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FUNCTIONAL AND CONFLICT THEORIES OF EDUCATIONAL STRATIFICATION *

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Two theories are considered in accounting for the increased schooling required for employment in advanced industrial society: (a) a technical-function theory, stating that educational requirements reflect the demands for greater skills on the job due to technological change; and (b) a conflict theory, stating that employment requirements reflect the efforts of competing status groups to monopolize or dominate jobs by imposing their cultural standards on the selection process. A review of the evidence indicates that the conflict theory is more strongly supported. The main dynamic of rising educational requirements in the United States has been primarily the expansion of mobility opportunities through the school system, rather than autonomous changes in the structure of employment. It is argued that the effort to build a comprehensive theory of stratification is best advanced by viewing those effects of technological change on educational requirements that are substantiated within the basic context of a conflict theory of stratification.

EDUCATION has become highly important in occupational attainment in modern America, and thus occupies a central place in the analysis of stratification and of

social mobility. This paper attempts to assess the adequacy of two theories in accounting for available evidence on the link between education and stratification: a functional theory concerning trends in technical skill requirements in industrial societies; and a conflict theory derived from the approach of Max Weber, stating the determinants of various outcomes in the struggles among status groups. It will be argued that the evidence best supports the conflict theory, although technical requirements have important effects in particular contexts. It will be further argued that the construction of a

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general theory of the determinants of stratification in its varying forms is best advanced by incorporating elements of the functional analysis of technical requirements of specific jobs at appropriate points within the conflict model. The conclusion offers an interpretation of historical change in education and stratification in industrial America, and suggests where further evidence is required for more precise tests and for further development of a comprehensive explanatory theory.

The Importance of Education

A number of studies have shown that the number of years of education is a strong determinant of occupational achievement in America with social origins constant. They also show that social origins affect educational attainment, and also occupational at-

tainment after the completion of education (Blau and Duncan, 1967:163-205; Eckland, 1965; Sewell *et al.*, 1969; Duncan and Hodge, 1963; Lipset and Bendix, 1959:189-192). There are differences in occupational attainment independent of social origins between the graduates of more prominent and less prominent secondary schools, colleges, graduate schools, and law schools (Smigel, 1964:39, 73-74, 117; Havemann and West, 1952:179-181; Ladinsky, 1967; Hargens and Hagstrom, 1967).

Educational requirements for employment have become increasingly widespread, not only in elite occupations but also at the bottom of the occupational hierarchy (see Table 1). In a 1967 survey of the San Francisco, Oakland, and San Jose areas (Collins, 1969), 17% of the employers surveyed required at least a high school diploma

Table 1. Percent of Employers Requiring Various Minimum Educational Levels of Employees, by Occupational Level.

| National Survey, 1937-38 | | | | | | |
|---|----------------|------------------|---------------|---------------|-----------------|-------------------|
| | Un- skilled | Semi- skilled | Skilled | Cleri- cal | Mana- gerial | Profes- sional |
| Less than high school | 99% | 97% | 89% | 33% | 32% | 9% |
| High school diploma | 1 | 3 | 11 | 63 | 54 | 16 |
| Some college | | | | 1 | 2 | 23 |
| College degree | | | | 3 | 12 | 52 |
| | 100% | 100% | 100% | 100% | 100% | 100% |
| San Francisco Bay Area, 1967 | | | | | | |
| Less than high school | 83% | 76% | 62% | 29% | 27% | 10% |
| High School diploma | 16 | 24 | 28 | 68 | 14 | 4 |
| Vocational training beyond high school | 1 | 1 | 10 | 2 | 2 | 4 |
| Some college | | | | 2 | 12 | 7 |
| College degree | | | | | 41 | 70 |
| Graduate degree | | | | | 3 | 5 |
| | 100% (244) | 100% (237) | 100% (245) | 101% (306) | 99% (288) | 100% (240) |

Sources: H.M. Bell, *Matching Youth and Jobs* (Washington: American Council on Education, 1940), p. 264, as analyzed in Lawrence Thomas, *The Occupational Structure and Education* (Englewood Cliffs: Prentice-Hall, 1956), P. 346; and Randall Collins, "Education and Employment," unpublished Ph.D. dissertation, University of California at Berkeley, 1969, Table III-1. Bell does not report the number of employers in the sample, but it was apparently large.

for employment in even unskilled positions;¹ a national survey (Bell, 1940) in 1937-1938 found a comparable figure of 1%. At the same time, educational requirements appear to have become more specialized, with 38% of the organizations in the 1967 survey which required college degrees of managers preferring business administration training, and an additional 15% preferring engineering training; such requirements appear to have been virtually unknown in the 1920s (Pier-son, 1959:34-54). At the same time, the proportions of the American population attending schools through the completion of high school and advanced levels have risen sharply during the last century (Table 2). Careers are thus increasingly shaped within the educational system.

The Technical-Function Theory of Education

A common explanation of the importance of education in modern society may be termed the technical-function theory. Its basic propositions, found in a number of sources (see, for example, B. Clark, 1962; Kerr *et al.*, 1960), may be stated as follows: (1) the skill requirements of jobs in industrial society constantly increase because

¹ This survey covered 309 establishments with 100 or more employees, representing all major industry groups.

of technological change. Two processes are involved: (a) the proportion of jobs requiring low skill decreases and the proportion requiring high skill increases; and (b) the same jobs are upgraded in skill requirements. (2) Formal education provides the training, either in specific skills or in general capacities, necessary for the more highly skilled jobs. (3) Therefore, educational requirements for employment constantly rise, and increasingly larger proportions of the population are required to spend longer and longer periods in school.

The technical-function theory of education may be seen as a particular application of a more general functional approach. The functional theory of stratification (Davis and Moore, 1945) rests on the premises (A) that occupational positions require particular kinds of skilled performance; and (B) that positions must be filled with persons who have either the native ability, or who have acquired the training, necessary for the performance of the given occupational role.²

² The concern here is with these basic premises rather than with the theory elaborated by Davis and Moore to account for the universality of stratification. This theory involves a few further propositions: (C) in any particular form of society certain occupational positions are functionally most central to the operation of the social system; (D) the ability to fill these positions, and/or the motivation to acquire the necessary training, is unequally distributed in the population; (E) in-

Table 2. Percentage Educational Attainment in the United States, 1869-1965.

| Period | High School graduates/ pop. 17 yrs. old | Resident college students/ pop. 18-21 | B.A.'s or 1st prof. degrees/ 1/10 of pop. 15-24 | M.A.'s or 2nd prof. degrees/ 1/10 of pop. 25-34 | Ph.D.'s 1/10 of pop. 25-34 |
|-----------|--|--|--|--|----------------------------|
| 1869-1870 | 2.0 | 1.7 | | | |
| 1879-1880 | 2.5 | 2.7 | | | |
| 1889-1890 | 3.5 | 3.0 | | | |
| 1899-1900 | 6.4 | 4.0 | 1.66 | 0.12 | 0.03 |
| 1909-1910 | 8.8 | 5.1 | 1.85 | 0.13 | 0.02 |
| 1919-1920 | 16.8 | 8.9 | 2.33 | 0.24 | 0.03 |
| 1929-1930 | 29.0 | 12.4 | 4.90 | 0.78 | 0.12 |
| 1939-1940 | 50.8 | 15.6 | 7.05 | 1.24 | 0.15 |
| 1949-1950 | 59.0 | 29.6 | 17.66 | 2.43 | 0.27 |
| 1959-1960 | 65.1 | 34.9 | 17.72 | 3.25 | 0.42 |
| 1963 | 76.3 | 38.0 | | | |
| 1965 | | | 19.71 | 5.02 | 0.73 |

Sources: Historical Statistics of the United States, Series A-28-29, H 327-338; Statistical Abstract of the United States 1966, Tables 3 and 194; Digest of Educational Statistics (U. S. Office of Education, 1967), Tables 66 and 88.

The technical-function theory of education may be viewed as a subtype of this form of analysis, since it shares the premises that the occupational structure creates demands for particular kinds of performance, and that training is one way of filling these demands. In addition, it includes the more restrictive premises (1 and 2 above) concerning the way in which skill requirements of jobs change with industrialization, and concerning the content of school experiences.

The technical-function theory of education may be tested by reviewing the evidence for each of its propositions (1a, 1b, and 2).³ As will be seen, these propositions do not adequately account for the evidence. In order to generate a more complete explanation, it will be necessary to examine the evidence for the underlying functional propositions, (A) and (B). This analysis leads to a focus on the processes of stratification—notably group conflict—not expressed in the functional theory, and to the formalization of a conflict theory to account for the evidence.

Proposition (1a): *Educational requirements of jobs in industrial society increase because the proportion of jobs requiring low skill decreases and the proportion requiring high skill increases.* Available evidence suggests that this process accounts for only a minor part of educational upgrading, at least in a society that has passed the point of initial industrialization. Fifteen percent of the increase in education of the U. S. labor force during the twentieth century may be attributed to shifts in the occupational structure—a decrease in the proportion of jobs with low skill requirements and an increase in proportion of jobs with high skill requirements (Folger and Nam, 1964). The bulk of educational upgrading (85%) has occurred *within* job categories.

Proposition (1b): *Educational requirements of jobs in industrial society rise because the same jobs are upgraded in skill requirements.*

equalities of rewards in wealth and prestige evolve to ensure that the supply of persons with the necessary ability or training meshes with the structure of demands for skilled performance. The problems of stating functional centrality in empirical terms have been subjects of much debate.

³ Proposition 3 is supported by Tables 1 and 2. The issue here is whether this can be explained by the previous propositions and premises.

The only available evidence on this point consists of data collected by the U. S. Department of Labor in 1950 and 1960, which indicate the amount of change in skill requirements of specific jobs. Under the most plausible assumptions as to the skills provided by various levels of education, it appears that the educational level of the U. S. labor force has changed in excess of that which is necessary to keep up with skill requirements of jobs (Berg, 1970:38–60). Over-education for available jobs is found particularly among males who have graduated from college and females with high school degrees or some college, and appears to have increased between 1950 and 1960.

Proposition (2): *Formal education provides required job skills.* This proposition may be tested in two ways: (a) Are better educated employees more productive than less educated employees? (b) Are vocational skills learned in schools, or elsewhere?

(a) *Are better educated employees more productive?* The evidence most often cited for the productive effects of education is indirect, consisting of relationships between aggregate levels of education in a society and its overall economic productivity. These are of three types:

(i) The national growth approach involves calculating the proportion of growth in the U. S. Gross National Product attributable to conventional inputs of capital and labor; these leave a large residual, which is attributed to improvements in skill of the labor force based on increased education (Schultz, 1961; Denison, 1965). This approach suffers from difficulty in clearly distinguishing among technological change affecting productive arrangements, changes in the abilities of workers acquired by experience at work with new technologies, and changes in skills due to formal education and motivational factors associated with a competitive or achievement-oriented society. The assignment of a large proportion of the residual category to education is arbitrary. Denison (1965) makes this attribution on the basis of the increased income to persons with higher levels of education interpreted as rewards for their contributions to productivity. Although it is a common assumption in economic argument that wage returns reflect output value, wage returns cannot be used to prove the productive contribution of education without circular reasoning.

(ii) Correlations of education and level of economic development for nations show that the higher the level of economic development

of a country, the higher the proportion of its population in elementary, secondary, and higher education (Harbison and Myers, 1964). Such correlations beg the question of causality. There are considerable variations in school enrollments among countries at the same economic level, and many of these variations are explicable in terms of political demands for access to education (Ben-David, 1963-64). Also, the overproduction of educated personnel in countries whose level of economic development cannot absorb them suggests the demand for education need not come directly from the economy, and may run counter to economic needs (Hoselitz, 1965).

(iii) Time-lag correlations of education and economic development show that increases in the proportion of population in elementary school precede increases in economic development after a takeoff point at approximately 30-50% of the 7-14 years old age-group in school. Similar anticipations of economic development are suggested for increases in secondary and higher education enrollment, although the data do not clearly support this conclusion (Peaslee, 1969). A pattern of advances in secondary school enrollments preceding advances in economic development is found only in a small number of cases (12 of 37 examined in Peaslee, 1969). A pattern of growth of university enrollments and subsequent economic development is found in 21 of 37 cases, but the exceptions (including the United States, France, Sweden, Russia, and Japan) are of such importance as to throw serious doubt on any *necessary* contribution of higher education to economic development. The main contribution of education to economic productivity, then, appears to occur at the level of the transition to mass literacy, and not significantly beyond this level.

Direct evidence of the contribution of education to *individual* productivity is summarized by Berg (1970:85-104, 143-176). It indicates that the better educated employees are not generally more productive, and in some cases are less productive, among samples of factory workers, maintenance men, department store clerks, technicians, secretaries, bank tellers, engineers, industrial research scientists, military personnel, and federal civil service employers.

(b) *Are vocational skills learned in school, or elsewhere?* Specifically vocational education in the schools for manual positions is virtually independent of job fate, as graduates of vocational programs are not more likely to be employed than high school dropouts (Plunkett, 1960; Duncan, 1964). Most skilled manual workers acquire their skills

on the job or casually (Clark and Sloan, 1966:73). Retraining for important technological changes in industry has been carried out largely informally on-the-job; in only a very small proportion of jobs affected by technological change is formal retraining in educational institutions used (Collins, 1969: 147-158; Bright, 1958).

The relevance of education for nonmanual occupational skills is more difficult to evaluate. Training in specific professions, such as medicine, engineering, scientific or scholarly research, teaching, and law can plausibly be considered vocationally relevant, and possibly essential. Evidences comparing particular degrees of educational success with particular kinds of occupational performance or success are not available, except for a few occupations. For engineers, high college grades and degree levels generally predict high levels of technical responsibility and high participation in professional activities, but not necessarily high salary or supervisory responsibility (Perrucci and Perrucci, 1970). At the same time, a number of practicing engineers lack college degrees (about 40% of engineers in the early 1950s; see Soderberg, 1963: 213), suggesting that even such highly technical skills may be acquired on the job. For academic research scientists, educational quality has little effect on subsequent productivity (Hagstrom and Hargens, 1968). For other professions, evidence is not available on the degree to which actual skills are learned in school rather than in practice. In professions such as medicine and law, where education is a legal requirement for admission to practice, a comparison group of noneducated practitioners is not available, at least in the modern era.

Outside of the traditional learned professions, the plausibility of the vocational importance of education is more questionable. Comparisons of the efforts of different occupations to achieve "professionalization" suggest that setting educational requirements and bolstering them through licensing laws is a common tactic in raising an occupation's prestige and autonomy (Wilensky, 1964). The result has been the proliferation of numerous pseudo-professions in modern society; nevertheless these fail to achieve strong professional organization through lack of a monopolizable (and hence teachable)

skill base. Business administration schools represent such an effort. (See Pierson, 1959: 9, 55-95, 140; Gordon and Howell, 1959:1-18, 40, 324-337). Descriptions of general, nonvocational education do not support the image of schools as places where skills are widely learned. Scattered studies suggest that the knowledge imparted in particular courses is retained only in small part through the next few years (Learned and Wood, 1938: 28), and indicate a dominant student culture concerned with nonacademic interests or with achieving grades with a minimum of learning (Coleman, 1961; Becker *et al.*, 1968).

The technical-function theory of education, then, does not give an adequate account of the evidence. Economic evidence indicates no clear contributions of education to economic development, beyond the provisions of mass literacy. Shifts in the proportions of more skilled and less skilled jobs do not account for the observed increase in education of the American labor force. Education is often irrelevant to on-the-job productivity and is sometimes counter-productive; specifically vocational training seems to be derived more from work experience than from formal school training. The quality of schools themselves, and the nature of dominant student cultures suggest that schooling is very inefficient as a means of training for work skills.

Functional and Conflict Perspectives

It may be suggested that the inadequacies of the technical-function theory of education derive from a more basic source: the functional approach to stratification. A fundamental assumption is that there is a generally fixed set of positions, whose various requirements the labor force must satisfy. The fixed demand for skills of various types, at any given time, is the basic determinant of who will be selected for what positions. Social change may then be explained by specifying how these functional demands change with the process of modernization. In keeping with the functional perspective in general, the needs of society are seen as determining the behavior and the rewards of the individuals within it.

However, this premise may be questioned as an adequate picture of the fundamental

processes of social organization. It may be suggested that the "demands" of any occupational position are not fixed, but represent whatever behavior is settled upon in bargaining between the persons who fill the positions and those who attempt to control them. Individuals want jobs primarily for the rewards to themselves in material goods, power, and prestige. The amount of productive skill they must demonstrate to hold their positions depends on how much clients, customers, or employers can successfully demand of them, and this in turn depends on the balance of power between workers and their employers.

Employers tend to have quite imprecise conceptions of the skill requirements of most jobs, and operate on a strategy of "satisficing" rather than optimizing—that is, setting average levels of performance as satisfactory, and making changes in procedures or personnel only when performance falls noticeably below minimum standards (Dill *et al.*, 1962; March and Simon, 1958:140-141). Efforts to predict work performance by objective tests have foundered due to difficulties in measuring performance (except on specific mechanical tasks) and the lack of control groups to validate the tests (Anastasi, 1967). Organizations do not force their employees to work at maximum efficiency; there is considerable insulation of workers at all levels from demands for full use of their skills and efforts. Informal controls over output are found not only among production workers in manufacturing but also among sales and clerical personnel (Roy, 1952; Blau, 1955; Lombard, 1955). The existence of informal organization at the managerial level, the widespread existence of bureaucratic pathologies such as evasion of responsibility, empire-building, and displacement of means by ends ("red tape"), and the fact that administrative work is only indirectly related to the output of the organization, suggest that managers, too, are insulated from strong technological pressures for use of technical skills. On all levels, wherever informal organization exists, it appears that standards of performance reflect the power of the groups involved.

In this light, it is possible to reinterpret the body of evidence that ascriptive factors continue to be important in occupational success

even in advanced industrial society. The social mobility data summarized at the onset of this paper show that social origins have a direct effect on occupational success, even after the completion of education. Both case studies and cross-sectional samples amply document widespread discrimination against Negroes. Case studies show that the operation of ethnic and class standards in employment based not merely on skin color but on name, accent, style of dress, manners, and conversational abilities (Noland and Bakke, 1949; Turner, 1952; Taeuber *et al.*, 1966; Nosow, 1956). Cross-sectional studies, based on both biographical and survey data, show that approximately 60 to 70% of the American business elite come from upper-class and upper-middle-class families, and fewer than 15% from working-class families (Taussig and Joselyn, 1932:97; Warner and Abegglen, 1955:37-68; Newcomer, 1955:53; Bendix, 1956:198-253; Mills, 1963:110-139). These proportions are fairly constant from the early 1800's through the 1950's. The business elite is overwhelmingly Protestant, male, and completely white, although there are some indications of a mild trend toward declining social origins and an increase of Catholics and Jews. Ethnic and class background have been found crucial for career advancement in the professions as well (Ladinsky, 1963; Hall, 1946). Sexual stereotyping of jobs is extremely widespread (Collins, 1969:234-238).

In the traditional functionalist approach, these forms of ascription are treated as residual categories: carry-overs from a less advanced period, or marks of the imperfections of the functional mechanism of placement. Yet available trend data suggest that the link between social class origins and occupational attainment has remained constant during the twentieth century in America (Blau and Duncan, 1967:81-113); the proportion of women in higher occupational levels has changed little since the late nineteenth century (Epstein, 1970:7); and the few available comparisons between elite groups in traditional and modern societies suggest comparable levels of mobility (Marsh, 1963). Declines in racial and ethnic discrimination that appear to have occurred at periods in twentieth-century America may be plausibly explained as results of political

mobilization of particular minority groups rather than by an increased economic need to select by achievement criteria.

Goode (1967) has offered a modified functional model to account for these disparities: that work groups always organize to protect their inept members from being judged by outsiders' standards of productivity, and that this self-protection is functional to the organizations, preventing a Hobbesian competitiveness and distrust of all against all. This argument re-establishes a functional explanation, but only at the cost of undermining the technological view of functional requirements. Further, Goode's conclusions can be put in other terms: it is to the advantage of groups of employees to organize so that they will not be judged by strict performance standards; and it is at least minimally to the advantage of the employer to let them do so, for if he presses them harder he creates dissension and alienation. Just how hard an employer *can* press his employees is not given in Goode's functional model. That is, his model has the disadvantage, common to functional analysis in its most general form, of covering too many alternative possibilities to provide testable explanations of specific outcomes. Functional analysis too easily operates as a justification for whatever particular pattern exists, asserting in effect that there is a proper reason for it to be so, but failing to state the conditions under which a particular pattern will hold rather than another. The technical version of job requirements has the advantage of specifying patterns, but it is this specific form of functional explanation that is jettisoned by a return to a more abstract functional analysis.

A second hypothesis may be suggested: the power of "ascribed" groups may be the *prime* basis of selection in all organizations, and technical skills are secondary considerations depending on the balance of power. Education may thus be regarded as a mark of membership in a particular group (possibly at times its defining characteristic), not a mark of technical skills or achievement. Educational requirements may thus reflect the interests of whichever groups have power to set them. Weber (1968:1000) interpreted educational requirements in bureaucracies, drawing especially on the history of public

administration in Prussia, as the result of efforts by university graduates to monopolize positions, raise their corporate status, and thereby increase their own security and power vis-à-vis both higher authorities and clients. Gusfield (1958) has shown that educational requirements in the British Civil Service were set as the result of a power struggle between a victorious educated upper-middle-class and the traditional aristocracy.

To summarize the argument to this point: available evidence suggests that the technical-functional view of educational requirements for jobs leaves a large number of facts unexplained. Functional analysis on the more abstract level does not provide a testable explanation of which ascribed groups will be able to dominate which positions. To answer this question, one must leave the functional frame of reference and examine the conditions of relative power of each group.

A Conflict Theory of Stratification

The conditions under which educational requirements will be set and changed may be stated more generally, on the basis of a conflict theory of stratification derived from Weber (1968:926-939; see also Collins, 1968), and from advances in modern organization theory fitting the spirit of this approach.

A. *Status groups.* The basic units of society are associational groups sharing common cultures (or "subcultures"). The core of such groups is families and friends, but they may be extended to religious, educational, or ethnic communities. In general, they comprises all persons who share a sense of status equality based on participation in a common culture: styles of language, tastes in clothing and decor, manners and other ritual observances, conversational topics and styles, opinions and values, and preferences in sports, arts, and media. Participation in such cultural groups gives individuals their fundamental sense of identity, especially in contrast with members of other associational groups in whose everyday culture they cannot participate comfortably. Subjectively, status groups distinguish themselves from others in terms of categories of *moral evaluation* such as "honor," "taste,"

"breeding," "respectability," "propriety," "cultivation," "good fellows," "plain folks," etc. Thus the exclusion of persons who lack the ingroup culture is felt to be normatively legitimated.

There is no *a priori* determination of the number of status groups in a particular society, nor can the degree to which there is consensus on a rank order among them be stated in advance. These are not matters of definition, but empirical variations, the causes of which are subjects of other developments of the conflict theory of stratification. Status groups should be regarded as ideal types, without implication of *necessarily distinct* boundaries; the concepts remain useful even in the case where associational groupings and their status cultures are fluid and overlapping, as hypotheses about the conflicts among status groups may remain fruitful even under these circumstances.

Status groups may be derived from a number of sources. Weber outlines three: (a) differences in life style based on economic situation (i.e., class); (b) differences in life situation based on power position; (c) differences in life situation deriving directly from cultural conditions or institutions, such as geographical origin, ethnicity, religion, education, or intellectual or aesthetic cultures.

B. *Struggle for Advantage.* There is a continual struggle in society for various "goods"—wealth, power, or prestige. We need make no assumption that every individual is motivated to maximize his rewards; however, since power and prestige are inherently scarce commodities, and wealth is often contingent upon them, the ambition of even a small proportion of persons for more than equal shares of these goods sets up an implicit counter-struggle on the part of others to avoid subjection and disesteem. Individuals may struggle with each other, but since individual identity is derived primarily from membership in a status group, and because the cohesion of status groups is a key resource in the struggle against others, the primary focus of struggle is between status groups rather than within them.

The struggle for wealth, power, and prestige is carried out primarily through organizations. There have been struggles throughout history among organizations controlled by different status groups, for military con-

quest, business advantage, or cultural (e.g., religious) hegemony, and intricate sorts of interorganizational alliances are possible. In the more complex societies, struggle between status groups is carried on in large part *within* organizations, as the status groups controlling an organization coerce, hire, or culturally manipulate others to carry out their wishes (as in, respectively, a conscript army, a business, or a church). Organizational research shows that the success of organizational elites in controlling their subordinates is quite variable. Under particular conditions, lower or middle members have considerable *de facto* power to avoid compliance, and even to change the course of the organizations (see Etzioni, 1961).

This opposing power from below is strengthened when subordinate members constitute a cohesive status group of their own; it is weakened when subordinates acquiesce in the values of the organization elite. Coincidence of ethnic and class boundaries produces the sharpest cultural distinctions. Thus, Catholics of immigrant origins have been the bulwarks of informal norms restricting work output in American firms run by WASPs, whereas Protestants of native rural backgrounds are the main "rate-busters" (O. Collins *et al.*, 1946). Selection and manipulation of members in terms of status groups is thus a key weapon in intraorganizational struggles. In general, the organization elite selects its new members and key assistants from its own status group and makes an effort to secure lower-level employees who are at least indoctrinated to respect the cultural superiority of their status culture.⁴

⁴It might be argued that the ethnic cultures may differ in their functionality: that middle-class Protestant culture provides the self-discipline and other attributes necessary for higher organizational positions in modern society. This version of functional theory is specific enough to be subject to empirical test: are middle-class WASPs in fact better businessmen or government administrators than Italians, Irishmen, or Jews of patrimonial or working class cultural backgrounds? Weber suggested that they were in the initial construction of the capitalist economy within the confines of traditional society; he also argued that once the new economic system was established, the original ethic was no longer necessary to run it (Weber, 1930:180-183). Moreover, the functional explanation also requires some feedback mechanism whereby organizations with more effi-

Once groups of employees of different status groups are formed at various positions (middle, lower, or laterally differentiated) in the organization, each of these groups may be expected to launch efforts to recruit more members of their own status group. This process is illustrated by conflicts among whites and blacks, Protestants and Catholics and Jews, Yankee, Irish and Italian, etc. found in American occupational life (Hughes, 1949; Dalton, 1951). These conflicts are based on ethnically or religiously founded status cultures; their intensity rises and falls with processes increasing or decreasing the cultural distinctiveness of these groups, and with the succession of advantages and disadvantages set by previous outcomes of these struggles which determine the organizational resources available for further struggle. Parallel processes of cultural conflict may be based on distinctive class as well as ethnic cultures.

C. *Education As Status Culture.* The main activity of schools is to teach particular status cultures, both in and outside the classroom. In this light, any failure of schools to impart technical knowledge (although it may also be successful in this) is not important; schools primarily teach vocabulary and inflection, styles of dress, aesthetic tastes, values and manners. The emphasis on sociability and athletics found in many schools is not extraneous but may be at the core of the status culture propagated by the schools. Where schools have a more academic or vocational emphasis, this emphasis may itself be the content of a particular status culture, providing sets of values, materials for conversation, and shared activities for an associational group making claims to a particular basis for status.

Insofar as a particular status group controls education, it may use it to foster con-

cient managers are selected for survival. The oligopolistic situation in large-scale American business since the late 19th century does not seem to provide such a mechanism; nor does government employment. Schumpeter (1951), the leading expositor of the importance of managerial talent in business, confined his emphasis to the formative period of business expansion, and regarded the large, oligopolistic corporation as an arena where advancement came to be based on skills in organizational politics (1951:122-124); these personalistic skills are arguably more characteristic of the patrimonial cultures than of WASP culture.

trol within work organizations. Educational requirements for employment can serve both to select new members for elite positions who share the elite culture and, at a lower level of education, to hire lower and middle employees who have acquired a general respect for these elite values and styles.

Tests of the Conflict Theory of Educational Stratification

The conflict theory in its general form is supported by evidence (1) that there are distinctions among status group cultures—based both on class and on ethnicity—in modern societies (Kahl, 1957:127–156, 184–220); (2) that status groups tend to occupy different occupational positions within organizations (see data on ascription cited above); and (3) that occupants of different organizational positions struggle over power (Dalton, 1959; Crozier, 1964). The more specific tests called for here, however, are of the adequacy of conflict theory to explain the link between education and occupational stratification. Such tests may focus either on the proposed mechanism of occupational placement, or on the conditions for strong or weak links between education and occupation.

Education As a Mechanism of Occupational Placement. The mechanism proposed is that employers use education to select persons who have been socialized into the dominant status culture: for entrants to their own managerial ranks, into elite culture; for lower-level employees, into an attitude of respect for the dominant culture and the elite which carries it. This requires evidence that: (a) schools provide either training for the elite culture, or respect for it; and (b) employers use education as a means of selection for cultural attributes.

(a) Historical and descriptive studies of schools support the generalization that they are places where particular status cultures are acquired, either from the teachers, from other students, or both. Schools are usually founded by powerful or autonomous status groups, either to provide an exclusive education for their own children, or to propagate respect for their cultural values. Until recently most schools were founded by religions, often in opposition to those founded by rival religions; throughout the 19th

century, this rivalry was an important basis for the founding of large numbers of colleges in the U. S., and of the Catholic and Lutheran school systems. The public school system in the U. S. was founded mainly under the impetus of WASP elites with the purpose of teaching respect for Protestant and middle-class standards of cultural and religious propriety, especially in the face of Catholic, working-class immigration from Europe (Cremin, 1961; Curti, 1935). The content of public school education has consisted especially of middle-class, WASP culture (Waller, 1932:15–131; Becker, 1961; Hess and Torney, 1967).

At the elite level, private secondary schools for children of the WASP upper class were founded from the 1880s, when the mass indoctrination function of the growing public schools made them unsuitable as means of maintaining cohesion of the elite culture itself (Baltzell, 1958:327–372). These elite schools produce a distinctive personality type, characterized by adherence to a distinctive set of upper-class values and manners (McArthur, 1955). The cultural role of schools has been more closely studied in Britain (Bernstein, 1961; Weinberg, 1967), and in France (Bourdieu and Passeron, 1964), although Riesman and his colleagues (Riesman, 1958; Jencks and Riesman, 1968) have shown some of the cultural differences among prestige levels of colleges and universities in the United States.

(b) Evidence that education has been used as a means of cultural selection may be found in several sources. Hollingshead's (1949:360–388) study of Elmtown school children, school dropouts, and community attitudes toward them suggests that employers use education as a means of selecting employees with middle-class attributes. A 1945–1946 survey of 240 employers in New Haven and Charlotte, N. C. indicated that they regarded education as a screening device for employees with desirable (middle-class) character and demeanor; white-collar positions particularly emphasized educational selection because these employees were considered most visible to outsiders (Noland and Bakke, 1949:20–63).

A survey of employers in nationally prominent corporations indicated that they regarded college degrees as important in hiring

potential managers, not because they were thought to ensure technical skills, but rather to indicate "motivation" and "social experience" (Gordon and Howell, 1959:121). Business school training is similarly regarded, less as evidence of necessary training (as employers have been widely skeptical of the utility of this curriculum for most positions) than as an indication that the college graduate is committed to business attitudes. Thus, employers are more likely to refuse to hire liberal arts graduates if they come from a college which has a business school than if their college is without a business school (Gordon and Howell, 1959:84-87; see also Pierson, 1959:90-99). In the latter case, the students could be said not to have had a choice; but when both business and liberal arts courses are offered and the student chooses liberal arts, employers appear to take this as a rejection of business values.

Finally, a 1967 survey of 309 California organizations (Collins, 1971) found that educational requirements for white-collar workers were highest in organizations which placed the strongest emphasis on normative control over their employees.⁵ Normative control emphasis was indicated by (i) relative emphasis on the absence of police record for job applicants; (ii) relative emphasis on a record of job loyalty; (iii) Etzioni's (1961) classification of organizations into those with high normative control emphasis (financial, professional services, government, and other public services organizations) and those with remunerative control emphasis (manufacturing, construction, and trade). These three indicators are highly interrelated, thus mutually validating their conceptualization as indicators of normative control emphasis. The relationship between normative control emphasis and educational requirements holds for managerial requirements and white-collar requirements generally, both including and excluding professional and technical positions. Normative control emphasis does not affect blue-collar education requirements.

⁵ Sample consisted of approximately one-third of all organizations with 100 or more employees in the San Francisco, Oakland, and San Jose metropolitan areas. See Gordon and Thal-Larsen (1969) for a description of procedures and other findings.

Variations in Linkage between Education and Occupation

The conflict model may also be tested by examining the cases in which it predicts education will be relatively important or unimportant in occupational attainment. Education should be most important where two conditions hold simultaneously: (1) the type of education most closely reflects membership in a particular status group, and (2) that group controls employment in particular organizational contexts. Thus, education will be most important where the fit is greatest between the culture of the status groups emerging from schools, and the status group doing the hiring; it will be least important where there is the greatest disparity between the culture of the school and of the employers.

This fit between school-group culture and employer culture may be conceptualized as a continuum. The importance of elite education is highest where it is involved in selection of new members of organizational elites, and should fade off where jobs are less elite (either lower level jobs in these organizations, or jobs in other organizations not controlled by the cultural elite). Similarly, schools which produce the most elite graduates will be most closely linked to elite occupations; schools whose products are less well socialized into elite culture are selected for jobs correspondingly less close to elite organizational levels.

In the United States, the schools which produce culturally elite groups, either by virtue of explicit training or by selection of students from elite backgrounds, or both, are the private prep schools at the secondary level; at the higher level, the elite colleges (the Ivy league, and to a lesser degree the major state universities); at the professional training level, those professional schools attached to the elite colleges and universities. At the secondary level, schools which produce respectably socialized, non-elite persons are the public high schools (especially those in middle-class residential areas); from the point of view of the culture of WASP employers, Catholic schools (and all-black schools) are less acceptable. At the level of higher education, Catholic and black colleges and professional schools are less

elite, and commercial training schools are the least elite form of education.

In the United States, the organizations most clearly dominated by the WASP upper class are large, nationally organized business corporations, and the largest law firms (Domhoff, 1967:38-62). Those organizations more likely to be dominated by members of minority ethnic cultures are the smaller and local businesses in manufacturing, construction, and retail trade; in legal practice, solo rather than firm employment. In government employment, local governments appear to be more heavily dominated by ethnic groups, whereas particular branches of the national government (notably the State Department and the Treasury) are dominated by WASP elites (Domhoff, 1967: 84-114, 132-137).

Evidence on the fit between education and employment is available for only some of these organizations. In a broad sample of organizational types (Collins, 1971) educational requirements were higher in the bigger organizations, which also tended to be organized on a national scale, than in smaller and more localistic organizations.⁶ The finding of Perrucci and Perrucci (1970) that upper-class social origins were important in career success precisely within the group of engineers who graduated from the most prestigious engineering schools with the highest grades may also bear on this question; since the big national corporations are most likely to hire this academically elite group, the importance of social origins within this group tends to corroborate the interpretation of education as part of a process of elite cultural selection in those organizations.

Among lawyers, the predicted differences are clear: graduates of the law schools attached to elite colleges and universities are more likely to be employed in firms, whereas graduates of Catholic or commercial law schools are more likely to be found in solo practice (Ladinsky, 1967). The elite Wall Street law firms are most educationally se-

lective in this regard, choosing not only from Ivy League law schools but from a group whose background includes attendance at elite prep schools and colleges (Smigel, 1964: 39, 73-74, 117). There are also indications that graduates of ethnically-dominated professional schools are most likely to practice within the ethnic community; this is clearly the case among black professionals. In general, the evidence that graduates of black colleges (Sharp, 1970:64-67) and of Catholic colleges (Jencks and Riesman, 1968:357-366) have attained lower occupational positions in business than graduates of white Protestant schools (at least until recent years) also bolsters this interpretation.⁷

It is possible to interpret this evidence according to the technical-function theory of education, arguing that the elite schools provide the best technical training, and that the major national organizations require the greatest degree of technical talent. What is necessary is to test simultaneously for technical and status-conflict conditions. The most direct evidence on this point is the California employer study (Collins, 1971), which examined the effects of normative control emphasis and of organizational prominence, while holding constant the organization's technological modernity, as measured by the number of technological and organizational changes in the previous six years. Technological change was found to affect educational requirements at managerial and white-collar (but not blue-collar) levels, thus giving some support to the technical-function theory of education. The three variables—normative control emphasis, organizational prominence, and technological change—each

⁶ Again, these relationships hold for managerial requirements and white-collar requirements generally, both including and excluding professional and technical positions, but not for blue-collar requirements. Noland and Bakke (1949:78) also report that larger organizations have higher educational requirements for administrative positions than smaller organizations.

⁷ Similar processes may be found in other societies, where the kinds of organizations linked to particular types of schools may differ. In England, the elite "public schools" are linked especially to the higher levels of the national civil service (Weinberg, 1967:139-143). In France, the elite Ecole Polytechnique is linked to both government and industrial administrative positions (Crozier, 1964: 238-244). In Germany, universities have been linked principally with government administration, and business executives are drawn from elsewhere (Ben-David and Zloczower, 1962). Comparative analysis of the kinds of education of government officials, business executives, and other groups in contexts where the status group links of schools differ is a promising area for further tests of conflict and technical-functional explanations.

independently affected educational requirements, in particular contexts. Technological change produced significantly higher educational requirements only in smaller, localistic organizations, and in organizational sectors not emphasizing normative control. Organizational prominence produced significantly higher educational requirements in organizations with low technological change, and in sectors de-emphasizing normative control. Normative control emphasis produced significantly higher educational requirements in organizations with low technological change, and in less prominent organizations. Thus, technical and normative status conditions all affect educational requirements; measures of association indicated that the latter conditions were stronger in this sample.

Other evidence bearing on this point concerns business executives only. A study of the top executives in nationally prominent businesses indicated that the most highly educated managers were not found in the most rapidly developing companies, but rather in the least economically vigorous ones, with highest education found in the traditionalistic financial and utility firms (Warner and Abegglen, 1955:141-143, 148). The business elite has always been highly educated in relation to the American populace, but education seems to be a correlate of their social origins rather than the determinant of their success (Mills, 1963:128; Taussig and Joslyn, 1932:200; Newcomer, 1955:76). Those members of the business elite who entered its ranks from lower social origins had less education than the businessmen of upper and upper-middle-class origins, and those businessmen who inherited their companies were much more likely to be college educated than those who achieved their positions by entrepreneurship (Bendix, 1956:230; Newcomer, 1955:80).

In general, the evidence indicates that educational requirements for employment reflect employers' concerns for acquiring respectable and well-socialized employees; their concern for the provision of technical skills through education enters to a lesser degree. The higher the normative control concerns of the employer, and the more elite the organization's status, the higher his educational requirements.

Historical Change

The rise in educational requirements for employment throughout the last century may be explained using the conflict theory, and incorporating elements of the technical-functional theory into it at appropriate points. The principal dynamic has centered on changes in the supply of educated persons caused by the expansion of the school system, which was in turn shaped by three conditions:

(1) Education has been associated with high economic and status position from the colonial period on through the twentieth century. The result was a popular demand for education as mobility opportunity. This demand has not been for vocational education at a terminal or commercial level, short of full university certification; the demand has rather focused on education giving entry into the elite status culture, and usually only those technically-oriented schools have prospered which have most closely associated themselves with the sequence of education leading to (or from) the classical Bachelor's degree (Collins, 1969:68-70, 86-87, 89, 96-101).

(2) Political decentralization, separation of church and state, and competition among religious denominations have made founding schools and colleges in America relatively easy, and provided initial motivations of competition among communities and religious groups that moved them to do so. As a result, education at all levels expanded faster in America than anywhere else in the world. At the time of the Revolution, there were nine colleges in the colonies; in all of Europe, with a population forty times that of America, there were approximately sixty colleges. By 1880 there were 811 American colleges and universities; by 1966, there were 2,337. The United States not only began with the highest ratio of institutions of higher education to population in the world, but increased this lead steadily, for the number of European universities was not much greater by the twentieth century than in the eighteenth (Ben-David and Zloczower, 1962).

(3) Technical changes also entered into the expansion of American education. As the evidence summarized above indicates: (a) mass literacy is crucial for beginnings of

full-scale industrialization, although demand for literacy could not have been important in the expansion of education beyond elementary levels. More importantly, (b) there is a mild trend toward the reduction in the proportion of unskilled jobs and an increase in the promotion of highly skilled (professional and technical) jobs as industrialism proceeds, accounting for 15% of the shift in educational levels in the twentieth century (Folger and Nam, 1964). (c) Technological change also brings about some upgrading in skill requirements of some continuing job positions, although the available evidence (Berg, 1970:38-60) refers only to the decade 1950-1960. Nevertheless, as Wilensky (1964) points out, there is no "professionalization of everyone," as most jobs do not require considerable technical knowledge on the order of that required of the engineer or the research scientist.

The existence of a relatively small group of experts in high-status positions, however, can have important effects on the structure of competition for mobility chances. In the United States, where democratic decentralization favors the use of schools (as well as government employment) as a kind of patronage for voter interests, the existence of even a small number of elite jobs fosters a demand for *large-scale* opportunities to acquire these positions. We thus have a "contest mobility" school system (Turner, 1960); it produced a widely educated populace because of the many dropouts who never achieve the elite level of schooling at which expert skills and/or high cultural status are acquired. In the process, the status value of American education has become diluted. Standards of respectability are always relative to the existing range of cultural differences. Once higher levels of education become recognized as an objective mark of elite status, and a moderate level of education as a mark of respectable middle-level status, increases in the supply of educated persons at given levels result in yet higher levels, becoming recognized as superior, and previously superior levels become only average.

Thus, before the end of the nineteenth century, an elementary school or home education was no longer satisfactory for a middle-class gentleman; by the 1930s, a college

degree was displacing the high school degree as the minimal standard of respectability; in the late 1960s, graduate school or specialized professional degrees were becoming necessary for initial entry to many middle-class positions, and high school graduation was becoming a standard for entry to manual laboring positions. Education has thus gradually become part of the status culture of classes far below the level of the original business and professional elites.

The increasing supply of educated persons (Table 2) has made education a rising requirement of jobs (Table 1). Led by the biggest and most prestigious organizations, employers have raised their educational requirements to maintain both the relative prestige of their own managerial ranks and the relative respectability of middle ranks.⁸ Education has become a legitimate standard in terms of which employers select employees, and employees compete with each other for promotion opportunities or for raised prestige in their continuing positions. With the attainment of a mass (now approaching universal) higher education system in modern America, the ideal or image of technical skill becomes the legitimating culture in terms of which the struggle for position goes on.

Higher educational requirements, and the higher level of educational credentials offered by individuals competing for position in organizations, have in turn increased the demand for education by the populace. The

⁸ It appears that employers may have raised their wage costs in the process. Their behavior is nevertheless plausible, in view of these considerations: (a) the thrust of organizational research since Mayo and Barnard has indicated that questions of internal organizational power and control, of which cultural dominance is a main feature, take precedence over purely economic considerations; (b) the large American corporations, which have led in educational requirements, have held positions of oligopolistic advantage since the late 19th century, and thus could afford a large internal "welfare" cost of maintaining a well-socialized work force; (c) there are inter-organizational wage differentials in local labor markets, corresponding to relative organizational prestige, and a "wage-escalator" process by which the wages of the leading organizations are gradually emulated by others according to their rank (Reynolds, 1951); a parallel structure of "educational status escalators" could plausibly be expected to operate.

interaction between formal job requirements and informal status cultures has resulted in a spiral in which educational requirements and educational attainments become ever higher. As the struggle for mass educational opportunities enters new phases in the universities of today and perhaps in the graduate schools of the future, we may expect a further upgrading of educational requirements for employment. The mobilization of demands by minority groups for mobility opportunities through schooling can only contribute an extension of the prevailing pattern.

Conclusion

It has been argued that conflict theory provides an explanation of the principal dynamics of rising educational requirements for employment in America. Changes in the technical requirements of jobs have caused more limited changes in particular jobs. The conditions of the interaction of these two determinants may be more closely studied.

Precise measures of changes in the actual technical skill requirements of jobs are as yet available only in rudimentary form. Few systematic studies show how much of particular job skills may be learned in practice, and how much must be acquired through school background. Close studies of what is actually learned in school, and how long it is retained, are rare. Organizational studies of how employers rate performance and decide upon promotions give a picture of relatively loose controls over the technical quality of employee performance, but this no doubt varies in particular types of jobs.

The most central line of analysis for assessing the joint effects of status group conflict and technical requirements are those which compare the relative importance of education in different contexts. One such approach may take organization as the unit of analysis, comparing the educational requirements of organizations both to organizational technologies and to the status (including educational) background of organizational elites. Such analysis may also be applied to surveys of individual mobility, comparing the effects of education on mobility in different employment contexts, where the status group (and educational)

background of employers varies in its fit with the educational culture of prospective employees. Such analysis of "old school tie" networks may also simultaneously test for the independent effect of the technical requirements of different sorts of jobs on the importance of education. Inter-national comparisons provide variations here in the fit between types of education and particular kinds of jobs which may not be available within any particular country.

The full elaboration of such analysis would give a more precise answer to the historical question of assigning weight to various factors in the changing place of education in the stratification of modern societies. At the same time, to state the conditions under which status groups vary in organizational power, including the power to emphasize or limit the importance of technical skills, would be to state the basic elements of a comprehensive explanatory theory of the forms of stratification.

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SOCIAL MOBILITY AND FERTILITY *

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In several recent studies the effects of mobility or status inconsistency on a dependent variable have been quantified by means of an additive model in which sets of constants have been fitted to two principles of classification. In examining a particular application of this model, the following paper begins by suggesting the possibility that the underlying hypothesis may be more adequately represented by a symmetrical model which fits one and the same set of constants to both principles of classification.

The second purpose of the paper is to show that, whether or not the symmetrical model is deemed to be the more appropriate, the basic hypothesis can be adequately tested only by the formulation of likely alternatives and the employment of tests which are specific to those alternatives.

Thirdly, a consideration of two alternatives to the basic model—one of which is simply a linear transformation of the other—implicitly demonstrates that some of the problems (of multicollinearity or identification) which are associated with quantitative studies of difference variables such as inconsistency or mobility are analogous to the pseudo-problems generated by the concept of rotation in factor analysis.

The generalization of the methods employed to more than two principles of classification and to more than one dependent variable is obvious.

Preamble **

IN their work on *The American Occupational Structure* Blau and Duncan (1967) devote a number of pages to a discussion of what they call "the mobility

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** This preamble grew out of comments and criticisms on the following sections of the paper which were made by Mrs. Jean Floud and Professor O. D. Duncan. As a reward for my attack on his hypothesis, Professor Duncan has, with his usual generosity, supplied me with data on which further studies of fertility and mobility may be carried out. Although we appear to disagree on several points, he and I are in entire agreement on the need to replicate findings such as those reported here. The additive hypothesis, in an approximate form, has already stood up to several replications and is to that extent on a surer footing than the mobility effect which I claim to detect.

hypothesis," particularly to the form¹ in which it was advanced by R. A. Fisher in *The Genetical Theory of Natural Selection*. Various formulations of the hypothesis are cited. It is claimed that the hypothesis is refuted if the data exemplify a particular pattern, which they term "the additive hypothesis." In this paper data which have previously been held to satisfy the additive hypothesis are re-examined to see whether in fact they satisfy that hypothesis, either in its original form or in a modified form.

¹ In considering their argument, it is important to note that the mobility which Blau and Duncan subject to empirical test is mobility of the present generation. They make only passing reference to the Galton-Fisher hypothesis of the inheritance of (voluntary or involuntary) infertility, which is a mechanism whereby the mobility of an antecedent generation might affect the fertility of the following generation. This restriction is apparent in their argument that if differential fertility were completely explained by social mobility then there would be no differential fertility by class among persons who do not change their class.