a process of finding the meaning of a situation if and when the meaning is not immediately clear.

⁷⁶ Boyd H. Bode, Modern Educational Theories (New York: The Macmillan Company, 1927), p. 200.

⁷⁷ Boyd H. Bode, Fundamentals of Education (New York: The Macmillan Company, 1921), p. 141.

To say that a thing has acquired meaning is to say that it now points to some further thing; the thing that is present has become a sign of something that is absent, and in proportion as things can be so used they become instrumentalities for our purposes.⁷⁸

The meaning of an event or a proposition, therefore, is that to which it points. This "pointing" involves the kind of future action which is appropriate to the event or proposition, and thus would succeed in handling it successfully. Through a thinking process a person, by trying out different meanings, is building a new meaning. Thought functions as an instrument of adaptation or a guide to action. "Thinking. . . is the intentional endeavor to discover specific connections between something which we do and the consequences which result, so that the two become continuous."⁷⁹ Thinking is an aid to intelligent behavior but different from it. Intelligent behavior is acting on the basis of insights which have been achieved. A situation requiring thought or evoking thought usually means that sensed data do not appear to fall into a harmonious pattern. The purpose of thinking is to find a harmonious pattern for accepted or recognized data.

As a method rather than an outcome, thinking is an integral part of a situation and cannot be discussed intel-

⁷⁸ Ibid., p. 105.

⁷⁹ Dewey, op. cit., p. 170.

ligerly when taken as separate from the situation of which it is a part. Bode quotes Dewey,

"Thinking which is not connected with increase of efficiency in action, and with learning more about ourselves and the world in which we live, has something the matter with it just as thought. And skill obtained apart from thinking is not connected with any sense of the purposes for which it is to be used."⁸⁰

Thinking makes it possible for the resources of civilization as represented by the contents of our courses of study, to become so inwoven with the experience of the learner as to enable him to respond intelligently and appreciatively to all forms of human needs and aspirations, to all the things that enrich and beautify life.⁸¹

The outstanding feature of scientific method as envisioned by Dewey and Bode is that scientific explanations are treated solely as working hypotheses. Truth is considered not as conformity to an alleged immutable cosmic order but as a relationship of meanings for guidance and control of action.

The point of reference is provided by human expectations and purposes. The requirements to be met are set by the situation in which these expectations and purposes operate, and metaphysical and theological explanations become beside the point.⁸²

Actual thinking advances to its conclusions along a zigzag route. Training in thinking cannot be accomplished by

⁸⁰ Boyd H. Bode, Modern Educational Theories (New York: The Macmillan Company, 1927), p. 209.

⁸¹ Ibid., p. 213.

⁸² Boyd H. Bode, "Pragmatism in Education," The New Republic, CXXI: 15-18. October 17, 1949.

adherence to a detailed program antecedently laid down. As a thinker gathers his facts, he is constantly entertaining suggestions or making guesses which he uses to interpret the facts available or to anticipate further facts.

In the pattern of a pragmatic outlook the general or universal with which its proponents are concerned in thinking is not necessarily a law. It is a name for a suggested hypothesis. The hypothesis serves to knit the facts together in a common meaning. "It applies to all the facts of the case, extends to all of them, but is not itself one of these facts."⁸³ "The inductive character of a thinking process cannot be determined by inquiring whether the aim of the process is the discovery of a 'new' principle or law."⁸⁴ Any process of thought is neither inductive nor deductive alone but rather it is both. Induction is simply a name for the hypothesizing aspect of a complete act of thought. When a person follows out the pointing or meaning of a proposition he is being deductive. Bode emphasizes that effective teaching involves an attempt to develop all-round thinking rather than to stimulate induction and deduction as separate processes. The process of thinking is

⁸³ Boyd H. Bode, Fundamentals of Education (New York: The Macmillan Company, 1921), p. 121.

⁸⁴ Ibid., p. 130.

reflective throughout.

"Thinking requires the finding and the elaborating and the testing of hypotheses. . . . The final meaning may be made accessible only through a long line of failures."⁸⁵ The features of a complete act of thought are (1) a problem, (2) formulation of hypothesis or hypotheses, and (3) testing hypotheses through the process of discovery-explanation and prediction-verification. The starting point -- the problem -- means that there is something to be explained, something that requires thinking. There is a situation, the meaning of which is not immediately clear. "The starting point of any process of thinking is something going on, something which just as it stands is incomplete or unfulfilled."⁸⁶

At the outset of a process of thinking, the hypothesis or the suggestion is merely a tentative explanation or interpretation -- a possible meaning. The suggestion offers itself as something to be tried out, and accepted or rejected on its merits. It will be used only as a point of orientation, a first step of a method for securing adequate evidence. Until a suggestion does occur, there is simply a problem. An individual is not yet thinking but rather merely trying to think. A hypothesis is formulated through the play of the imagination. Hypotheses are possible solu-

⁸⁵ Ibid., p. 114.

⁸⁶ Dewey, op. cit., p. 171.

tions, possibilities, guesses, cues, hunches, or ideas.

Bode describes the two-fold nature of the process of testing hypotheses -- discovery-explanation and prediction-verification. The discovery-explanation phase of testing is an attempt of a problem-solver to find which of the possible solutions best fits the data he possesses. The hypothesis which is tentatively adopted as a solution is the one that best harmonizes the data already available. Facts are deduced after they are found.

In testing a hypothesis through prediction-verification, facts are deduced before they are found. The hypothesis is used in the prediction of further data. Accurate prediction requires greater accuracy and care in thought than does explanation of existing facts. The test of prediction manifests all the frailties of subjective human mental processes, in contrast to the test of discovery and explanation which is a relatively objective event, publicly observable and usually easily recognized by others. The act of thought does not occur in any fixed sequence. The problem, and the suggestion of hypotheses, may occur simultaneously. In some cases proof may be adequate without resort to formal prediction whereas, in other cases, the need and function of prediction and verification may dwarf the importance of observation and explanation.

The process of thought does not always lead to im-

mediate success. The final solution of a problem may become accessible only through a succession of failures. Failures bring sweat and agony but, in the long run, the very mistakes may help to produce a valid solution. False starts, random experimentation, and forays into blind alleys each may have important bearings upon the outcome.⁸⁷

Proof requires the removal of reasonable doubt, and the truth of a suggestion or idea consists in its ability to organize all the relevant facts into a body of evidence to the exclusion of reasonable doubt.⁸⁸

Evidence for proof is gathered by scrutiny and explanation, and by prediction and verification.

The investigation is completed when the conclusion is supported by a considerable body of evidence and when it is impossible to find any facts that conflict with the conclusion. There must be no evidence to support a rival hypothesis.⁸⁹

A problem can be considered solved beyond reasonable doubt when and only when the proposed solution forms a pattern which harmonizes all of the data that have been obtained by any means whatever; there are no data which are incompatible with that proposal, and the data achieved have been adequate in light of the nature of the problem and the circumstances surrounding it.

⁸⁷ Boyd H. Bode, Fundamentals of Education (New York: The Macmillan Company, 1921), p. 114.

⁸⁸ Ibid., p. 118.

⁸⁹ Ibid., p. 117.

To explain means to recreate or to reconstruct the situation by means of concepts. . . . A meaning that is marked off is called a concept. Concepts are substitutes for things that are not present.⁹⁰

Bode proposes that a concept cannot be derived from a mechanistic system of inert matter and that neither is it a product of a substantive mind. Human nature is not fixed but is developed through social relationships by means of which the individual acquires language and capacity for conceptual thinking, and through which he achieves moral, social, religious, and other predispositions and insights.⁹¹ Concepts constitute the instruments by means of which people normally bring to bear their past experiences upon new situations. When one says he has a concept of an object, what he seems to mean is that he knows what to look out for and what is worth trying in case he is obliged to deal with that object.

The concept represents a wide range of possible behavior in condensed and concentrated form. In epitomizing a wide variety of experience it becomes both a record of the past and a guide for the future. To the extent that the concept is rich in content, the new situation calls forth a variety of suggestions or expedients, and so opens the way for adaptive behavior as contrasted with the fixed responses of purely mechanical habits or reflexes.⁹²

⁹⁰ Ibid., pp. 107 ff.

⁹¹ "What is the Meaning of Freedom in Education?" Educational Freedom and Democracy (New York: D. Appleton-Century Company, 1938), pp. 1-18.

⁹² Boyd H. Bode, Modern Educational Theories (New York: The Macmillan Company, 1927), p. 202.

Habit formation and thinking are not contrasting processes. Rather, thinking is a process of remaking old habits and forming new ones. It is a process of building up new total responses. Meanings or concepts are first of all total responses, or complexes or systems of response, which one develops -- systems of response for classes of objects which may be so diverse that no single trait is common to all its members.

Thinking, appreciation, skill, and information are intimately interrelated. Thinking has to do with the removal of obstacles, and this involves an element of concern or value; else why take the trouble to think at all? The successful culmination of thinking has an attendant esthetic quality, as when we speak in mathematics of a "beautiful demonstration." Thinking, moreover, involves the gathering of data for the testing of hypotheses, which in turn is related both to the acquisition of information and to the development of skills or techniques in observation, in analysis, and in the organization of material.⁹³

⁹³ Boyd H. Bode, How We Learn (Boston: D. C. Heath and Company, 1940), p. 240.

CHAPTER V

HARMONIES AND CONFLICTS OF PRINCIPLES OF TOPOLOGICAL AND VECTOR PSYCHOLOGY WITH TENETS OF IDEALISM, REALISM, AND PRAGMATISM REGARDING THEORIES OF MOTIVATION

Introduction

Kurt Lewin was born in Germany in 1890. He studied at the University of Freiburg at Munich and received his doctorate at the University of Berlin. He was introduced to psychology by Wertheimer. After serving four years in the German army during World War I, he was professor of psychology and philosophy at the University of Berlin for six years. In 1932 he came to the United States, where he subsequently taught at Cornell and the State University of Iowa. In 1944 he became director of the Research Center for Group Dynamics at the Massachusetts Institute of Technology. At the time of his death in 1947 he was still widening the program of his research and refining his experimental processes.¹

Lewin considered psychology a science closely related to the real business of living. His studies were in tune with the times. He was vitally interested in interpersonal relations. His studies involved problems of minorities,

¹ Kurt Lewin, Resolving Social Conflicts. Selected papers in group dynamics (New York: Harper & Brothers, 1948), p. xii.

democracy, war, and other features of contemporary society. His great curiosity led to creativity in developing new problems and new methods of solution. His center of interest was in the motivating conditions of contemporary situations.

Lewin's followers speak of him as one who was truly a democratic leader. His ideas and methods matured through group discussion. Lewin believed that actual experiments on groups could be performed under precisely controlled conditions. In his later years he was enthusiastically working with "action research." This concept implies the carrying out of group studies, with an additional feature that key individuals in an actual social conflict under investigation should themselves be drawn in as cooperating recorders, observers, and analyzers.²

He was extremely interested in democracy and probably was its outstanding psychological exponent. Studies which developed under his direction show in concrete operational terms "what it means to be a democratic leader, and to create a democratic group structure."³ Lewin apparently saw the

² E. C. Tolman, "Kurt Lewin 1890-1947." Psychol. Rev., 1948, 55, 1-4.

³ Kurt Lewin, Resolving Social Conflicts. Selected papers on group dynamics (New York: Harper & Brothers, 1948), p. xi.

dependence of democracy on social science and felt that knowledge of and obedience to the laws of human behavior in group settings was essential to the success of democracy.

Lewin believed that psychology somehow had missed much that was at the heart of the scientific modes of thought developed since the time of Galileo. His purpose was to develop these modes for the utilization of psychology. He believed behaviorism to be an inadequate psychological approach. In his concepts, he developed a psychology basically different from that of the behaviorists.

In fact, it is possible to determine and to measure psychological atmospheres quite accurately. Every child is sensitive, even to small changes in social atmosphere, e.g., in the degree of friendliness or security. The teacher knows that success in teaching French, or any subject, depends largely on the atmosphere he is able to create. That these problems have not been properly dealt with in psychology until now is due. . . mainly to certain philosophical prejudices in the direction of physicalistic behaviorism.⁴

Lewin's system is unique in that its foundational constructs are comparatively elaborate. These constructs provide conceptual tools necessary for theory and principles. Lewin insisted upon directly observed facts; however, he believed that data in themselves may present problems but do not solve them.

⁴ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 218.

Lewin's basic formula is that,

Behavior (B) is a function (F) of the person (P) and of his environment (E), $B = F(P, E)$. This statement is correct for emotional outbreaks as well as for "purposive" directed activities; for dreaming, wishing, and thinking, as well as for talking and acting.⁵

In this formula, the state of the person and that of the environment are not mutually independent. In a sense, the state of the environment depends upon the person and, inversely, "the state of the person depends upon his environment."⁶

Lewin's system is identified as topological and vector, or field psychology. A study in the framework of Lewin's "field theoretical approach,"

Instead of picking out one or another isolated element within a situation, the importance of which cannot be judged without consideration of the situation as a whole, . . . finds it advantageous, as a rule, to start with a characterization of the situation as a whole. After this first approximation, the various aspects and parts of the situation undergo a more and more specific and detailed analysis. . . . Such a method is the best safeguard against being misled by one or another element of the situation.⁷

In developing his topological and vector psychology

⁵ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 791.

⁶ Ibid., p. 792.

⁷ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 218.

Lewin held to the point of view that "to permit scientific derivations, psychology must use a language which is logically strict and at the same time in line with constructive methods."⁸

Topological and vectorial concepts combine power of analysis, conceptual precision, usefulness for derivation and fitness for the total range of psychological problems in a way which, in my opinion, makes them superior to any other known conceptual tool in psychology.⁹

Topology, as a non-metrical geometry, uses concepts such as inside, outside, and boundary. No distances are defined. "Topologically there is no difference between a circle, an ellipse, a regular or irregular polygon with any number of sides."¹⁰ "A drop of water and the earth are, from a topological point of view, fully equivalent."¹¹ The concept vector is borrowed from a mathematical system used in mechanics to represent direction and strength as two of the three properties of a force. The third property of a force is its point of application. Lewin diagrammatically represents a vector by an arrow. The length of the arrow denotes its strength.

⁸ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 219.

⁹ Ibid., p. 219.

¹⁰ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 88.

¹¹ Ibid., p. 53.

THEORY OF MOTIVATION

Motivation is of central importance within the theory of topological and vector psychology. Motivation is a predominant factor of the life space as Lewin's topological diagrams illustrate it. The life space consists of the totality of the constellation of interdependent factors which determine the behavior of an individual at a certain moment. It is a psychological field. It represents the totality of possible events and includes the person and his psychological environment.

In this great emphasis upon motivation topological and vector psychology harmonizes with pragmatism and conflicts with realism. Both Lewin and Bode (page 74) emphasize the goal-direction of behavior. Realism, in contrast, gives motivation only minor importance (page 48). When motivation is discussed it is in the framework of physical and social determinism. Idealism emphasizes motivation, but motivation is seen in a different sense. Whereas Lewin resorts to no kind of supernaturalism in treating motivation, Horne, in making personality of supreme worth, gives great emphasis to the supernatural motives of man (page 20).

Lewin thought that in the past it had not been sufficiently recognized that the behavior of a person depends above all upon his momentary situation. His principle of

contemporaneity approaches behavior and development as a function of the total situation. "The effect of a given stimulus depends upon the stimulus constellation and upon the state of the particular person at that time."¹²

He assumed that in representing the psychological situation it is necessary to include physical, social, and conceptual facts in so far as and in the manner that they influence the person under consideration.¹³ Psychological events are determined by conditions at the time when behavior occurs. One cannot derive behavior teleologically from the future, neither can he derive it from past events. A psychological event is always a result of the interaction of many facts and is to be explained in terms of existent relations.

The concept of the psychological field as a determinant of behavior implies that everything which affects behavior at a given time should be represented in the field existing at that time, and that only those facts can affect behavior which are part of the present field.¹⁴

A psychological field is conceived as a space having

¹² Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 791.

¹³ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 25.

¹⁴ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 793.

a certain characteristic at every point. A person's psychological field which exists at a given time contains the views of that individual about his future and past as well as the environment of the present. It is emphasized that the psychological past and the psychological future are simultaneous parts of a psychological field existing at a given time. Lewin predicates that an individual's views about the past and about the rest of the physical and social world are often incorrect, but nevertheless they constitute in his own life space the reality-level of the past.¹⁵

Objectivity in psychology demands representing the field correctly as it exists for the individual in question at that particular time. For this field the child's friendships, conscious and "unconscious" goals, dreams, ideals, and fears are at least as essential as any physical setting. Since this field is different for every age and for every individual, the situation as characterized by physics or sociology, which is the same for everybody, cannot be substituted for it. It is important, however, to know the physical and social conditions because they limit the variety of possible life spaces -- probably as boundary conditions of the psychological field.¹⁶

In 1943 Lewin recognized that, in psychology as in physics, adequate description of a situation at a given moment is impossible without observation of a certain time-period.

¹⁵ Kurt Lewin, "Defining the 'field at a given time.'" Psychological Review, 50, No. 3, p. 303.

¹⁶ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 793.

An adequate psychological description of the character and the direction of an on-going process can and has to be done on various microscopic and macroscopic levels.¹⁷

Without altering the principle of contemporaneity as one of the basic propositions of field theory, we have to realize that to determine the psychological direction and velocity of behavior (the meaning of the psychological event) we have to take into account in psychology as in physics a certain time period. The length of this period depends in psychology upon the scope of the situation. As a rule, the more macroscopic the situation is which has to be described, the longer is the period which has to be observed to determine the direction and velocity of behavior at a given time.¹⁸

Within his contemporaneous scheme, Lewin gives an important position to goal. The goal as a psychological fact lies in the present and it constitutes an essential part of the life space. A "person strives toward a goal which exists psychologically in the present life space."¹⁹ The content of the goal lies in the future -- in fact it may not occur at all. The nature of the expectation is not dependent upon the event coming to pass. This goal-setting is largely dependent upon certain ideal goals or the ideology of the person.

¹⁷ Kurt Lewin, "Defining the 'field at a given time.'" Psychological Review, 50, No. 3, p. 300.

¹⁸ Ibid., p. 301.

¹⁹ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 37.

Goal levels within one goal structure may include a high dream goal, a somewhat more realistic wish goal, the level which the person expects to reach when he tries to judge the situation objectively, and a low level he might hit if luck were against him. Somewhere on that scale will be what can be described as the action goal, e.g., what the person "tries for" at that time; somewhere his ideal goal will be located. Sometimes the individual comes closer to his ideal goal, sometimes the distance between the ideal goal and the action goal becomes wider. This is called "inner discrepancy."²⁰

In the formula $B = F(P, E)$, B-behavior is produced by the totality of coexisting facts. This totality is a psychological field. This psychological field is not defined in terms of consciousness or awareness. Rather it is a dynamic whole of such nature that a change in any part affects other parts, and every change depends upon the whole. P-psychological person and E-psychological environment function as sub-wholes of the psychological field or life space.

Lewin's principle of contemporaneity harmonizes with the outlook of pragmatism. It conflicts with both realism and idealism. Lewin's insistence that behavior is goal-directed, but that the goal lies in the present, harmonizes with Bode's position that all ideals spring from the soil of experience, that a person adjusts to the social order through identifying himself with certain activities or concerns

²⁰ Kurt Lewin and others, "Level of aspiration." In J. McV. Hunt ed., Handbook of personality and the behavior disorders (New York: Ronald, 1944), p. 335.

present in the environment, and that self, a dynamic achievement, means present interests (pages 76-77).

Realism (page 51) in contrast to pragmatism and topological and vector psychology is committed to a stimulus-response-conditioning theory of behavior which gives primary emphasis to influences of the past upon present behavior. A person's behavior at a certain time is dependent upon his conditioning prior to that time. Idealism also conflicts with Lewin in this regard but in a way different from realism. Whereas in realism there is no place for eternal timelessness (page 48), idealism (page 22) emphasizes both past and future as determiners of present behavior. The substantive mind of idealism has a remembered past and an anticipated future.

Lewin in treating psychological person and psychological environment as sub-wholes of a dynamic whole shows the influence of idealistic thinking, yet he does not use these thoughts in a way that an idealist would use them. His position in this regard harmonizes very closely to that of pragmatism (page 78). Pragmatism emphasizes the self as a going concern, acting and being acted upon. Lewin's holistic approach conflicts with the atomistic method to which a realist is pledged. A realist sees all psychological forces and existences as being ultimately reducible to matter (page 49).

To understand behavior, one needs to determine the structure of the field, i.e. interpositional relationships between parts in space, and to ascertain the dynamic properties of the field. "Objectivity in psychology demands representing the field correctly as it exists for the individual in question at that particular time."²¹ A distinction is made between the structure and the dynamics of a field. "The structure of the life space determines what locomotions are possible at a given time. What change actually occurs depends on the constellation of psychological forces."²² The topological structure of the life space expresses the behavior that is possible and the behavior which is impossible. "In general one may say that the topological tools allow us to determine what events are possible in a given life space and which are not possible."²³

Topology is important in motivation because it locates the person within the total psychological field and the positions of other parts of the field in relation to one another.

The determination of the position of the person with-

²¹ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 793.

²² Ibid., p. 805.

²³ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (New York: McGraw-Hill Book Company, Inc., 1936), p. 85.

in the life space is the first prerequisite for understanding behavior. His social position within or outside of various groups should be known; his position in regard to various activities, in regard to his goal regions, and in regard to physical areas should be determined. . . . The region in which the person is located determines (1) the quality of his immediate surroundings, (2) what kinds of regions are adjacent to the present region -- that is, what possibilities the individual has for his next step -- and (3) what step has the meaning of an action toward his goal and what step corresponds to an action away from his goal. Most behavior can be conceived of as a change of position, . . . as a locomotion of a person.²⁴

Potency refers to the relative weight which a certain area of the life space has to other areas. This concept is particularly valuable in case of "overlapping situations," where the pertinent feature is belongingness to two groups or the involvement in two or more activities at the same time.²⁵

Any part of the life space is a region. Each region is coordinated to every discrete part of the life space. Also a region is coordinated to each part of a psychological person. The positional relation of need regions to other regions is important. Some structural changes of regions are differentiation, integration, and restructuring.²⁶

Lewin thought that the task in psychology is, first,

²⁴ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), pp. 799 f.

²⁵ Ibid., p. 796.

²⁶ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 155.

to describe positional relationships, then, to seek the causal characteristics of each fact.

The task of explaining behavior then becomes identical with (1) finding a scientific representation of the life space and (2) determining the function F which links the behavior to the life space. This function F is what one usually calls a law.²⁷

In addition to expressing what is possible and impossible, one must anticipate what will occur. Thus it is in his handling of dynamic properties that he treats extensively the problem of motivation.

Need, valence, and force are pivotal concepts in Lewin's dynamics of behavior. "A need corresponds to a tension system of the inner-personal region."²⁸ A need is a state of a person which, when existing in relation to a goal, determines behavior toward that goal. The state of the person in itself does not cause behavior; part of the environment-goal must also be active in a situation. The construct tension was used by Lewin as a logically defined concept in describing need. Tension is "a state of a region relative to surrounding regions. It involves forces at the boundary of the region which tend to produce changes such

²⁷ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 792.

²⁸ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 218.

that differences of tension are diminished."²⁹ "The carrying out of a locomotion or the reaching of a goal can at the same time mean the release of a tension."³⁰ Although it is true that a locomotion involves the person as a whole, it is also recognized that one can satisfy different needs more or less independently. Thus tensions of different systems of the person can change relatively independently.

There is a tendency toward equilibrium of tensions within a system and within the whole organism or person. A system can come to equilibrium "in a state of tension."³¹

Generally speaking, needs may be changed by changes in any part of the psychological environment, by changes of the inner-personal regions, by changes on the reality level as well as on the irreality level (for instance, by a change in hope), and by changes in the cognitive structure of the psychological future and of the psychological past. . . . This is well in line with the fact that the total life space of a person has to be considered as one connected field. The problem of emergence of needs lies at the crossroad of cultural anthropology, developmental psychology, and the psychology of motivation. Its investigation has been hampered by premature speculative attempts to systematize needs into a few categories.³²

Behavior in a situation usually results from a com-

²⁹ Ibid., p. 218.

³⁰ Ibid., p. 174.

³¹ Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 58.

³² Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 824.

combination of several needs. Individual needs largely are determined by social factors. The culture in which a child grows up affects practically every need. During development new needs may arise by differentiation from previous ones. "A change in goals depends on the change in the cognitive structure and on individual differences."³³

The law of parsimony holds for psychological means, but not for ends. Although a person tries to achieve his goal in the quickest and easiest way he sees possible, he does not level his aspiration to a task requiring no effort.

Children, like adults, will prefer a goal which is more difficult to reach, provided that the barrier is not too strong and that both goal objects are not fully identical. This preference is observed if the object itself has the nature of a goal, but not if it is merely a means. For instance, the child will prefer (everything else being equal) a toy which is slightly more difficult to reach. If, however, he has to choose between two tools with which to get the same object, he will prefer that tool which is easier to reach.³⁴

Needs have the character of organizing behavior.

They are closely related to valences -- "imperative environmental facts."³⁵ The valence of a certain object or activity depends upon the nature of the object or activity as related to the state of the needs of the person at that time.

³³ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 825.

³⁴ Ibid., p. 824.

³⁵ Kurt Lewin, "Environmental Forces in Child Behavior and Development." Handbook of Child Psychology (Worcester, Mass.: Clark University Press, 1931), p. 101.

An object acquires or loses valence in accordance with the needs of the organism. "A psychological valence may be positive (attracting) or negative (repelling)."³⁶ "The valence of an activity is related to its consummatory value for satisfying the need."³⁷ Any statement about change of needs can be expressed by a statement concerning certain positive and negative valences. One can establish a hierarchy of needs based on valences of objects and activities. "A valence is not identical with a force" although there is a close relationship.³⁸ Valence is associated with goal or purpose, whereas force is a tendency to act. The force of the action is related to valences of objects and activities. The person will change the direction of his action if the position of the goal is changed.

Valence and force frequently go hand in hand, yet they should be clearly distinguished. An object with a positive valence might not have a satisfaction value in case of consumption. On the other hand, an object with no or even a negative valence may have satisfaction value.

³⁶ Ibid., p. 101.

³⁷ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 819.

³⁸ Kurt Lewin, The Conceptual Representation and the Measurement of Psychological Forces (Durham, N.C.: Duke University Press, 1938), Vol. I, No. 4, Serial No. 4, p. 88.

Valences determine the direction of behavior. The kind, strength, and distribution of valences are among the most important properties of the environment.³⁹

If the child is forced out of its original direction by difficulties. . . the direction of the field force also changes in accordance with the changed local relations between individual and goal. Further, the change of direction is of such a character that a vector in the direction of the goal constantly arises and initiates the corresponding behavior. The behavior thus makes a pronounced goal-seeking impression. A natural teleology reigns. What is ordinarily designed as teleology and taken as the criterion of the behavior of living beings is in large part nothing other than the expression of the following facts: a positive valence controls the situation in such a way that with changes in the position of the person the direction of the field forces changes in the manner just described.⁴⁰

There are numerous ways in which different valences may interact, and needs may be interdependent in a situation.⁴¹ Two or more needs can be in communication so that their need tensions vary concomitantly. Needs may be interdependent in such a way that one need rules another. There may be a communication between two underlying need systems in such a way that satisfying the one also satisfies the

³⁹ Kurt Lewin, "Environmental Forces in Child Behavior and Development." Handbook of Child Psychology (Worcester, Mass.: Clark University Press, 1931), p. 101.

⁴⁰ Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 119.

⁴¹ Kurt Lewin, "Environmental Forces in Child Behavior and Development." Handbook of Child Psychology (Worcester, Mass.: Clark University Press, 1931), p. 107.

other. This substitute satisfaction depends partly on the cognitive similarity of the activities. This cognitive similarity is contingent upon the nature of the situation and the developmental state of the person. Activities which have substitute valence do not need to have satisfaction value. (Spontaneous substitute actions frequently have no permanent substitute value.)

An object that a person wants has for him a positive valence. It may be represented by a vector which indicates a force pushing the organism toward the desired object. An object with a negative valence is indicated by a vector which pushes the person away.

The term force denotes the tendency to act in a certain direction. Its properties include direction, magnitude, or strength, and point of application. "The combination of a number of forces acting at the same point at a given time is called the resultant force."⁴² "The construct force characterizes, for a given point of the life space, the direction and strength of the tendency to change."⁴³ Psychological force corresponds to a relation between at least two regions of the life space. Force is analogous with drive or excitatory tendency as used in other psychological

⁴² Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 805.

⁴³ Ibid., p. 805.

systems.⁴⁴ Psychological force presupposes a need. It may lead either to locomotion in the direction of the force or to a change in the cognitive structure. Reversed, it holds that "whenever a locomotion or change of structure exists, resultant forces exist in that direction."⁴⁵ The construct vector represents two of the properties of a force -- direction and strength. The third property is its point of application. Lewin uses an arrow to represent a vector. It points in the direction of the force and its length represents the property of strength. "Psychological forces do not carry a person forward mechanically but generally by way of 'motivation.'"⁴⁶

Lewin distinguishes between driving forces and restraining forces.⁴⁷ Driving forces are forces toward a positive or away from a negative valence. Restraining forces are barriers to locomotion consisting of physical or social obstacles. The same physical or social obstacle constitutes

⁴⁴ Ibid., p. 796.

⁴⁵ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 805.

⁴⁶ Kurt Lewin, The Conceptual Representation and the Measurement of Psychological Forces (Durham, N.C.: Duke University Press, 1938), Vol. I, No. 4, Serial No. 4, p. 95.

⁴⁷ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 808.

different restraining forces for different individuals.

From another approach, forces are categorized into forces corresponding to one's own needs, induced forces -- forces acting on a person but which do not correspond to his own wishes but to those of another -- and impersonal forces -- forces which correspond to the wish of no one but have for the person an impersonal, matter-of-fact demand. Lewin attaches great importance to whether a force is personal or impersonal, induced or self-initiated. Forces may conflict in several different patterns.

Definition of conflict -- A conflict situation can be defined as a situation where forces acting on the person are opposite in direction and about equal in strength. In regard to driving forces three cases are possible: The person may be located between two positive valences, between two negative valences, or a positive and negative valence may lie in the same direction. There may be, also, conflicts between driving and restraining forces. Finally, there may be conflicts between own forces and various combinations of induced and impersonal forces. The effect and the development of conflicts vary with these different constellations, although all conflicts have certain properties in common.⁴⁸

A conflict in which a person is located between two positive valences of nearly equal strength is readily resolved. A person tends to stay in the field and psychologically move toward one of the valences. A more severe conflict exists when a person is located between two equal neg-

⁴⁸ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 809.

ative valences. He cannot move in either direction, and thus tends to leave the field. Conflict also may exist where a positive and a negative valence lie in the same direction, or where a driving force and a restraining force (barrier) lie in the same direction. In a conflict situation between a person's own forces and various combinations of induced and impersonal forces, an equilibrium is sought, and the person tends to stay in the field.

A choice usually means that a person is located between two mutually exclusive positive or negative valences. In the case of two negative valences there is a resultant force in the direction of leaving the field. When there is a choice between two positive valences the person will desire to reach both goals. A most common type of conflict arises when a barrier prevents one from reaching his goal. The person may be surrounded by a barrier with the goal outside or the goal may be surrounded by a barrier with the person outside. A person may leave the field psychologically while manifesting very little or no physical locomotion.⁴⁹

A situation of choice may be viewed as an overlapping situation. The potency of the various possibilities fluctuates. A decision means that one of the situations perman-

⁴⁹ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 811.

ently acquires a dominant potency. The possibility of success or failure influences such a choice situation. The effect of group customs on the child is conducive to a choice situation. The child's needs and goals may not harmonize with those of society. The effect of the various groups of which the person is a member depends on the relative potency of these groups at that time. Emotional tension diminishes when the child accepts his belongingness to a definite group.

Topological and vector psychology is greatly concerned with the results of frustration. Barriers to the achievement of a goal subject or activity are erected and the resultant behavior is observed.

Barker, Dembo, and Lewin found that the frequency of negative emotional behavior increased with the intensity of frustration. The same holds for the amount of regression as measured by the constructiveness of play. One of the simplest expressions of emotionality is restless movements, movements which are not directed to a certain goal but are merely an expression of tension. The influence which the background of a situation has on behavior can be understood as an overlapping of an immediate situation and of the situation at large. A background of frustration decreases constructiveness of play even if the play itself is not hampered from the outside. The amount of regression increases with increasing potency of the background of frustration.⁵⁰

Regression may be either permanent or temporary. It is a common phenomenon and may be due, for instance, to sickness, frustration, insecurity, or emotional tension.

⁵⁰ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 815.

Regression, in the sense of a narrowing-down of the psychologically present area, may result from emotional tension, for instance, if the child is too eager to overcome an obstacle. Regression may occur not only as a result of such frustration in the immediate situation but also as the result of a background of frustration.⁵¹

Lewin makes much of "success" and "failure" in his treatment of motivation. He sees behavior as goal-directed. The experience of success and failure depends not upon achievement as such, but upon the relation between the achievement and the person's expectation. Objective achievement cannot be correlated with the feeling of success or failure. Too easy or too difficult tasks do not lead to feelings of success or failure. Thus the experience of success or failure depends upon the level of performance within a frame of reference.⁵² Although the scale of possible difficulties is infinite, the scale of possible achievement has a definite upper limit for a given individual at a given time. Success or failure occur only when the difficulty of a task is near the upper limit of achievement. The feeling of failure occurs only where there is a chance of success; vice versa, the feeling of success occurs only if there is a chance for failure. Thus a conflict situation is involved in success or failure.

⁵¹ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 798.

⁵² Ibid., p. 830.

Level of aspiration studies focus attention on aspects of goal-directed activities which have been neglected by psychologists preoccupied with reward and punishment.

Some studies have attempted to ascertain factors which influence changes in the level of aspiration, and to gain understanding of determiners of success and failure. Some are concerned with the role of personality traits in setting levels of aspiration.⁵³

Experimental psychology has shown that the formation of goals depends upon the laws which govern the level of aspiration, particularly upon the effect which success or failure has in raising and lowering the level of aspiration. . . . The level of aspiration is greatly influenced by such social facts as the presence or absence of other persons or by the competitive or noncompetitive character of the situation.⁵⁴

The level of aspiration is closely related to the time perspective with respect to both the psychological past and the psychological future. According to Escalona (1940), the level of aspiration at a given time depends upon the strength of the valence of success and failure and upon the probability of success at that time. By representing this probability as the potency of the future success or failure situation, the basic facts concerning the level of aspiration can be understood.⁵⁵

⁵³ Kurt Lewin and others, "Level of aspiration." In J. McV. Hunt ed. Handbook of personality and the behavior disorders (New York: Ronald), p. 356.

⁵⁴ Kurt Lewin, "Field theory and experiment in social psychology: Concepts and methods." Amer. J. Sociol., 44, pp. 868-896.

⁵⁵ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 832.

In summing up his approach to motivation, it is noted that Lewin means by objectivity in psychology that the field is described as it exists for a person at a particular time. To understand behavior one needs to determine the structure and the dynamics of the field. Needs, valence, and force are pivotal concepts in treating the dynamics of behavior. Psychological locomotion -- not necessarily physical movement -- conforms to the law of parsimony in achieving goals, but not in setting them. Success vs. failure and ego involvement are critical terms in dealing with motivation. Conflict and frustration are phenomena worthy of careful psychological study.

In treating motivation, topological and vector psychology is in nearly complete harmony with pragmatism. Describing the field as it exists for a person at a given time and following the law of parsimony harmonizes with the statement of pragmatism (page 74) that an individual acts in such a way as to achieve his goal or goals in the quickest and easiest way that he comprehends as possible under existing conditions. Lewin's use of needs, valences, and forces is in harmony with pragmatism's describing the motivating-affective aspects of behavior as feelings in form of wants, desires, or cravings (page 75). Lewin's use of success vs. failure and ego involvement attunes with Bode's treatment of the content of the self (pages 76-77).

Lewin observes that change in needs may be effected by change in the cognitive structure of the psychological past or the psychological future. This agrees with Eode's view of the role of cognition in motivation (pages 74-75).

Realism, with its mechanistic outlook in regard to motivation, approaches the subject in a manner entirely different from that of Lewin. Whereas Lewin emphasizes the purposiveness of behavior, Breed (page 48), to escape supernaturalism, denies purpose in a teleological sense and continues his denial to cover a concept of purpose in any sense. Realism studies the individual as a complex object surrounded, and acted upon, by a vast organization of environmental objects. Breed recognizes a phenomenon of mechanistic selective reaction but considers purposefulness only an ideation of this mechanical process of selection (page 53). Thus Breed's mechanistic approach stands in contradistinction to Lewin's dynamical psychology.

Since idealism treats motivation entirely in a transcendental frame of reference, there is very little in common between idealism and Lewin's approach to motivation. Lewin approaches motivation in a framework of needs of a person in his life space. Horne, in contrast (page 21), thinks that motivation must be developed or stimulated in the individual in order that he may conform to a transcendental, purposive.

universe. In practical application, Horne has an atomistic approach to motivation. He speaks of motivation arising through presentation of new subjects as extensions of old interests (page 25). This also contrasts with Lewin's field approach.

CHAPTER VI

HARMONIES AND CONFLICTS OF PRINCIPLES OF TOPOLOGICAL AND VECTOR PSYCHOLOGY WITH TENETS OF IDEALISM, REALISM, AND PRAGMATISM REGARDING INTERPRETATIONS OF PERCEPTION

Lewin's central interest was in problems of motivation. He alluded to perception from time to time in his writings, but in no one place did he give a detailed account of his definition and interpretation of perception. It seems probable that, being familiar with the extensive study of perception that had been developed by members of the Gestalt school, he wrote assuming a general knowledge of Gestalt principles of perception such as those involving phi-phenomenon, closure, and figure-ground relationships.

Lewin's approach to the study of human behavior was phenomenological. He was concerned with the way in which things and events appear. His purpose was to inspect phenomena as they appeared and then to bring constructs to bear. His theoretical concepts were connecting links between empirical data (appearances) and reality. He interpreted objectivity in psychology as determining conditions as they exist for a person. Constructs were inferred from direct facts. He seems to imply that all psychological phenomena are to be interpreted according to common over-arching principles. Thus perception is studied in conjunction with concepts such as motivation, movement, and cognitive structure.

"There are a number of indications that the laws which determine the patterning in perception are more or less the same as those in thinking and memory."¹

Lewin's treatment of perception is prefaced by the basic assumption that "the conception of the perceptual world as a sum of sensory elements must be given up. . . . The stimulus to perception must be assessed not according to its physical intensity but according to its psychological reality."² He disapproves any elementaristic procedure whether it involves sensations, reflexes, or unconditioned responses. He views perceptions clearly in terms of wholes or figures. Relationships, not factors, determine an event.

The dynamics of the processes of perception are to be deduced not from the single elements of the perception but from its whole structure. It is impossible, through mere consideration of its elements, to define a figure in its broader sense. The life space is a Gestalt -- a system whose parts are dynamically connected in such a way that a change of one part results in a change of all the parts. Perception

¹ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 238.

² Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 47.

centers on the problem of organization. The dynamics of perception are centered in the person.

The dynamics of the processes is always to be derived from the relation of the concrete individual to the concrete situation, and, so far as internal forces are concerned, from the mutual relations of the various functional systems that make up the individual.³

A psychological event is always a result of the interaction of many factors.

Lewin uses the term perception with a broader connotation than do associationists. "We should get accustomed to include within perception psychology also the perception of the character of other persons and of social facts."⁴

Social action no less than physical action is steered by perception. . . . If we grasp an object, the movement of our hand is steered by its perceived position in the perceived surroundings. Likewise, our social actions are steered by the position in which we perceive ourselves and others within the total social setting.⁵

A person in any situation acts according to the field he perceives. Two aspects of a field are that which con-

³ Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 41.

⁴ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 238.

⁵ Kurt Lewin, Resolving Social Conflicts. Selected papers on group dynamics (New York: Harper & Brothers, 1948), p. 61.

cerns facts and that which concerns values. The basic task of re-education can thus be viewed as one of changing the individual's social perception.

Since action is ruled by perception, a change in conduct presupposes that new facts and values are perceived. These have to be accepted not merely verbally as an official ideology, but as an action-ideology, involving that particular, frequently non-conscious system of values which guides conduct. In other words, a change in action-ideology, a real acceptance of a changed set of facts and values, a change in the perceived social world -- all three are but different expressions of the same process.⁶

Behavior is observed from the point of view of the individual himself. It is that which exists for the person. It is not described in physicalistic terms.

One of the basic characteristics of field theory in psychology, as I see it, is the demand that the field which influences an individual should be described not in objective physicalistic terms, but in the way in which it exists for that person at that time. . . . To describe a situation "objectively" in psychology actually means to describe the situation as a totality of those facts and of only those facts which make up the field of that individual.⁷

The action of an individual depends upon the way in which he

⁶ Kurt Lewin, Resolving Social Conflicts. Selected papers on group dynamics (New York: Harper & Brothers, 1948), p. 63.

⁷ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 217.

perceives a situation.⁸ In any situation we act, therefore, according to the field we perceive.

Perception as well as cognitive structure is dependent on the needs and emotions of an individual.⁹ Lewin denies the principle of adhesion -- one thing being attached to another so that the revival of the first brings forth the second. The existence of an association does not produce the motor for mental activity. A tension system or need is always necessary for activity. Thus perception is closely linked with need.

The close connection. . . between the perceptual field and the course of the process must not let us forget that the forces which control the course of the process remain without effect or simply do not arise when no psychological energies are present, when there exists no connection with tense psychological systems which keep the process in motion.¹⁰

The perception of an object or event can cause the formation of a tense psychological system which previously did not exist, then influence an already existing state of tension.

⁸ Kurt Lewin, Resolving Social Conflicts. Selected papers on group dynamics (New York: Harper & Brothers, 1948), p. 139.

⁹ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 238.

¹⁰ Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 50.

There are two cases in which the life space is influenced from the outside. (1) A perceptual process changes the cognitive structure of the field with reference to the object in question. (2) A gross somatic influence is exerted; for example, one is hit by a stone in such a way as to cause injury or loss of consciousness. The stone need not appear in the perceptual field of the person to influence his life space.¹¹ "The transition from the grossly somatic effects of physical objects to their effects as objects of perception is not at all an abrupt one."¹² An example is that of a man moving a heavy timber and being lifted up by it. Thus changes effected by physical objects which occur in the environment and in the state of the person are not the result of perceptual processes alone. Furthermore, the effect of perception may go beyond a change in cognitive structure of the life space. For instance, it may produce a change of goal and lead to a change in direction of action.

Lewin interprets experience to be a dynamic process. He emphasizes not constancy and association but continuous change.

¹¹ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 27.

¹² Ibid., p. 28.

The effect of experience cannot be sufficiently characterized by means of the concept of association. The effect of experience always consists in the fact that a person (P), upon the repetition of a situation, reacts not in the same way but in another way than that in which he reacted the preceding time. . . . The effect of experience is always a change of the person or of the psychological meaning of the environment.¹³

Lewin's constructs are centered either in a person or in environment, yet in the formula $B = F(P, E)$, person and environment are not independent variables. "The structure of the environment and the constellation of forces in it vary with the desires and needs, or in general with the state of the person."¹⁴

In reality it is impossible to derive the psychological processes in the life space without including, in the representation, changes in both person and environment. A bipolar relationship of person and environment determines behavior. The vector for the goal is outside of a person, and abilities mediate between person and environment.

"The conception of a person in an environment is one of relative position."¹⁵ The use of life space enables one

¹³ Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 239.

¹⁴ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 166.

¹⁵ Ibid., p. 41.

to represent person and environment in common terms as part of one situation. All bodily changes in the person also are included in the life space.¹⁶ "Environment is understood psychologically sometimes to mean the momentary situation of the child, at other times to mean the milieu, in the sense of the chief characteristics of the permanent situation."¹⁷ "Actually, all aspects of the child's behavior, hence instinctive and voluntary behavior, play, emotion, speech, expression, are co-determined by the existing environment."¹⁸

The motor-perceptual stratum of a person has the position of a boundary zone between the inner-personal regions and the environment. The person is a highly differentiated object as contrasted with the concept of its being an entirely homogeneous unity. "In reality the person is not an entirely homogeneous unity but a highly differentiated object."¹⁹

The child, to a greater extent than the adult, is a

¹⁶ Ibid., p. 29.

¹⁷ Kurt Lewin, "Environmental Forces in Child Behavior and Development." Handbook of Child Psychology (Worcester, Mass.: Clark University Press, 1931), p. 96.

¹⁸ Ibid., p. 94.

¹⁹ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 166.

dynamic unity. The infant, for example, acts first with its whole body and learns only gradually to separate out voluntarily certain parts of its environment, to "concentrate."²⁰

"For the child, the boundary region between the self and the environment is less defined than for the adult."²¹

The "life space" of the infant is extremely small and undifferentiated. This is just as true of its perceptual as of its effective space. With the gradual extension and differentiation of the child's life space, a larger environment and essentially different facts acquire psychological existence, and this is true also with respect to dynamic factors. The child learns in increasing degree to "control" the environment. At the same time -- and no less important -- it becomes psychologically dependent upon a growing circle of environmental events.²²

The psychological environment is the environment as it exists for the person. It is not physical environment, neither is it conscious environment. Everything in which, toward which, or away from which the person can perform locomotion is part of the environment.

The self is experienced as a region within the whole field. One can treat everything as environment in which, toward which, or away from which the person as a whole can perform locomotion.²³

²⁰ Kurt Lewin, "Environmental Forces in Child Behavior and Development." Handbook of Child Psychology (Worcester, Mass.: Clark University Press, 1931), p. 121.

²¹ Ibid., p. 120.

²² Ibid., p. 99.

²³ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 167.

Lewin implies that external processes have an existence independent of their being perceived, and that the perception of them depends upon a total situation.

Perception and cognition often affect the life space in such a way that the structure of certain of its parts corresponds in a high degree to the objective structure of what is perceived. How far and at what points the two structures correspond in concrete cases is very important for the success of an action, and is decisive for the value of a plan. The comprehension of the intrinsic nature of the alien factors, whether of physical relationships, of mathematical problems, or of social groups, is therefore of the greatest importance for every achievement.²⁴

The properties of the "life space" of the individual depend partly upon the state of that individual as a product of his history, partly upon the nonpsychologic -- physical and social -- surroundings.²⁵

Stimuli from the physical and social surroundings are considered as boundary conditions -- not inner parts of the life space. "This does not mean, however, that it is permissible to treat stimuli as if they were inner parts of the life space (rather than boundary conditions), a common mistake of physicalistic behaviorism."²⁶ The life space is a limited and closed region which includes its own boundary. The physical and social conditions limit the variety of pos-

²⁴ Ibid., p. 71.

²⁵ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 217.

²⁶ Ibid., p. 217.

sible life spaces, probably as boundary conditions of the psychological field.²⁷ Thus, Lewin recognizes the existence of "alien factors, that is, those physical and social factors which may be viewed as the boundary conditions of the life space."²⁸

It is obvious that psychology must take into account also physical and social facts which obey non-psychological laws and which control the events in the "foreign" hull of the life space.²⁹

Within the realm of facts existing at a given time one can distinguish three areas in which changes are or might be of interest to psychology.

1. "The life space," i.e., the person and the psychological environment as it exists for him. We usually have this field in mind if we refer to needs, motivation, mood, goal, anxiety, ideals.

2. A multitude of processes in the physical or social world, which do not affect the life space of the individual at that time.

3. A "boundary zone" of the life space: certain parts of the physical or social world do affect the state of the life space at that time. The process of perception, for instance, is intimately linked with this boundary zone because what is perceived is partly determined by the physical stimuli; i.e., that part of the physical world which affects the sensory organs at that

²⁷ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 805.

²⁸ Ibid., p. 805.

²⁹ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 75.

time. Another process located in the boundary zone is the "execution" of an action.³⁰

The boundary conditions of a field are considered essential characteristics of that field. Processes of perception which are related to the boundary zone depend partly on the state of the inner part of the psychological field and partly on the stimuli distributed on the receptors as enforced by physical processes outside the organism.³¹ The life space at a given time does not include the parts of the physical or social world which do not affect the person at that time.

Lewin's underlying assumption seems to be that nature and reality are organized existences. His objective in analysis is to perceive the functionally significant sub-wholes which are also real. He states,

Perception and cognition often affect the life space in such a way that the structure of certain of its parts corresponds in a high degree to the objective structure of what is perceived.³²

In Resolving Social Conflicts Lewin avers that "even extensive first-hand experience does not automatically create

³⁰ Kurt Lewin, "Defining the 'field at a given time,'" Psychological Review, Vol. 50, No. 3, 1943, p. 306.

³¹ Ibid., p. 307.

³² Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 71.

correct concepts (knowledge)."³³ Man's everyday experience with falling objects did not bring him to a correct theory of gravity. Experiments were necessary to replace less adequate with more adequate concepts. He further states,

Our insight into the conditions which determine the correctness or incorrectness of perception is still very limited. It is known that some relation exists between visual perception and knowledge. However, the lines which appear curved in an optical illusion do not straighten out as soon as we "know" they are straight.³⁴

The holistic field approach of topological and vector psychology is in clear conflict with the dualistic approach of idealism. This contrast is in bold relief when the ideas of the two outlooks in regard to perception are compared. Horne (page 28), in contrast with Lewin, posits that the mind has a body, and that mind or self as opposed to matter or body is the essential factor in experience. Whereas Lewin writes of the bipolar relationship of person and environment, Horne (page 29) emphasizes that the self is active and the environment passive. Horne would agree with Lewin that reality is organized existence; however, he would disagree with Lewin in positing all organization as a func-

³³ Kurt Lewin, Resolving Social Conflicts. Selected papers on group dynamics (New York: Harper & Brothers, 1948), p. 60.

³⁴ Ibid., p. 61.

tion of mind as contrasted with body. Horne (page 28) taught that atomistic matter is known through the senses in the form of mental states, but its idea or principle is grasped through mind. This assumption is in complete conflict with Lewin's definition of dynamic experience.

Some of Lewin's basic assumptions underlying his treatment of perception evidently are realistic. He seems to assume that external processes have existence independent of being perceived (page 142). His foreign hull of the life space implies this independent existence as described by realism (page 53), which sees perceptual data as simply being there as brute facts. Lewin's point of difference with Breed in regard to independent existence is that Lewin proceeds on the underlying assumption (page 143) that nature and reality are organized existences.

In weighing the importance of wants and needs in perception, topological and vector psychology conflicts with realism. Lewin (page 136) avers that, in perception, structure is dependent upon the needs and emotions of an individual. Breed (page 53), in contrast, assumes that conformation to this world is primary, and wants and needs are subjective and secondary. This assumption of realism leads into an atomistic approach to perception which is in basic conflict to the methods and constructs of topological and vector psychology. Realism operates in a frame of reference of an

environment impinging upon a physical organism (page 54). The mechanism of sense organs and nerves is analogous to transmitter and wires of a telephone. Impulses -- vibrations -- are transferred with no compromise of identity. Perception is a process of a mechanically selective nervous system (page 55) combining a complex of sensations. Experience consists of the activity of thought plus its content. Topological and vector psychology, in contrast, negates the conception of the perceptual world as a sum of sensory elements (page 133).

In its holistic and configurational approach to perception, topological and vector psychology is in harmony with a pragmatic outlook. Lewin's theory (page 135) that a person in any situation acts according to the field he perceives and that the field is described, not in objective physicalistic terms, but in the way it exists for a person at a certain time agrees with the pragmatic position, although the latter is stated in somewhat different terms. Bode (page 82), in regard to the problem of action and perception, asserts that experience is not primarily cognitive but active-passive and includes cognition.

Lewin's bipolar relationship of person and environment determining behavior (page 138), and his view that psychological environment is the environment as it exists for a person, harmonize with Bode's contentions that the unit of

a given experience is not the product of blending or mental chemistry but rather an "aboriginal" quality or characteristic of the situation (page 83); that perceptions are insights developed by a purposive organism acting or proposing to act in anticipation of consequences (page 79); and that behavior is not a passive response to an activating environmental factor called a stimulus but, rather, experience is trying something then undergoing the consequences (page 79).

To recapitulate, one might say that Lewin's method of treatment of perception is similar to pragmatism, whereas the basic assumptions underlying his treatment are realistic. Lewin, like Bode, emphasizes that motivation is essential to perception and the two seem to agree that a thing is perceived only as a relationship among the object, the viewer, and the background. Yet Lewin, unlike Bode, seems to postulate an independent, existent reality, the basic tenet of realism.

CHAPTER VII

HARMONIES AND CONFLICTS OF PRINCIPLES OF TOPOLOGICAL AND VECTOR PSYCHOLOGY WITH TENETS OF IDEALISM, REALISM, AND PRAGMATISM REGARDING THE TREATMENT OF LEARNING AND THINKING

Approach to the Problem of Learning

The concepts of topological and vector psychology are not developed and presented as a theory of learning. However, Lewin has written a good deal on the application of his theories to the concept of learning. Learning, as with other activities treated by Lewin, is discussed from a situational point of view. The process is studied within the framework of the life space of an individual.

Lewin considered an atomistic approach to learning as erroneous.

It is usually possible to divide psychological whole regions into part regions but this can not be carried on ad infinitum. An analysis which attempts to do this is not more accurate; it is psychologically wrong.¹

His psychological theory is in opposition to connectionism. Connections are never causes of events. Rather, in order that a process may occur, there must be a freeing of energy capable of doing work. "One must therefore inquire

¹ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 163.

of every psychological event whence the causal energies come."² Lewin assumes that couplings or connections are not to be regarded as sources of energy. Yet he does not deny the existence of these couplings. He further does not regard the presence or absence of couplings as unimportant.

To say that couplings are not to be regarded as sources of energy is by no means to say that there are no couplings, or that their presence or absence is unimportant. They are, indeed, not sources of energy for events, but the form of the event depends in large degree upon them.³

He believed that the historical development of psychology has confused rather than clarified the situation.

He observed that

Associationism reached out farther and farther until it prided itself on explaining with one law not only the process of rote learning but any kind of intellectual process, behavior habits, values, and particularly directed actions. . . . Association was supposed to explain both motivation and cognition.⁴

He interpreted Ach's theory of "determining tendency" and Thorndike's "law of effect" as attempts to recognize the particular role of goals, needs, and other directed factors

² Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 45.

³ Ibid., p. 46.

⁴ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 221.

in behavior, but without surrendering the basic position of associationism.

One is tempted to say that a theory of needs very similar to that accepted in field theory has been taken over, although a somewhat peculiar type of terminology makes this fact less apparent. Instead of speaking, for instance, of "consumption," conditioned reflex theory speaks of "goal response."⁵

Lewin predicates that no force within mere association leads to reproduction. Items are linked together in memory, not by virtue of connection or association but by the way each expresses the field organization or the task as a whole. He assumes that learning results in building traces which affect future performance. Memory processes refer to the structural similarities and differences between life spaces of an individual in existence at different times.

Associationism implies that the past is the cause of behavior, whereas topological and vector psychology predicates that behavior depends on neither the future nor the past, but on the present field.

All approaches to psychology are apparently becoming more and more aware that the theory has to include the particular pattern of factors existing at a given time. Such a leading conditioned reflex theorist as Hull recognizes this point. On the whole, however, this recognition has led toward a complication rather than a clar-

⁵ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 221.

ification of the theory of the conditioned reflex. This emphasis on the past has contributed much to the over-emphasis on the problem of learning. . . . Causal explanations actually mean a derivation of behavior from the present field -- a principle that is basic to field theory.⁶

One finds very little in Lewin's approach to the problem of learning which agrees with the idealistic outlook. Idealism recognizes associationism as a learning process and emphasizes its use in habit-formation and inculcation (page 34). Horne's idealism makes all physiological considerations secondary to spiritual growth (page 32), yet it does consider association as a type of learning. Lewin leaves no place for associationism as such. Neither does he treat spiritual growth in the way that the concept is used in idealism. There may be some slight, vaguely defined similarity between idealism's emphasis upon individual growth in learning (page 32) and Lewin's basic concept of the person in his life space. In Horne's description of a learner as a cultivated personality (page 33) as contrasted with a complicated mechanism, with a set of conditioned reflexes, or with a cultivated vocationalist, there is some slight harmony with Lewin's position (page 149) that he does not deny the existence of couplings but that they are not to be regarded as sources of energy. Idealism (page 33) assumes teleological

⁶ Ibid., p. 222.

purposiveness in learning, in contrast with the approach of topological and vector psychology which emphasizes the contemporaneity of purpose as a function of the present field.

Lewin's topological and vector psychology and Breed's new realism are antithetical in regard to their treatment of the specific problem of learning. The essence of Breed's learning process centers around reflex arc, connectionism, stimulus-response, and common nervous pathways (pages 56-57). All this Lewin inveighs against. Breed, when he tries to interpose goal through the back door under the headings of selection and integration in learning, represents the pattern of behaviorism proscribed by Lewin.

Lewin's situational approach to learning, and his view that behavior depends on neither the future nor the past but on the present field (page 145), agrees with Bode's position that a field approach supersedes the idea of a dualism of mind and matter (page 93) and that learning is a reconstruction of experience through continuity of experience (page 88). Lewin's psychological field which exists at a given time contains the views of that individual in regard to his future (page 107). This harmonizes with Bode's position that goal is taken to mean the future reference of a present fact or datum. The anticipated future is part of the life space.

Lewin's opposition to atomistic connectionism (page

148), and his criticism of the behavioristic-connectionist attempt by means of "goal response," "determining effect," or "law of effect" to recognize directed factors in behavior without surrendering the basic position of associationism (page 150), agree with Bode's statements in regard to this practice. Bode (page 85) states that mechanistic connectionism is inadequate and that the reflex-arc hypothesis is too simple. Stimulus and response can be contrasted in terms of function, but they cannot be separated temporally (page 86). Habit is not a fixed sequence of acts and is not to be explained by pre-formed pathways in the nervous system (page 91). Bode agrees with Lewin's assumption of purposefulness or direction in learning in his postulation (page 92) that all learning activity, including habit formation, is goal-directed.

Lewin's predications (page 150) that learning results in building traces which affect future performance and that memory processes refer to structural similarities and differences between life spaces of an individual at different times fundamentally agree with the pragmatic definition of learning (page 86) as a process by which experiences are changed so as to become more serviceable for future guidance. Pragmatism continues to posit, in harmony with topological and vector psychology, that all forms of learning have a

common element -- a change in the experiential situation which gives greater control in relation to subsequent behavior.

It is asserted by Lewin that the term learning, as generally used, refers to several different processes which do not lend themselves to one inclusive theory of learning. Each process is to be treated according to its psychological nature.

Within what is called learning, we have to distinguish at least the following types of changes: (1) learning as a change in cognitive structure (knowledge), (2) learning as a change in motivation (learning to like or to dislike), (3) learning as a change in group belongingness or ideology (this is an important aspect of growing into a culture), (4) learning in the meaning of voluntary control of the body musculature (this is one important aspect of acquiring skills, such as speech and self-control).⁷

Lewin's writings seem to recognize a cognitive or insightful aspect of each of the four categories. Yet he consistently divided learning into these four categories for treatment.

Learning as change in cognitive structure

A change in cognitive structure may occur in any part of the individual's life space, including the psychological future, the psychological present, or the psychological past. It may occur on the reality level or on the irreality level (wish and fear level) of each of these sections of the life space.⁸

⁷ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 220.

⁸ Ibid., p. 237.

The cognitive structure consists of the way a person sees the physical and social world, including all his facts, concepts, beliefs, and expectations.⁹ Insight is viewed as a change in the cognitive structure of the situation.¹⁰ The principles of change in cognitive structure can be applied to social and mathematical problems as well as to physical problems.

The problems of insight, of acquiring knowledge, and of other kinds of change in cognitive structure, seem to be closely related to those laws which govern perception and determine the structure of the perceived field.¹¹

Lewin holds to the centralist position -- namely, that an organism reacts to what the central processes make of the stimuli which come in. The type of forces leading to a change in cognitive structure is very similar to, if not identical with, those forces which govern the perceptual fields. They must be considered when discussing problems of figure and ground, and problems of specific patterns and their internal equilibria.¹²

⁹ Kurt Lewin, Resolving Social Conflicts. Selected papers on group dynamics (New York: Harper & Brothers, 1948), p. 59.

¹⁰ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 802.

¹¹ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 223.

¹² Ibid., p. 238.

Learning as a change in knowledge or cognitive structure is manifested through differentiation of unstructured areas; restructurization involving psychological direction or meaning; elements of time perspective; and levels of psychological reality and irreality.¹³

In differentiation of unstructured areas a previously vague and unstructured area becomes cognitively structured and specific. This factor looms important in regard to development of language, knowledge, social interrelations, emotions, and actions.¹⁴ An example of this type of learning is the cognitive change of a psychological world as a whole during the development of a person.

From all that we know, the newborn cannot distinguish between himself and his environment; slowly certain areas, for instance, those connected with eating, take on a specific character, become more and more differentiated; the parts of his own body become differentiated from each other and from the rest of the world; social relations develop and become differentiated; needs, emotions, language go through a similar process of differentiation.¹⁵

This emphasis on differentiation is presented as a more ade-

¹³ Ibid., p. 224.

¹⁴ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 796.

¹⁵ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 226.

quate alternative to association or conditioned-reflex theories.

A shift from the theory of association or conditioned reflex to a theory of differentiation (or similar changes in structure) means a change from a physical analogy (namely that of links in a chain) to a more biological approach. . . . Associations, so far as they refer to changes in knowledge, may well be reinterpreted as relatively simple cases of change in structure.¹⁶

Sometimes a change in cognitive structure occurs without an increase or decrease in the degree of differentiation -- subdividing regions into smaller units. The life space may be restructured -- separating certain regions which have been connected and connecting regions which have been separated. Restructurization of the life space determines psychological direction and meaning. In an unstructured situation "the person feels insecure because the psychological directions are not defined; in other words, the person does not know what action will lead to what result."¹⁷ Orientation means the structurization of an unstructured region. Thus, through orientation or restructuring, direction within the life space becomes determined.

The totality of the individual's views of his psychological future and his psychological past existing at a given time can be called "time perspective." . . . The reality level of the psychological past, present, and future corresponds to the situation as they actually

¹⁶ Ibid., p. 227.

¹⁷ Ibid., p. 228.

existed, exist, and will exist according to the individual's belief. Aside from his "expectations" for the future, the individual has certain wishes or daydreams.¹⁸

The time dimension of the life space of an individual grows with increasing age. Thus more and more distant future and past events affect present behavior.

The behavior of an individual does not depend entirely on his present situation. His mood is deeply affected by his hopes and wishes and by his views of his own past. The morale and happiness of an individual seem to depend more on what he expects of the future than on the pleasantness or unpleasantness of the present situation.¹⁹

Normal development brings with it, in addition, an increased differentiation in the reality-irreality dimensions of the life space. The young child does not very clearly distinguish wishes from facts, hopes from expectations.²⁰

Learning as change in motivation

Learning as change in motivation is distinguished from learning as change in cognitive structure.²¹ Some areas of factors which determine motivation and personality development are "the basic laws of needs and satiation, goal structures, the level of aspiration, and the problem of

¹⁸ Ibid., p. 230.

¹⁹ Ibid., pp. 229 f.

²⁰ Ibid., p. 229.

²¹ Ibid., p. 237.

group belongingness."²² Motivational learning involves changes in goals or needs and in one's learning to like or to dislike. It is a process whereby a person's valences and values are modified. Lewin's definition of need (page 114) recognizes that a need may exist without being in relation to a goal.

Learning as related to change in motivation deals either with a change in needs or a change in the means of their satisfaction. To these processes belong not only such examples as becoming addicted to or breaking away from a drug habit, and any ideological conversion, but also the normal process of acculturation during childhood or after entering a new social group. Obviously, forces governing this type of learning are related to the total area of factors which determine motivation and personality development.²³

Lewin describes two principal ways of bringing about a desired change in goals:

The one implies a change of the person's own needs or interests; the other leaves needs or interests more or less untouched, and compels the individual to do the undesired action either by direct force or by setting up a constellation where other, stronger, needs overbalance the effect of the first need.²⁴

"Mere force plays a considerable role in all education."²⁵ A person learns by force when he is pushed into a situation and he adapts himself to it. A step-by-step method is more efficient in breaking resistance than the all-at-

²² Ibid., p. 238.

²³ Ibid., p. 238.

²⁴ Ibid., p. 232.

²⁵ Ibid., p. 232.

once method. Reward and punishment are psychologically something more specific than a mere linkage between a certain activity and a pleasant or unpleasant tone.

An analytical treatment of the typical situation of the threat of punishment, for instance, shows the following constellation. The individual dislikes the activity "T." To make him carry out this activity, a second even more disagreeable possibility is set up in such a way that the individual has to face one of them. . . . The individual is in a particular type of conflict situation, namely, in a conflict between two forces. . . . Such conflicts lead to a tendency to "leave the field," to run away from both activities. To make the threat of punishment effective, barriers against this way out have to be established -- barriers strong enough to keep the individual within the conflict area. These barriers usually consist of social forces imposed upon the individual by an authority. By detailed analysis of the field in case of threat of punishment, one can derive the tension resulting from the conflict.²⁶

"Neither the promise of reward nor the threat of punishment creates the same constellation of psychological forces as a change of interest in the demanded activity itself."²⁷ The promise of reward does not involve a prison-like situation -- the person is permitted more freedom in other directions. "Still a barrier has to be kept up around the reward in such a way that the goal cannot be reached save by the way of the disliked but requested activity."²⁸ In the end a reward may lead to an actual change of interest.

²⁶ Ibid., p. 232.

²⁷ Ibid., p. 233.

²⁸ Ibid., p. 233.

The originally disliked activity may become liked. On the other hand, "the repetition of punishment usually makes the demanded activity only more hated. However, a state of apathy and giving-in may be reached, as shown by experiments on social climates."²⁹

Failure frequently leads to rationalization, emotional outbreak, overpersistence, or rapid discontinuance. . . . This "learning to take it" is certainly one of the most important aspects of learning as a part of the character development of the individual.³⁰

Frequently, learning to like or to dislike certain activities results from long-range change of needs, which emerge during development and seem particularly marked during crises such as adolescence.³¹

However, through education valences can be changed.

The valence of an activity depends partly on its meaning and therefore on the cognitive structure. . . . The most frequent method of changing valences in education is based on this relation to cognitive structure. For instance, the mother may try to eliminate a certain behavior by remarking that only "bad children do that."³²

The level of aspiration is defined as the degree of difficulty of the goal toward which a person is striving. The level of aspiration is influenced partly by the ability of the individual as manifested in his past and present successes and failures, partly by certain group standards. By and large, the experience of success and failure occurs only in a relatively limited area of dif-

²⁹ Ibid., p. 233.

³⁰ Ibid., p. 237.

³¹ Ibid., p. 233.

³² Ibid., p. 234.

faculties which is close to the boundary level of ability of the individual.³³

As in physical consumption, the psychological "consumption" of the activity satiates the underlying need. Experiments have shown that repetitions beyond the saturation point lead to variation, inattentiveness, mistakes, fatigue, and finally to a complete disorganization; in other words, to an "unlearning" in the sense of inability to carry out an activity previously mastered. Over-satiation, too, may lead to a permanent dislike for an activity.³⁴

Learning as change in group belongingness or ideology

An important aspect of motivational learning is changes in group belongingness or ideology.

Beginning with this early stage (at a few months) the child's behavior is moulded in every respect by his social situation. Of course, his morale, his religion, and his political values are determined by his being a part of, and reacting to, the society in which he lives.³⁵

I try to distinguish more sharply than is usually done between historical and ahistorical problems in psychology. However, that does not imply at all a neglect of the historical categories. As a matter of fact, anyone who defines stimuli in psychological rather than in physical terms, and does not forget about the social side of psychological phenomena, cannot possibly omit the historical aspect of every psychological datum.³⁶

³³ Ibid., p. 235.

³⁴ Ibid., p. 233.

³⁵ Kurt Lewin, "Field theory and experiment in social psychology: Concepts and Methods." American Journal of Sociology, 44: 868-896.

³⁶ Kurt Lewin, The Conceptual Representation and the Measurement of Psychological Forces (Durham, N.C.: Duke University Press, 1938), Vol. I, No. 4, Serial No. 4, p. 2.

Cultures differ in regard to what values are recognized but, of at least equal importance, they also differ in the way different activities are seen or linked.

Much of the advertising and most of propaganda are effective not by changing needs and values as such but by changing the cognitive structure in a way which makes the propagandized activity appear to be a part of, or a means to, an area which has high value for that individual.³⁷

Conversions or learning of new ideologies are usually difficult partly because of the way in which needs and cognitive structure are interwoven. A new experience can change the ideology of a people suddenly and deeply if it provides valuable goals and an advantageous, long-range outlook, even though this new experience in its immediate results might be restraining.

Learning as voluntary control of body musculature

Voluntary control of body-musculature involves a degree of an individual's power over his physical and social movements. Learning voluntary control is an important aspect of acquiring skills.

³⁷ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 235.

Habits of a person at a given time must be treated as part of the present field.³⁸ The essential fact of habit-formation or practice is taken to be, "not the formation of piecemeal associations, but the re-formation and new formation of definite action unities."³⁹ Certain psychical energies -- tense psychical systems -- are always a necessary condition of the occurrence of a psychical event. Evidence of this phenomenon is that interrupted tasks leave a state of tension -- a quasi-need -- and are recalled much better than completed ones. Old habits can be changed from day to day by changing the meaning of an activity.⁴⁰

Habits of action and thinking are closely related to problems of ideology and expectation. "The experimental investigation of habits (association) has shown that the couplings created by habit are never, as such, the motor of a psychical event."⁴¹

³⁸ Kurt Lewin, "Defining the 'field at a given time,'" Psychological Review, 50, No. 3, p. 303.

³⁹ Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935, p. 44.

⁴⁰ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 235.

⁴¹ Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 44.

It is correct that a change in cognitive structure may occur on the occasion of repeated experience. However, it is important to realize that it is not the repetition itself but the change in cognitive structure which is essential for learning.⁴²

Even animals learn mazes through hypotheses or changes in cognitive structure. "A spontaneous repetition of an act is not very likely and in case it does occur the activity is generally distinctly changed."⁴³ Even in rote learning the number of repetitions is of secondary importance.⁴⁴ A state of hunger, satiation, or oversatiation correspond to a positive, a neutral, or a negative valence of the activity regions which are related to the particular need. The so-called repetition of an activity does sometimes bring changes in the cognitive structure and the need-tension system.

If an activity psychologically has the character of actual repetition -- or marking time as opposed to making progress -- satiation occurs.

Mere repetition, if carried on frequently enough,

⁴² Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 229.

⁴³ Kurt Lewin, "Psychology of success and failure," Occupations, 14: 926-930.

⁴⁴ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 229.

has a definitely opposite effect on learning. It leads to disorganization and dedifferentiation which are typical symptoms of what has been called psychological satiation. As the result of the satiation, the meaningful will become meaningless and what has been known may be unlearned.⁴⁵

An activity may be imbedded in a different psychological whole so that its meaning is changed and this alteration achieves the same effect in satiation as shifting to a different activity.⁴⁶ "The velocity of satiation increases with the centrality of the activity."⁴⁷

Lewin's pivotal idea in learning appears to be change in cognitive structure. The cognitive structure of the life space corresponds to the knowledge of a person. It consists of the way a person sees the physical and social world. The unfamiliar is represented psychologically as a cognitively unstructured region -- the region is not differentiated into clearly distinguishable parts. There is definite differentiation between cognition and tension. The cognitive structure steers, but does not provide energy for action. Insight is viewed as a change in cognitive structure of a situation. Thus insight and change in cognitive structure are

⁴⁵ Ibid., p. 229.

⁴⁶ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 826.

⁴⁷ Ibid., p. 826.

used more or less synonymously. Insight as used by Lewin includes differentiation and restructuring (page 155).

Idealism in its treatment of the process of learning shows very little in common with topological and vector psychology. Horne's position is that the learner grows in knowledge through the mind's interpreting sensations and directing movement and that learning takes place through contagion of personality (page 32). Thus idealism locates the whole process of learning within individual personalities.

In its treatment of learning topological and vector psychology is much in agreement with pragmatism, yet it does include in its definition of learning some factors based on realistic assumptions. Lewin seems to differ from Bode in analyzing learning into four types of change. (page 154). Bode sees all learning as reconstruction of experience or development of insight (page 87). A careful analysis of Lewin's writings seems to disclose a cognitive aspect of each of his latter three types. However, his failure to recognize overtly that the four categories are only various aspects of learning as change in cognitive structure gives a realistic tinge to his treatment of learning.

Lewin's structuring of a life space seems to describe the same process as Bode's gaining insight into a confronting situation. Thus, Bode uses development-of-insight and

Lewin uses change-in-cognitive-structure to describe the same process -- that of conceptualization. Lewin uses the term "insight" somewhat differently from Bode. Lewin means, by insight, a change in cognitive structure, whereas Bode means the cognitive structure or understanding itself. Lewin treats the term insight as meaning a process which comprises one of the aspects of learning. He is not so clear on the point that all learning is insightful as is Bode. Bode uses the term insight as a synonym for understanding. Insight rises out of the process of experience as contrasted with being a process in the sense the term is used by Lewin.

Although Lewin harmonizes with pragmatism in describing cognitive structure as the way one sees the physical and social world, he is realistic in assuming that in that world perception takes place in accordance with laws of independent relations. He assumes that laws or truths in the form of relationships exist independent of their being perceived. In a learning situation, he treats structurization of both the person and the environment, but he seems to place major emphasis upon the role of environment.

Lewin interprets differences in intelligence quotients as different rates in progressive differentiation of the life space. Thus the mark of an intelligent person is that his life space is more highly structured. This agrees with pragmatism's definition of intelligence as a measure of a person's insights.

In his treatment of learning as a change in motivation (pages 159-162), Lewin emphasizes goal and states two ways of bringing about a desired change in goals; (1) evoke a change in a person's own needs and interests; (2) compel the individual to do the undesired action. He emphasizes the role of conflict situations. He speaks of a person "adapting" to a conflict situation. With this concept of adaptation, he approaches the pragmatic emphasis in learning of the process of harmonizing conflicts; however, this idea is not as clearly drawn as in pragmatism.

In regard to habit Lewin states (pages 164-166) that couplings created by habit are never, as such, the motive power of a psychical event; it is not the repetition itself but the change in cognitive structure which is essential for learning. His position concerning couplings is that they furnish the structure, but not the dynamics of learning. He sums up his position on habit by positing that even animals learn mazes through use of hypotheses (page 165). This approach seems to approximate the pragmatic position in regard to habit. Yet the wearing of pathways in the nervous system as described by Breed (page 60) is not discarded by Lewin. He seems only to add a dynamic nuance to the realistic structure.

Pragmatism, in contrast to topological and vector psychology, defines habits as outcomes of previous experience

(page 91) and experience as effectual because of the insights developed. There is seen to be no need of taking into consideration any plan of couplings in the nervous system. The existence of neural couplings is neither affirmed nor denied. The point is that the concept of "couplings" or connections is inadequate to describe and treat the function of learning in the most fruitful manner. Pragmatism centers its definition of learning upon conceptualization. A person learns by getting the idea or feeling the pattern involved. Habit is not a fixed sequence of acts. Even the simplest behavior involves some reorganization. Thus habit is not to be explained by pre-formed neural pathways.

The Process of Thinking

Lewin treats thinking in the same framework that he deals with learning. Structuring the life space permits problem-solution. Systems of tension within an individual -- needs, aspiration level, saturation -- are anchored in the dynamic psychology of the individual and furnish dynamic energy for action. The cognitive structure of the life space is not identical to the state-of-needs, yet is influenced by it. The effect of this influence depends upon the intensity of need and the fluidity of related areas of the life space.⁴⁸ "Needs affect the cognitive structure not

⁴⁸ Ibid., p. 820.

only of the psychological present but, even more, of the psychological future and past."⁴⁹

Direction must be defined in psychological terms. "Progress in thinking is a psychologically real event."⁵⁰ There can be psychologically real locomotion in quasi-conceptual fields. A problem -- mathematics for instance -- presents itself as an unclear, unstructured region. Progress in thinking means that one is fortunate enough to approach the solution of the problem by a particular path. "The same path can be taken several times and such repetitions are different from giving up one path and trying another."⁵¹

All intellectual processes are deeply influenced by the goals of an individual.

The goals which determine the child's behavior are thrown continually further into the future. A decisive extension of the psychologically present life space of the child is based upon this temporal displacement of goals.⁵²

Only in a sufficiently free life space in which the

⁴⁹ Ibid., p. 56.

⁵⁰ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 49.

⁵¹ Ibid., p. 49.

⁵² Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 173.

child has the possibility of choosing his goals according to his own needs and in which, at the same time, he fully experiences the objectively conditioned difficulties in the attainment of the goal, can a clear level of reality be formed, only thus can the ability for responsive decision develop.⁵³

Intellectual processes depend upon the emotional state of the person. "Becoming emotional leads frequently to a narrowing down of the psychologically existing area. A state of strong emotionality should, therefore, be detrimental to finding intellectual solutions."⁵⁴ "Relative detachment to inward retirement" from the valence is highly favorable to perception of the whole situation, and thus to transformation of the total field in the process of insight. The prospect of especially intense reward or punishment may impede solution of intellectual tasks.⁵⁵ "A distance sufficient to permit a survey of the larger situation helps in the solution of intellectual problems."⁵⁶ This aids in getting an

⁵³ Ibid., p. 179.

⁵⁴ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 804.

⁵⁵ Kurt Lewin, "Environmental Forces in Child Behavior and Development." Handbook of Child Psychology (Worcester, Mass.: Clark University Press, 1931), p. 105.

⁵⁶ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 804.

over-all view of a broader area and is thus helpful in creating a change in cognitive structure.

Lewin thus interprets thinking as a psychological event in which there is psychological locomotion -- structuring or restructuring of a field including an orientation toward a goal. He feels that strong emotionality is detrimental to intellectual solutions. Thinking is an insightful process through which there is a transformation of the total field arising through perception of the total situation. Sufficient distance to get an over-all view is conducive to a change in cognitive structure.

Lewin considers the Aristotelian logic of idealism an inadequate approach to the understanding of human thinking. Idealism teaches that we live our way into a system of thinking (page 36), whereas Lewin's ideas harmonize better with thinking into a system of living. Idealism recognizes purposiveness in thinking (page 34); however, this purposiveness is transcendental and teleological as contrasted with Lewin's situational purpose. Idealism places thinking and reasoning secondary to inspiration, intuition, and contemplation as sources of truth (page 35): children and adults can find their own answers with proper leadership, but these answers consist of pre-existent truth. Lewin places primary emphasis upon thinking and reasoning in the motivational life of an individual. Progress in thinking and reasoning con-

stitutes psychologically real locomotion through which the individual changes the cognitive structure of his life space.

Topological and vector psychology harmonizes with realism, at least to some degree, in considering thinking a process of disclosure of reality (page 61). Although reality is defined somewhat differently by each, yet there is agreement that it is there, awaiting disclosure through experimental research -- the scientific method, or thinking. Realism, in contrast to topological and vector psychology, emphasizes and idealizes analytical thinking (page 62). Whereas Lewin understands thinking as a field process (page 173), Breed defines the essence of reasoning as selective response to identical elements in numerically different experiences (page 62). To realism, creative imagination is really not "creative"; it is the formation of new relationships out of old stuff -- new combinations of old bonds woven into a new pattern (page 65). This idea of realism lacks the dynamic element of topological and vector psychology.

Pragmatism sees the role of thinking as the resolution of an unclear situation into a clear one. (page 93). It is a process whereby one proceeds through a zigzag route to find and test meanings (pages 95-97). The process includes the finding, the elaborating, and the testing of hypotheses

(page 99). Habit formation and thinking are not contrasting processes. Rather, thinking is a process of remaking old habits and forming new ones (page 103). Pragmatists think of insights as guides for action, whereas topological and vector psychology in counter-distinction to pragmatism makes no overt distinction between insights and actions. Yet, in its emphasis upon psychological needs and tension systems, it implies that conceptualization is the basis for psychological motion in a given direction.

Both Bode and Lewin describe the process of thinking as arising from a situation in which the individual feels a need -- has a goal. Lewin's detour-situations are comparable to learning situations involving a forked road or no road, as described in pragmatism. Progress in thinking -- approaching a problem by a successful path -- is similar to pragmatism's acting and realizing the consequences of the act.

Differentiation of the life space which brings a change in cognitive structure is accomplished through a process which can be likened to Bode's reflective thinking. Yet Lewin's emphasis upon the presentness of life space minimizes the development of insights for guidance of future actions. Lewin's concept of trace does cover this process but the nature of trace or its function in reasoning is not

clearly defined. Within these limitations the implications of topological and vector psychology for the meaning of thinking and reasoning are vaguely in agreement with the pragmatic approach to the study of the process. It seems likely that Lewin's thinking in regard to the nature of thinking was moving in the direction of Bode's position. In 1945 he wrote, "A change in action ideology, a real acceptance of a changed set of facts and values, a change in the perceived social world -- all three are but different expressions of the same process."⁵⁷

⁵⁷ Kurt Lewin, Resolving Social Conflicts. Selected papers on group dynamics (New York: Harper & Brothers, 1948), p. 64.

CHAPTER VIII

HARMONIES AND CONFLICTS OF PRINCIPLES OF TOPOLOGICAL AND VECTOR PSYCHOLOGY WITH TENETS OF IDEALISM, REALISM, AND PRAGMATISM REGARDING ASSUMPTIONS CONCERNING THE NATURE OF REALITY AND THE NATURE OF, AND TESTS FOR, TRUTH

Throughout his work, Lewin's emphasis is upon coping with distinctly psychological concepts and factors. Having been trained in philosophy, he undoubtedly realized that his various theories, positions, methods, and terminologies had certain philosophical implications. This is confirmed by his allusion in the bodies and footnotes of his manuscripts to philosophical problems and implications. His primary aim was to develop a scientific psychology; thus he tended to leave in abeyance problems of philosophy which are inherent in his psychological approach.

The approach of topological and vector psychology is that man is acting in a psychological instead of a physical environment. It is assumed that the physical world does exist but that it is different from the psychological environment which is the reality that is perceived.

To avoid unnecessary assumptions, one can represent the psychological field scientifically by the interrelation of its parts in mathematical terms without asking which the "essence behind" this field is.¹

¹ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 793.

Lewin was greatly devoted to scientific work. He carried science to problems involving all aspects of living. To him, truth was the truth of science as contrasted with the truth of God, to be found possibly through inspiration or intuition. Thus, his theory of truth has very little, if anything, in common with the position of idealism as presented by Horne.

Lewin insisted upon directly observed facts in science, but he also insisted that data by themselves never solve problems. He placed little faith in the stage of science consisting of observation and classification; yet he recognized the stage or aspect of science consisting of direct observation.

It was his belief that simple collection of facts is indispensable in certain stages of a science, and is a wholesome reaction against speculative theory-building. However, collection and classification of facts are inadequate in answering questions of cause and conditions of events.

Only with the help of theories can one determine causal interrelationships. A science without theory is blind because it lacks that element which alone is able to organize facts and to give direction to research. Even from a practical point of view the mere gathering of facts has very limited value. It cannot give an answer to the question that is most important for practical purposes -- namely, what must one do to obtain a desired effect in given concrete cases? To answer this question it is necessary to have a theory, but a theory

which is empirical and not speculative. This means that theory and facts must be closely related to each other.²

To advance beyond mere description, Lewin uses constructs. His constructs were developed from a background of what may be called scientific imagination. He uses the terms phenotype and genotype, developed in other sciences, to designate respectively observational description of data and unobservable, structural characteristics. Thus, his method of science in psychology is phenomenological plus constructive. To him, objectivity did not mean restriction to what is directly observable.

In Lewin's method of prediction, "instead of a reference to the abstract average of as many historically given cases as possible, there is a reference to the full concreteness of the particular situations."³

The task of dynamical psychology is to derive univocally the behavior of a given individual from the totality of the psychobiological facts that exist in the life space at a given moment ($B = f(S)$). To this also belong all those facts at the boundary points which influence the person at the present moment but which themselves owe their existence partly to alien events. In so far, therefore, the task of deriving the behavior B from the totality of S remains unchanged and has not lost anything of its psychological character. In so far

² Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 4.

³ Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 31.

there is no formal difference between psychology and physics. The difference consists in the fact that there are no boundary points in the physical world which depend on non-physical factors.⁴

In his Principles of Topological Psychology Lewin states, "Even if all the laws of psychology were known, one could make a prediction about the behavior of a man only if in addition to the laws the special nature of the particular situation were known."⁵ He viewed experimentation as deliberate creation of pure cases.⁶ His purpose seems to be to discover the laws of the pure case; laws whereby a given life space inevitably produces a certain behavior. His terms topological and vector imply two steps in his purpose -- first to describe positional relationships and second to find the causal characteristics of each fact. He interpreted the goal of psychology as that of discovering laws and predicting individual cases.⁷ His approach brings laws and single occurrences into intimate relationship.

In his situational, as opposed to historical, approach to motivation, Lewin seems to imply that, if we could correctly conceptualize ahistorical situational factors deter-

⁴ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Helder (McGraw-Hill Book Company, Inc., 1936), p. 74.

⁵ Ibid., p. 9.

⁶ Ibid., p. 10.

⁷ Ibid., p. 9.

minative of behavior, we could manipulate contemporaneous situational factors and educe the behavior desired. Behavior is explained not in physicalistic terms but in that which exists for the person. Topological and vector psychology strives to be objective through being subjective in describing conditions as they exist for the person.

The gap between general laws and individual differences is bridged by Lewin's "constructive method."

The essence of the constructive method is the representation of an individual case with the help of a few "elements" of construction. In psychology, one can use psychological "position," psychological "forces," and similar concepts as elements. The general laws of psychology are statements of the empirical relations between these constructive elements or certain properties of them. It is possible to construct an infinite number of constellations in line with those laws; each of those constellations corresponds to an individual case at a given time. In this way, the gap between generalities and specificities, between laws and individual differences, can be bridged.⁸

The main desiderata for an efficient empirical theory are: (1) constructs which (a) are linked to observable facts (symptoms) by a so-called operational definition or by a number of operational definitions corresponding to the possibilities of observation under different circumstances; and constructs which (b) have clearly defined conceptual properties. These properties are coordinated to certain mathematical (logical) concepts.⁹

⁸ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II, (Chicago: The University of Chicago Press, 1942), p. 216.

⁹ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 794.

Lewin defines a construct as

A dynamic fact which is determined indirectly as an "intervening concept" by way of "operational definition." A construct expresses a dynamic interrelation and permits, in connection with laws, the making of statements about what is possible and what is not possible.¹⁰

Lewin berates attempts at pure empirical science without theories or concepts. He states that any science which deals with causation employs intermediate concepts. These intermediate concepts are

Names for facts which cannot be directly perceived but which are properties representing certain types of reaction or behavior. The existence of such states cannot be directly "seen," but must be demonstrated by "manipulation."¹¹

He contends that "dynamic constructs have been unavoidable in any worth while psychology"¹² and thus they should be introduced in a deliberate and orderly fashion instead of permitted to slip in secretly, unrecognized, and uncontrolled. His position is that the sole purpose of constructs is that of deriving scientifically the observable processes which one might want to explain or predict.

Lewin assumes a single universe of material. On the other hand, he sees the sciences as dealing with problems

¹⁰ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (New York: McGraw-Hill Book Company, Inc., 1936), p. 213.

¹¹ Kurt Lewin, The Conceptual Representation and the Measurement of Psychological Forces (Durham, N.C.: Duke University Press, 1938), Vol. I, No. 4, Serial No. 4, p. 11.

¹² Ibid., p. 12.

rather than materials and thus visualizes different universes of discourse of constructs and laws.

As far as I can see the solution lies in the direction (a) that a science should be considered a realm of problems rather than a realm of material; (b) that the different realms of problems might necessitate different universes of discourse of constructs and laws (such as those of physics, aesthetics, psychology, and sociology; and (c) that any one of them refers more or less to the same universe of material.¹³

Dynamic questions now claim the center of interest in both theoretical and applied psychology. Dynamic questions are questions about the why.

In order to answer these questions it is necessary to find out the laws which control psychological events. This means that one must determine under which conditions the different kinds of psychological events occur and what effects they have.¹⁴

Although Lewin assumes that the fundamental Gestalt laws are equally valid for both sciences -- physics and psychology -- and that within limits there is formal correspondence between the dynamic concepts of physics and psychology, he makes a distinction between the sciences of physics and psychology not on the basis of the dichotomy of physical and mental but of the difference between physics and biology.

¹³ Kurt Lewin, "Field theory and experiment in social psychology: Concepts and methods." American Journal of Sociology, 44: 868-896.

¹⁴ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 9.

We must emphasize that not only psychological facts but also the "bodily" biological facts do not belong to the physical space. This makes it clear that in the following when we speak of psychological regions, forces, or changes, we are not dealing with figments of the imagination but with facts which have the same reality and kind of existence as biological facts in general.¹⁵

Lewin assumes that a psychological force is as real as any other kind of dynamical construct in psychology and as real as a physical force. The concept of force used in psychology is fundamentally the same as that used in physics. Still, the laws governing forces in psychology might be very different from those governing forces in physics.¹⁶

It is insisted that sciences like psychology should be free to use types of constructs that are found most adequate for handling their own problems. These new sciences should not be obliged to use constructs of another science -- physics -- merely because popular metaphysics apply true reality to physical entities only.¹⁷ The use of spatial concepts in psychology treats psychology mathematically but does not imply physicalism. Lewin warns against interpreting

¹⁵ Kurt Lewin, "Field theory and experiment in social psychology: Concepts and methods." American Journal of Sociology, 44: 868-896.

¹⁶ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (New York: McGraw-Hill Book Company, Inc., 1936), p. 67 ff.

¹⁷ Kurt Lewin, "Field theory and experiment in social psychology: Concepts and methods." American Journal of Sociology, 44: 868-896.

his theory as a method of representing psychological problems in physical terms. Lewin thus, in contrast to realism, recognizes a dynamic feature of man. In the study of biology and psychology he assumes the possibility and likelihood of biological and psychological truths which need not conform to the truths of physics.

Although certain aspects of Lewin's method of acquiring truth are in harmony with the method of pragmatism, nevertheless there is always a realistic purpose behind the method. In his study of group dynamics he approaches social science with the assumption that its method is not basically different from methods of other sciences but that it is not identical with physics or any other one science.

I am persuaded that it is possible to undertake experiments in sociology which have as much right to be called scientific experiments as those in physics and chemistry. I am persuaded that there exists a social space which has all the essential properties of a real empirical space and deserves as much attention by students of geometry and mathematics as the physical space, although it is not a physical one. The perception of social space and the experimental and conceptual investigation of the dynamics and laws of the processes in social space are of fundamental theoretical and practical importance.¹⁸

I am persuaded that scientific sociology and social psychology based on an intimate combination of experiments and empirical theory can do as much, or more, for

¹⁸ Kurt Lewin, Resolving Social Conflicts. Selected papers on group dynamics (New York: Harper & Brothers, 1948), p. 71.

human betterment as the natural sciences have done. However, the development of such a realistic nonmystical social science and the possibility of its fruitful application presuppose the existence of a society which believes in reason.¹⁹

Institutions interested in engineering, such as the Massachusetts Institute of Technology, have turned more and more to what is called basic research. In regard to social engineering, too, progress will depend largely on the rate with which basic research in social sciences can develop deeper insight into the laws which govern social life. This "basic social research" will have to include mathematical and conceptual problems of theoretical analysis. It will have to include the whole range of descriptive fact-finding in regard to small and large social bodies. Above all, it will have to include laboratory and field experiments in social change.²⁰

"The task of scientific research is, however, to determine the dynamic characteristics of the facts themselves."²¹ The constant assumption back of Lewin's scientific efforts seems to be that the aim of science is to picture reality -- an objective psychological science of man. He, like a realist, sees his procedures as "a method of successive approximation."²²

Lewin varies from many realistic psychologists (a) in his emphasis upon explanation in terms of relations, (b) in his great devotion to a constructive method in which his

¹⁹ Ibid., p. 83.

²⁰ Ibid., p. 203.

²¹ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 79.

²² Ibid., p. 6.

constructs are defined according to logical content as well as operationally, and (c) in his method of perceptual inference from direct facts as contrasted with deduction from data. Behavior is described, not in physicalistic terms but in terms of that which exists for the person. To be objective one must be subjective. He must get at the conditions as they exist for (P) person. His analysis starts with a situation as a whole and his psychological approach centers his interest in the dynamic aspects of events.

Lewin assumes that truth consists of the findings of experimental research. He acknowledges that the products of research, at any stage, need not be ultimate truth in order to be true. He assumes, however, that the truth is there to be found -- that there is such a thing as ultimate truth. He thus agrees with realism in thinking of truth as an accurate report of ultimate reality (page 42). He emphasizes objective facts to the point that they become ultimate reality, the accurate report of which represents truth in his system. Experiments, as with Breed in realism (page 48), are merely arrangements which make accurate and adequate observation possible. The three levels of realistic science (pages 46-47) are all posited by Lewin. It is true that he minimizes the first two -- observation and classification -- yet he does not predicate that all scientific study is in a sense and to some degree a testing of hypotheses, as is the

thesis of pragmatism (pages 72-73). Lewin's approach differs somewhat from that of Breed's realism in that he emphasizes the use of hypotheses, whereas Breed warns that the use of hypotheses must be limited and its results labeled so that hypotheses will not be confused with verified results or truths (page 47).

Lewin, in regard to the nature of truth, is realistic. Implications of his statements which have bearing on the nature of truth correspond to the nature of truth as described by Breed (page 43). He emphasizes use of theories and constructs as a method of arriving at truth, yet he insists that empirical theories are not speculative. He takes them to represent a report on a presumably pre-existent law, as contrasted with representing a human contrivance which happily makes more successful living possible. Pragmatism (pages 72-73) defines truth as proven insight; one which enables us to anticipate behavior with accuracy; hence, to behave wisely. Lewin's definition conflicts with this definition in that his criterion of truth, as in realism (page 43), involves a quality of an idea or proposition referring to a pre-existent reality -- a product of discovery.

Lewin emphasizes that all events are lawful -- including those which occur only once.²³ Psychological phe-

²³ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (New York: McGraw-Hill Book Company, Inc., 1936), p. 10.

nomena are treated as one field governed throughout by the same system of laws.²⁴ He denounces the inadequacy of Aristotelian character of thought, which dichotomizes occurrences into lawful and chance events. An empirical law defines the functional relationship between various facts.

"The laws serve as principles according to which the actual events may be derived from dynamic factors of the situation."²⁵

The laws (that is, the relation between behavior, on the one hand, and the field characterized by certain constructs, on the other, or between various factors determining the field) should be verified by experiment. A law should be accepted as valid only if it is not contradicted by data in any branch of psychology. In this sense, a law should always be general.²⁶

"Laws and definitions are a network of statement which only as a whole can be viewed as right or wrong."²⁷ The general laws of psychology are statements of the empirical relations between constructive elements such as psychological position and psychological force or certain of their properties.²⁸

²⁴ Ibid., p. 9.

²⁵ Ibid., p. 214.

²⁶ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 794.

²⁷ Kurt Lewin, The Conceptual Representation and the Measurement of Psychological Forces (Durham, N.C.: Duke University Press, 1938), Vol. I, No. 4, Serial No. 4, p. 16.

²⁸ Kurt Lewin, "Field Theory and Learning," Forty-First Yearbook of the National Society for the Study of Education, Part II (Chicago: The University of Chicago Press, 1942), p. 216.

The task of explaining behavior then becomes identical with (1) finding a scientific representation of the life space and (2) determining the function which links the behavior to the life space. This function is what one usually calls a law.²⁹

Laws usually are concerned with the relations between various parts of a situation and are independent of the absolute size to a high degree. Without this dependence of laws upon structure rather than upon size, experimentation would be infinitely more difficult.³⁰

Lewin's purpose for science is empirical observation and more observation, pointed toward a goal of complete knowledge of laws of psychology -- relationships in human behavior which, once found, will hold universally when allowance is made for specific situations. It is true that he places great emphasis upon the use of constructs, but their sole purpose (page 178) is to derive scientifically the observable processes which one might want to explain or predict.

In his Principles of Topological Psychology Lewin states, "It would soon prove most unfortunate if one should lose sight of the fact that the main purpose of psychological theories is, after all, to explain reality."³¹ Lewin's

²⁹ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 792.

³⁰ Ibid., p. 796.

³¹ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 22.

statements clearly allude to a reality which a scientist is attempting to discover. He recognizes that psychology today must proceed with a theoretical framework which is not absolutely correct but at the same time he assumes that there is an absolutely correct reality back of psychological laws. "Psychology today can hardly undertake to find a theoretical framework which is sufficiently correct."³² In his Dynamic Theory of Personality he states,

Unconditional General Validity of Psychological Laws. The clearest and most important expression of increasing homogeneity, besides the transition from class to serial concepts, is the fact that the validity of particular psychological laws is no longer limited to particular fields, as it was once limited to the normal human adult on the ground that anything might be expected of psychopaths or of genuises, or that in such cases the same laws do not hold. It is coming to be realized that every psychological law must hold without exception. . . . The thesis of general validity permits of no exceptions in the entire realm of the psychic, whether of child or adult, whether in normal or pathological psychology.³³

Lewin's studies indicate that he prefaced them with an underlying assumption that a body of pre-existent law was there to be known.

The complete representation of even one given situation would presuppose the solution of all psychological problems and the knowledge of all psychological laws.

³² Kurt Lewin, The Conceptual Representation and the Measurement of Psychological Forces (Durham, N.C.: Duke University Press, 1938), Vol. I, No. 4, Serial No. 4, p. 19.

³³ Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), pp. 23 f.

For scientific research the difficulties begin as soon as one tries to represent a "given" situation. A complete representation of one situation would mean that the whole task of psychology is completed. The representation can be made only step by step and its progress must be parallel to the investigation of the dynamic laws.³⁴

Pragmatism escapes the implications of perfectionism -- the idea that there is something "out there" to be known completely -- by defining the purpose of scientific method to develop conceptions which achieve a high degree of capacity to predict (page 72). Lewin emphasizes this capacity to predict, but he is not satisfied to build his entire system of truth on this base. Thus he is not in complete harmony with the pragmatic outlook.

Lewin was not averse to recognition of the existence of universals. His point was that psychology is not far enough developed to achieve them. He seems to shelter no doubt that the absolutely true relationships are there, awaiting discovery.

Lewin recognizes a "foreign hull" of physical and social raw materials which constitute a complex of all non-psychological facts which surround the life space. This non-psychological matrix does not influence behavior directly, but limits behavioral possibilities. The foreign hull is

³⁴ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 82.

constituted of facts which are not subject to psychological laws but which influence the state of the life space.

We cannot avoid recognizing that there are such influences from outside on the psychological life space. That means that there are changes which cannot be derived from the dynamics of the psychological life space even if one assumes strict determinism in psychology and if one has a complete knowledge of the previous situation and of all psychological laws. These changes can only be thought of as influences on the psychological life space which are "alien to psychology."³⁵

His recognition of possible existence of a foreign hull harmonizes with the pragmatic approach to the problem of existence. Pragmatism assumes an object to have an existence of its own, quite independent possibly of a viewer -- part of the viewer's world of effect either potential or actual.

For a pragmatist, reality in terms of intelligent action is taken to be what makes a difference to our behavior; that is, what we make of what comes to us, through our senses or otherwise (page 70). To a realist, reality centers on the content of the physical sciences accepted as objective, as experienced, and as discovered (page 43). An idealist's reality consists of the content of the consciousness of God. It is accepted as revealed (page 16). Lewin displays little if any feeling for the idealist's definition

³⁵ Kurt Lewin, A Dynamic Theory of Personality. Translated by Adams and Zener (New York: McGraw-Hill Book Company, Inc., 1935), p. 70.

of reality. His idea of reality comes close to being pragmatic -- yet because of his definition of truth, it remains cemented in a foundation of realism.

Lewin seems to use the term interaction in two senses; (1) co-operative action and (2) interaction in perception. In most cases he uses the term in the first sense. However, particularly in his later works, he alludes to interaction in perception.

In his Principles of Topological Psychology he states, "An event is always the result of an interaction of several facts. . . . The effect of a stimulus depends in part upon the nature of the surrounding field."³⁶ This idea was developed in contrast to the Aristotelian way of thinking according to which an event was derived from a single object. Lewin derives events from forces and he recognizes "that a force is always the result of the interaction of several facts."³⁷ The concept, psychological field, is used to connote everything which affects behavior at a given time and is represented at that time as part of the field. It also implies that only those facts which are part of the present field can affect behavior.

³⁶ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (New York: McGraw-Hill Book Company, Inc., 1936), p. 33.

³⁷ Ibid., p. 33.

To characterize properly the psychological field, one has to take into account such specific items as particular goals, stimuli, needs, social relations, as well as such more general characteristics of the field as the atmosphere (for instance, the friendly, tense, or hostile atmosphere) or the amount of freedom. These characteristics of the field as a whole are as important in psychology as, for instance, the field of gravity for the explanation of events in classical physics. Psychological atmospheres are empirical realities and are scientifically describable facts.³⁸

Lewin's basic formula, $B = F(P, E)$, states that behavior depends upon the relation or interaction between person and environment and in this respect Lewin's thinking is relativistic. In elaborating and applying this formula, Lewin has studied relationships and has come close to developing a meaning of interaction in perception as formulated by a pragmatist (pages 69-70). In 1945 he recognized that,

Experiments dealing with memory and group pressure on the individual show that what exists as "reality" for the individual is, to a high degree, determined by what is socially accepted as reality. This holds even in the field of physical fact: to the South Sea Islander the world may be flat; to the European, it is round. "Reality," therefore, is not an absolute. It differs with the group to which the individual belongs.³⁹

Here one recognizes a "feel" for interaction as is described under pragmatism (pages 69-70) but at no place in Lewin's writings is this concept fully developed. Several of the

³⁸ Kurt Lewin, "Behavior and development as a function of the total situation." In L. Carmichael edition, Manual of child psychology (New York: Wiley), p. 71.

³⁹ Kurt Lewin, Resolving Social Conflicts. Selected papers on group dynamics. (New York: Harper & Brothers, 1948), p. 57.

works of his last years from time to time do allude to movement toward a pragmatic outlook in regard to the relationship of person and environment.

Lewin constructs scientific reality as interrelationships of conditions rather than isolated objects. His experiments and those of his followers seem to be searching for the relationships behind human behavior. He inveighs against the Aristotelian method of seeking the cause of events in the nature of a single isolated object, and champions finding cause in the relationship between an object and its surroundings.

As far as the content is concerned, the transition from Aristotelian to Galilean concepts demands that we no longer seek the "cause" of events in the nature of a single isolated object, but in the relationship between an object and its surroundings.⁴⁰

Topological and vector psychology thus recognizes that behavior is caused by a number of interdependent facts. Relationships determine events. Causes of phenomena lie in the bipolar relationship of person to environment.

Lewin in his psychology speaks and thinks of relativity, yet he seems to operate in a frame-of-reference of relative absolutes. To him, relationships are to be accepted as objective, as experienced, and as discovered. He does not confine his definition of reality to that which makes a

⁴⁰ Kurt Lewin, Principles of Topological Psychology. Translated by Fritz and Grace Heider (McGraw-Hill Book Company, Inc., 1936), p. 11.

difference to one's behavior. His outlook harmonizes with Breed's in implying the importance of an objective, metaphysical reality beyond that which an individual makes of what is "out there." Bode's outlook conflicts with Lewin's in that, according to his pragmatic outlook, reality is taken to be what makes a difference to one's behavior. Bode recognizes that, as far as intelligent behavior is concerned, a difference is effected, not by what is objectively "out there" but by what an individual makes of what is out there.

Studies made in America by Lewin and his disciples generally fall into a realistic frame of reference. Shying away from philosophy, they fall into a conventional, "scientific" category. Their outlooks are realistic even though they may not have made a careful study of the tenets of realism and do not intend that they should be realistic.

There is in Lewin's works very little, if any, trace of idealism. His absolutism, perhaps, traces back to the German absolute idealism of his early training, but he is persistently careful to avoid implications of mysticism.

Lewin's latest works seem almost pragmatic. His outlook, no doubt, developed into one largely pragmatic, yet he was too busy with experimentation to take time to define carefully a philosophical outlook. It seems that, had he

done this, his philosophy would have had much in common with pragmatism. Such definition of a philosophy would, in turn, probably have colored his attitude toward experimentation.

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