DOCUMENT RESUME

ED 120 037 SO 008 913

AUTHOR Franklin, Barry M.
TITLE Social Perspective and Educational Knowledge: Edward L. Thorndike Reexamined.
PUB DATE Oct 75
NOTE 13p.; Paper presented at the annual meeting of the Southern History of Education Society (Atlanta, Georgia, October 17, 1975)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage
DESCRIPTORS Behavior Theories; *Educational History; Educational Philosophy; Educational Psychology; Educational Sociology; *Educational Theories; Historiography; *Operant Conditioning; Psychological Patterns; *Social Behavior; Social Structure
IDENTIFIERS *Thorndike (Edward L)

ABSTRACT

This paper examines the relationship between educational theorist Edward L. Thorndike's psychology and his social viewpoint. Many of the revisionists in educational history have oversimplified Thorndike's thought by not examining his views from this perspective. Thorndike's educational ideas and practices are reflections of certain fundamental constitutive structures that determine the very character of his thought at many different levels of conceptualization. One of the early behavioralists, Thorndike viewed education as the control of the human being through operant conditioning. This same desire for control permeated his social viewpoint in that he felt only experts such as scientists, lawyers, and businessmen should make decisions for the rest of society. As a consequence, these experts deserved a special and privileged place in society. Education, then, prepared the great mass of the population for their role as followers. Thus, viewing Thorndike's thought from the theoretical and social perspective, his conceptualizing of human behavior in terms of control led inextricably toward designing social institutions that reflected a control orientation. (Author/DE)

Social Perspective and Educational Knowledge: Edward L. Thorndike Re-examined

Barry M. Franklin
Division of Education
The University of South Carolina
at Spartanburg

A paper presented at the annual meeting
of the Southern History of Education Society,
Georgia State University, Atlanta, Georgia,
October 17, 1975

It was fitting indeed that the hundredth anniversary of the birth of Edward L. Thorndike should have been marked by calls from some educators for a revival within contemporary educational practice of Thorndike's psychology, particularly the laws of learning.[1] Yet in another respect the seeming commitment of contemporary American education to social and racial equality makes it difficult to understand the renewed interest in the psychology of an individual who educational historians have long identified with politically conservative and unegalitarian social views.[2]

This anomaly is to be explained in part by the dominant intellectual tradition now prevailing within educational history, revisionism. The revisionists not only in their treatment of Thorndike but of other important educational theorists and practitioners have demonstrated an extreme susceptibility to rest their interpretations on a kind of ad hominem argumentation. They have not been content simply to explain, interpret, and even evaluate the thought of educators such as Thorndike. Rather they cannot seem to resist "finishing off," so to speak, individuals such as Thorndike by labeling them as racists, elitists, and quasi-fascists. They offer us a picture of the history of American education as a conspiracy of evil men, plotting evil deeds for sinister ends. As a consequence revisionist interpretations of our educational past are on the whole less than compelling. They reduce a viewpoint that may in the end have strong theoretical merit to a vulgar, radical rhetoric. This in part explains the growing criticism by other historians of education who argue that the picture which the revisionists are giving us of our educational past is not only too simplistic but in many respects inaccurate.[3]

The difficulty that the revisionists have gotten themselves into can be seen if we look briefly at the nature and character of their studies of Thorndike's thought. For the most part they have ignored his psychology, tacitly letting stand existing interpretations within educational psychology that tend to be favorable or at least uncritical, and have concentrated solely on his social and political viewpoint.[4] One revisionist has, however, treated both Thorndike's psychology and his social viewpoint. But in doing this he treated these two aspects of his thought separately from each other, and thus he failed to link them together.[5] In either case the revisionists have left us, either by default or design, with a dualistic view of Thorndike's thought that sees his psychology independently from his social viewpoint. The problem is that dualisms of this sort, as Dewey warned us about more than seventy years ago, create false divisions of knowledge and action that make "it easier to see conditions in their separateness, to insist upon one at the expense of the other, to make antagonists of them, than to discover a reality to which each belongs."[6] The consequence of such a dualistic view, we believe, is a partial and incomplete picture of the meaning of Thorndike's thought. It does in fact provide the kind of understanding of Thorndike's thought that enables educators to call for a revival of his psychology within educational practice with little or no knowledge of the social ends toward which this psychology is directed.

It is our view that both Thorndike's psychology and his social viewpoint are grounded in and reflect a common meaning or in Dewey's term a common "reality." It is this common meaning rooted in what I will define as an underlying conceptual structure that makes these two aspects of his thought mutually supportive

and consistent. Any complete understanding of Thorndike hinges on our ability to uncover this conceptual structure. The problem facing historians of education is that the field at present lacks the intellectual constructs to establish a connection between Thorndike's psychology and what sociologists of knowledge call his everyday thought, specifically his views on the social and political matters of his day. In this paper we will begin the task of correcting this problem within our historical scholarship by addressing ourselves to the common, underlying meaning of Thorndike's psychology and his social viewpoint. We will first look at certain common features in both his psychology and his social views. We will then turn to two intellectual traditions which historians have traditionally ignored, the sociology of knowledge and critical theory, for possible constructs that will enable us to identify from these common features the underlying conceptual structure which we are concerned about. We will conclude by suggesting the implications of our work for educational history as a field of study.

Psychological Theory and Social Viewpoint

What we are looking for in our attempt to identify the underlying meaning of Thorndike's thought are common features or characteristics within his psychology and his social views that we can relate together. One key characteristic which does seem to pervade all of Thorndike's thinking is that of control.[7] It was this desire for control that brought Thorndike to psychology in the first place. As he argued at the beginning of his career in the published report of his doctoral research, "there can be no moral warrant for studying man's nature unless the study will enable us to control his acts."[8]

The law of effect, the most important of his laws of learning, represented not only an explanation of how learning occurred but also an instrument to control human behavior. In fact the law of effect was one of the earliest formulations of the behavioristic process of operant or instrumental conditioning.[9] Thorndike spoke of this control mechanism as constituting a subsidiary law of learning, which he called the law of associative shifting. In the law of effect Thorndike defined learning in terms of neural connections or bonds between external stimuli in the environment and overt responses on the part of the organism. The connections emerged out of a trial and error process in which certain responses on the part of the organism, brought about by certain stimuli, acted to reward the organism, which Thorndike defined as constituting "satisfaction."[10] Learning occurred for Thorndike when these connections became automatic, that is, according to Thorndike, became habits.[11] In the law of associative shifting, he argued that any response that was connected to a given stimulus could be connected to any other stimulus to which the organism was sensitive. As an example he pointed to the case of one holding up a fish in front of a cat and saying at the same time, "stand up." If the cat was hungry enough, Thorndike argued, he would stand up. After a number of trials, the fish could be discarded, and the cat would stand up on command.[12]

Thorndike viewed this ability to "shift" stimuli and responses as a mechanism of social control. Specifically he argued that the law of associative shifting could be employed in social life to both determine and to change an individual's attitudes and values. He illustrated this quite decisively in pointing out that the law could be employed to "shift hatred from truly odious behavior to perfectly smooth and genial words like progressive, Jew, and labor union."[13]

The same desire for control pervades what we are calling Thorndike's social viewpoint. Thorndike, unlike many of his contemporary educators, did not

develop a systematic and explicit social philosophy. He was throughout his career too preoccupied with his work in psychology to write extensively on social and political matters. But like most of us he held views on the social and political questions of his day. Of particular importance in this respect were his views on the role of the expert in society and the social function of education. Although his ideas on these matters represent more of a tacit personal philosophy than an explicit social theory, they do indicate the social orientation or viewpoint that not only guided his daily life but which he brought to his work as a psychologist and educator.

Thorndike believed that individuals were not generally knowledgeable and skillful, but instead they were narrow specialists or experts in particular areas of competence. Outside of these areas Thorndike believed that individuals knew very little, and were thus what he called "half-educated." Because of the specialized character of knowledge and skill, he felt that it was dangerous for individuals to do all of their own thinking. Their lack of expertise in most areas of life would lead them to accept false or naive solutions to important social problems. As a consequence Thorndike argued that an individual should limit his thinking to those issues and problems that fell within his particular area of competence. Outside of his area of competence, he should seek out the appropriate expert for direction and guidance.[14]

But not all experts were of equal importance for Thorndike. Of paramount importance were what he viewed as men of affairs, particularly scientists, businessmen, and lawyers. These were individuals who Thorndike believed not only exhibited expertise, a trait which most individuals exhibited in some area of life, but in addition, intelligence. They were, he argued, not only more intelligent but more moral, more dedicated to their work, and more willing to apply their talents to the benefit of the larger society than were the majority of the population.[15] As a consequence Thorndike argued that these experts deserved a special and privileged place in society. He believed, for example, that political and social influence should be concentrated in the hands of these intelligent experts. Toward that end he favored doing away with the practice of counting each vote in political elections equally. He called instead for a weighted system of voting that would favor the so-called most intelligent members of society. He also suggested the creation of boards of trustees throughout the nation composed of those of high intelligence to select candidates for political office.[16]

Thorndike turned to education as the vehicle to institutionalize his social vision. That is, education had the twofold purpose of preparing the most intelligent members of society for social and political leadership while preparing everyone, but particularly what he thought of as the great mass of the population, for what he called "following." Education for "following" represented Thorndike's solution to the problem of the "half educated" man. Its function was to get individuals to submit themselves to the leadership of experts by teaching them whom to trust and what to believe outside their narrow sphere of competence. As such education for Thorndike constituted an instrument of social control. He indicated this most clearly when he pointed out in defining the notion of "following" that "we must all learn to accept in many lines doctrins which we cannot evaluate or even understand, and persons whose thoughts and ways are alien to us or even distasteful."[17]

Social Perspective and the Sociology of Knowledge

Having established the desire for control as well as the search for a mechanism of social control as a common characteristic of both Thorndike's psychology

and his social viewpoint, we can proceed with the task of establishing a linkage between these two aspects of his thought. One scholar within the field concerned with this very same issue, has gone beyond traditional modes of historiography and turned to the perspective of the sociology of knowledge for guidance.[18] In this respect the work of the sociologist and philosopher, Alfred Schutz, on what he calls "multiple realities" is quite suggestive. Schutz argues that as individuals our experience of the world is not of one reality but of several realities, each with its own meaning. That is, reality not only includes the meaning we give to the everyday world of our immediate physical experience but also to the meaning we find in the world of imagination, the world of dreams, and the world of scientific theory. In order to emphasize that these realities represent the meanings we give to our experiences, Schutz calls them "provinces of meaning":

> Each province of meaning--the paramount world of real objects and events into which we can gear our actions, the world of imaginings and fantasms ... the world of dreams, the world of scientific contemplation--has its particular cognitive style. It is this particular style of a set of our experiences which constitutes them as a finite province of meaning. All experiences within each of these worlds are, with respect to this cognitive style, consistent in themselves and compatible with one another (although not compatible with the meaning of everyday life).[19]

In pointing out that each of these "provinces of meaning" has its own cognitive style, Schutz seems to be suggesting that individuals conceptualize at several related levels, the point we are making in talking about a relationship between Thorndike's psychology and his social viewpoint.

For Schutz there are linkages between these "provinces of meaning." He argues that of these provinces the world of daily life represents the individual's most important experience of reality. It is the reality of his physical existence, and as such it defines the possibilities and limits of human action.[20] All of the other provinces for Schutz are to be viewed as a variant of the world of daily life. As such these provinces "...are merely names for different tensions of one and the same consciousness, and it is the same life, the mundane life, unbroken from birth to death, which is attended to in different modifications."[21]

In defining the idea of "multiple realities," Schutz pays particular attention to the linkage between the levels of thought that we are concerned with in our examination of Thorndike. He identifies a relationship between what he calls the "common-sense" thought of the individual in the everyday world and the theorizing of the same individual as a social scientist in the world of "scientific contemplation," a distinction that is similar to the one we are making between Thornsike's social views and his psychological theory. It is Schutz's belief that the theorizing of the individual as a social scientist is rooted in the "common-sense" thought of his everyday life.[22] Expanding Schutz's point, the sociologist, Jack Douglas, has argued that the relationship between social science theorizing and "common-sense" thought leads the social scientist to use his theory to reflect the same meanings he holds in his daily life. As Douglas points out, many social scientists, particularly those within the positivistic tradition of Comte and Durkheim, have "...bootlegged common sense meanings into their object-like data and theories and created an 'as if' science of man."[23]

The perspective of the sociology of knowledge, however, is only partially helpful in identifying the linkage between these two aspects of Thorndike's

thought. The problem is with the view within this perspective that everyday thought represents the supreme reality of which all other thought is a simple variation. Such a view begs the question of false consciousness. It ignores the possibility that the subjective interpretations of individuals that constitute their everyday thought can be ideologies rooted in meanings which themselves are subject to further examination and interpretation. We are left with the acceptance of everyday thought as the most accurate interpretation of things without any inquiry as to a possible, non-ideological meaning of everyday thought itself.[24] This perspective then only takes us halfway in our search for a common grounding to human thought. Schutz leads us to the acceptance of the fact that there are various levels of thinking that parallel the levels we are concerned about in our examination of Thorndike. But in discussing the relationship between these levels of conceptualization Schutz does not go beyond telling us that social science thought reflects everyday thought. As such we do not learn much about the meaning of everyday thought itself and how that meaning is manifested in social science theorizing.

What is missing in the perspective of the sociology of knowledge is a view of an underlying constitutive structure that is common to one's theory and to one's everyday thought, in the case of Thorndike his psychology and his social views. We should point out that when we describe what we are looking for as a structure we come close to making what Ryle calls a "category mistake." That is, in conceptualizing this common grounding as a structure we act to reify an aspect of our mental life such that it seems to be an actual physical object.[25] This of course is not our intent. Despite the limitations of language we are in fact talking about a hypothetical construct and not a physical object. With this in mind we can turn to the notion of a "root metaphor" as developed by the philosopher, Stephen Pepper, as suggestive of the kind of structure we are looking for. Pepper's concern is with the nature of the explanations or hypotheses we develop for interpreting worldly phenomena. What distinguishes these explanations or hypotheses from each other is an underlying element, the "root metaphor." It is this structure that provides each type of hypothesis with its own lens for viewing and interpreting reality:[26]

> A man desiring to understand the world looks about for a clue to its comprehension. He pitches upon some area of commonsense fact and tries if he cannot understand other areas in terms of this one. This original area becomes then his basic analogy or root metaphor. He describes as best he can the characteristics of this area, or, if you will, discriminates its structure. A list of its structural characteristics becomes his basic concepts of explanation and description. We call them a set of categories. In terms of these categories he proceeds to study all other areas of fact whether uncriticized or previously criticized. He undertakes to interpret all facts in terms of these categories.[27]

The machine, for example, is the "root metaphor" for what Pepper calls mechanistic explanations, while the historic event is the "root metaphor" for what he calls contextualistic explanations.[28] In a sense then the notion of a "root metaphor" represents the assumptions that underlie our theories and explanations about worldly phenomena.[29] What we need in our investigation of Thorndike is a similar constitutive structure to that of Pepper's, but one that specifically underlies and links one's theorizing to one's everyday thought.

Social Perspective and Critical Theory

Such a construct is to be found in a similar but intellectually more radical perspective than that of the sociology of knowledge, the German school of social thought known as critical theory. Of particular importance within this tradition is the notion of "interest" as developed by the German social theorist, Jürgen Habermas. "Interest" refers to the basic orientation of human activity, be that activity work, social interaction, or thought.[30]

In developing this idea, Habermas identifies three specific "interests" that can underlie human activity: an "interest" in technical control that reflects the commitments of the natural sciences and positivistic social sciences toward certain knowledge and prediction: a practical "interest" which reflects a commitment toward understanding and interpreting meaning as embodied in historical explanation and hermeneutics; and an emancipatory "interest" which reflects a commitment toward self-reflection, a process that serves to free the individual from naturally and socially predetermined forms of external control and domination.[31] This notion of interest is important to us because it is a construct that underlies and links the categories that we are concerned with in our examination of Thorndike.[32] "Interest," according to Habermas, provides a linkage between knowledge and action. He makes this point in talking about the manifestation of technical control and practical "interests" in forms of action, which he refers to respectively as instrumental and communicative action:

> The conditions of instrumental and communicative action are also the conditions of the objectivity of possible knowledge. They establish the meaning of the validity of nomological and hermeneutic statements respectively. The embeddedness of cognitive processes in life structures call attention to the role of knowledge-constitutive interests: a life structure is an interest structure. Like the level on which social life reproduces itself, however, this interest structure cannot be defined independently of those forms of action and the pertinent categories of knowledge. At the human level, the interest in the preservation of life is rooted in life organized through knowledge and action. Thus knowledge-constitutive interests are determined by both factors. On the one hand, they attest to the fact that cognitive processes arise from life structures and function within them. On the other hand, however, they also signify that the form of socially reproduced life cannot be characterized without recourse to the specific connections of knowing and acting.[33]

When we speak of "interest" in terms of human knowledge, we are talking about the mode of theorizing that engenders that knowledge. An American exponent of critical theory, Trent Schroyer, has identified three modes of theorizing to obtain knowledge, each reflecting one of the "interests" posited by Habermas: strict science rooted in a technical control "interest"; hermeneutic science rooted in a practical "interest," that is, an "interest" in understanding; and critical science rooted in an emancipatory "interest."[34] In terms of human action, Habermas speaks of two behavioral systems that historically have guided forms of social organization. One is purposive-rational action or instrumental action, a system governed by technical rules derived from empirical knowledge. A second system is symbolic interaction or communicative action, which is

governed by a reciprocal agreement to a common normative pattern. These two behavioral systems are rooted respectively in "interests" in technical control and in understanding, which Habermas also designates as open communication.[35] Not only do these two behavioral systems represent modes of action in organizing society, they also represent ideas about how society should be organized. As such these behavioral systems constitute knowledge about society. Thus when we speak of "interest" being manifested in knowledge and action, we are not speaking of forms of expression that are so radically different. To overcome any tendency to exaggerate what appears to be a difference, we prefer to talk about them both as examples of human thought. We will refer to the knowledge component of "interest" as thought at a socio-political level.

The same "interests" thus appear to underlie human activity, in this case human thought, at two levels of conceptualization. Because of this we can think of the notion of "interest" as defining the commonalities of activities at these two levels. That is, roughly speaking we can conceptualize strict science as a form of theory analogous to the behavioral system of purposive-rational action, while hermeneutical and critical science are analogous to the behavioral system of symbolic interaction. We can then use the construct of "interest" to connect ideas at a theoretical level with ideas at a socio-political level. And because the notion of "interest" reveals the fundamental orientation of activity at these two levels, its use will allow us to interpret their common, underlying meaning.

With respect to Thorndike, we can talk about his psychology as representing his thought at a theoretical level and his social viewpoint, his ideas on how society should be organized and governed, as his thought at a socio-political level. In making this connection between these two aspects of his thought the relationship between his desire for control as manifested within his psychology in the law of effect and his desire for control as exhibited in his notion of education for "following" becomes clear. The desire for control at both levels of his thought reflects the commitment to prediction and certain knowledge which Habermas describes as constituting an "interest" in technical control. That is, within the law of effect Thorndike seems to be attempting to establish predictability and certainty in our understanding and description of human behavior. And in his idea of education for "following" he seems to be attempting to establish certain technical rules for assuring certainty about social and institutional relationships. As such it is our view that both Thorndike's psychology and his social viewpoint are both grounded in an underlying "interest" in technical control.

Adopting the notion of "interest" not only allows us to connect both aspects of Thorndike's thought, it also allows us to define their meaning, specifically their common underlying meaning. Habermas maintains that an "interest" in technical control manifests itself at a socio-political level in a justification of authoritarianism and repression. This is the case because such an "interest" in guiding systems of social organization does not provide for what we have called, in another paper, reciprocity. That is, in systems of social organization grounded in a technical control "interest," the social system and its norms are not seen to emerge out of mutual adjustments amont interacting individuals through the building up of shared expectations, expectations that represent the input and agreement of all parties to the interaction.[36] In these systems of organization the question of the creation of the social system and its norms is ignored. The social system is viewed as pre-given. The concern is with the most efficient and predictable means of socializing the individual to a pre-established normative pattern. As such a behavioristic mechanism of conditioning and not reciprocal adjustment becomes the prime mechanism of socialization.[37]

We can see the seeds of repression and authoritarianism within Thorndike's thought in his desire to concentrate political and social power in the hands of the so-called intelligent expert, while limiting the role of the mass of the population to "following," that is, to the pursuit of certain narrow, technical specialties. Under such a system of social organization the mass of the population would become mere technical functionaries, dependent on and subservient to the will of a small segment of society holding political power. Education in terms of Thorndike's social vision becomes a politically conservative instrument of social control for what we might call exploitative ends, ends that promote the privileges of the few at the expense of the needs and desires of the many.

The notion of "interest" also provides us with a further insight about the relationship of thought at various levels of conceptualization. We have argued that at a socio-political level systems of social organization grounded in a technical control "interest" employ conditioning as the prime instrument of socialization. Thorndike, we have seen, developed just such an instrument of conditioning at the theoretical level in his law of effect. It would thus seem that the law of effect represented the mechanism of social control at the theoretical level which Thorndike would need at the socio-political level to institutionalize the leadership of the intelligent expert and followership of the majority of the population. This would suggest that there is an interactive relationship between thought at these two levels. From our use of the notion of "interest" to interpret Thorndike's thought it would appear that the institutional arrangements we support are rooted in the ways in which we talk about and conceptualize human behavior. That is, conceptualizing human behavior in terms of control, leads us, it seems, inextricably toward designing social institutions that reflect the same control orientation.[38]

Critical theory, specifically Habermas' notion of "interest," offers us the construct we need to overcome the existing weakness in our historical scholarship that has left us with the kind of dualistic viewpoint that Dewey so aptly warned us about. The notion of "interest" provides us with the conceptual structure we need to link Thorndike's psychology with his social viewpoint and to define the common, underlying meaning of his thought.

Implications for Educational History

Notwithstanding our criticisms of the revisionists, we must give them credit in that their focus on the function of American schooling and educational thought as instruments of social control has injected a sense of reality and honesty into our historical scholarship. But in limiting, as we have said, their attention to what we have called the socio-political level, the revisionists have not been able to do more with the idea of social control than to talk of it in terms of the private, evil motivations which certain individuals have brought to the task of constructing our educational institutions. Now while this view may be helpful in aiding the revisionists in their attempt to debunk traditional interpretations of certain key historic individuals and events, it does, as we have argued, make them susceptible to ad hominum argumentation. But more importantly, perhaps, it limits the ability of these historians to develop an adequate understanding of the roots of the idea of social control and how that idea has come to be sedimented into our educational thought and practice.

Such an understanding of not only the idea of social control but of other ideas that have influenced the development of our educational thought and practice

require us to go beyond simple conspiratorial views of history. They require that we recognize that our educational ideas and practices are reflections of certain fundamental constitutive structures that determine the very character of human thought at many interrelated levels of conceptualization. What is needed if the field of educational history is to obtain a complete and adequate interpretation of our educational past are intellectual efforts, of which this paper is hopefully a contribution, at the identification of constructs, such as the notion of "interest," that will allow us to go to the very roots of the ideas that have influenced American education and to uncover these constitutive structures.

FOOTNOTES

1. Mary Alice White, "The Mind Does Not Do Something for Nothing," Teachers College Record LXXVI (February, 1975), pp. 461-75; W. J. McKeachie, "The Decline and Fall of the Laws of Learning," Educational Researcher, III (March, 1974), pp. 7-11.

2. Merle Curti, The Social Ideas of American Educators (Totowa, New Jersey: Littlefield, Adams, and Company, 1959), chapter 14; Clarence Karier, "Elite Views on American Education," in Education and Social Structure in the Twentieth Century, ed. by Walter Laquer and George L. Mosee (New York: Harper Torchbooks, 1967), pp. 150-55.

3. See R. Freeman Butts, "Public Education and Political Community," History of Education Quarterly XIV (Summer, 1974), pp. 170-71; J. Christopher Eisele, "John Dewey and the Immigrants," History of Education Quarterly XV (Spring, 1975), pp. 67-85.

4. Clarence, Karier, Paul Violas, and Joel Spring, Roots of Crisis (Chicago: Rand McNally, 1973), chapters 1, 6. "Elite Views of American Education," loc. cit.

5. Walter Feinberg, Reason and Rhetoric: The Intellectual Foundations of Twentieth Century Liberal Educational Policy (New York: John Wiley and Company, 1975), pp. 58-71.

6. John Dewey, The Child and the Curriculum (Chicago: University of Chicago Press, 1902), p. 4.

7. Barry M. Franklin, "The Curriculum Field and the Problem of Social Control, 1918-1938: A Study in Critical Theory," unpublished Ph.D. Dissertation, University of Wisconsin-Madison, 1974, chapter 5.

8. Edward L. Thorndike, Animal Intelligence (New York: Macmillan Company, 1911), pp. 15-16.

9. Geraldine Joncich, The Sane Positivist (Middletown: Wesleyan University Press, 1968), pp. 347-53, 415-16; Morton Deutsch and Robert M. Kraus, Theories in Social Psychology (New York: Basic Books, 1965), p. 79.

10. Edward L. Thorndike, The Psychology of Learning, Vol. II of Educational Psychology, 3 Vols. (New York: Arno Press, 1969), p. 10; Animal Intelligence, op. cit., p. 244.

11. Edward L. Thorndike, The Elements of Psychology (New York: A. G. Siler, 1905), pp. 14, 16.

12. The Psychology of Learning, op. cit., p. 15.

13. Ibid., p. 31.

14. Edward L. Thorndike, "The Psychology of the Half-Educated Man," Harpers Monthly Magazine, CIL (April, 1920), pp. 666-670.

15. Edward L. Thorndike, Human Nature and the Social Order, ed. and abridged by Geraldine Joncich Clifford (Cambridge: MIT Press, 1969), pp. 33-34, 38, 2890290, 337.

16. Ibid., pp. 292, 294-95; Edward L. Thorndike, Selected Writings from a Connectionist's Psychology (New York: Appleton-Century Crofts, 1949), pp. 338-39.

17. Edward L. Thorndike, "How May We Improve the Selection, Training, and Life Work of Leaders?" in How Should a Democratic People Provide for the Selection and Training of Leaders in the Various Walks of Life (New York: Teachers College Press, 1938), p. 41.

18. See Russell Marks, "Lewis M. Terman: Individual Differences and the Construction of Social Reality," Educational Theory XXIV (Fall, 1974), pp. 336-55.

19. Alfred Schutz, "Symbol, Reality, and Society," in Collected Papers I: The Problem of Social Reality, ed. by Maurice Natanson (The Hague: Martinus Nijhoff, 1973), p. 341.

20. Ibid., p. 343.

21. Alfred Schutz, "On Multiple Realities," in Ibid., p. 258.

22. Alfred Schutz, "Common-Sense and Scientific Interpretation of Human Action," in Ibid., p. 6.

23. Jack Douglas (ed.), Understanding Everyday Life (Chicago: Aldine Publishing Company, 1970), p. ix; see also Jack Douglas, American Social Order (The Free Press, 1971), chapter 2.

24. Albrecht Wellmer, Critical Theory of Society, trans. by John Cumming (New York: Seabury Press, 1971), p. 33; Trent Schroyer, The Critique of Domination (New York: George Braziller, 1973), pp. 267-68 (footnote 22).

25. Gilbert Tyle, The Concept of Mind (New York: Barnes and Noble, 1949), chapter 1.

26. Burkhart Holzner, Reality Construction in Society (Cambridge: Schenkman, 1968), p. 49.

27. Stephen C. Pepper, World Hypotheses: A Study in Evidence (Berkeley: University of California Press, 1951), p. 41.

28. Ibid., pp. 186, 232.

29. Max Black, Models and Metaphors (Ithaca: Cornell University Press, 1964), pp. 239-41.

30. Habermas defines "interest" as follows: "I term interests the basic orientations rooted in specific fundamental conditions of the possible reproduction and self constitution of the human species, namely work and interaction." Jurgen Habermas, Knowledge and Human Interests, trans. by Jeremy J. Shapiro (Boston: Beacon Press, 1971), p. 196; see also p. 313.

31. Ibid., pp. 306-17.

32. Jurgen Habermas, Theory and Practice, trans. by John Viertel (Boston: Beacon Press, 1973), p. 9.

33. Knowledge and Human Interests, op. cit., p. 211.

34. Trent Schroyer, "Toward a Critical Theory for Advanced Industrial Society," in Recent Sociology No. 2, ed. by Hans Peter Dreitzel (New York: The Macmillan Company, 1970), p. 215.

35. Jurgen Habermas, Toward a Rational Society: Student Protest, Science, and Politics, trans. by Jeremy J. Shapiro (Boston: Beacon Press, 1970), pp. 91-93.

36. Ibid., p. 57; Barry M. Franklin, "George Herbert Mead, Curriculum Theorist: The Curriculum Field and the Problem of Social Control," a paper presented at the symposium, "Historical Studies within the Curriculum Field," Annual Meeting of the American Educational Research Association, Washington, D.C., April, 1975, p. 11 (ERIC #103-976, Resources in Education, August, 1975).

37. Toward a Rational Society, Ibid., p. 107.

38. I am indebted to Michael Apple for bringing this point to my attention. See Michael Apple, "Rationality as Ideology: An Essay Review of Walter Feinberg, Reason and Rhetoric," Educational Theory, in press.