

THREE STATIC EXPLANATION-LOGICS FOR
DESCRIBING EDUCATION:
PARSONS, SKINNER, AND SMITH

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I. Parsons

This essay will examine passages from Talcott Parsons,¹ B.F. Skinner and Robert G. Smith as analyses of, or "explanation logics" for "education." It will endeavor to show that the explanation-logics are not neutral, scientific or even very descriptive. They assume what they purport to explain; acknowledging them is a political decision—not a "learning of the truth."

To Parsons the application of the general Parsonian functional scheme to education, while specifically referenced to the American University, is identical in substance to Emile Durkheim's socialization and division of labor functions. In the preface to *The American University* written by Talcott Parsons alone, Parsons states that he ". . . had long decided that higher education, including the research complex, had become the most critical single feature of the developing structure of modern societies" (1973:VI). While no immediate reason is given for this belief, it becomes clear that it is based on a Durkheim-like analysis of functions which perpetuate the moral community and advance the division of labor. Durkheim's assumptions with respect to

¹ Anyone who has ever dealt with the works of Talcott Parsons will be aware of the perils of trying to encapsulate his thought in a few selected quotations. To keep this paper short and to the point, it has been necessary to present Parsons' views on the organization of American higher education systems in abbreviated form. This paper is a summary of the arguments which I present in a much larger version entitled "Science and the Politics of Education." Copies of this longer draft are available from the Study Commission on Undergraduate Education and the Education of Teachers, Andrews Hall, University of Nebraska, Lincoln, Nebraska.

those aspects of education which "perpetuate the moral community" and those which "serve the division of labor" are set down in Robert Hanson's essay on Durkheim and Freire (above). The form of Parsons' discussions of the functions of education systems is the familiar LIGA "paradigm."² In going beyond these general functions, Parsons differentiates four functions of the higher education complex, each of which is conceived of as analogous to an industry. Each function (or industry) has a chapter devoted to it in *The American University*.

The first industry is the "general education" industry. It forms the base line from which others are differentiated. The second is the research industry which is concerned with enhancing the cognitive capacity. . . . A third is graduate training of the . . . successors of current academicians.³ A fourth industry . . . (is) the training of practitioners in the applied professions" (1973:5-6). In addition, the university complex also performs a general ideological function which is described as contributing to the "general cultural definition of the situation" (1973:6). However, this role is shared with intellectuals outside the university. The diagram on the next page shows the relationships of each function with the others and with the university complex as a whole.

² Systems theorists and structural-functionalists must define the social system in terms of abstract "functional requisites" which are manifest in every open system. For Parsons all action systems which persist through time do so because they manifest four functions. The "latent pattern-maintenance" or "L" function is a similar function to the one performed by a species' gene pool. The latent pattern is not social structure, but a morphogenetic equilibrium. The "Integration" or "I" function in the social system is the value consensus of moral society. The "Adaptation" or "A" function is analogous to growth with reference to the economy and the division of labor. "Goal attainment" or the "G" function is performed primarily by the state. The university as one of the "fiduciary" systems in society aids in pattern maintenance, while as a persistent sub-system with its own identity, the university also manifests all of the functional requisites of any social system.

³ As the Diagram on the next page shows, Parsons thinks of the graduate training and research functions as combined in the "core" where purely cognitive concerns are primary. When the graduate training and research industry is counted as one, there are four functional categories; if they are counted separately, there are five.

Figure 1. Institutionalization of Cognitive Rationality in the Structure of the University

	Knowledge "for its own sake"	Knowledge "for problem solving"
Institutionalization of Cognitive Complex	(Functions in the division of labor) Research and graduate training by, and of, "specialists"	(Perpetuates the Moral community) Contributions to society by "intellectuals" as "generalists"
Utilization of Cognitive Resources	(Perpetuates the moral community) General education of "citizenry" (especially undergraduates as "generalists")	(Functions in the division of labor) Training of professional practitioners (as "specialists")

(Based on a chart in Parsons, 1973, 92, Fig. 2-8, part b.)

The first function discussed by Parsons is the research function which involves developing new "pure theory and knowledge;" here only cognition is primary. This "knowledge function" is probably the most important, in Parsons' view, not only because it protects "cognitive rationality," but because it allows for the actual reproduction of the university. This section of the university explicitly trains replacements for the current generation of academicians. In functional terms, the core *where cognition is primary* contributes trained academicians to the social system and increased knowledge to the cultural system. This research and graduate training aspect of the

university was not explicitly differentiated by Durkheim. But, in the three quarters of a century since he wrote *The Division of Labor in Society*, this aspect of higher education has become increasingly important, paralleling changes in the division of labor itself. The new requirements of the division of labor, now based on science and technology to an unprecedented degree, led not only to a differentiation and proliferation of academic and scientific disciplines, but also to new requirements for advanced degrees (a phenomenon which Parsons calls "cognitive upgrading") (1973:227).

The second function discussed by Parsons is the general education of the citizen, conceived of as "knowledge for its own sake." This is the familiar socialization function as put forth by Durkheim. In Parsons' own words: "... Undergraduate education focuses on the development of an 'educated citizenry.' Citizenship means, here, the capacities for participation in the societal community with competence and intelligence. Such capacities are grounded at the moral levels of culture and the affective levels of personality" (Parsons; 1973:164165).

The third function is also an aspect of the division of labor, the specific training of professionals. This "industry" was also recently differentiated, as Parsons points out. In the middle third of the nineteenth century, a student would not have distinguished between the functions of graduate training and research, and the functions of the applied professions of law, theology, medicine, and philosophy (Parsons, 1973:225). This "training of professionals" function of the university entails the reproduction of the various professions, and an increase in the knowledge available to them. The professional function here is very similar to the core function. Parsons points to the differentiation of the two functions as an empirical "fact" of the American university, one not found in all university systems, e.g., in the U.S.S.R. there exist separate professional schools apart from the main university complex (Parsons, 1973: 227). While the professional school is part of the *university complex in American education*, the Parsonian scheme differentiates between the two functions because the professions exist outside the cognitive disciplinary lines within the university. That is, physiology and biology are not medicine; physics is not engineering. The second axis of differentiation is that, whereas academic disciplines are primarily concerned with the structure of knowledge which relates to the cultural system, the professions are concerned with the practical application of knowledge to the social needs of its clients (Parsons, 1973:227-228).

The fourth and last function in Parsons' analysis is that of the "cultural definition of the situation" which is performed by "intellectuals" in their role as "generalists." The cultural definition of the situation—along with the professional training and general education functions, connect the academic complex to the concerns of the social system at large.

Parsons uses an interesting analogy in the explanation of "symbolic" media of exchange:

Definition of the situation is parallel to *value-commitments* at the social-system level, that is, in the same sense as intelligence is a generalized medium parallel to money and affect is parallel to influence. In all these cases, at least one difference between the medium at the social-system level and at the level of the general system of action is that certain constraints operating at the social-system level, a sub-system of action, may be conceived to be lifted at the general action level. Thus ... we suggested that "exclusive rights of possession" were central to the property complex at the social-system level and applied to money but that they did not apply to knowledge and the other components of the cognitive complex at the general action level, even though, in the special sense we outlined, intelligence is subject to the general imperative of scarcity (Parsons, 1973:268-269).

The metaphor of knowledge being "parallel" to money is obviously designed to clarify what is meant by a "symbolic media of exchange." However, it can only do this within the academic paradigm. In the Marxist paradigm, the preceding paragraph does not make sense since it relies on a concept of money which Marxists would view as a mystification.⁴

⁴It would make this paper altogether unwieldy to attempt the comparison of the Marxist theory of value and bourgeois political economy. It must suffice to indicate that Parsons' analysis of intelligence and knowledge, etc., as "symbolic media of interchange" rests explicitly on a view of money thoroughly discussed and criticized by Marx. Cf. *The Grundrisse* which has recently been translated into English for the first time (Middlesex, England: Penguin Books Ltd., 1973, translated by Martin Nicolaus) and especially the section on commodities and money in volume one of *Capital* (New York: International Publishers, 1967:35-177). In a nutshell, the Marxist argument is as follows: The

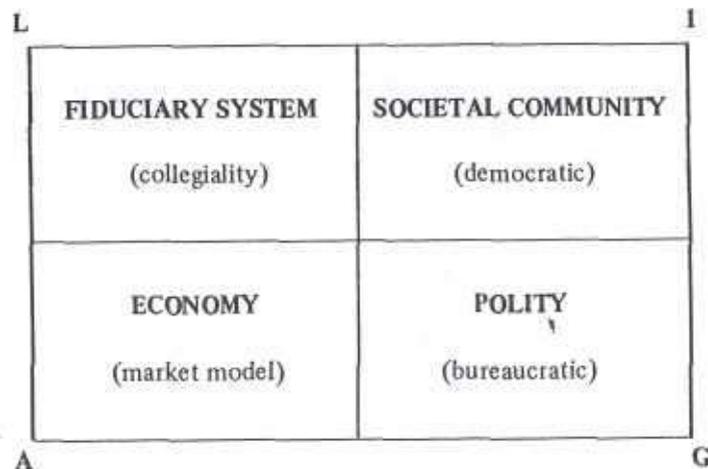
In Parsons' analysis of the American university, he asserts that the dominant structural features are to be found within the division of arts and sciences. Three previous models for analyzing this structure have been proposed by Parsons: (1) the university as bureaucracy where the top administrators make the decisions, faculty carries them out, and the students are conceived as equal citizen-participants; and (3) the university as a structure like the economic marketplace, where knowledge produced by the faculty is consumed by the students (Parsons, 1973:125). In opposing these three inadequate models, Parsons points out that members of academia owe two different allegiances: they have one commitment to their discipline and one to the institution in which they work. The discipline constitutes one market for the academic's output, research findings, scholarly papers, etc., while the institutions constitute the more obvious labor market for professionals in general. Because of this, Parsons refers to the university as a "fiduciary subsystem"—that is, an institution all of whose members bear a "good faith" relation to the other members of their discipline.

The fiduciary component enters because this outside context (to the discipline) symbolizes responsibility to cognitive standards and their implementation through processes of critical evaluation. . . . This, rather than solidarity with the institution or responsibility to student-customers . . . is the main focus of professional status (Parsons, 1973:127).

existence of money as the universal commodity form seems like a physical "law" of the universe. Upon dialectical analysis, however, money reveals its true nature as a social construction: "The price or money-form of commodities is, like their form of value generally, a form quite distinct from their palpable bodily form; it is, therefore, a purely ideal or mental form" (*Capital*, p. 95). When the ideal form of money as the universal commodity form is then treated as a thing-in-the-world, e.g., as a "symbolic media of interchange" it loses its identity as socially constituted to become a form of domination. The word "reification" applies to this technique of treating a human social relation as an independent entity with its own laws of process. That is, a human social relationship between producers is first treated as a relationship between *things* (commodities or "symbolic media of interchange") and then this "law of exchange" is presented in the mystical guise of a natural law. A Marxist would see Parsons' analogy as merely an extension of the "fetishism of commodities" to human mental products. In fact, this extension is what Marcuse calls the one-dimensionalization of the universe of human discourse in *One-Dimensional Man* (Boston: Beacon Press, 1967).

The notion of "fiduciary responsibility" is not merely used by Parsons to describe relationships to the academic discipline and within the university; it also serves as a model for how academia in general works and how it comes to constitute a subsystem of the total social system which is run on different principles. The "fiduciary subsystem," which includes the university, is one of the structures of the social system which lies between the "cultural system" and society, and functions in "latent pattern-maintenance." The following diagram illustrates the place of the "good faith" subsystem within the social system. I have added, in parentheses, the models applicable in the analysis of each subsystem.

Figure 2. Structure of the Social System



(Parsons, 1973:19)

In the social system described in *The American University*, the educational subsystem is not the only fiduciary subsystem. However, it does enjoy

a particularly central position.⁵ The educational system has two axes of fiduciary responsibility. The first is to the "cognitive subsystem" (sometimes referred to as the "rationality system") which is governed by "theoretical codes" (Parsons, 1973:18-19). The other axis of "good faith" responsibility is to the moral community. According to Parsons, it is the duty of the education system to contribute to the sense of community of the society by institutionalizing the common value system. In many respects, then, these fiduciary or "good faith" responsibilities of a university are simply to restate the prerequisites that an education system *must* fulfill with respect to the division of labor (the rationalization of human action) and the socialization necessary to maintain the moral community. People are to be told what their jobs are and "what's right." However, the existence of these two tasks as "good faith" responsibilities has had important structural consequences, in Parsons' view.

That is, Parsons invites us to consider the education system as a microcosmic social system containing functional institutions which are the result of a history of evolutionary changes. One such institution is *academic freedom*, which provides the protective milieu for "good faith" academic work and makes possible the supportive role of the university vis-a-vis student socialization. *Tenure*, a similar institution, functions like kinship to secure broad rights for each of the four estates. Tenure is broadly defined in opposition to simple contractual relations; that is to say, members of any estate have rights which prevent arbitrary termination without just cause. The third institution, collegiality, is the mode of association within and between student bodies,

⁵"Among the various fiduciary complexes in modern society, the academic one carries with it responsibility for the integrity, development, and implementation of knowledge and other components of the cognitive complex. No given mode of knowledge or level of attainment in it is a general property of human beings; therefore, such fiduciary responsibilities are differentiated by both kinds of knowledge and hierarchically by levels" (Parsons, 1973:129-130). Each of the fiduciary subsystems mentioned by Parsons has something to do with *socialization*; consequently, these subsystems occupy protected locations in the social system, e.g., education, religion, the cultural aspects of nationalism, and the kinship system. This protected location insures that "resources with long-run significance to the society can have an opportunity to mature in some kind of insulation from the pressures toward immediate utilization to satisfy practical social exigencies" (Parsons, 1973:150).

faculties, and disciplines, and which governs the relations within the university as a whole. *Collegiality* is related to tenure, since all members of each estate are considered citizen-equals. Thus, a discipline is considered a "stratified collegial association" in which all members have citizen rights and duties, even though a discipline is stratified along lines of possession of intelligence and knowledge, contributions to the written corpus of the discipline, or level of position attained in an academic institution (e.g., junior professor) (Parsons, 1973:364).

The structural patterning we have been discussing calls attention to a criss-crossing between membership in a faculty and department ... (and) an anchorage transcending the particular employing institution. The outcome of simultaneous integration on *both* of these axes is the distinctive associational pattern of collegiality, which has become the pattern not only of any one faculty or department, but of a nationwide academic community (Parsons, 1973:147).

Nevertheless:

Complete institutionalization of the egalitarian principle would be incompatible with the achievement component of the cognitive complex (Parsons, 1973:147).

In summing up Parsons' view of the structure of the education system, it is necessary to focus in on his analysis of stratification. There are, in any functioning social system, many different bases for stratification. Parsons does not pay any central attention to stratification along economic lines. Rather, he maintains that there are several "media of exchange," e.g., status, money, intelligence, etc., each of which is a "scarce resource." Each of these social stratifications "crosscuts" others. And, although in any particular situation one medium of exchange will be determinate, there is no general theoretical determination holding one medium predominant. Thus, where the Marxist perspective focuses on class relations as determining the basic cast of the other social relations within a given mode of production, the academic paradigm views several different bases for stratified social relations.

II. Skinner

One may contrast Parsons with Skinner. There is an enormous difference in epistemological conceptions of science and society in the explanation logics of Skinner and Parsons. Skinner, rejecting Parsons' elaborate critical epistemology and all similar to it, is dogmatically opposed to epistemology itself. The very notion of an epistemology, vital in the Parsonian account, is an unneeded mystification for him. Skinner does not even recognize that there is a "corpus of knowledge." The behavioral world consists entirely of environments which provide stimuli in the form of contingencies of reinforcement, and organisms which have been genetically programmed to selectively respond to these stimuli with behavior. Since this universe consists entirely of observables, the notion of epistemology is unnecessary along with the other mystical and unneeded concepts like "mind" and "memory" (Cf. Skinner, 1968:203-205). Instead of a theory of knowledge, Skinner substitutes a theory of behavior.

It is easy to see that, from these two different views of how we meet experience, will come different pictures of what is experienced. For Parsons, a "fact" is neither part of the subject nor of the object. Facts, the knowledge system, constitute a separate ontological and epistemological entity characterized by internal structures and processes. This knowledge system has objective criteria of validity and subjective criteria of significance. But an interpretive theory of the meaning of knowledge is irrelevant to Skinner because, as a scientist and behaviorist, he restricts himself to questions of validity. He conceives of a "fact" as a particular stimulus-response pair. For Parsons, "facts" are *interpretative*. For Skinner, on the other hand, they are *accomplished, caused*. For Skinner, it is irrelevant that there are meaning relationships between facts. For him, behavior is the only "fact" and all behavior is explained by subsumation under a covering law.

Parsonian structural-functionalism retains a more voluntaristic role for the actor than behaviorism, not only in the recognition of the individual's ability to choose goals and means, but in its recognition of the actor's willful decision to respond to a given situation. Parsons is a voluntarist also in the sense that his system is not reducible to any one level of action; human action cannot be fully accounted for by reference to the stimulus-response mechanism of the organism. For Skinner, the determinist, the Parsonian "levels of action" are only "contingencies of reinforcement" for the organism. Culture, society, and personality are recognizable as themselves manifestations of

human behavior; as behavior they can be controlled and extinguished according to "natural law." Culture, social system, and personality are epistemologically and ontologically identical. All behavior of mice and men is determinate.⁶ Skinner applies his "law" of behavior to such interpretive activity as writing poetry. Even creating poetry is not a willful activity; it is determined. Skinner does not create poetry, and he is not a poet. Skinner has a poem; he is a chicken.⁷ He and the chicken *only* do what they were programmed to do by genetic endowment and environmental contingencies which select traits and reinforce (determine) behavior.

For Parsons, Skinner neither has a poem nor is he a chicken because writing a poem is not simply behavioral learning, and behavioral learning is only one aspect of human learning: "Learning is not merely the acquisition of 'information' (that is, specific items of cognitive orientation) about the properties of the object world; it is also the acquisition of new 'patterns of orientation'" (Parsons, Shils, *et al.*, 1951:12). This definition is both wider and more specific, if less elegant, than Skinner's, and forms a critical distinction between the two modes of explanation. For Skinner (1968:2-5), "acquisition" is an unfortunate "metaphor" for the relationship between organism and environment:

Three variables compose the so-called contingencies of reinforcement under which learning takes place: (1) an occasion upon which behavior occurs, (2) the behavior itself, and (3) the consequences of that behavior (Skinner, 1968:4).

Parsons must agree with Skinner's definition as a limiting case, but the Parsonian analysis of human learning goes beyond this with a different emphasis.

Of fundamental importance in learning is the degree and incidence of generalization which is introduced into the actor's orientations to his object world. Generalizations are modes of

⁶Thus, for Skinner, "Determinism is a useful assumption because it encourages a search for causes." Cf. B.F. Skinner, *The Technology of Teaching* (New York: Appleton Century-Crofts, 1968:171).

⁷As he himself proudly announced in *The Saturday Review*. Cf. B.F. Skinner, "On Having a Poem," *The Saturday Review* (July 15, 1972).

defining the actor's orientations to particular objects of which he has not yet had experience. This entails the categorization of the particular, concrete objects of his situation into general classes. In the acquisition of systems of cultural symbols, generalization is perhaps the most important of the learning mechanisms. As frames of reference, as the content of communication, and as the foci of common orientations, cultural patterns must possess content with a degree of generality which transcends the particularity of all concrete situations and experiences (Parsons, Shils, *et al.*, 1951:12).

But for Skinner (1968:120), the notion of "generalization" adds nothing but "poetry" to the discussion:

When we teach (a child) to press a red button and then discover that he will press an orange button as well, though with lower probability, it adds nothing to say that he has "generalized" from one color to another.

For Parsons, the notion of "generalization" is central to the establishment of the separate levels of personality, social system, and culture which form the structural framework for the voluntarist explanation of human action. Parsons distinguishes certain kinds of generalized learning which are categorized as "socialization." Humans have certain "social-relational needs" as a result of the infant's prolonged state of dependency. "As a result of this dependency, the social-relational context in which viscerogenic needs are gratified or deprived becomes, perhaps, just as important as the intrinsic gratification or deprivation of the viscerogenic needs themselves" (Parsons, Shils, *et al.*, 1951:16-17). It goes without saying that both Parsons and Skinner agree that babies should be cuddled and loved. Skinner would explain this reward system as due to the fact that cuddling is an appropriate contingency of reinforcement to program behavior thought desirable by the parents; Parsons' explanation is that the "message" (content) of education is contained in the medium or "social-relational context." "Becoming a participant in a culture or social system, or acquiring a personality, requires complicated generalizations, e.g., language, or generalized behavior patterns like deferred gratification. These behavior patterns are the product of socialization. "The newly learned generalization is acceptable to the child if the child feels that the adult wants it to do the things in question and that it is loved" (Parsons, Shils, *et al.*, 1951:17).

III. Smith

Whereas Skinner does not provide, except in *Walden II*, for an explanation of total educational institutions either those present or possible, systems theorists who have attended to Skinner have done this work. For example, a rather practical wedding between behaviorism and general systems theory has been achieved by Robert G. Smith in his book *The Engineering of Educational and Training Systems* (Lexington, Massachusetts: Heath Lexington Books, 1971). The significance which Smith attaches to the relationships within education systems and between education systems and their environment is very different from the significance gathered by structural-functional analysis. Smith's synthesis of behaviorism and systems theory is neither subtle nor appealing; however, it is representative of an intention common to both explanation logics—to recreate education systems in a technologically and economically more efficient form. Smith's (1971:5) description of an education system is abstract and general:

An education system is composed of many subsystems. At the heart of the system is the instructional subsystem. However, there are also transportation systems for delivering children to school, cafeteria systems for feeding them, communication systems, and so on. . . . All these systems interact. It is the highest order of system design to keep all these systems from clashing with one another.

Systems do not exist in splendid isolation from each other. They are parts of larger systems, or they interact with and impinge upon (or are impinged upon) by other systems. All this means that it is frequently impossible to design an effective and efficient system without removing some of the constraints within which present systems must operate.... Yet it is quite clear that we know how to design much more effective instruction than we are able to implement. It is constraints which keep us from applying all the knowledge that we have (Smith, 1971:6).

Smith provides an operationalized concept of the education system as it *must* function because of the lawful operation of systems in general. Instead of a description of any concrete education system, Smith offers an ideal description of an imaginary education system. But it is an education system worthy

of *Brave New World*, one without past or future—only outcomes.

Those historical and social facts which Parsons sees as central to the development of the American system of education, traditions, customs, norms, values, etc.—all these are defined by Smith as "constraints" which prevent the implementation of a truly "rational" system. Smith's concern is with order, efficiency and economy, not with the interpretation of social processes. The technological application of systems theory is to design human systems in the same way that computer systems are designed. Efficient systems are designed intentionally along the lines indicated by scientific laws; they are rarely, if ever, the product of accidental historical processes.

Whereas Parsons strongly defends the present structural organization of the American university and includes the four-functions of the university (undergraduate education, graduate training and research, professional training of doctors, lawyers, etc., and the ideological definition of the situation) within a single institution, not because this is the most "efficient" education system, but because this is the education system which *is* the product of socio-cultural evolution, Smith and systems theorists see the very facticity of this unification of functions as the *system's claim* to necessity, but not as the necessity produced by the operation of natural laws. The very *identity* of the American university, according to Parsons, is the set of structures and functions which Smith labels "*constraints*." Tenure, academic freedom, collegiality, lack of rigid criteria of accountability, the departmental organization, research functions, the grading system, etc. are all aspects of the university which Smith claims inhibit the implementation of an efficient and "scientific" system of education. For Parsons, these are some of the aspects of the American university which keep it in a functioning state of morphogenetic equilibrium. Furthermore, disruption of this system of checks and balances in the interest of efficiency is sure to have unintended and potentially destructive consequences for both the education system and the *society-at-large*.

Both Parsons and Smith show that sociological questions about the purpose of the education system must also be questions about the relationship between the education system and the socio-cultural system. Both view the task of the education system as service to the needs of the society. But Smith is concerned with reducing any tension between the two systems by removing constraints:

These system constraints, if identified completely, can serve several useful purposes and it may be possible to relax some of them. They normally arise because the instructional system is imbedded in other larger systems. For instance, there are inevitably a set of laws which have been established to govern the educational or training institution of which the system is a part. . . . Many of the common constraints which have been developed within the American educational system provide barriers to increased educational effectiveness (Smith, 1971:211).

Smith does not, of course, bother to ask what undesirable things would happen once the constraints are "taken away," nor does he pause to ask whether the tension between the university and society may not be useful.

[Walter Buckley, who is a general systems theorist—not a behaviorist or behavioral engineer—provides an alternative view of this relationship. Rather than seeking to reduce "tension" between the educational system and the social system, he views "tension" as beneficial:

Thus it can be argued that, far from seeing any principle of "inertia" operating in a complex adaptive system, with "tension" occurring only occasionally or residually as a "disturbing" factor, we must see some level of tension as characteristic of and vital to such systems though it may manifest itself as now destructive, now constructive (Buckley, 1967:51).

Albeit, "tension," "stress," and "strain" are disturbing and possibly destructive to both individuals and systems; they are viewed in Buckley's scheme as absolutely necessary in providing impetus to action. If the education system is viewed in all its historic potential as a source of change and innovation vis-à-vis the socio-cultural system, a state of tension between the two systems is a necessary and good thing. Smith, in seeking only to reduce tension to an inertial service relationship, denies the possibility of education as an innovative force. A true general systems approach to education would see this tension as an energy and information source to mobilize the socio-cultural system to action.]

In setting goals for the educational system, Smith engages in a diatribe against "vague" non-operationalized objectives. He insists that objectives

must be stated in behavioral (one-dimensional) terms since they facilitate measurement of output and enable "efficiency" to be quantified.⁸ Unfortunately, this results in a closing circle which prevents growth and change, and yields an education system geared to reproduce the existing reality—the same teleological conception which Parsons inherited from Durkheim. To focus on education as a source of change means to state the objectives as concepts without removing their negative potential; it means to be prepared to evaluate efficiency qualitatively rather than quantitatively. This is not to say that objectives must be "vague," but simply that they must be stated two-dimensionally as transcendent concepts. If this, in turn, makes them difficult to measure, then it is necessary to question the measuring techniques. *One should not destroy the potential of education as a "world-creating" activity simply because one's measuring devices are one-dimensional.*

For instance, Smith cites the example of a social science teacher whose stated objective is: ". . . to make my students better citizens so that they can function effectively in our nation's dynamic democracy" (Smith, 1971:24). This is obviously a two-dimensional statement of a goal, yet Smith is unsatisfied and wishes to measure citizenship with a true-false test. He wishes to be able to measure this "general objective" in performance terms. Alternatively, instead of operationalizing "citizenship" to a series of yes-no answers, it might be possible to measure it qualitatively by observing the students' activities in the "real world." If the attempt at measuring the impact of these "good citizens" on "our nation's dynamic democracy" leads to a dialogue among all concerned about what constitutes a "good citizen" or a "dynamic democracy," so much the better.

If we go from Skinner and Smith to the general systems theorists or Parsonians, it is clear that another possible goal of the education system is that of organizing information in the constant process of mapping the internal and external environment. This task of organization is an open-ended creative and cognitive process within every complex adaptive system, and it is a major function of the education system. Of course, the education system must provide students with the already established "maps" of the various environments, but this is only part of the educational objective. Just as

⁸ See his section on "quality control," pages 97-109.

primary is the struggle between various groups with different "maps of reality." There is no single "map" of the human environment accepted by all individuals, and one of the functions of education systems is to provide a milieu for dialogue between these competing names for the world. Out of the dialogues come alternative "maps" which are a continuous source of tension and provide the impetus for changing the environment itself. That this is, in fact, the process of human conceptual development has been well-documented in the history of science. Smith and Skinner ignore this function of education systems; Parsons⁹ downplays it. Both design or argue for education systems as if there were one agreed-upon reality which does not change much; in doing this they deny that the education system and society are complex adaptive systems, and reduce them to the kind of mechanical, equilibria], or morphostatic system which general systems theory attempts to go beyond.

Buckley and general system theory provide another way to discuss this function of education when he states that one major role of the complex adaptive system is the "nurturing of nonpathological deviation and variety as the basic source of the continued critical examination and considered change of the institutionalized structures and value interpretations" (1967: 27). While it is difficult to know what "nonpathological" means in a mode of explanation which claims to have rejected the organic analogy, the implications of this are clear for educational systems. The education system, perhaps more than any other system in society, maintains this pool of deviance and new ideas which prevent the socio-cultural system from tending toward entropy. And the whole legal structure concerned with free speech and academic freedom is designed to allow the maintenance of this academic function, and it serves to protect this pool of deviance from the sanctions of the outside world.¹

⁹It appears that Parsons sees the conflict over competing maps of reality which wracked the universities during the 1960's as potentially destructive both to academic and to the values of American society. This is an ideological perspective, not a scientific finding. Dr. Parsons defines the conflict between structural-functional and Marxist maps of reality as competition between the scientific "truth" of the positivistic "Weltanschauung" and the ideological "misconceptions" of the Marxists.

¹⁰Smith treats the matter of educational efficiency in the manner of most "efficiency experts" concerned with the production of a commodity. He wants to know how to instill a certain amount of quantified knowledge in X number of students, at a

Parsons' model of the American university stands in opposition to those who would restructure education "along purely scientific lines," such as Smith and Skinner. His work is obviously intended to counter the leftist attack on the university; it is also an attempt to "protect against" the behavioral engineers.

Those historical features of the university—tenure, academic freedom and lack of strict accountability, collegial ties between educators and their respective disciplines, the grading system, the association of teaching and certification functions, the research complex and the organization of academic departments—all of these are seen by Parsons as vital to the American education system. But these same structures and functions are seen by both Skinner and Smith as "constraints" which interfere with the development of an efficient technology of teaching. Parsons' fundamental argument is that if these aspects of the education system are removed in the interest of "efficiency," then the entire "fiduciary" structure of the system will be endangered. Moreover, the removal of these "constraints" on the education system threatens to destroy the entire value system of American culture from within. On the other hand, the behavioral engineers argue that if the American system is *to continue, it must provide a more efficient and less constrained system of education.*

The culture which most accurately predicts the problems it will face and most effectively identifies the behavior most likely to solve them will presumably put a technology of teaching to its best use. It will thus maximize its chances of surviving and contributing to the culture of the future. Accidental practices and practices designed for irrelevant reasons have survival value, but the explicit design of a policy with respect to the strength of a culture is more promising (Skinner, 1968:233).

Neither explanation sees itself as having as its obligation the constitution of a different, a more just, or a more democratic society. By eliminating the

minimum cost and in a minimum amount of time. Students, in his view, exist to be trained to fill already existing slots in a society which is fundamentally stable. This seems to be based on a simplistic, static, model of the social system, and does not appear to be true to the social science paradigm known as general systems theory.

possibility, in the ideology of the existence of basic change each also eliminates the possibility of the envisaging of real change through the use of management or governance structures based on, or legitimized by, the ideology.

Conclusion

The claim that behaviorism, behavioristic systems theory, and structural-functionalism are "families" of explanation within the academic paradigm is not meant to minimize the scientific and philosophical differences between these explanation logics. However, the questions of philosophical "truth" and scientific "validity" which have been raised by the existence of these contradictory modes of explanation have no immediate solution. Each explanation logic is what one might call a "pseudo-paradigm." Since it is not possible to resolve these problems once and for all, the academic paradigm has learned to "live with" its contradictions. Each of these approaches to social science is recognized as legitimate, and selections between them occur at the empirical and technological level. Within the academic paradigm and within bourgeois society, the unification of theory and practice is achieved *on a practical technological level*. The focus of the academic social sciences is problem oriented, therapeutic, and technological in its attempts to explain and predict human behavior¹¹. In lieu of a unified social science, selection between these modes of explanation occurs on the situated empirical level: the ability of the explanation logic to "make things work." Thus, the alliance between the "technology of teaching" offered by Skinner and the "engineering" model suggested by Smith, is intended to make education into a scientific

¹¹The explanation of the Marxist concept of praxis, or the unification of theory and practice, to an academic social scientist is usually interpreted as the hypothetico-deductive scientific method. However, this method is frozen into static categories, "the controlled experiment," "prediction and control," etc. The difference between these formulae and "praxis" is that a true praxis is a teleological, hence theoretical, undertaking devoted to human liberation. A technology able to perform spectacular feats "making things work" is a unification of theory and practice, yet it is not praxical unless it can also be demonstrated theoretically and practically that this technology is liberatory and not exploitative. Education has become one such technological unification of theory and practice, and as Paulo Freire observes: "Education is not neutral. It is either a means for liberation or a means of oppression."

and efficient enterprise by providing a model for its complete restructuring. In opposition to this "reform" of education, Parsonian structural-functionalism demonstrates that the traditional values of democratic capitalism and the American education system properly work together and do not require "radical" changes

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