The Effect of Recent Techno-Economic Changes on the Mobility Patterns and Opportunities of the American Middle-Class, with Particular Emphasis on Emergent Contradictions Between Occupational and Educational Factors

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Abstract

This thesis attempts a macro level analysis of the evolutionary changes that have occurred in the structure of North American society. It focuses on the so-called "middle-class" as the most definitive in this respect, since this stratum has been widely accepted as the primary reference group in the society and because it is perceived to have experienced, in both the historical and contemporary context, the most significant shifts in material and ideological base.

The motivation for the thesis stems from the increasingly apparent inability of the conventional social scientific analytic frameworks to predict or explain the exceptional change in the social and political behavior patterns of contemporary "middle-class" youth. The conceptual and methodological orientation is thus defined by the nature of the problem; and both historical-material and dialectical frameworks are employed as alternatives to the predominant functionalist paradigm.

Part One of the thesis examines the historical development of the American social structure between the turn of the century and 1950. Particular emphasis is placed upon the material and ideological changes that occurred with the shift from "entrepreneurial" to "bureaucratic" models of social ascent, and the institutional adaptations -- particularly those of public and higher education -- that accompanied this basic shift in "middle-class" socialization. A critique of the mainstream North American social mobility theory is also included in Part One as a necessary approach to a fundamental re-examination of the primary socio-structural components of occupational opportunity, educational attainment, and social status identity. Part One concludes with an analysis of the contradictions which have emerged between the material, ideological and institutional components of the American social structure to 1950.

Part Two examines in considerable detail the occupational and educational structures of American society as these have evolved from
1950 to 1970. Both the qualitative and quantitative aspects of rapidly changing technology and its effect on the occupational mix are pursued empirically and then related to mainstream sociological and economic explanatory models. The progressive failure of these conventional models to meet empirical verification criteria is examined in terms of the growing incongruence between the basic theoretical assumptions and what appears to be a major shift in the material bases of social reality.

The basic parameters in this major reallocation of economic factors are examined and specifically discussed in terms of which social groups have experienced the most significant change in their social relations to production and consumption, and how these changes have affected their social consciousness and conditioned their political behavior.

Among the more contemporary and relevant social manifestations which this thesis attempts to place in a broader theoretical perspective are:

- The effects of cybernated technology upon the occupational structure, especially that of professional, managerial and technical employment.

- The source and extent of the growing structural unemployment among the higher educated.

- The functional change in higher education from "human capital" production to surplus manpower absorption.

The principal hypothesis which the thesis supports is that the rapid decline in social consensus and the emergence of proletarian "class" consciousness on the part of a significant number of the best educated "middle-class" youth is explainable in terms of the disintegration of the socio-structural links between occupational opportunity, educational attainments, and social "status" identity.
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Dedication

This thesis is dedicated to all those who participated in the attempt by the Political Science, Sociology and Anthropology Department to establish a learning and working environment that would encourage free, critical and community relevant social studies and research. Special mention must go to:

Kathleen Gough Aberle
Saghir Ahmad
Mordecai Briemberg
Louis Feldhammer
John Legget
Nathan Popkin
David Potter
Prudence Wheeldon
...just like their theory, functionalists always take the existing social structure as given and for granted; and both their theoretical and apparently practical interests in it are limited to the analytic value that structure may have in explaining the existence of the particular institutional parts to which functionalists like to limit their scientific study....

Andrew Gunder Frank

...we may take this whole issue as evidence of the extraordinary trauma which social science in the United States has experienced as a result of its isolation from Marxist viewpoints.

Marvin Harris
PART ONE:

STRUCTURAL ORIGINS - TO 1950
Chapter 1

Theoretical Origins

Two broad streams of social theory have emerged with the development of modern industrial society. These schools of thought differ in their interpretations of the role and effect of the progressive growth in the division of labour, technological innovation and the economic separation of land, labour and capital.

The functional-integration school, tracing its origins through St. Simon, Montesqieu, Compte and Durkheim, sees the increasing specialization of work roles as a socially integrating force because it results in greater interdependencies through which a "collective conscience" emerges as a functionally (rather than ritualistically) determined social value system.

This value consensus is seen as having evolved from the arational, "mechanical" kinship and authority patterns of primitive tribal society to the rational, "organic" and contractual forms through which modern societies articulate collective priorities and regulate individual transactions.

The above terminology is taken from Durkheim, but the theme repeats itself, with minor variations, in the writings of many of the most popular nineteenth and twentieth century social researchers and philosophers.* The common element, however, is the persistent belief

*For example, Tonnies talks of Gemeinschaft and Gesellschaft societies and Maine of "Status" and "Contract" cultures.
that societies based on individual free contract are naturally equilibrating and, unlike the rigidly authoritarian traditional societies, are seen as progressive, self-correcting and in the long run productive of the most harmonious and fulfilling human relationships.

Although it is perhaps an oversimplification to equate Adam Smith's *laissez-faire* economic doctrines with the organic equilibrium theories of Durkheim and his followers, both are ideologically and epistemologically compatible.* If there is to be a "free market", then there must be an open or "free contract" society. Equilibrium implies dynamic balance and not stasis, as does the *laissez-faire* doctrine of transactionalism. The classical economics assumption that individual competition for unequal distribution of wealth is compatible with the most socially utilitarian allocation of scarce natural resources and commodities is fully consistent with the functionalist belief in general social benefit accruing from a hierarchical reward distribution within the division of labour, assuring (it is assumed) the most socially beneficial allocation of human talent.

It would be unfair, of course, to categorize all functional-integrationists as "social Darwinists" in the extreme sense represented by Spencer and Sumner, but it is clear that the school's predominant epistemological paradigm does rest on an evolutionary framework in

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*However, Marvin Harris has criticized Durkheim and the French functional-structural school in terms of their inability to throw off the residue of the long, Gallic intellectual tradition of idealism in order to complete the logic of their essentially materialist arguments. For example, in his *The Rise of Anthropological Theory*, Harris notes that "Durkheim himself draws attention to the fact that he has not yet systematically examined how economic activity is governed by religious ideas. He is convinced, however, that there is no dearth of connection. Thus we see how Durkheim's conception of economics was...contaminated with the *emic* [idealistic] sense of rules and ideas...resulting in flights of fancy and displays of learned obscurantism."*6
which "survival of the fittest" is at a minimum interpreted as a functional justification for social inequity.  

Although the equating of social utility and economic efficiency is based upon the tacit acceptance of economic priorities as deterministic of social organization, the integration sociologists have tended not to focus on the social consequences that result from the crucial capitalist economic divisions of labour and capital.

The second stream of modern industrial social theory, that of the conflict school, focuses precisely on this separation of labour and capital. Building on the prodigious works of Karl Marx, conflict sociology emphasizes the apparent contradiction between the ability to produce great surplus through collective effort that the industrial process provides and the differential social access to these material benefits inherent in the capitalist socio-economic system. The Marxists argue that in such a system the division of labour should not be seen as socially integrating but rather as individually alienating in the sense that workers lose the unity of work, ritual and play which a more instinctive social relations to production provided. It is further argued that the institutionalization of private property rights, which separate workers from free access to their tools and materials, effectively abrogates their natural political function in collective determination of basic social and economic priorities.

Therefore, under capitalism, unified labour, through which man realizes himself, is seen to have been fragmented and rendered a marketable commodity by a minority "class" of capitalists who monopolize the society's productive instruments and manipulate the social
priorities in pursuit of "exchange" rather than "use" value in order to achieve class rather than collective advantage.

Thus to the classical conflict theorist, the basic social cleavage is not seen in terms of the divisions within productive labour, but between those who own the means of production and those who are forced to sell their labour power as the only means of acquiring an unequal share of the common productive wealth.

Because the Marxist socio-structural model is based upon the ownership or non-ownership relations to production, there is an emphasis on the polar strata of wage-labour proletariat and the wealthy entrepreneurial bourgeoisie. Although Marx recognized the existence of a "middle-class" of small owners that transcended the worker-owner dichotomy, he predicted that, given the aggregative dynamic of the capitalist system, the majority of these petit bourgeoisie would ultimately fail in their uneven competition with large owners and thus be forced into the industrial proletariat.

Few would question that the first half of this prediction was well founded; at a minimum, most would agree with C. Wright Mills that those small entrepreneurs who remain today are as dependent upon the whims of the large corporations as the workers; and they are perhaps even more vulnerable since they lack collective bargaining power. However, with regard to the proletarianization of the middle-class prediction, most latter-day critics of Marx (including many who claim to be -- or are accused of being -- neo-Marxist) point out that the shifts in industrial production technique and business organization that precipitated the decline in small entrepreneurship also led to the
growth of a new "middle-class" or professionals, middle-managers and supervisors. This "new middle-class" has become the sine qua non of the most advanced capitalist systems.

To quibble that objectively the vast majority of this new middle-class are employed and hence have a "worker's" relationship to production and therefore represent nothing more than the white-collar legion of the proletariat may well satisfy the technical definition of the "class" division, but it does not explain the typically unproletarian self-image and behaviour patterns exhibited by this emergent social group.*

It was Max Weber who first articulated the important distinction between "classes" and "status groups".11 According to Weber's typology, a person's position in the social structure may be determined not only by his "class", i.e., relations to production, but also by his "status", i.e., relations to consumption.

...one might thus say that 'classes' are stratified according to their relations to the production and acquisition of goods; whereas 'status groups' are stratified according to the principles of their consumption of goods as represented by special 'styles of life'.12

Thus as the capitalist industrial system began its inexorable evolutionary progress into more sophisticated and complex organizational

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*It should be pointed out that Marx himself was very much aware of both the existence of "false consciousness" and the role which the division between "mental" and "manual" labour plays in fostering this intra-class division. Marx's own works, particularly Poverty of Philosophy and Capital, were largely concerned with the conditions under which a "class in itself" becomes a "class for itself". Many of the conditions which Marx saw as likely to result in the rapid growth in proletarian class consciousness did not occur, or have not yet occurred. Other conditions, especially in North America, have been decisive in maintaining the intra-class divisions. One of the persistent problems of neo-Marxist analysis is the tendency to look in the contemporary society for the circumstances predicted by Marx rather than pursuing the logic of the existing dialectic.
and administrative forms, there occurred within the extended class of employed "workers" certain preconditions for a highly subjective status group separation which would prove more visible and hence more subjectively experienced than the more objective Marxian class distinctions. These preconditions included:

(1) Differential monetary rewards of sufficient magnitude to assure the possibility of some "workers" setting themselves apart in terms of an exclusive consumption pattern.

(2) The opening of mobility routes to permit a few of the privileged workers further access to even more exclusive consumption-based life-styles if they represent ownership interests in the face of, and contrary to, the perceived interests of the less privileged workers.

(3) The consumption style which the more privileged workers can afford to adopt is made more or less socially obligatory in order to achieve and maintain the advantaged occupational position.

Thus the visible boundary between the most distinct status groups within the employed class became the "collar-line", which symbolizes not the distinction between ownership or non-ownership, but manual from non-manual work and vulgar from more genteel life-styles.

In contributing this new conceptual dimension to social stratification theory, Weber spotlighted the essential connection between occupational prestige and social status. In so doing, he provided subsequent generations of social scientists, especially in North America, with a theoretical foundation which appeared to be more congruent with the visible social reality as well as with the predominant socio-political ideology. Although a capitalist elite "class" clearly existed, it was not sociologically separable from the upper status levels of the
occupational structure, since both reflected similar life styles and hence belonged to the same status group. Thus, in sociological terms, so long as individual mobility routes were available within the same social status hierarchy, and this structure included the capitalist elite "class", then the society remained "open", or as some sociologists insisted, "classless".

Because the preponderance of North American socio-structural analysis has been based upon the Weberian concept of status group rather than on Marxian class assumptions, there has been an emphasis on the integrative role of the so-called "middle-class", for it is within this stratum that the maximum opportunity for individual differentiation in terms of talent and ability is seen to exist. Provided that access routes into the middle status hierarchy are kept open, that the occupational mobility ladder within the middle stratum is selective on the basis of merit, and that at least some individuals are regularly and visibly recruited from this level into the propertied elite, then this "middle-class" is seen as the integrative link which prevents social polarization through the development of class consciousness.

Because of the pervasiveness of this functionalist-integration approach in the analysis of the North American social structure, any study which intends to focus on the changing character and structural relations of the American middle-class must begin with a critical examination of the principal theoretical constructs, methodological approaches and explanatory models of this school. The remaining chapters in Part One of this thesis will undertake this task and in so doing will define the appropriate terms, review the relevant literature and provide
the necessary time and space benchmarks upon which a contemporary socio-structural analysis with future implications may proceed in Part Two.
Notes


8. See Walter Buckley, Sociology and Modern Systems Theory, Englewood Cliffs, New Jersey, Prentice-Hall, 1967, Chapter 1, "Social System Models", for a thorough comparative review of how various societal models are determined by other disciplinary concepts and how these are deterministic of the resulting explanations.


12. Ibid., p. 193.
Chapter 2

Social Status and Occupational Prestige

Whereas the Marxist theory unmistakably reflects the character of social and political conflicts in nineteenth century Europe, the functionalist theory reflects equally clearly the social situation in the USA, where neither a working class political movement nor a working class ideology has ever become established, and where the social hierarchy has been conceived very largely as a system of loosely organized status groups, membership of which is related to individual abilities.

- T. B. Bottomore, Sociology

If a society's most visible social cleavages are based upon status honour rather than on class distinctions (which is not to suggest that class distinctions are not objectively present), and if an individual's occupation is the principal means of determining both his social status and personal life-style, then there is a necessary correlation between individually achieved status and socially ascribed occupational prestige.

Indeed, one of the most definitive functionalist explanations of the necessity for, and existence of, hierarchical social stratification is based upon a social status-occupational prestige nexus:

Starting from the proposition that no society is "classless", or unstratified, an effort is made to explain, in functional terms, the universal necessity which calls forth stratification in any social system... The main functional necessity...is... the requirement faced by any society of placing and motivating individuals in the social structure...[so as to] ensure that the most important positions [occupations] are conscientiously filled by the most qualified persons...[unequal] rewards and their distribution become a part of the social order and thus give rise to stratification...Granting the general function that inequalities subserves, one can specify the two factors that determine the relative rank of different positions. In general those positions convey the best reward, and hence have the highest rank, which (a) have the greatest importance for the society and (b) require the greatest training or talent.
In summarizing the criticisms which the original Davis and Moore paper elicited, T. B. Bottomore notes that the functionalist theory

...assumes that the 'most important positions' and 'most qualified persons' are unambiguously defined, independently of the influence of interest groups, in all societies. Next, it will be observed that the theory is conceived in terms of the ranking of individuals, and that it does not explain the existence of well defined social groups, status groups, elites, and classes. Moreover, the theory does not account for, but merely recognizes, the existence of different types of social stratification and processes of change from one type to another. Finally, it...has little to say about the relationship between social stratification and political conflict.

Although the argumentation between Davis and Moore and their principal critics was carried out at a theoretical level emphasizing the traditional "class" vs. "status group" assumptive distinctions, there also emerges the question of institutional isomorphism; namely, even if one assumes that a society does at some point (perhaps after a major social or economic revolution) achieve something close to a perfectly functional stratification system which allocates status on the basis of some automatically determined social utility scale, to what extent does this status hierarchy, once established, respond to evolutionary changes in the functional utility scale of the occupational structure?

In order to approach an empirical verification of the theory it is necessary to reduce these theoretical speculations to two basic questions.

First: What evidence is there to support the functionalist contention that occupational prestige ascription has, in fact, been arrived at through some form of autonomic collective value consensus that reflects the hierarchy of amiant social needs?
Second: Is there any evidence for the existence of mechanisms whereby substantive and qualitative shifts in the functioning occupational structure are transmitted to, and deterministic of, change in the occupational prestige hierarchy?

In attempting to approach the first question -- evidence of the assumed congruence between occupational prestige and social utility -- one is faced immediately with the problem of determining what are, in fact, the most socially utilitarian priorities. An epistemological as well as empirical problem exists here. As the critics of classical market economics have pointed out, the almost theological character of the terms "natural", "automatic" and "self-correcting" effectively defy the application of negative evidence, since any such evidence is explained away as "dysfunctional Utopian meddling". ³

We may, however, avoid this definitional dilemma if we elude the trap of attempting to establish absolute criteria of occupational utility and resort to comparative methods. According to the logic of the functionalist stratification theory, every society establishes an occupational prestige hierarchy in congruence with its objective functional requisites. Since these requisites are also assumed to be intimately tied to the existing modes and relations to material production, it follows, if the functionalist explanation is correct, that societies with qualitatively different economic foundations and/or stages of technological development will have institutionalized qualitatively different occupational prestige hierarchies. Indeed, this point is specifically made in the Davis and Moore presentation;
In so far as there is a difference between one system of stratification and another, it is attributable to whatever factors affect the two determinants of differential rewards - namely, functional importance and scarcity of personnel. Positions important in one society may not be important in another, because the conditions faced by the societies, or the degrees of internal development, may be different.... In some societies the stage of development, or the external situation, may wholly obviate the necessity of certain kinds of skill or talent.

Thus comparisons of the occupational prestige hierarchies between societies with different economic bases and at significantly different stages of technological development would seem to offer a fruitful method of testing the functionalist explanation. Specifically, if societies chosen for their infrastructural divergence had a high degree of relative discrepancy in their occupational prestige hierarchies, then the functionalist explanation would take on at least heuristic validity in the absence of absolute measures of social utility. Conversely, should these comparisons indicate very similar occupational prestige hierarchies, then the monocausal functional determinism explanation for unequal social status and material reward distribution would seem to fail.

Fortunately, a considerable amount of research into the qualitative and quantitative dimensions of occupational prestige ascription is available. In the United States, for example, the National Opinion Research Center (NORC) has conducted successive large sample public opinion polls in order to determine popular occupational prestige ratings. These ratings have been correlated with a number of respondent socio-economic and educational characteristics, and a high degree of agreement has been found to exist as to the prestige value of various categories of jobs across the whole spectrum of American society.
... one of the major findings of the original 1947 [and later 1963] NORC survey was the demonstration that all segments of the population share essentially the same view of the prestige hierarchy and rate occupations in much the same way.

Otis Dudley Duncan's secondary analysis of the 1960 U.S. Census data\(^7\) confirms the general conclusions of the NORC studies and further demonstrates the essential connection between occupations, income and educational attainments as interdependent status factors.

Inkeles and Rossi\(^8\) extend the American NORC occupational prestige data into cross-cultural comparison by correlating similar studies from five other modern industrial societies. All five nations were seen as occupying fairly close levels of technological development, but they represent marked separations in terms of economic base. Inkeles and Rossi found "impressive agreement among the countries in their ordering of occupations." Coefficients of determination (\(r^2\)) ranged between 0.94 and 0.55 with an average of 0.83.\(^*\) Noting that these six societies differed widely with respect to their economic foundations, Inkeles and Rossi concluded that

... a great deal of weight must be given to the cross-national similarities in social structure which arise from the industrial system and from other common structural features, such as the national state.\(^9\)

Although the term "industrial system" is distressingly vague, in context, it would seem to imply something close to "level of technological development". In other words, the conclusion seems to imply that if nations with clearly different economic infrastructures do not develop significantly different occupational prestige hierarchies, then

\(^*\) The original correlations cited in the Inkeles and Rossi study were the standard coefficient "r". These have been squared in order to render them compatible with all subsequent studies.
(if the functionalist assumptions with respect to socio-structural causality are to be upheld) the answer must lie in their common productive technique.

But other studies suggested that similar occupational hierarchies exist in technologically backward countries. This prompted Hodge, Terman and Rossi to extend the original Inkeles and Rossi comparisons to include some two dozen nations with not only widely different material foundations, but representative of the widest possible divergence in technological development.

Here we investigate the hierarchy imposed upon occupational systems by popular evaluation, studying the prestige according to "samples" of occupations obtained from more than a score of nations. The countries studied vary widely in cultural base, in political and economic diversity, and in the way in which major institutional complexes are articulated with each other.

They further note with respect to the earlier study that Inkeles and Rossi made no specific prediction concerning how the occupational-prestige hierarchies in relatively underdeveloped nations would compare either with each other or with industrialized countries, although the stress placed in their interpretation on the industrial system has been interpreted to mean that underdeveloped nations would show prestige hierarchies which were more idiosyncratic than those of industrialized nations.

But the results totally invalidate this latent prediction. Occupational prestige correlations ($r^2$) for the non-farm occupations in all countries studied fell between 0.95 and 0.62 with an average of 0.83. Of particular significance to this thesis was the case of the white-collar occupations, many of which have virtually no functional significance in underdeveloped societies, but which nevertheless had an average correlation of 0.79.
These facts led the authors of the study to conclude

...that it is impossible to argue...that similarities in levels of industrialization induced similarities in the hierarchical evaluation of occupations, since without any substantial progress toward industrialization, many "new nations" have achieved a structure of occupational evaluations quite similar to that observed in the United States.15

Their further explanation that the apparently dysfunctional occupational prestige hierarchies which these underdeveloped nations appeared to adopt is explainable in terms of something analogous to "reference group" behaviour, does not, of course, disprove the "functionality" of these hierarchies for the advanced "reference" societies. But it does demonstrate that the social acceptance of occupational prestige hierarchies is particularly susceptible to some sort of extrinsic value socialization and is not necessarily a "natural" and "automatic" response to functional requisites.

Thus, with respect to the first question postulated in order to determine the validity of the functionalist assumption that occupational prestige ascription universally reflects an accurate consensual response to the ambiant functional priorities, the answer would seem to be categorically in the negative. This conclusion is further supported when we consider the second and related question regarding the ability of the occupational prestige structure to undergo adaptive reallocations in the face of significant evolutionary shifts in the techno-economy.

Hodge, Siegel and Rossi, apparently still searching for evidence to support the functionalist assumptions, undertook yet another study in which it was hypothesized that
...there are cogent reasons for expecting that changes in occupational structure will be reflected, at least ultimately, in corresponding changes in the prestige positions of occupations. The prestige position of an occupation is apparently a characteristic of that occupation, generated by the way in which it is articulated into the division of labor, by the amount of power and influence implied in the activities of the occupation, by the characteristics of incumbents, and by the amount of resources society places at the disposal of incumbents.... Hence as occupations shift in these respects over time, corresponding adjustive shifts in prestige positions can be anticipated.16

The authors further noted the objective fact that "the occupational structures of the labor force of the United States have undergone considerable change since 1947 (and even more change since 1925)"17 and that the availability of the two NORC surveys of 1947 and 1963, plus supplementary studies dating back as far as 1925, offered an excellent opportunity to prove or disprove the hypothesis.

The question at issue is whether changes in the occupational structure have been reflected in shifts in the prestige of occupations between the two points in time.18

The study provided a highly conclusive answer when correlations between the occupational prestige ratings collected in 1925, 1940, 1947, and 1963 ranged between 0.934 and 0.990.19 These results are further confirmed by Otis Dudley Duncan's study on the "Properties and Characteristics of the Socio-Economic Index"20 where a correlation of 0.94 was found between an aggregate measure of the income of an occupation in 1940 and a similar indicator in 1950.

These studies provide substantial evidence to the effect that the functionalist assumptions with respect to the deterministic and self-correcting relationship between occupational prestige and social utility are not substantiated in the very terms that the theory emphasizes, i.e., cross-cultural particularism and intra-cultural evolution. This
negative evidence would thus place the functionalist causal explanation as to the origins of the existing North American social structure in considerable doubt. None of the cited studies, however, has provided anything close to an alternative explanation of the origins and maintenance of the existing social structure. Nevertheless, certain heuristic elements in these studies are suggestive that if social utility factors are not deterministic in establishing and maintaining the social ascription of occupational prestige and status rewards, other more political and ideological factors are.

For example, Hodge, Siegel and Rossi attempt to explain their unexpected discovery of occupational prestige stability over a near half-century of occupational change by suggesting that

...any dramatic shifts in the prestige structure of occupations would upset the dependency that is presumed to hold between the social evaluation of jobs, its educational prerequisites, its rewards and its importance to the society.... Instabilities would further ambiguities of status inconsistencies if the prestige structure were subject to marked and rapid change. Indeed, the meaning of achievement, career, seniority, and occupational mobility would be fundamentally altered if occupational prestige was subjected to large-scale changes. No small amount of intra-generational mobility between prestige classes would, for example, be induced solely by the changing structure of occupational prestige even though individuals did not change their occupations over time.  

These, then, are the clues -- educational norms, status maintenance mechanisms, the socialization of legitimating ideologies and the effects of institutionalized mobility patterns -- which will be pursued in subsequent chapters in the analysis of the conventional socio-structural wisdom in the development of explanatory and predictive models.


4. Davis and Moore, *op. cit.*, p. 244.


11. Hodge, Terman and Rossi, *op. cit.*


21. Hodge, Siegel and Rossi, *op. cit.*, p. 327-28, original emphasis.
Chapter 3

The Ideology of the Open Society

Two Models: Entrepreneurial and Bureaucratic

Nothing in all history has ever succeeded like America, and every American knew it. Nowhere else on the globe had nature been at once so rich and so generous, and her riches were available to all who had the enterprise to take them and the good fortune to be white.

Henry Steel Commager, The American Mind

...in the great interlocking system of corporations people live not by attending to the job, but by status role playing, and tenure, and they work to maximize profits, prestige, or votes regardless of utility or even public disutility...

Paul Goodman, Growing Up Absurd

The intimate relationship between the rise of classical economic theory and liberal political philosophy has been thoroughly documented by numerous scholars. Similarly, there is a great deal of unanimity in attributing the cultural seedbed for these once revolutionary concepts to 18th century England. But if there is agreement that market economics and liberal philosophy were conceived and born in the land of Ricardo and J. S. Mill, it has become a veritable cliche to note that these concepts were best nurtured to social maturity in the land of Jefferson and Dewey.

Ever since Alexis de Tocqueville's two-volume eulogy to early American society, those who have searched for evidence that the liberal notion of equality of opportunity can best be realized through the concept of an "open society" have looked to America where historical and material circumstances combined to produce a veritable liberal Utopia of small propertied entrepreneurs. C. Wright Mills describes this early America as
...a remarkable society with a self-balancing principle, requiring little or no authority at the center, but only wide-flung traditions and a few safeguards for property. Here the ideals of the political economist Adam Smith coincided with those of the political moralist Thomas Jefferson; together they form the ideology of the naturally harmonious world of the small entrepreneur.4

Having been spared the "five-hundred-year struggle out of feudalism" with a continent full of resources to exploit, and with an initial immigrant population dominated by ascetic Calvinists, the nation was born "almost de novo a capitalist order."5

But this new-world capitalism was rural based with little need for an industrial proletariat but great need for individual enterprise that, given the relatively primitive stage of the technology and the general availability of resources, was not much inhibited by lack of initial capital.

Under these special conditions, Mills suggests that capitalism did not imply the individual alienation and class conflicts which Marx saw as the inevitable outcome of institutionalizing private property rights under a laissez-faire ideology -- at least not immediately:

The individual who owns democratic property [property which the owner himself works] has power over his work, he can manage his self and his working day. The individual who owns class property [property which others are hired to work] has power over those who do not own, but who must work for him.... Democratic property means that man stands isolated from economic authority: class property means that, in order to live, man must submit to the authority which property lends its owner.6

This is the original distinction which Mills sees as separating a truly free-enterprise, small, entrepreneurial capitalism from monopoly corporate capitalism; pluralistic liberal democracy from increasingly centralized and manipulative state power; and 18th century America from 20th century America.7
The transition between the "American Dream" of Horatio Alger and the "American Tragedy" of Theodore Dreiser was as brief as it was inevitable. As rural-based and rural-oriented entrepreneurship declined in the face of urban-centered industrial empire builders there was not only a massive influx of industrial proles, for the most part new immigrants, but also a fundamental shift in the work relations of the indigenous middle sector of the social structure. The sons of small entrepreneurs, who maintained their "middle-classness" by labouring profitably within the security of their father's "democratic" property, became the new white-collar status group employed in the service of "class" property. Mills distinguishes the now ambiguous term "middle-class" as the "old" and the "new" American middle-class and notes that "the numerical decline of the older, independent sectors of the middle-class, by nearly half between the years 1870 and 1940, is an incident in the centralization of property." The near quadrupling of the new middle-class between 1870 and 1940 he attributes to "the industrial mechanics by which the occupations composing the new middle class have arisen." He goes on to say that

Negatively, the transformation of the middle class is a shift from property to no-property; positively, it is a shift from property to a new axis of stratification, occupation. The nature and well being of the old middle class can best be sought in the condition of entrepreneurial property; of the new middle class, in the economics and sociology of occupations.

Yet in spite of the new occupational reality, the old proprietorial ideology persists. "Free enterprise" and the "American way of life" remain synonyms. It is said that the dream of nearly every citizen is to some day "own his own show"; and every year hundreds of
thousands of those who have mortgaged their life savings in the attempt to become the economic casualties of the system.

As an economic fact, the old independent entrepreneur lives on a small island in a big new world; yet, as an ideological figment and a political force he has persisted as if he inhabited an entire continent. He has become the man through which the ideology of utopian capitalism is still attractively presented to many of our contemporaries.... This ideology performs a crucial role in the competition between [big] business on the one hand and the electorate, labor in particular, on the other. It is a means of justifying a social and economic position of business in the community at large. For, if there is free competition and a constant coming and going of enterprises, the one who remains established is 'the better man' and 'deserves to be where he is.'

The entrepreneurial ideology has thus become one of the great cultural mythologies of our time. Its role is no longer one of function, but legitimation; it evokes more nostalgia than hope; and like the "flesh" and "blood" sacraments of a high mass, it is celebrated ritualistically as a symbol of traditional faith and not because its presence is very meaningfully felt amongst those who have most directly inherited its tradition. As William H. Whyte has pointed out, though the entrepreneurial ideology has remained as an opiate for the lower strata, another much more pervasive and deterministic ideology -- one based upon the bureaucratic model -- now dominates the middle stratum which has of necessity joined the more privileged sectors of the occupational world.

If Mills has demonstrated the evolutionary shift from "old" to the "new" middle-class in America and if Whyte has provided an inside view of the new middle-status workers' on-the-job relations, Riesman, Glazer and Denny have combined elements of both in portraying the total personality and life-style of contemporary "middle-class" America.
There is a comparative framework in which the polar characteristics of the old entrepreneurial and the new bureaucratic behavioural models are developed as "ideal-types." Like Whyte, Riesman, et al., see the shift in identity validation from the "inner directed" asceticism of the entrepreneurial ideology to the "other directed" reflectionism of the bureaucratic "status honour" as the decisive outcome of the shift from independent property to dependent occupational relations. Self-worth is symbolized not in accumulation and production skills but in display and consumption styles. The measure of success has shifted from ability to exploit or husband the material environment to the mastery of the social skills of "selling oneself" and interpersonal manipulation. Personal gratification is achieved not out of the realization in "life works" of the inner moral and ethical standards established in youth, but in the degree of popularity one can "earn" through conforming to shifting group norms and fulfilling superficial peer group role expectations. Though personal striving for success remains the ultimate drive, the goal is achieved not in terms of individual initiative but in group adjustment. Horatio Alger has been set aside for How to Win Friends and Influence People and Emerson for How to Stop Worrying and Start Living. Although Riesman interprets this shift from the "bank account" to the "expense account" and from the "hidden hand" to the "glad hand" as signalling what Daniel Bell later depicts as "the end of ideology," others have seen this new and pervasive middle-status reference style as an inevitable extension of the rationalized organizational ideology to the whole socio-cultural matrix. When Paul Goodman referred to middle-class America as suffering from the mass psycho-
pathology of powerlessness, he did so precisely in terms of the reflection in their private life of their organizational ideology.\textsuperscript{17}

We may agree, and certainly the community-based case studies of Seely, \textit{et al}\textsuperscript{18} and Arensberg and Kimball\textsuperscript{19} would confirm, that the new middle-status groups have as a result of their shift from property to occupational status become highly vulnerable to extrinsic socio-economic forces. But this is not to say that the new middle-status groups have not developed as a source of collective power institutions uniquely adapted to protect, maintain and extend their social group interests.

As Peter Blau\textsuperscript{20} and Anthony Downs\textsuperscript{21} have informed us with respect to the functional aspects of bureaucratic organizations, though the individual bureaucrat is formally and individually weak, the bureaucracy is itself informally and collectively not without power and certainly not without that kind of negative power through which the institutionalized norms and commitments of the organization men as a group are protected from excessive outside encroachment.

If we accept that the new American middle-class's relations to production are essentially bureaucratic in style, and that this relationship has qualitatively changed the ideological foundations of their life-style and world view, then we may look to the institutional field in which this group acts out its social relations for similar evidence of congruent maintenance and mobility mechanisms.

But first we must establish theoretical and methodological frameworks through which such socio-structural investigations may proceed.
Notes


4. Ibid., p. 4.

5. Loc. cit.


8. C. Wright Mills, op. cit., p.65.


11. Ibid., p. 34-36.


Chapter 4

Social Mobility - Concepts and Methods

Individual Ascent: Origins and Destinations

It has already been emphasized that the equal opportunity rhetoric of the "open society" ideology does not imply the socialist commitment to equality of condition but rather the liberal belief in equal opportunity in the competition to become unequal. The concept of individual social ascent is thus central to the open society's structural legitimation, and its measurement is a basic task for those who would study this structure.

The previous chapter traced the historical evolution of American society from one which maintained a socio-cultural reference based on small entrepreneurship to one dominated by values associated with a new bureaucratic middle reference group. It was suggested that these two "middle-class" models, and the rather polar norms and values they contain, represented the principal source of cultural contradiction between legitimating rhetoric and functional reality. Ioan Davies has described this cultural dialectic as the competition between the "collectivistic-meritocratic" values engendered by the contemporary bureaucratic style and the residual socialized commitments to the "particularism-individualism" of the entrepreneuriial past.

In terms of social mobility measurements, it is clear that both these socio-cultural models have provided the a priori notions of what to measure when looking for evidence of social mobility. At the most
basic conceptual level, then, the distinction between the two models of entrepreneurial and bureaucratic reference may be found in terms of time scale. If individuals are assumed to have equal opportunity within the amiant institutional structures, then longitudinal studies which span the father-son generation gap and hence focus on social origins as a significant factor, are hardly conceivable. Thus the intra-generational mobility methodology fits well within the assumptions of the entrepreneurial model which assumes all final destination outcomes to be a function of factors internal to the individual concerned.

Alternatively, the bureaucratic model assumes that such obvious occupational mobility factors as initial selection and subsequent promotions are based on some extrinsic and reasonably objective measures of merit. Although the individual is seen as having ultimately to prove himself in terms of his own ability to achieve, there is little attempt to mystify the obvious fact that such prerequisites to the meritocratic competition as education and the acquisition of sophisticated personal manners have their origin for the most part in family ascription.

Researchers have thus increasingly tended to favour the inter-generational approach of father-son comparisons. In general, most of these studies accept the methodological truism that the more you sub-divide the occupational categories, the more absolute mobility you find. However, in terms of "class" or relative mobility, there is a general reliance on three significant categories: "manual" (working, blue-collar), "non-manual" (middle, white-collar), and elite (large owning). Within this framework early investigators found that while there was considerable inter-generational strata mobility within each of these "class"
categories, the most significant predictor of an individual's "class" destination is the occupation of his father. They further found that where upward mobility across the "collar line" does occur, the probability is that the "origin" was the last strata below and the "destination" the first strata above the major class divisions. Such findings confirm that the point of origin is an important factor in achieving individual mobility.

In describing the conceptual differences between these two ways of looking at social mobility, Ralph Turner makes the "race" and the "ladder" analogy.

In the race the important consideration is that everyone starts at the same place and must cover the same ground to reach a given goal. The race institutionalizes the goal of equal opportunity.... The ladder, on the other hand, consists of a series of steps, each of which must be traversed in order to reach the next higher step. Each individual starts from a given rung, [the son of] the unskilled laborer has as far to climb in moving up two rungs to the skilled-labor category as [the son of] the small-business owner has in moving up to a managerial position in large business. On the other hand, the son of a large-business owner or official has nothing more to do than stay put in order to remain in the same category.

Because the race model assumes an equalitarian society which is capable of placing all its youthful competitors along a common starting line to begin their life-chance race, it is the final destination distance from a common "zero point" which represents the measure of mobility achieved. The ladder model, on the other hand, assumes that some inequalities exist in the sense that an individual's social origins provide an initial reference point for subsequent mobility measurement.

J. Katz illustrates how categorically different conclusions can derive by applying each model to the same data through the following example:
A truck driver's son becomes a book keeper and a physician's son becomes a chartered accountant. Applying the race model, one would conclude that the physician's son achieved significantly greater upward mobility than the truck driver's son. Alternatively, the ladder model indicates that while the truck driver's son achieved upward mobility, the physician's son suffered downward mobility.

In terms of individual outcomes, the race model can only conclude that some upward mobility takes place for almost everyone. In terms of general societal outcomes, this model predetermines the conclusion that net upward mobility inevitably occurs, since in every generation the top and middle status ranks are populated.

On the other hand, the ladder model clearly allows for the conclusion that an individual may experience one of three mobility possibilities: he may remain socially static, become upwardly mobile, or become downwardly mobile with respect to his familial social origins. The ladder model measures not only distance travelled but also the direction of travel, the origin being socially defined rather than arbitrarily assumed. Because this conceptualization is obviously much more in conformity with socially perceived reality, Turner notes that "sociological writings strongly favor the ladder model..." However, true though this may be, an uncritical acceptance of the ladder concept's validity with respect to individual measurements cannot be extended to the more general societal conclusions.

We may best understand the nature of this by first noting some obvious demographic truisms which nonetheless are often overlooked and become the source of much analytic confusion.
In any hierarchically arranged society there are more individuals near the bottom of the structure than at the top. Those at the bottom cannot categorically descend further, while those at the top cannot categorically rise. In terms of inter-generational mobility, then, the nearer the bottom the sample selection occurs, the higher the probability of upward mobility. Conversely, the nearer the sample is to the top, the higher the probability of finding incidence of downward mobility. Indeed, if the status distribution profile remains constant, and if the population distribution within it is known, then exact rates of up and down mobility can be calculated for each layer with respect to random chance probability of such movement. This is called "perfect mobility".

If an ideal "open society" means no institutional restrictions to individually experienced opportunity for mobility based on some set of naturally occurring, randomly distributed ability characteristics, then the degree of relative openness may be ascertained by comparing actual rates of up and down mobility into and out of each stratum with the "perfect mobility" calculation. To fail to make such statistically controlled comparisons and to look only at the raw rates of mobility into and out of each layer under the precepts of the ladder model will insure the conclusion that "there has been significant [up] mobility at the bottom and lack of [up] mobility at the top of the social scale" and hence that the society is constantly tending toward social equality where the ultimate point of "classless" equilibrium is located in the middle of the structure.

Thus, though the initial selection of the ladder model represents a tacit rejection of the classless society's real world existence, its
superficial employment will inevitably confirm the belief that the society is increasingly approaching the ideal.

It is a basic contention of this thesis (to be subsequently verified) that American sociology has to an exceptional degree accepted socio-structural conclusions based on such uncontrolled application of raw rate mobility data, and that it has further tended to ignore certain strata differentials in measuring downward mobility rates as well as having failed to control for occupational and population distribution changes.

**Group and Strata Mobility**

We have seen how intra-generational mobility studies based upon the race model emphasize destinations while inter-generational mobility studies based on the ladder model place an equal emphasis on the point of origin. Both share the common assumption that the basic unit of mobility is the individual; that is, so far as mobility is concerned, it is the individual who is seen as the variable, moving into or out of fixed strata in the social hierarchy.

It is possible, however, to view the strata themselves as mobility variables. In this conceptualization a stratum may move up or down the hierarchy relative to other strata, or a whole sector of the hierarchy may experience a general rise or fall in its material wellbeing without displacing other elements in the existing order. In both cases individuals are seen as experiencing mobility as a function of continuing membership within their original strata rather than through their change of strata.
It seems clear that for any extensive amount of "strata" mobility to occur, there would have to be a shift in the occupational structure of the society -- where extrinsic factors cause an increase in the relative number of workers in one sector while decreasing their proportion in another. An obvious example of this has been the extensive migration of farm labour to the industrial sector in America between 1900 and the Second World War. More recently a similar trend has taken place between secondary and tertiary sectors.

Another but related form of "group" mobility is that kind of absolute (as distinct from relative) mobility produced by a general rise in such things as purchasing power, leisure, security and retirement benefits which have been the general outcome of the rise in productivity of the blue collar workers and their successful application of collective bargaining.

Hodgkinson describes this group mobility and compares it with the individualized mobility of the "middle-class".

Group mobility has as its general objective the betterment of every worker who does a particular job while he is still doing that job, while individual mobility meant the movement of an individual through the job structure by changing jobs. It is the difference between a stairway, which must be climbed by each individual under his own power, and an elevator, which takes everyone in it up without any particular effort on his part...

We are suggesting that in the minds of most manual workers, especially in heavily unionized occupations, social mobility has now come to mean more salary and benefits in the same job.

It is important to note that the conditions which would promote strata or group mobility lie outside any narrowly defined stratification concepts. As indicated, strata mobility is dependent on major techno-
economic change, while upward group mobility is primarily dependent upon such macro-economic determinants as increasing productivity resulting in changes in the capital-labour mix and a long-term growth in GNP and concomitant growth in aggregate demand. Thus it is the combination of macro- and micro-economic factors which determine a society's potentials for net upward, net downward or equilibrated mobility.

This last point, which is taken up in some detail in the next chapter, is often overlooked by sociologists. For example, a large body of literature which focuses on individual upward mobility tends to assume that because those in the upper-middle occupation brackets tend to have university degrees, all that is required for those in the lower strata to achieve movement into the higher positions is to acquire a similar education. Such analysis fails to recognize that given the existing economy, there are only so many good jobs, and if everyone had a Ph.D. the occupational mix would remain essentially unchanged.

A related problem in definitional naivete arises when it is noted that the evolution of production and consumption factors shifts the locus of the labour market from primary to secondary to tertiary (and now in the latest version by Herman Kahn) to quaternary occupations, and then this is taken for prima facie evidence of upward mobility. But if grandfather was a farmer, father was a production worker, and the indigenous generational son is a department store clerk, are we really entitled to conclude that there has been a progressive realization of intergenerational upward mobility? Or might we not more realistically decide that the job description of the typical prolet has simply undergone
some change while the whole society has experienced considerable group mobility?


Chapter 5

Comparative Mobility

We have noted in previous chapters a number of socio-cultural discrepancies. These include the discrepancy between an objectively changing occupational structure and a static subjective perception of occupational prestige, and the discrepancy between entrepreneurial ideology, as a legitimating social model reference, and the bureaucratic style as the principal functional social model reference. Alternative socio-structural research frameworks have been reviewed in terms of their congruence with one or another of these models. We have also alluded to the problem of theoretical reification in establishing status categories within the socio-structural hierarchy and the necessity for developing categories that maintain some sort of approximation to both objective class distinctions and subjectively perceived status differentials.

In this chapter this somewhat abstract material will be applied to the concrete problem of determining the degree of rigidity or fluidity within the American social structure. The chapter will also examine the further problem of determining the most relevant, useful and accurate set of stratification categories to be applied to the problem of determining the mechanisms of mobility and/or status maintenance. Finally, an attempt will be made to reach some conclusions as to the differential propensities of each of these sub-strata to vary from the "perfect mobility" ideal and to institutionalize mechanisms of self-recruitment.
As stated earlier, much of the mobility research strategy has proceeded under the conscious or latent assumptions contained within the "open society" ideology. Particularly in the U.S.A., it is virtually a cultural imperative to demonstrate that the society not only remains "open" but that it is the most open society.

Sociological exponents of the "rags to riches" ideology, while being generally forced to abandon or modify their earlier predisposition to intra-generational investigation, have tended to apply the inter-generational approach within a rather naive and restrictive set of assumptions and methods.\(^1\) These include:

1. The measurement of rates of upward mobility while ignoring rates of downward mobility.

2. The failure to distinguish the very definitive difference between group and individual mobility. Indeed, a number of such studies have supported the conclusion that individual mobility is still very high and perhaps rising with evidence of long-term group mobility. For example, in a much quoted article entitled, "Is America Still the Land of Opportunity?"\(^2\) the sociologist William Peterson selectively reviews a number of empirical mobility studies and concludes that "contrary to much recent opinion that the 'rags-to-riches' tradition of the United States has become a myth -- [the evidence indicates] that the individual has as much or more chance to rise in the world as he ever had in this country."\(^3\) Unfortunately, from the point of view of logic, the studies cited -- or more correctly, those parts of the studies cited -- are concerned almost entirely with long term group mobility, which in no sense supports the Peterson conclusion with respect to individual mobility. Indeed, in at least one of the cited studies the opposite
conclusion was obtained.\(^4\)

(3) A heavy reliance upon the three macro categories of "farm", "industrial-labour" and "non-manual" strata as the significant "rungs" on the mobility ladder. These gross, macro divisions may well have been the significant "class" divisions of the past, but, as will be demonstrated, there is as much reason to believe that today they may more realistically represent the changing job description within a single stratum than divisions between significant groups in the total social hierarchy.

The last point is perhaps the most significant, since its application, even when the other problems are recognized, often leads to disjointed conclusions. An example of this may be found in a Lipset and Rogoff\(^5\) study which, to some extent, was inspired by the above mentioned Peterson paper. Taking the cultural myth that America was the most open society under investigation, Lipset and Rogoff compared the rates of upward mobility across the three macro levels of farm, industrial-labour and non-manual labour in the U.S. and in six western European countries. They discovered that in spite of the conventional belief, "Western Europe has as open a class structure as the U.S."\(^6\)

This conclusion, while both interesting and significant (we will return to it later), is not so important in the present context as the conceptual problems that the authors encountered in reaching it. Although Lipset and Rogoff neither justified their use of the three macro categories nor concluded that they were problematic, it is clear that what began as a relatively simple one-dimensional study of
comparative mobility soon became a multi-dimensional digression on the nature of techno-economically engendered occupational change. In this digression the concept of social mobility is somewhat mysteriously replaced by a new conceptualization which the authors call "the opportunity structure." Although social mobility is said to be as prevalent in Europe as in America, the "opportunity structure" is not:

Not the alleged rigidity of European class lines... but the ability of the expanding American urban economy to absorb much larger numbers of the sons and daughters of the American countryside, explains why America is more of a land of opportunity than Europe.

And,

The larger movement of Americans into the class of non-manual workers is due, again, not to a higher rate of social mobility as such, but to a greater increase in the proportion of non-manual "opportunities" in the U.S. which have expanded at a faster rate than in Europe.

They further conclude (in the digression) that one-dimensional mobility studies fail to take into account differential fertility rates, rural-urban migration patterns and the structural (occupational) changes of opportunity.

Given these conclusions, it is a source of some wonder why the authors did not question their original status categories and further did not see fit to articulate the distinction between individual and group mobility in the pursuit of their central hypothesis. (To complete the picture, they also failed to consider downward mobility patterns.)

These oversights need not concern us, however, for in extending their analysis to the consideration of why everyone thinks that the U.S. is actually more socially fluid than Europe, they make the essential point:
We have answered [the question of the misconception] in part by distinguishing between social mobility as such, and fundamental changes in the "opportunity structure" caused by the rapidly expanding American economy. Thus the precipitous decline in the absolute and relative size of the American farm class, the other side of which is a sharp increase in the number and proportion of non-manual urban occupations, has been mistakenly attributed to a more fluid class structure in the U.S. 10

Thus the use of the "farm", "industrial-labour" and "non-manual" categories would seem to offer very little understanding about the maintenance or change of individual opportunity, but usage of these categories does very clearly document the changing job descriptions and perhaps group mobility of those who remain objectively in the lower working stratum.

But if the Peterson approach only demonstrates the extent of group mobility experienced by the whole society (or a major proportion of it) over a fifty-year period, and the Lipset and Rogoff study suggests that what is sometimes taken for mobility is only change in the lower status job descriptions, how are we to distinguish between these structural changes and the real parameters of individual and group social mobility?

The only conclusion which can be drawn from the above review is that the failure to make conceptual distinctions between individual and group mobility patterns and the further failure to incorporate the ambient changes in occupational and economic factors as a control on one-dimensional mobility studies, produces more confusion than enlightenment. Fortunately, Robert J. Havighurst 11 has developed a typological model which offers a route out of this conceptual morass.

Havighurst begins by observing the importance of conceptually separating individual from group mobility. Both forms of mobility are defined in terms similar to that already established in this thesis, i.e.,
individual mobility as competitive movement up and down a fixed scale of occupational prestige strata, and group mobility in terms of a general transference or evolution of occupational descriptions and/or consumption opportunities of a given social strata and hence all those who remain within that strata. Recognizing the inherent problems associated with the use of macro status divisions, Havighurst employs a five-point scale with the first point being reserved for the owning-inheriting elite class, the second and third points separating the higher white-collar managerial and supervisory status group from the lower non-manual workers, and the fourth and fifth divisions separating the more skilled blue-collar industrial workers from the lumpens.

Havighurst then compares socio-structural data from four societies -- the U.S., Britain, Australia and Brazil -- in order to determine whether there is evidence of a static or changing proportion of occupancy within the social sub-strata divisions of each country. He discovers that both possibilities obtain. The United States has in the years 1900 to 1950 experienced a steadily changing occupational structure while Britain has remained virtually static in this respect.

In England...the proportion of manual workers' positions in the labor force seems not to have declined since 1900. This is an important fact, and goes far toward explaining why England and Australia probably do not have net upward mobility. Increasing productivity in these countries has taken place without a decrease of the proportion of manual workers, while in the USA there has been a substantial decrease in the proportion of manual workers.

It is important to emphasize here that it is changes or rigidities in the macro occupational structure that are revealed in these comparisons. Whether or not these changes or rigidities have implications
for social mobility, either of the group or individual kind, depends upon a more thorough socio-economic factor analysis. Since each of the compared countries has a rather different socio-economic factor mix, it is possible to compare these as clues in this regard.

Havighurst isolates the following economic factors as worthy of inter-country comparison:

1. Industrialization effects on the organization of work.
2. Productivity and income changes.
3. National resources and their general availability to individuals.

In terms of social factors, Havighurst considers strata differentials in birth rate, and socio-structural ideologies and institutional norms.

After making these socio-economic factor comparisons and keying them to the macro occupational shift data, Havighurst concludes that the conditions which favour net upward social mobility are:

1. A shift in the occupational structure brought about by a combination of the following factors:
   a. technological change (simple to complex);
   b. change in economic base (especially from primary to secondary);
   c. increase in general productivity;
   d. easy access to valuable natural resources.

2. Differential fertility such that the upper strata do not reproduce their numbers, thus providing a demographic imbalance favoring some upward mobility.
In general the "net upward mobility" factors of the first category are associated with a certain stage of industrialization (it was noted, for example, that Britain, which does not exhibit many of these features today, did so in the 19th century). This "net upward mobility" effect is experienced predominantly, though not exclusively, in terms of group mobility. The individual mobility opportunities which occur under these predominantly group mobile conditions are seen by Havighurst in terms of a kind of "spin off" effect. As the lower stratum experiences sufficient group mobility to be able to afford to equip their children with the basic resources required for individual competition (university education, for example), they stand a better chance in the competition. Such an effect, however, does not consider sub-cultural characteristics associated with differences in sub-strata life-styles and aspirations.

In any event, the significant factor is the shift in the occupational structure such that low skill, low productivity workers are automatically recruited into higher skill, more productive and hence better paid jobs. It may well be that those workers who are carried along by this external dynamic do subjectively and individually experience a feeling of absolute upward mobility, in the sense that their standard of living has improved. But if most of their original stratum peers are also transported by the same dynamic, then objectively the mobility has been group and not individual.

Alternatively, the socio-economic factor mix which tends to result in a static distribution of population within the occupational categories suggests that either no mobility at all occurs -- an unlikely
situation in industrial societies -- or that there is balanced up and
down mobility.

Britain, as the most mature and stable (i.e., non-expanding) industrial
economy is found to have reached this point. It is suggested that in such
societies no great amount of further upward group mobility, due to
expansion engendered occupational migration, is possible. Whatever
mobility is experienced will thus be individual mobility, and, given the
static profile of the social structure, the rate of individual inter-
genерational upward mobility will have to be balanced by a similar rate
of individual inter-generational downward mobility. The extent to which
such "balanced" mobility occurs (as against the alternative of a totally
rigid social structure) will, according to the Havighurst typology, depend
on the following factors:

(1) Meritocratic education systems which combine open admissions
policies with rigorous selection standards.

(2) Ideal typical bureaucratic selection and promotion standards for
all middle and upper occupational status positions.

(3) Relatively progressive technological and organizational innovation
such that job functions change considerably over a lifetime, thus
preventing job sinecures from being established.

While the detailed comparisons need not be pursued here, the
concluding statements are relevant:

...it seems reasonable to suppose that productivity may reach
something of a plateau in the technologically mature nations,
while it increases rapidly in the less industrialized countries.
If this happens, group social mobility due to technological
development will...tend to disappear in the more developed
countries...Social mobility due to differential fertility is
likely to decrease or disappear in the more industrialized countries....Finally, it appears that the evolution of a modern industrial society tends toward a reduction of net upward individual mobility or perhaps towards its disappearance; but at the same time, this evolution tends toward increasing the amount of balanced upward and downward individual mobility.15

Several important clues with respect to the question of North American socio-structural analysis emerge from the Havighurst model and its conclusions. First, it provides an explanation of the rather confusing observations of Lipset and Rogoff with respect to economic factors being the principal determinants of "net upward mobility" in the U.S. over the half-century period beginning 1900. It further confirms our suspicion that such "net upward mobility" is predominantly "group" rather than "individual", but more important, it suggests that we may expect such net upward mobility will decline in proportion to the rate of maturation of the American socio-economy. Evidence will be deployed later to indicate that such maturation has not only retarded the rate of net upward mobility in America, but that for the middle status sector the opportunity structure has over the past decade (1960's) actually reversed and now threatens net downward mobility for this status group. However, for the moment let us assume that group mobility in the U.S. has declined noticeably and that the current conditions are approaching that which Havighurst suggests have existed in Britain for a half-century, i.e., a state of mobility equilibrium.

Now it is quite evident that the previously mentioned statistical concept of "perfect mobility" applies only to "individual" mobility and further cannot legitimately be applied under conditions where net upward mobility patterns confuse the analysis by changing the proportional
representation between the sub-strata during the generation interval. However, under balanced conditions, and where the categories under investigation are still relatively macro and refer to status slots rather than to narrow occupational roles (which may continue to change rapidly), it seems quite clear that the "perfect mobility" concept is not only methodologically legitimate, but it also offers a very powerful means of determining the extent to which, under an assumed "balanced" mobility situation, the society is open or closed; and it further provides a means of isolating any differentials between the sub-strata in this respect.

Before proceeding, it may be useful to review briefly the comparative evidence gleaned so far. Two studies have been cited which compare American and European social structures. Lipset and Rogoff concluded rather paradoxically that while there was no evidence that the American society was any more open than that of Western Europe, the "opportunity structure" was nevertheless greater in the U.S. Although this apparent contradiction was never clarified by the authors, resolution is achieved by distinguishing between "individual" and "group" mobility where "openness" implies individual mobility and expanding "opportunity" implies net upward group mobility.

Havighurst provides a comparative framework which clearly distinguishes the parameters of group and individual mobility and provides a typology of ambiant socio-economic factors which identify the conditions conducive to group and individual mobility patterns.

Because the Lipset and Rogoff study used only a three-point occupational scale, which seems too gross for proper status differentiation, the conclusion about comparable degrees of socio-structural
"fluidity" between the U.S. and Europe must be considered as only heuristic and tentative.

Havighurst's five-point scale, while still dependent upon a basic collar-line separation, certainly provides a more adequate categorical framework, and his conclusions based on comparative data and theoretical interpretation do support the general conclusion of Lipset and Rogoff. However, Havighurst's typology further suggests that the socio-economic factors leading to the conclusion that the U.S. enjoyed a greater "opportunity structure", i.e., a net upward group mobility between the turn and mid-century, may be expected to decline rapidly as the American techno-economy reaches industrial maturity.

A failure of both studies is their lack of concern for comparative sub-strata patterns. Specifically, we do not know which, if any, sub-strata exhibit excessive self-recruitment within a given society and how these compare with other societies. It is, for example, conceivable that societies which maintain an overall balanced mobility pattern, where up mobiles from one stratum are balanced by down mobiles from another, may contain still other strata where no, or very little, mobility occurs. In other words, balanced mobility does not imply "perfect mobility".

It is now proposed to extend the socio-structural studies of the United States and Great Britain into a detailed comparison of the rates of mobility out of and into each of the extended (Havighurst) strata categories in order to determine not only an overall degree of openness, but also to isolate any differences between rates of sub-strata mobility. It is further hoped that this comparative method will lead to
the isolation of particular institutional components which act either as bridges or moats to mobility.

In this endeavour we are fortunate in having available for secondary analysis two major mobility studies, one American and one British, which utilize data obtained during the 1950s. Both of these studies include cross-cultural comparative analysis and employ variants of the "perfect mobility" controls. However, there is sufficient conceptual and methodological variation to allow each study to act as a cross-check on the other.

Thomas Fox and S. M. Miller undertook a comparative analysis of variations in rates of mobility between sub-strata in each of four countries: Great Britain, Japan, The Netherlands, and the United States. Although the authors make no specific reference to Havighurst, it appears that they conform very closely to his typological model. They note, for example, that

Our analysis encompasses both upward and downward mobility in contrast to the more frequent solitary emphasis on upward mobility. We are well aware that the process of industrialization has been associated with a decline in the size of the manual stratum, relative to the nonmanual -- a phenomenon contributing to upward intergenerational mobility. Downward movement on the other hand may be evidence that sons are not always entitled to their fathers' social position as heir apparent but must be able in their own right to suffer displacement by more capable individuals from lower strata.

It is clear from the above quotation that Fox and Miller make the distinction between economic expansion, determined group mobility and competitively achieved individual mobility. They also suggest that since it is difficult to separate statistically individual up-mobility from group experienced net upward mobility, the surest measure of a society's fluidity is to concentrate on the ratios of
inflow to outflow experienced by each of the sub-strata.

They begin their comparison with the macro strata "collar line" division. Their results, reproduced in Table I, confirm Havighurst's typological distinction between Great Britain as maintaining "balanced" mobility and the U.S. as experiencing net upward mobility. Specifically, in Britain the inflow to outflow ratio in each of the manual/non-manual categories is balanced within less than 0.2 percentage points -- an exceptional degree of equilibrium.

Table I

Comparative Manual and Non-Manual Inflow and Outflow Mobility (in percentages)

<table>
<thead>
<tr>
<th>Nation</th>
<th>Manual Mobility</th>
<th>Non-Manual Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inflow  Outflow</td>
<td>Inflow  Outflow</td>
</tr>
<tr>
<td>Great Britain</td>
<td>24.83 24.73</td>
<td>42.01 42.14</td>
</tr>
<tr>
<td>Japan</td>
<td>12.43 23.70</td>
<td>48.00 29.66</td>
</tr>
<tr>
<td>Netherlands</td>
<td>18.73 19.77</td>
<td>44.84 43.20</td>
</tr>
<tr>
<td>United States</td>
<td>18.06 30.38</td>
<td>32.49 19.55</td>
</tr>
</tbody>
</table>


The United States data, on the other hand, indicate a 12 percentage point discrepancy in the direction of net upward mobility from manual to non-manual occupations. Taken in terms of ratios of inflow to outflow, these data certainly support the net-upward mobility conclusion. However, we may also look at the data in terms of cross-cultural outflow comparisons from the perspective of each of the two categories. Viewed
this way, we find that for Great Britain, Japan and The Netherlands, "the rate of outflow is greater for the nonmanual stratum than for the manual." Only the United States maintains a lower outflow of non-manuals than manuals, and this by a rather significant ratio of 2:3. Fox and Miller conclude that cross-cultural comparisons of

Downward mobility may be more indicative of social fluidity than upward mobility....If this argument is valid, then the social structures of Great Britain and The Netherlands are less congealed in some respects than the United States...

Recognizing that a macro "collar line" division "blankets considerable intra-stratum mobility" variations, Fox and Miller proceed to comparisons on a five-point scale. It is now possible to isolate the occupational "middle-class" stratum, formerly subsumed by the "non-manual" category, from the "elite" stratum where self-recruitment may be expected to be (and indeed, was found to be) high.

Using this five-point scale and comparing the intra-generational outflow from "middle-class" to any of the manual sub-strata between Great Britain and the United States, it is discovered that the ratio is 48 to 21, or nearly two and a half times greater in Great Britain than in the United States. This implies that even under conditions of net upward mobility, the degree of middle-class self-recruitment in the United States is exceptionally high.

To determine just how high, the concept of "perfect mobility" may be employed. Fox and Miller apply Feldmesser's Index of Equality of Opportunity to their data. This index is explained as follows:

[The Feldmesser index takes the proportion of sons remaining in their stratum of origin in each country as 100. The proportions of sons of other origins entering the given stratum are expressed as ratios to 100. If the proportions or
frequencies of sons of all social origins entering any given stratum are equal, all ratios will have the value of 100. In other words, this index examines the proportional representation of all social strata in any given stratum. The further any ratio is from 100, the less opportunity that group has for entering any given stratum than do the sons who inherit the status.  

Table II presents the indices of intra-country equality of opportunity for each of the five strata divisions. Briefly summarized, these data indicate that the United States has a slightly more open elite than Great Britain, but that during the 1950's the American social structure exhibited an exceptionally high degree of middle-class self-recruitment and status maintenance (prevention of inter-generational downward mobility) and allowed upward mobility from the non-manual strata into the middle-class only at a rate compatible with the extrinsically determined expansion of opportunities in this occupational sector.

Table II compares the Feldmesser Indices of Equality in terms of intra-country sub-strata for each of the four countries. Fox has reworked this data in order to make the four nations more inter-comparative by selecting the proportion of occupational inheritance within any given country as the base of the index for each stratum. This measure gives the inter-country equality of opportunity indices for all countries, relative to the nation selected as the base. Great Britain was established as the comparative base. This means that if within any stratum the comparative index for the U.S. was greater than 100, occupational inheritance would be greater in the U.S. than in Great Britain with the difference between the respective index values indicating how much greater. This comparison is reproduced in Table III.
### Table II

Intra-Country Comparisons of Indices of Equality

<table>
<thead>
<tr>
<th>Equality of opportunity for:</th>
<th>Great Britain</th>
<th>Japan</th>
<th>Netherlands</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elite</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Middle class</td>
<td>19</td>
<td>39</td>
<td>22</td>
<td>37</td>
</tr>
<tr>
<td>Skilled</td>
<td>7</td>
<td>21</td>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td>Semiskilled</td>
<td>3</td>
<td>17</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Unskilled</td>
<td>2</td>
<td>18</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>$\bar{X}$</td>
<td>26.2</td>
<td>39.0</td>
<td>30.6</td>
<td>34.8</td>
</tr>
<tr>
<td>Middle class</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Middle class</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Elite</td>
<td>88</td>
<td>65</td>
<td>57</td>
<td>51</td>
</tr>
<tr>
<td>Skilled</td>
<td>61</td>
<td>41</td>
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<td>Semiskilled</td>
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<td>43</td>
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<td>31</td>
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<tr>
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<td>29</td>
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<td>27</td>
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<td>$\bar{X}$</td>
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<td>55.6</td>
<td>49.4</td>
<td>50.8</td>
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<tr>
<td>Skilled</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skilled</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Semiskilled</td>
<td>84</td>
<td>53</td>
<td>64</td>
<td>70</td>
</tr>
<tr>
<td>Unskilled</td>
<td>80</td>
<td>18</td>
<td>62</td>
<td>56</td>
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<tr>
<td>Middle class</td>
<td>76</td>
<td>20</td>
<td>68</td>
<td>28</td>
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<td>Elite</td>
<td>29</td>
<td>20</td>
<td>39</td>
<td>27</td>
</tr>
<tr>
<td>$\bar{X}$</td>
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<td>42.2</td>
<td>66.6</td>
<td>56.2</td>
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<tr>
<td>Semiskilled</td>
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<td></td>
<td></td>
</tr>
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<tr>
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<td>Skilled</td>
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<td>46</td>
<td>47</td>
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<tr>
<td>Middle class</td>
<td>36</td>
<td>29</td>
<td>31</td>
<td>21</td>
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<tr>
<td>Elite</td>
<td>18</td>
<td>25</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>$\bar{X}$</td>
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<td>45.4</td>
<td>55.8</td>
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<td>100</td>
<td>100</td>
<td>100</td>
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<tr>
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<tr>
<td>Middle class</td>
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<td>18</td>
<td>6</td>
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<td>5</td>
</tr>
<tr>
<td>$\bar{X}$</td>
<td>47.0</td>
<td>38.8</td>
<td>39.4</td>
<td>31.2</td>
</tr>
</tbody>
</table>


### Table III

Inter-Country Comparisons of Indices of Equality

<table>
<thead>
<tr>
<th>Equality of opportunity for:</th>
<th>Great Britain</th>
<th>Japan</th>
<th>Netherlands</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elite</td>
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<td>86</td>
<td>119</td>
<td>124</td>
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<td>Middle class</td>
<td>19</td>
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<td>26</td>
<td>46</td>
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<td>Skilled</td>
<td>7</td>
<td>18</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>Semiskilled</td>
<td>3</td>
<td>15</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Unskilled</td>
<td>2</td>
<td>15</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>$\bar{X}$</td>
<td>26.2</td>
<td>33.6</td>
<td>36.4</td>
<td>43.2</td>
</tr>
<tr>
<td>Middle class</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle class</td>
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<td>143</td>
<td>92</td>
<td>137</td>
</tr>
<tr>
<td>Elite</td>
<td>88</td>
<td>93</td>
<td>53</td>
<td>70</td>
</tr>
<tr>
<td>Skilled</td>
<td>61</td>
<td>59</td>
<td>38</td>
<td>62</td>
</tr>
<tr>
<td>Semiskilled</td>
<td>39</td>
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<td>27</td>
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</tr>
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<td>43</td>
<td>23</td>
</tr>
<tr>
<td>$\bar{X}$</td>
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<td>74.6</td>
<td>45.4</td>
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<tr>
<td>Semiskilled</td>
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<td>Semiskilled</td>
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<td>144</td>
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<td>Unskilled</td>
<td>75</td>
<td>19</td>
<td>132</td>
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<td>Skilled</td>
<td>54</td>
<td>40</td>
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<td>68</td>
</tr>
<tr>
<td>Middle class</td>
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<td>23</td>
<td>45</td>
<td>30</td>
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<td>Elite</td>
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<td>20</td>
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<tr>
<td>$\bar{X}$</td>
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<td>Semiskilled</td>
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<td>Skilled</td>
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<td>Middle class</td>
<td>23</td>
<td>56</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>Elite</td>
<td>7</td>
<td>42</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>$\bar{X}$</td>
<td>47.0</td>
<td>90.6</td>
<td>29.2</td>
<td>45.0</td>
</tr>
</tbody>
</table>
Looking at the "middle-class" section of this table we see clearly that our conclusions with respect to high levels of middle-class self-recruitment in America as compared to Britain are confirmed (137:100). The table provides more clues, however, with respect to understanding how the net upward mobility experienced by the lower stratum may be rationalized with a high propensity for status maintenance in the higher stratum. Again in focusing on the "middle-class" category in Table III, we discover the semiskilled and unskilled movement into the middle-class is similar in the U.S. and Britain, but the reverse is not true. Only about half the incidence of downward mobility of middle-class sons into the working class occurs in America compared with Britain.

The second study was conducted in Britain by J.R. Hall and W. Ziegel. In this study, social mobility data from Britain, Italy, France and the United States were compared in terms of sub-strata entry and exit ratios within a "perfect mobility" framework. A full discussion of this methodology and its statistical concepts is available elsewhere, but reduced to essentials, it may be explained as follows:

(1) It is assumed that over one generation, differential fertility and changes in the occupational structure are not significant.

(2) If in each generation the sub-strata of the status hierarchy were populated only on the basis of differential merit, each stratum would contain some sons whose fathers were in that stratum before and some whose fathers were in some other stratum.
The actual ratio between these two categories within each stratum is dependent upon the population distribution between the sub-strata. When this distribution is known, the calculations may be made so as to indicate, with respect to each sub-strata, the number of sons who will leave the stratum of their birth, the number of sons arriving in specific strata other than their birth, and the number of sons who would stay in the stratum of their birth.

Surveys may then be made to determine the actual re-distribution along the same parameters. These empirical results are then expressed as ratios to the "perfect mobility" calculations for each stratum.

Although such ratios may be expressed from several perspectives (father's, son's, leaving, entering), the perspective which offers the most verificational validity with respect to the Fox and Miller study is that which measures the degree of excessive self-recruitment within each stratum. This is named "The Index of Association" and is defined as the ratio of actual to expected sons arriving in the same stratum as their father. Since the perfect mobility situation would result in a ratio of 1.0 (expected = actual), evidence of excessive self-recruitment will be represented with indices greater than unity (> 1).

The Hall and Ziegel study, which abstracts from different data sources and employs a different criteria of "perfect mobility", fully confirms the Fox and Miller study.

In terms of the total social structure, Britain has a significantly lower index of association, 1.45 compared to 1.69 for the United States. Focusing on the middle-class (as we did in the Fox and Miller study) as the most heuristic in terms of comparison, we discover that this ratio
spread increases, 1.74 for Britain and 1.91 for the United States.

Correlations \( r^2 \) between the two studies have been worked out, and though it must be cautioned that the categories in the two studies are not fully analogous, the fact that they correlate close to the 0.9 level \( r^2 \) may be taken as strong evidence of mutual verification.

Before concluding, it is necessary to discuss briefly the aforementioned source of error associated with perfect mobility calculations when comparing a "balanced" society (Britain) with one that is (or was during the 1950's) still experiencing "net upward mobility". A second source of error, that of differential fertility, must also be considered.

The essential question here is whether or not the fact that the American society has net upward mobility, a fact which is not controlled for in the "perfect mobility" methodology, detracts from or reinforces the conclusions with respect to the American middle-class's strong propensity to maintain the status of its progeny. The answer is immediate and self-evident. If net upward mobility were controlled for in the "perfect mobility" methodology so that only individual mobility were measured, then the various statistical indices indicating the self-recruiting propensity of the American middle-class would have all been much higher. Indeed, it is the existence of this long-term shift in the occupational structure, which has been statistically mistaken for evidence of individual upward mobility, plus the general unwillingness to isolate downward mobility patterns, that has masked the essential rigidity of the American social structure as it evolved through the post-Depression era into the 1950's. In conceptually and methodologically separating these factors, a more accurate picture emerges.
By the same token, as Table IV below shows, American demographic data indicates that both the upper- and middle-classes do not reproduce their numbers and that the lower classes overproduce their numbers (though the difference is not great). This fact thus adds to the net upward mobility situation and further reinforces the conclusion with respect to the high degree of status maintenance associated with the American middle stratum.

Table IV

Comparison of Social Class Population

<table>
<thead>
<tr>
<th>Social Class</th>
<th>Population Distribution by Status</th>
<th>Population by Net Rate of Reproduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Class</td>
<td>3.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Upper Middle</td>
<td>9.0</td>
<td>6.5</td>
</tr>
<tr>
<td>Lower Middle</td>
<td>36.0</td>
<td>28.0</td>
</tr>
<tr>
<td>Upper Lower</td>
<td>35.0</td>
<td>39.0</td>
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<tr>
<td>Lower Lower</td>
<td>17.0</td>
<td>24.0</td>
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<tr>
<td>Totals</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>


This comparative analysis demonstrates that although the American social structure remained open in the sense that factors extrinsic to the socio-structural dynamic itself assured a net upward mobility condition, the internal dynamic of the social structure indicates an exceptional degree of rigidity with respect to a merit based, downward mobility rate for the middle and upper strata. We therefore must agree with Fox and Miller's speculation that in systems which are still undergoing economically determined group mobility, indices of downward mobility are the best indicators of fluidity or rigidity within sub-strata of
the social structure.

Such a focus led Fox and Miller to note the paradox that "the U.S.A. has high inheritance and high accessibility"\textsuperscript{25} concurrently. The accessibility factor is, of course, explained in terms of the changing techno-economic relations which have resulted in a continuing measure of net upward mobility through the 1950's when the above data were collected. However, the high rate of strata inheritance, especially in the middle occupational sector, was a situation for which Fox and Miller felt they could offer no "concise and parsimonious explanation."\textsuperscript{26}

We will now turn our attention to this question.
Notes


6. Ibid., p. 564.

7. Loc. cit.

8. Loc. cit.


10. Ibid., p. 566, emphasis added.


12. Ibid., p. 105.

13. Ibid., p. 106.


15. Ibid., p. 119, emphasis added.

16. It should be pointed out that Rogoff has attempted to control for the extrinsic shift in the occupational structure in her 1953 (op. cit.) study.


18. Ibid., p. 575.

20. Ibid., pp. 575-76.


22. Ibid., p. 578.


25. Fox and Miller, op. cit., p. 579.

26. Ibid., p. 581.
Chapter 6

Education and Status - Functionally or Symbolically Related?

In the last chapter, the social structure in the United States was compared to that in Great Britain. The purpose of this comparison was to locate any significant differences in mobility patterns between what Havighurst typologized as a "mature and stable" economy and one that was still undergoing relatively rapid socio-economic evolution through the 1950's. This comparison verified both the Havighurst predictions, at least with respect to the working- and middle-classes, that net upward mobility would obtain in the expansionist American socio-economy, and that a state of balanced up and down mobility had occurred in the more equilibrated British system. However, in an attempt to determine the relative fluidity of the American social structure, and working from the hypothesis that it is impossible to separate statistically net group mobility from the incidence of individual upward mobility, the comparative focus was brought to bear on sub-strata rates of individual downward mobility. In the case of the propertied elite class, a high level of self-recruitment was anticipated and found in both societies. But when inter-generational redistribution between middle-class fathers and their sons was compared, it was discovered that in America an exceptional incidence of middle stratum status maintenance occurred. This discovery is diametrically opposed to the Havighurst assertion that the American society is tending toward a more meritocratic individual status selection where balanced rates of up and down mobility within the
socio-structural hierarchy must emerge. Indeed, if the conditions that still fostered (though the 1950's) net upward mobility should, as anticipated by Havighurst, decline into a more stable condition, then the American social structure, unlike that of Britain, would be left with an unusually low rate of mobility across the "collar line" in either direction.

This conclusion, which the comparative analysis supports in every way, begs an explanation, especially in light of the general belief and the Havighurst prediction that it is in America where "individual mobility, both upward and downward, will be increased by the extension of educational opportunity to working class youth..."1

In pursuing this apparent contradiction between the oft-stated meritocratic goals of the American education system and the just demonstrated ability of the "new middle-class" to prevent the downward movement of their sons and to limit the inflow of up-mobiles from the lower stratum to that which is demanded by the shifting occupational structure and differential fertility, we are brought back to the concluding question of Chapter 4, i.e., to what extent has the new bureaucratic middle occupational stratum been able to institutionalize protective mechanisms against what appears to be in objective terms a highly vulnerable status inheritance position?

Since we derived our conclusions about the American mobility pattern through comparative analysis with Britain, and since in the process we discovered that the British "middle-class", contrary to much popular myth, maintained a relatively low degree of self-recruitment and in fact contributed as many down-mobile sons to the lower working stratum as they
received up-mobiles from the blue collar realm, we may find it fruitful to begin an analysis of the American educational system and its relationship to the social structure by making some initial comparisons with the British system.

We may resume where we left off -- with Havighurst's model. In terms of ideal-typological distinctions, Havighurst recognizes none at the elementary school level, the elementary school being considered functional for basic socialization and universal literacy in both systems. However, beginning with secondary school and becoming more pronounced beyond, the two models are seen in terms of their "symbolic" and "functional" relationship to the social structure.²

In the American "functional" education system, education is used to achieve subsequent social status. In Britain, education beyond elementary school is "symbolic" or reflective of one's original or ascribed social status. In the first case, education is used as a means of achieving (or maintaining) a relatively high social status; in the second, it is simply one of several mechanisms through which high social status incumbents may choose to "validate" their existing positions.

Joseph Ben-David and Randall Collins³ have provided a similar typological model in the context of normative and value differences associated with British and American universities. In the British "elite" system, a high level of mutual trust is seen to exist between all members of the university community. The predominant institutional values are thus personal and intellectual and make minimum use of formal procedures. This informal normative structure is possible because recruitment has been predominantly from the upper social stratum where
there is a high degree of value consensus. When "bright boys" from lower strata origins are admitted, it is only after a prior re-socialization period during their "scholarships" at the elite-value-dominated private schools.

At the other extreme, the American "utilitarian" university system exhibits a low level of internal value consensus and achieves its normative cohesion primarily through formalistic rule structures. The dominant institutional norms are thus bureaucratic and professional, a necessary consequence of cross-class recruitment and the lack of prior socialization to an "academic" value system. 4

Finally, Ralph Turner has contrasted the "modes of social ascent through education" employed in Britain and America in terms of divergent "folk norms" which legitimize "sponsored" mobility in the one case and "contest" mobility in the other. 5

Contest mobility is a system in which elite status is the prize in an open contest and is taken by the aspirants' own efforts. Since the "prize" of successful upward mobility is not in the hands of the established elite to give out, the latter are not in a position to determine who shall attain it and who shall not. Under sponsored mobility, elite recruits are chosen by the established elite or their agents, and elite status is given on the basis of some criterion of supposed merit and cannot be taken by any amount of effort or strategy. Upward mobility is like entry into a private club, where each candidate must be "sponsored" by one or more of the members. 6

It should be emphasized that all these models tend to be "ideal-typical" and were developed in the 1950's; hence, they relate to the social reality and conventional wisdom of that period and in this sense are temporally congruent with the previously deployed data and analysis. They do not, for example, take into account the rather major educational
"reforms" that have transpired in England during the 1960's; nor do they indicate the development of major challenges to the incumbent value and normative systems in the U.S. colleges and schools during the past decade.  

We may conclude our brief comparison of the two education systems as they evolved through the decade of the '50's by deploying two sets of comparative statistics relevant to the above-quoted typologies. Table V compares the school-going population within each of the three categories of "primary", "secondary" and "university" of the two countries, and Table VI shows the proportional distribution on a five-point status scale of the university-going population of each country.

Table V
Percentages of Young People in Primary, Secondary, and College: 1950-55

<table>
<thead>
<tr>
<th></th>
<th>U.S.A.</th>
<th>Britain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary (7-13)</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>Secondary (14-17)</td>
<td>81</td>
<td>38</td>
</tr>
<tr>
<td>University (18-21)</td>
<td>31</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Table VI
Proportional Status Distribution of University Students: 1950-55

<table>
<thead>
<tr>
<th>Social Status</th>
<th>% of U.S. Population</th>
<th>% of U.S. University Population</th>
<th>% of U.K. Population</th>
<th>% of U.K. University Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Upper Middle</td>
<td>10</td>
<td>30</td>
<td>7</td>
<td>26</td>
</tr>
<tr>
<td>Lower Middle</td>
<td>30</td>
<td>30</td>
<td>20</td>
<td>32</td>
</tr>
<tr>
<td>Upper Working</td>
<td>40</td>
<td>25</td>
<td>50</td>
<td>21</td>
</tr>
<tr>
<td>Lower Working</td>
<td>17</td>
<td>5</td>
<td>20</td>
<td>6</td>
</tr>
</tbody>
</table>


Two conclusions emerge from the above data. First, there is no very large difference in the distribution by status of the university-going population in the two countries. Both countries have a sizeable over-representation of the upper stratum and a rather larger under-representation from the lower stratum, with the (lower) middle stratum being represented in the university population in about the same proportion as their societal distribution.

However, the second observation with respect to the percentage of the total population which attends secondary and especially post-secondary schools is highly heuristic in terms of differing strata relations to the school systems of each country. The contrast may best be highlighted by combining the emphasis of both tables in order to arrive at some understanding of the differences in usage or participation.
rate in the schools by sub-strata rather than their proportional representation.

By combining the sub-strata categories of upper and lower middle strata into a single "middle-class", we discover that in the U.S. this "middle-class" sector, which represents 40 per cent of the American population, occupies 60 per cent of the available university places which are distributed to 31 per cent of the total population. In statistical terms this means that during the 1950's more than 60 per cent of the "middle-class" children of university age attended university.

But in Britain, where similar proportions of each sub-strata may be found in the universities, but where only a total of 2.5 per cent of the university age population attended university, it is clear that a very small proportion of the sons of any social stratum actually achieve a higher education. Indeed, since almost as many American youths attend university as British youths attend secondary school, it is discovered (through the same statistical procedures) that less than half of the combined "middle-class" youth in England complete this level, whereas in America virtually all the middle stratum youths complete an academic high school programme.

It may therefore be concluded that the American public secondary school system and the universities, while open to all, have in terms of participation become an integral part of the "middle-class" institutional matrix, whereas in Britain they have not.

The status mobility and/or maintenance implications of this very large differential in middle stratum higher education participation rate may be closely related to the Havighurst typological distinction between
"functional" and "symbolic" education. By any standards the American higher education system during the 1950's must be assessed as having been functional -- in terms of jobs and hence of status mobility or maintenance. In Britain the situation is not so clear. From the point of view of the aristocracy and latterly the wealthy, propertied elites, who have been the traditional "patrons" of the "public" schools and universities, an "education" must be seen primarily in symbolic terms. However, for the few very bright lower stratum children who received "sponsorship" through the same system, their education must be assessed as having been highly "functional" from the point of view of their subsequent individual upward mobility.

This analysis would imply that in Britain for the "established", higher education, while a desirable symbolic validation, is not a prime requisite for status maintenance; but for the lower stratum, it acts as a powerful vehicle for upward mobility.

The research findings of J. R. Hall and D. V. Glass confirm this interpretation. Investigating the "role of education within each parental status category" Hall and Glass anticipated that "where the fathers were in the upper status categories, the status affiliation between father and son would be greatest if the sons had been to grammar school or their equivalents, and that the converse [i.e., upward mobility] would apply to the men whose fathers were in the lower status categories".

These anticipations were not, however, verified. While it was found that those sons of lower stratum fathers who attended the elite grammar schools did achieve a high incidence of upward mobility, for the
middle stratum sons "the influence of schooling [on mobility or maintenance] is not statistically significant". It was further discovered that for the upper stratum sons, education beyond grammar school "is not generally significant".

This study suggests that in Britain, through the 1950's, the key educational variable in mobility or maintenance is the symbolic "sponsorship" associated with attending one of the elite "public" (grammar) schools and not the functional occupational attributes of attending university.

It is not that there is less evidence of the role of the grammar school in maintaining at the parental level the status of those subjects whose fathers were in the upper status categories, but that, given this grammar school background, the additional contribution of further education is not, as seen by chi-square tests, generally significant. For the high status occupations parental status as such--rather than further education--is important in providing opportunities. Where, however, it is not a question of achieving the same status as that of their fathers, but of moving up or down in the prestige hierarchy in relation to parental status, the additional contribution of further education is significant.

The authors conclude that

In general, the educational requirements for social ascent seem to be more stringent than those necessary to minimize the degree of social descent.

While these conclusions support our earlier conjecture that higher education in Britain served the lower stratum "functionally" in terms of their upward mobility, and the higher stratum "symbolically" since they were able in general to maintain inter-generational status with or without it, the situation of the middle stratum is left ambiguous.

C. Arnold Anderson has re-formulated the Hall and Glass material in order to ascertain the effect of education on British middle stratum mobility and/or maintenance. The data indicated that
...the distribution of schooling among all sons moving upward was not greatly different from that among the downwardly mobile.17

In other words, for the British middle stratum, education has not proved a decisive weapon for either strata maintenance or mobility. This goes a long way toward explaining why the British middle stratum have not been able to institutionalize effective "fail safe" mechanisms to prevent relatively high rates of downward mobility.

A similar U.S. study conducted by R. Centers in 1949 came to quite different conclusions:

Among sons of fathers in white collar occupations whose schooling was superior to their fathers', 38 percent achieved an occupation above the father's while 29 percent were in a lower occupation. When the son's schooling was inferior to that of the father, only 11 percent held superior positions and 68 percent had a poorer one.

In order to see more clearly the mobility/maintenance effect of education on the American middle stratum, the Centers data have been re-analysed in terms of the destination statistics of middle stratum sons who have: (1) achieved more education than their fathers; (2) achieved the same education as their fathers; and (3) achieved less education than their fathers. The results are compiled in Table VII below.

These data support the general conclusion that by the 1950's the American middle stratum used the public education system as a "fail safe" mechanism through which they successfully managed to assure, at a minimum, the status maintenance of their children, and more maximally, further inter-generational upward mobility.
Table VII

Middle Stratum Sons' Occupational Destination and Educational Achievement Compared to Fathers'

<table>
<thead>
<tr>
<th>Sons' Occupation Destination</th>
<th>More Education than Father</th>
<th>Same Education as Father</th>
<th>Less Education than Father</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better Occupation than Father</td>
<td>82%</td>
<td>14%</td>
<td>4%</td>
</tr>
<tr>
<td>Same Occupation as Father</td>
<td>66%</td>
<td>23%</td>
<td>11%</td>
</tr>
<tr>
<td>Lower Occupation than Father</td>
<td>57%</td>
<td>22%</td>
<td>21%</td>
</tr>
</tbody>
</table>


The data further underscore our earlier point that with the shift from an entrepreneurial middle-class to a bureaucratic middle status group, there was a necessary shift away from property inheritance as the institutional means of assuring the status maintenance and perhaps further mobility opportunities of middle stratum progeny. Lipset and Zetterberg have commented that

A bureaucrat unlike a businessman cannot give his job to his son. Many non-self-employed middle-class parents have little to give their children except a better opportunity to secure a good education and the motivation to attempt to obtain a high-class position.19

And John Seeley has noted in his upper middle-class community study, Crestwood Heights, that,

The task of the family is to equip the child as effectively as possible in the present with all available means for his later solitary climb to better and more prosperous worlds...20

The next chapter will take a close look at how this task is accomplished and at what individual and social costs.

Ibid., p. 122.


Notes


2. Ibid., p. 133 ff.


6. Ibid., p. 122.


8. See, for example, the debate between Ralph Turner, in defense of the professional faculty norms, and D. Driscoll and R. A. Lockhart, in support of a more intellectually critical academic norm, in et al., Vol., 2, No. 2 (Fall, 1969), pp. 23-25.


11. Ibid., p. 293.

12. Ibid., pp. 293-98.

13. Ibid., p. 298.


15. Ibid., pp. 298-99.
16. Ibid., p. 299.


18. Quoted in Ibid., p. 166.


Chapter 7

Public and Higher Education in America

Higher education, to an increasing extent, is perhaps the major gateway to the personal and social rewards available to the members of modern industrial societies. While in the past it was only one of several alternatives, more and more higher education preempts the part formerly played by inherited wealth, personal daring and energy, or the slow climb to the next higher job.

Natalie Rogoff, "American Public Schools and Equality of Opportunity"

To control...the schools...is to have the power to determine the character of all citizens -- and their beliefs, their motives and their aspirations.

Gail Kennedy, Education for Democracy

As the entrepreneurial epoch disappeared over the western horizon and the bureaucratic reality became the predominant success model in America's "open society", the free access to natural resource norms was progressively displaced by the concept of free access to educational resources. Politically, the transition was a painless one, for both concepts imply the same ideological commitment to equality of opportunity, and in America the notion of universal free access to a common education was always an integral part of the open society ideology. It was none other than Thomas Jefferson who first articulated the essential connection between the emerging American political and educational philosophies:

[By means of universal free education] We hope to avail the State of those talents which nature has sown as liberally among the poor as the rich, but which will perish without use, if not sought for and cultivated.]

However, though the State was to be a principal beneficiary in this nurturing of individual talent, it should not attempt to control the education process itself nor allow education to become a special instrument
of any of those countervailing interest groups which, in the "check and balance" theory of liberal pluralism, was supposed to eliminate the concept of privileged and underprivileged classes once and for all.

But if education was to become an instrument of social equity, it could not be left to the independent and differential resources of the parent. Jefferson's solution, as always, lay in the concept of local autonomy. The State may, indeed must, provide, but democratic control must be as decentralized as possible.

Thus was born an educational concept which was later to grow, under the further philosophical nourishment of pragmatists like John Dewey, into the "comprehensive high school" and the "land-grant college" system. This educational structure flourished through the early to mid-twentieth century under the largely unchallenged and for the most part hardly noticed "control" of locally elected school boards and regionally appointed college trustees.

The most abiding principle of this educational system was that of "equality of opportunity through equality of provision", and its universally and openly proclaimed function was the provision of a utilitarian path to individual success and national economic growth. During this period the socio-structural literature became increasingly confirmed in the belief that education was becoming the most important channel for occupational and hence status mobility. In the words of W. Lloyd Warner, "It is not only the royal road but perhaps the only road to success for the vast majority."

The transition from the three "R's" of the little red school house of earlier America to the multi-track, comprehensive educational concept
of the contemporary central high school's "physical plant" is paralleled by a shift from the original aim of providing every youth with the basic intellectual skills that would be required for his later competition in the world of business, to the notion that the school itself becomes the field of competition through which individuals are selected for differential entry into the world of occupations. As already noted, this transition was hardly perceived, because it was relatively slow and progressive, and because in either case the basic premise of equality of opportunity held. But as unobtrusive and ideologically consistent as this shift was, it was not without its contradictions. Foremost among these is the question of control.

The Educational Constituency

There can be little argument that the Jeffersonian concept of widely dispersed, community based political power is more consistent with the assumptions of liberal democracy than the Jacksonian belief in a strong central authority. However, this doctrine, which maintains that democratic political control is best guarded by a decentralized community based constituency, also assumes that the "community" is socially homogeneous with unique and internally consistent needs, and where conflicts occur between rather than within these basic political units. Under such conditions, a locally elected citizens' board of education could be expected to be both representative of and responsible to a broad based community consensus.

However, should the basic political unit include an internally heterogeneous population consisting of socially distant and mutually
exclusive sub-communities, each representing distinct and often antagonistic interests, and where resolution of intra-group conflict is a function of the local power structure of which the school board is an integral (and often cross-represented) part, then the question of which among the many interests are most consistently represented by the "local" and "autonomous" educational governance bodies becomes vital.

It is not necessary to review here the extensive literature on the changing American community other than to suggest that the previously cited *Culture and Community* by Conrad Arensberg and Solon Kimball is both representative and exhaustive. However, in the present context, the statement holds that in general wherever distinctive lower strata residential communities exist, they almost always exist within a civic political structure which also includes unique middle and upper-middle strata residential areas. The converse, however, is not true. That is, many suburban communities which maintain their own separate political identity may contain only middle or upper-middle strata residences.

It is clear that in the latter case, the assumption of a high degree of representativeness and responsiveness to the predominantly middle strata community consensus is likely to be found in the locally based school board. However, in the former case, where all schools come under the control of the central Board, the composition of the Board and the interests which such a composition reflects must be investigated.

We may begin such an investigation with two large national surveys, one sampling the strata composition of local school boards, the other of university Boards of Trustees. In the first case it was
found that 76 per cent of all school board members came from the professional and upper managerial stratum, a stratum which is representative of only 15 per cent of the national population. At the other extreme, the bottom 15 per cent of the blue-collar strata had only a 3 per cent representation on the nation's school boards. The remaining 21 per cent skewed heavily toward the upper-middle stratum distribution.  

In displaying these statistics, William C. Mitchell comments that although school trustees often disclaim any interference with the "professional" aspects of pedagogy, "it is highly unlikely that a school board composed of such men would long tolerate teachers and texts that depart sharply from the values and norms held by the school board as dear and essential to the welfare of America".  

In the universities, where "free thought" and "academic freedom" are at least rhetoricly valued by most faculty and some students, it is assumed that trustees should not directly intervene in the academic programme. They are, nevertheless, ultimately responsible for many decisions which do indirectly affect the teaching and research programmes; and they are very directly involved in student admissions policy and in the recruitment and appointment of administrators and even faculty.  

Who these university trustees are and what values they represent was the subject of a study conducted by Educational Testing Service of Princeton, New Jersey. A sample of 5000 college and university trustees returned a 200-item questionnaire designed to ascertain the trustee's socio-economic background and other personal characteristics, his attitudes toward higher education issues, and his opinion on the proper duties and responsibilities of a trustee.
In terms of background it was found that trustees were, in the words of the report, "overwhelmingly white, Protestant, and wealthy (more than half had incomes of $30,000), and belonged to or voted for the Republican Party".

In terms of social attitudes, the Trustees for the most part reflected what are generally held to be middle-class liberal values. However, in terms of specific attitudes on institutional control, they clearly rejected the liberal educational values most positively held by the intellectual community. For example; less than 50 per cent of the trustees "agreed" or "strongly agreed" that faculty members should be granted the right to free expression of opinion, and an amazing 27 per cent were in strong disagreement with granting this basic requisite of academic freedom; 51 per cent were unwilling to give student newspapers the rights associated with freedom of the press; 70 per cent "strongly agreed" that campus speakers should be politically screened; and 53 per cent held that faculty should be required to swear a loyalty oath.

As startling as these attitudes may be to those who assume that academic freedom norms have been securely institutionalized in American higher education, it is the Trustees' attitudes on who should be served by higher education which, in the present context, provide the greatest insights. On the question of whether university attendance should remain a "privileged" pursuit to which the student (or his family) should continue to contribute financially, 92 per cent "strongly agreed" while only 6 per cent "disagreed". However, the Trustees did for the most part agree (70 per cent to 24 per cent) that the most able students should be freed
from financial disability through scholarships. They overwhelmingly agreed that university education should not become a "social right". This would seem to imply that the majority of trustees feel that the universities should be open to anyone with exceptional and proven academic ability, but for the less than brilliant they should remain a predominantly economically restrictive "voluntary association".

These survey data rather categorically support the contention that the officially vested, local control of both the public schools and the universities is heavily biased toward the middle- and especially upper middle-class sectors. The pervasive existence of such "class"-specific de jure control does not, of course, tell us anything of the existence and extent of de facto power maintained by administrators, teachers, PTA or other school centered parents' organizations, or for that matter, students themselves. At the other extreme, centralized state organs such as Departments of Education, state and national accrediting boards and teacher and faculty professional associations do exist and may exert subtle pressures on the local governance bodies. It is, therefore, necessary to investigate these organizational and operational factors in order to ascertain whether or not they reinforce or contradict the de jure control bias.

Although some notable attempts have been made to ascertain the locus of power and vested interests of the education system at the macro-structural level, 12 the individual case study and empirical surveys remain the most revealing. Such studies fall roughly into two categories: those with a psychological bias, where such individual characteristics as aptitude, achievement, and motivation are focused upon and treated as
intrinsic variables within a constant extrinsic ambiance; and those with a sociological bias, where such extrinsic factors as the family, peer group, community norms, school organization and professional attitudes are considered to be important variables with respect to student aptitude, achievement and motivation.

It may no longer be very revealing to observe that the early and continuing popularity of the psychological approach within the pedagogic literature is perhaps as much explainable in terms of its propensity to define "problems" in terms of student characteristics (as opposed to ambient variables which would include the school environment itself) as its obvious instrumental value in providing teachers with "objective" scales of measurement and student behaviour conditioning techniques. 13

In any event, for the purpose at hand, the sociological approach is felt to be the more productive and will be followed here.

Family Influence

It is generally accepted that little or no correlation exists between innate intelligence and socio-economic status. Even the suggestion that after generations of "natural selection" the more esoteric occupational strata should produce more intelligent offspring has been questioned by cognitive psychologists who have demonstrated a persistent "regression toward the mean" effect in the progeny of both extremes of low and high I.Q. parents.

Frank Riesman has shown the sub-cultural bias of I.Q. tests which favour those people whose formative years were spent in "middle-class" settings. 14 But even with this built-in bias, higher I.Q. scores are not strongly associated with the upper social strata. 15
However, when we relate scholastic aptitude, school achievement and college-going expectations, the common correlative factor is the occupation (and hence income) of the fathers.

Natalie Rogoff and Joseph A. Kahl\textsuperscript{16} have independently analysed large national sample survey material in order to ascertain these relations. Their results have been reconstructed (for compatibility) and are shown in Tables VIII and IX below.

Table VIII

Percentage of Boys Who Expect to Go to College by IQ and Father's Occupation

<table>
<thead>
<tr>
<th>IQ Quintile</th>
<th>Father's Occupation</th>
<th>All Boys of Given IQ Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>(high) 5</td>
<td>89 76 55 40 29</td>
<td>52</td>
</tr>
<tr>
<td>4</td>
<td>82 53 29 22 14</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>70 47 22 19 10</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>72 36 20 15 6</td>
<td>17</td>
</tr>
<tr>
<td>(low) 1</td>
<td>56 28 12 4 9</td>
<td>11</td>
</tr>
</tbody>
</table>

All Boys of Given Occupational Level 80 52 26 19 12 27

Source: See Note 16. These results are based on a sample of 3,348 sophomores and juniors in the high schools of eight towns that are part of the Boston Metropolitan area, 1950.
Source: See Note 16. These results are based on a study of over 35,000 American high-school seniors who constituted the entire senior class of 500 public secondary schools. The schools were a fairly representative sample of the 20,000-odd senior public high schools in the country, 1955.

Kahl has further demonstrated that a student's college-going aspirations are more related to his parents' social strata experiences and motivations than to either financial or academic factors. 17

Table IX
Percentage of High-School Seniors Planning to Attend College, According to Scholastic Ability and Socio-Educational Status of the Family

<table>
<thead>
<tr>
<th>Scholastic Ability</th>
<th>Family Socio-Educational Status (high)</th>
<th>Family Socio-Educational Status (low)</th>
<th>All Students of Given Ability Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>(high) 4</td>
<td>83 66 53 44 43</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>70 53 37 29 29</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>65 41 31 20 21</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>(low) 1</td>
<td>53 30 22 16 18</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>All Students of Given Family Status</td>
<td>72 47 35 26 24</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

Table X
Relation Between Parental Pressure and Son's Aspirations

<table>
<thead>
<tr>
<th>Son's Aspirations</th>
<th>Parental Pressure toward College No</th>
<th>Parental Pressure toward College Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>College</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>No College</td>
<td>11</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: See Note 16. N=24
Of the lower stratum "common man" families interviewed by Kahl, the predominant socio-economic value was "getting by", while the middle stratum families had a core value of "getting ahead".

This may explain why, in spite of scholarships, "about half of the most able 5 per cent of American high-school graduates do not graduate from college".

Berdie sampled all the Minnesota high school seniors in 1950. He asked those in the top 10 per cent of this total sample who indicated that they were not going on to college whether they would if more money were available. Only half of these indicated "yes".

Kahl concludes that

...boys learn to an extraordinary degree to view the occupational system from their parents' perspective. They take over their parents' view of the opportunities available, the desirability and possibility of change of status, the techniques to be used if change was desired, and the appropriate goals for boys who performed as they did in school.

Given this strong family centered motivational influence, one would expect to find within an education system rhetorically committed to "equal opportunity" goals many innovations specifically geared to overcoming the latent motivational disadvantages associated with lower strata social origins. Yet Kahl found

...no cases in which the [common man] boy found in schoolwork sufficient intellectual satisfaction to supply its own motivation. And there were no cases where a sympathetic and encouraging teacher had successfully stimulated a boy to high aspirations.
The Community and Its Schools

As has already been pointed out, the "equality of opportunity" educational ideology evolved from the notion of equal provision to the concept of meritocratic selection. Although the selection function must ultimately confound the equality of provision goal, since to be selected "in" means to have more and better education provided than if one is selected "out", it seems obvious that if selection is to be truly meritocratic, it is dependent upon an initial equality of provision.

And if equality of provision means equal access to educational resources, both physical and human, irrespective of familial origins or geographic location, then local community variations in economic ability or willingness to "provide" would logically have to be equalized through some form of national transfer payments. This, however, has not been the case.

Of the hundreds of studies that document the prodigious spread in the educational resource allocation between the rich and poor states, the suburban and the urban sectors of cities, and the ethnic majority and minority communities, the massive survey conducted by the U.S. Office of Education under the direction of James S. Coleman 23 stands as the complete indictment.

In terms of regional and community disparities, the report found that these occurred at two levels. Poorer regions had, as expected, provided generally fewer educational resources than richer regions. However, this discrepancy between regions was considerably less than the discrepancy found between the upper and lower strata residential zones within individual school districts.
The effect of these discrepancies on student performance is summed up by Rossi:

...the achievement levels of a state or community are highly correlated with indexes of economic well-being, e.g., telephone ownership, per capita income, proportion of professionals in the labor force, and the like.24

Rogoff25 made use of large sample surveys to compare the college-planning rates and scholastic ability medians of senior high school classes in (1) small, independent towns, (2) suburbs, and (3) large towns and cities. In each case family socio-economic status was controlled. In all cases she found that "the suburbs stand out as most conducive to pronounced scholastic achievement"26 as well as to college planning.

Alan B. Wilson specifically studied the "exceptional" cases of poor children who attended well-to-do suburban schools and "well-to-do" children who attended inner-city schools. He found that

While 93 per cent of the sons of professionals in group A [suburban] schools want to go to college, less than two-thirds of the sons of professionals in the group C [inner-city] schools wish to do so; whereas only one-third of the sons of manual workers wish to go to college if they attend a predominantly working-class school, more than one-half of such sons so wish in the middle-class schools.27

Although such differentials in aspirations have been attributed to "peer group" attitudes,28 the influence of the school itself must be considered as important in affecting peer group variables. Schools are not uniform in their normative set and operational structure, and any given school setting may reinforce, contradict or be relatively neutral with respect to the family and community norms and values. In terms of motivation, the dominant institutional norms may become a major influence in turning a student "on" or "off" the academic process as a worthwhile and satisfying activity.
Working from the hypothesis that schools vary with respect to their motivating influence on students and that this variation may have some relationship to the predominant socio-economic status of the school's clientele, Nordstrom, Friedenberg and Gold\textsuperscript{29} developed an elaborate research instrument designed to isolate and measure the effect of the school environment on the attitudes of students and teachers. Seven public and two private high schools representative of clearly distinct socio-economic communities were surveyed. All responses were keyed in terms of the degree of "ressentiment" which they implied, "ressentiment" being roughly equivalent to negative motivation.\textsuperscript{*}

In addition to providing an extremely detailed and insightful picture of the very great variation in school norms and their differential effects on student and teacher attitudes, the methodology results in a mean "ressentiment index" for each school: these have been arranged in Table XI below as they relate to the socio-economic community settings of the public high schools.\textsuperscript{30} (The higher the score, the greater the incidence of ressentiment among students and teachers.)

\textsuperscript{*}The concept of "ressentiment" was developed by the German phenomenologist Max Scheler. Although not completely analogous with the Marxist "alienation" nor the Durkheimian "anomie", it combines elements of both and in social-psychological terms elicits in the individual an angry feeling resulting from an "oppressive sense of impotence which he cannot imagine actively transcending". The result is a negative and hostile attitude toward the perceived source of the impotence -- in this case, the school.
Table XI
Mean Ressentiment Index

<table>
<thead>
<tr>
<th>Community's Socio-Economic Status as Measured by Mean Family Income (Census Data)</th>
<th>Number of High Schools Sampled</th>
<th>Mean Ressentiment Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper-Middle</td>
<td>2</td>
<td>60</td>
</tr>
<tr>
<td>Lower-Middle</td>
<td>2</td>
<td>60</td>
</tr>
<tr>
<td>Working</td>
<td>3</td>
<td>70</td>
</tr>
</tbody>
</table>


Although these scores indicate the low ability of any public high school to motivate its students, the motivation is obviously lowest in the schools that serve working class communities.

If we shift our focus from equality of provision to the question of meritocratic selection, we find an even greater advantage afforded those in the middle-class suburban schools. Both Seeley and Whyte have reported how the high schools in the upper middle-class suburban communities they studied de-emphasized the competitive grading and selection norms found in the lower class community schools.

The Park Forest schools are similarly flexible in grading. To use fixed standards of performance, the authorities feel, would straitjacket the child. As a consequence, the primaries, as in many other suburban schools, are ungraded, and in later classes formal reports of the A-B-C-D-F or percentage type have been discarded. "It is obviously impossible," curriculum consultant Lucille Thimblin explains, "for a teacher to reduce the many-sided aspects of a pupil's development to an accurate numerical value."

The more "subjective" grading allows the teacher considerable latitude in weighting the student's academic record with such "important"
extra-curricular characteristics as "social maturity" and the "more inward aspects" of social "adjustment".34

Of course, the college-going aspirations of virtually all the children at Park Forest require some attention to academic subjects, but the Principal explained that "bright students" should not get undue advantage in this respect since it is a fact "that many $20,000-to-$100,000-a-year jobs in business, sales, sports, radio...are held by persons with I.Q.'s of less than ninety".35

Thus the socially acceptable, but less than "bright" students who have difficulty clearing the "stumbling block" of "specific academic credits for college admission"36 were helped by this flexible curricular philosophy. "Core courses like Unified Studies offer flexibility: if a student lacks a credit in English, for example, Unified Studies can be translated as English; if he needs a history credit, as history."37

It would appear that in suburban schools where virtually every child is "socially acceptable" and where in Parsons' terms the "college going expectation has been socially ascribed",38 there is a danger in institutionalizing competitive norms and grading practices which distribute students according to statistical ability curves -- the danger being that it is hard to rationalize those who populate the bottom quartile as "university material."

These case studies are unanimous in attributing the origin of these permissive selection norms as they apply to the upper-middle stratum children, not to the school's enlightened educational philosophies, but to the direct involvement of the local school boards in influencing the
school administration and teaching staff. In communities like "Crestwood Heights" and "Park Forest" where the social base is homogeneously upper-middle stratum, this influence need go no further than the selection of school staff with the appropriate grading attitudes. However, in socially heterogeneous communities, the interference may be more direct and coercive, as A. B. Hollingshead discovered in his now classic study, *Elmtown's Youth.*

Elmtown, a small middle-western county seat with a fully stratified population, had a central high school and maintained a community power structure dominated by the "Rotarians" who "carefully controlled...the selection of [school] Board members" by filling vacancies without announcing elections and later declaring acclamations. This practice assured that the Board would be comprised of "conservative men who have represented through the years the political, economic, social and educational interests of classes I and II [on a five-point scale] rather than the other four-fifths to seven-eights of the population".

Using field study techniques, Hollingshead discovered many incidents of class bias in the operation of the school, especially in the assigning of grades and the awarding of scholarships.

The class I and class II students received more than twice as many grades in the 85-100 category as probability indicated they would have if chance factors alone were operating. On the other hand, class V boys and girls were given about one-third as many grades between 85-100 as they should have received if no bias had been present.

When Willa, a class I girl with a social disposition but mediocre marks, was awarded the special college scholarship over Joe, the top-ranking carpenter's son who had worked his way through high school and hoped to go
on to college, no one in the community was surprised. For the lower stratum this was just another example of "how things are done around here". For the teachers, the award was justified because "Willa is more of an all-round person than Joe." And as one class mother put it, "They are such fine teachers. They know the background of each child and teach accordingly." As far as the school administration was concerned, the school superintendent had learned to be "very sensitive to pressures from families who are in a position to influence Board members... As he said, he had learned one had to follow 'the line of least resistance' or move on every year or two."

Nor are the huge urban school systems any less vulnerable to parental interference. In studying the Chicago school system, Howard S. Becker found that the bureaucratic and professional barriers which the school staff erected against parental intrusion in the schools worked to the advantage of the "middle-class".

Such a (defense) system does not work equally well with all kinds of people. In Chicago, it works to perfection with lower-class parents who are easily intimidated by middle-class institutions. But it does not work well at all with the middle-class parent, who knows how to make trouble for the school and will do so without compunction if not satisfied.

These findings by Hollingshead and Becker are further confirmed by Patricia Sexton who discovered in her research on "Education and Income" that upper-income parents frequently consult with teachers, counselors, and the school principal, the superintendent, and even school board members about their children and school affairs. Lower income parents seldom talk with any of these people. When an upper-income parent has a grievance, he talks to the appropriate person at school about it; he talks this person's language and he regards himself as at least an equal... Whatever the complaint is about... chances are it will be given serious attention.
The School Personnel

Considerable research has been done on the origins, values, attitudes and capabilities of school teachers. We know, for instance, that the teaching profession is seen as one of the more accessible middle stratum occupations for those moving out of the lower stratum; their social "reference group" is not the intellectual but rather the administrator; as a group they have the lowest intelligence and achievement scores of all college graduates; the more intelligent among them leave the profession after only a few years; of those that stay in the profession, the more creative and adventuresome are predominantly attracted to upper-middle-class suburban schools while the dull and the psychological misfits gravitate to the poorer districts.

Of this last group, teachers in the slum and ghetto schools, much has been written. Typically endowed with an "authoritarian personality" and espousing a "blackboard jungle" world view, this teacher enters the classroom looking for trouble and is seldom disappointed. Bernard Asbell describes his visit to one such classroom:

When I called on the teacher...I found him standing in front of his class, hands locked behind him, chest out, shoulders back, springing up and down rhythmically on the balls of his feet, overseeing the sullen, dark-skinned faces that filled the room,"Most of the time I'm a policeman, not a teacher," he said."Of course, I really don't mind. I was in the Army for years and I just got out of teachers' college a year ago. Maybe this is a good place for me 'cause I'm a big bruiser...

Naturally the experienced teachers want the better spots."54

A study was recently prepared for the U.S. Senate Subcommittee on Juvenile Delinquency under the auspices of Senator Thomas J. Dodd (D-Conn.). The report concludes, among other things, that "teaching everywhere [in the inner-city schools] has been reduced to the level of keeping discipline..."55 75 per cent of all teachers in East St. Louis carry
These are the schools serving the one-third of the "affluent society" that live below the poverty line. As such they have become prisons for the poor, their function being to keep those who have nothing more to lose off the street during business hours. In no way can they be construed as providing any, let alone equal, opportunity. In Urie Bronfenbrenner's words,

The success of any program to foster the development of children requires as its first ingredient an intact child.56

If the inner-city school teacher is most characterized by his authoritarian and repressive style, then the suburban school teacher is most characterized by what Herbert Marcuse calls "repressive tolerance" -- the employment of human relations psychological techniques to transfer the desired degree of control from the authority figure to the self-structure of the individual.

[Park Forest's new Superintendent Gerald Smith introduced] the "fourth R: Responsibility"...The disciplining vehicle, Smith explains, is the group. The teacher strives not to discipline the child directly but to influence all the children's attitudes so that as a group they recognize correct behavior. If a child falls out of line, he does not have to be subjected to authoritarian structures of elders; he senses the disapproval of the group and in that way, the school believes, learns to discipline himself as much as possible.57

This overt use of teacher expectations in the conditioning of classroom behavior has covert implications in the motivation of academic achievement. In the typically overcrowded classrooms, the "reward" of having teacher's personal attention is valued by students and becomes an early determinant of the child's self-image as a "good" or "bad" student.
Hoehn studied the sociometric contact patterns of nineteen elementary school teachers in schools with socially heterogeneous student populations. Controlling for initial discrepancies in scholastic aptitude, he found that "teachers had more contacts with the higher-status and (subsequently) higher-achieving pupils than with the lower-status and (subsequently) lower-achieving pupils." 59

This empirical study confirms Hollingshead's earlier observations in Elmtown that the high school teachers spent much more time coaching the upper stratum (apparently more able) than the lower stratum (apparently less able) students.

A by no means negligible element in student achievement is a teacher's expectation that the class I and II child will "make good"; and she helps him realize this goal....These factors react in subtle ways to produce high grades and leadership in extracurricular activities in classes I and II. 60

However, the most convincing evidence about the effect of teacher expectations on the performance of students comes from an extensive research project conducted by Robert Rosenthal and Lenore F. Jacobson. 61 In the course of conducting an undergraduate behavioural psychology experiment, Rosenthal discovered that when two samples of rats, one specifically bred for intelligence and the other for dullness, were at first inadvertently and later intentionally reverse labelled, the students invariably found that the genetically dull rats, which they believed to be the genetically intelligent rats, exhibited the most intelligent maze-solving ability. Rosenthal and Jacobson hypothesized that the scholastic performance of children may similarly result from the teacher's tendency toward "self fulfilling prophecy." 62
They decided to test this hypothesis in an operational school setting. A socially heterogeneous elementary school in a middle-sized city was selected. All six grades were divided into slow, average, and above-average classes. Rosenthal and Jacobson tested all but the sixth grade students on a battery of standardized scholastic ability and intelligence tests. In so doing, they made a point of involving all the teachers and told them informally that the "tests" were of a radically different sort designed to anticipate late bloomers, "spurters" as they dubbed them. They even went to the trouble of having printed the high-sounding title of "Test of Inflected Acquisition".

During the summer vacation 20 per cent of the children were randomly selected to become the "designated" group with the remainder becoming the "control". In the fall the experimenters returned to the school and casually mentioned the names of the designated students to the appropriate teachers as the anticipated "spurters". The summer vacation interval between the original ability tests and the "planting" of the false information with the teachers was to avoid any "Hawthorne effect" on the students or the teachers. Thus,

The experimental treatment of the children involved nothing more than giving their names to their new teachers as children who could be expected to show unusual intellectual gains in the year ahead. The difference, then, between these children and the undesignated children who constituted the control group was entirely in the minds of the teachers.63

When Rosenthal and Jacobson returned at the end of the school year, they retested all the children (both control and designated) and also solicited subjective evaluations from the teachers. The results were, to say the least, startling.
All the designated children showed great gains in I.Q. and scholastic ability -- greater, in fact, than those achieved through the special experimental "total push" programme designed to raise the scholastic aptitude of low achievers.

(they) "total push" programme...led in three years to a 10-point gain in I.Q. by 38 per cent of the children and a 20-point gain by 12 per cent. The gains were dramatic, but they did not match the ones achieved by the (designated) children in the first and second grades of Oak School.64

The subjective teacher evaluations described the designated children in general as

Having a better chance of being successful in later life and as being happier, more curious and more interesting than the other children... (they were) seen as more appealing, better adjusted and more affectionate.65

However, when these subjective teacher evaluations were broken down and keyed to the three classroom groups of slow, average and above-average, an academic division which was found to be highly correlative with social class origins, it was found that

the most unfavorable ratings were given to the children in low-ability classrooms who gained the most intellectually. When these "slow track" children were in the control group, where little intellectual gain was expected of them, they were rated more unfavorably by their teachers if they did show gains in I.Q. The more they gained, the more unfavorably they were rated. Even when the slow-track children are in the experimental group, where greater intellectual gains were expected of them, they were not rated as favorably with respect to their control-group peers as were the children of the high track and the medium track. Evidently it is likely to be difficult for a slow-track (usually low socio-economic) child, even if his I.Q. is rising, to be seen by his teacher as well adjusted and as a potentially successful student.66

This study demonstrates both the powerful motivational effect of high teacher expectations on scholastic achievement and "measured"
intelligence and the propensity for teachers to stereotype students from lower socio-economic backgrounds as low achievers and treat them accordingly.

These findings, especially with respect to the inability of teachers to rationalize upward divergence in student achievement with their stereotyped low expectations, and their further propensity to resolve the contradiction by making increasingly negative subjective evaluations the more the objective achievement diverges from the expectation, brings up the important question of the role of school records and the effect of school counselling on such students.

The Counsellor and the Record

Grambs notes that the most significant recent innovation in the structure of the school is that of guidance and counselling. Effective counselling is dependent on the accumulation of formal and informal information on individual student records. Teachers and counsellors are free, indeed are encouraged, to make frequent, impressionistic, anecdotal entries. Students and parents are not normally permitted access to these records, but the "permanent record" follows the student through his entire educational journey and beyond; employers and investigative agencies are regularly granted free and confidential access.

However, it is in the intra-educational selection process that the record and the counsellor's interpretation of it become decisive. Cicourel and Kitsuse undertook a study designed to reveal how much the organizational norms of the high school and the professional and personal values of the school staff
...differentiates talented from average and low-ability students and college-going from non-college-going students and how such activities may affect the future occupational careers of the student population....

...we wish (also) to examine the thesis advanced in earlier studies that social class and organizational sponsorship, as opposed to capability, are critical for the manner in which students are processed through the school system.69

During preliminary investigations of the school chosen for their study, they came to the conclusion that

One of the major consequences of the current search for academic talent [selection process] in the high school... [is the] limitation of access to future occupational opportunities by organizational decisions and actions that occur as early as the students' last year in junior high school. The activities of counselling personnel are of major importance in such organizational decisions and actions and therefore deserve close examination.70

The first thing the study revealed about counsellors was that counselling is "professionalized" around the concepts and categories of clinical psychology.71 Counsellors encourage teachers to report "deviant" behaviour on the part of students, and students are encouraged to initiate "self-referral" for personal "adjustment problems". Thus the record entry categories favoured by the counsellors are defined in terms of "deviance and adjustment" and not "aptitude and achievement".

Given the schools' rather narrow adoption of "middle-class" norms and values, it is not surprising that those students who were defined by teachers as tending toward deviance or who experienced problems of school adjustment were from the lower strata. The outcome of this "natural selection" process was that the counsellor records of lower strata children were bulging with entries -- all couched in the clinician's jargon of pathology -- while the middle strata students had few if any such entries.
When the time came to be counselled with respect to educational selection, those students who had "problems" on their records tended to be counselled into the easier, non-academic tracks. Of special significance was the student who had many "problems" entered on his record but who maintained a high overall academic record. The school counsellors were then confronted with the previously mentioned contradiction in stereotypes, a contradiction they resolved by designating the student as an "overachiever". The significance of this label lies in the fact that such students were subsequently reported to college entrance or other educational selection committees as unlikely to maintain their current scholastic record.

In order to ascertain the extent to which the social class origins of the students affected the counsellor classifications as against other factors, Cicourel and Kitsuse coded all the students in their sample on a seven-point socio-economic scale as well as rating their objective achievement; they then asked the counsellors to rate the students in terms of future college-going potentialities. The results indicated that of the 184 students rated as "excellent" prospects by the counsellors, all came from the upper social stratum but only 94 had above-average grade points while 90 had below-average grade points, including some regular failures.72

Referring to Turner's73 "sponsored" and "contest" mobility typology, they conclude

Our materials indicate first of all that in the bureaucratically organized high school the day-to-day activities of the school personnel effectively control the access of students to the limited number of curriculums available, particularly their access to the curriculum most instrumental for upward mobility, i.e., the college preparatory curriculum. Through control over the student's course programs, the school personnel may include
or exclude students from the 'contest' and that the 'aspirant's own efforts' are neither the only nor the critical determinants of their qualifications as 'contestants'.74

This conclusion, that there is a high degree of socially ascribed "sponsorship" associated with the school's selection mechanisms, is reinforced by Porter's75 findings that high school counsellors tend to counsel lower strata children according to the "reality principle" where the counsellor believes that it is only realistic to divert financially unsupported children, including those with higher than average achievement records, away from "expensive" post-secondary education.

Burton Clark76 similarly found that the student record and counselling service were used in the junior colleges as a means of "cooling out" students on terminal programmes in order to discourage them from taking the heavily high-strata subscribed university transfer programmes. The counsellor's record, he concluded, "has the function of documenting denial".77

The Post-Secondary Institutional Hierarchy

It seems not unreasonable to conclude from the foregoing evidence that "bright" or potentially "bright" lower strata children face many formidable cultural and institutional hurdles in attempting to realize the "equal opportunity" promise of the American education system. It seems equally clear that middle strata children, particularly upper-middle stratum, who are not especially able intellectually are afforded numerous bridges across the formally imposed meritocratic selection moats into the college-going track.
Because college-going was seen as the great watershed of opportunity, we have focused on the public school's inability to provide equal opportunity for successful preparation and entry into college. If we have concluded that the public schools one way or another assure virtually every middle strata child a successful passage through the college preparatory programme, we are not entitled to suggest that this means he can go to any college he likes and successfully graduate from it. Nor are we entitled to assume that the selection battle is over for those few from lower strata origins who, in spite of the odds, graduate from high school cum laude.

David Riesman has described in some detail what he calls the "academic procession" -- the Ivy League, the Land Grant, the Sectarian, and the new multi-dimensional State college systems. Each of these segments is seen to appeal to (or recruit from) different clientele, and the mechanisms which distribute individuals within this hierarchy are both social and scholastic.

Like all socio-institutional hierarchies, the academic profession is based upon prestige; and like the occupational prestige scale already discussed, this prestige need not be very isomorphic with the manifest functions which the institution was created to serve. However, if the functional value of a college degree is measured in terms of the subsequent income it achieves for the possessor, there is a very distinct correlation between institutional prestige and occupational rewards.

Ernest Havermann and Patricia Salter West randomly sampled 9000 college graduates and correlated their annual incomes with the institutions from which they graduated. The results are reproduced in Table XII.
Table XII
Types of Colleges and Financial Success

<table>
<thead>
<tr>
<th>Type of College</th>
<th>Annual Income of Graduates, 1947</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Big Three</td>
<td>$7,365</td>
</tr>
<tr>
<td>(Harvard, Yale, Princeton)</td>
<td></td>
</tr>
<tr>
<td>Other Ivy League</td>
<td>$6,142</td>
</tr>
<tr>
<td>(Columbia, Cornell, Dartmouth, Pennsylvania)</td>
<td></td>
</tr>
<tr>
<td>Seventeen Technical Colleges</td>
<td>$5,382</td>
</tr>
<tr>
<td>(e.g., California, Carnegie, Detroit, Stevens Institutes of Technology, Polytechnic Institute of Brooklyn, Tri-State College, etc.)</td>
<td></td>
</tr>
<tr>
<td>Twenty Famous Eastern Colleges</td>
<td>$5,287</td>
</tr>
<tr>
<td>(e.g., Amherst, Bowdoin, Brown, Haverford, Lafayette, Rutgers, Tufts, Williams, etc.)</td>
<td></td>
</tr>
<tr>
<td>The Big Ten</td>
<td>$5,176</td>
</tr>
<tr>
<td>(Chicago, Illinois, Indiana, Iowa, Michigan, Minnesota, Northwestern, Ohio State, Purdue, Wisconsin)</td>
<td></td>
</tr>
<tr>
<td>All Other Midwest Colleges</td>
<td>$4,322</td>
</tr>
<tr>
<td>All Other Eastern Colleges</td>
<td>$4,235</td>
</tr>
</tbody>
</table>


Burton Clark in his study of the California State college system examined the social class origins of those who attended the western elite private college of Stanford, the academically selective University of California in Los Angeles, and the "satellite" four- and two-year state colleges near Los Angeles. His results are reproduced in Table XIII.
Table XIII
Comparison of Backgrounds of Freshman Students from City of San Jose, 1955*

<table>
<thead>
<tr>
<th>College</th>
<th>Upper White-Collar</th>
<th>Lower White-Collar</th>
<th>Upper Blue-Collar</th>
<th>Lower Blue-Collar</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stanford University</td>
<td>87</td>
<td>7</td>
<td>6</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>University of California</td>
<td>69</td>
<td>14</td>
<td>11</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>San Jose State College</td>
<td>38</td>
<td>17</td>
<td>29</td>
<td>16</td>
<td>100</td>
</tr>
<tr>
<td>San Jose Junior College</td>
<td>23</td>
<td>15</td>
<td>45</td>
<td>17</td>
<td>100</td>
</tr>
<tr>
<td>Total work force of city of San Jose</td>
<td>26</td>
<td>17</td>
<td>38</td>
<td>19</td>
<td>100</td>
</tr>
</tbody>
</table>

*Based on freshman students from city of San Jose, 1955; socio-economic background determined by father's occupation.

Source: See note 81.

Once again the connection between social-class origins, "measured" scholastic ability, and selection into opportunity paths is demonstrated. This is not to imply (as was the case in some of the previously displayed public school research) that the more prestigious colleges admit and "push through" the less than able upper strata students; on the contrary, all evidence indicates that they do not. However, the evidence does indicate that "bright" upper strata students are heavily over-represented in the elite institutions relative to "bright" lower strata students. As for the less than bright middle- and upper-middle class students that made the well lubricated passage out of high school and into the college selection net, Dael Wolfle has demonstrated that there is an accredited "college for every intellectual range". 82
However, the plight of the "under-privileged" and the threat that this implies to the legitimating "equal opportunity" rhetoric of the American political system has caused federal and state level intervention in the predominantly locally controlled education systems in the form of sponsoring the new "open door" junior college systems. The function of this junior college system is to provide belated opportunities for those who, for all the reasons discussed, have found closed the door to higher education and hence occupational opportunity.

The "open door" is accomplished by placing the "community" colleges in the most disadvantaged residential areas, charging little or no tuition and requiring no pre-requisites for admission. In spite of these obviously equalitarian intents, the success of the colleges in achieving their primary goal of providing a bridge into educational opportunity for those who were previously discriminated against has not been great.\textsuperscript{83}

The most obvious reasons for this failure are:

(1) The impossibility of eliminating in two years the cumulative bad effects of 12 years of educational deprivation and social discrimination.

(2) The junior colleges recruit most of their "faculty" (74 per cent according to Katz\textsuperscript{84}) from the senior staff of high schools. Thus this "faculty" brings with it all the institutional bias, professional mediocrity and bourgeois attitudes which alienated the disadvantaged in the first place.

(3) These colleges offer both a two-year terminal diploma programme, specifically geared to predominantly blue-collar style jobs, and an academic programme intended to lead to university transfer credit.

Thus, though the door may be open initially, once through it there is the
opportunity, as demonstrated by Clark, to "cool out" those students with sub-cultural traits which the college counsellors identify with low academic potentials and consequently diverted into low opportunity terminal programmes.

(4) There is the further opportunity of "reserving" the transfer programme places for the middle- and upper-middle strata students who were so unproductive during high school that they failed to meet the standards of the least selective four-year colleges and who therefore regard the open door colleges as "make up" schools.

This last possibility was the subject of research by J. Katz who found that low achieving, middle strata students were indeed highly over-represented in the academic transfer programme, while high achieving, lower strata students either dropped out altogether or were predominantly located in the terminal programmes. Katz further concluded that the formal and informal institutional matrix suggested that although the junior college had been specifically intended for lower strata populations and had been located so as to be convenient to them, it had become a "middle-class voluntary association" which socially discriminated against and hence alienated the very sector it had been created to serve.

Thus the tail of the "academic procession", far from achieving its manifest function of providing equal opportunity for the under-privileged, is at best "a dyke against the vast numbers of lower strata students who otherwise might wish to attend the university." At worst it is just one more publically sponsored means of preventing middle strata social fall-out, a last ditch "fail safe" which, though tedious and not very intrinsically valuable, will eventually provide a "degree", the basic requisite for "middle-class" status maintenance.
Notes


7. Ibid., p. 270.


10. Loc. cit.

11. Compare with Sanford, op. cit.


17. Kahl, op. cit., p. 351

18. Ibid., p. 354.


22. Ibid., p. 362.


26. Ibid., p. 249.


30. Data abstracted from ibid., pp. 107 and 166.


34. Ibid., pp. 424-25.

35. Loc. cit.

36. Ibid., p. 430.

37. Loc. cit.


41. All quotes, loc. cit.

42. Ibid., p. 173.

43. Ibid., p. 182.

44. Ibid., p. 129.

45. Ibid., p. 195.


47. Ibid., p. 102.


53. Loc. cit.


59. Ibid.

60. Hollingshead, op. cit., p. 176.


62. Ibid., p. 184.

63. Ibid., p. 187.

64. Ibid., p. 188.

65. Ibid., p. 187.

66. Loc. cit., emphasis added.


68. Ibid., p. 101.


70. Ibid., p 14.
71. See also, Herman, Sadosky and Rosenberg, op. cit., Chapter 5.


77. Ibid., p. 520.


79. See also, Riesman and others in Sanford, op. cit., p. 74-192.


82. Wolfle, op. cit., p. 221.


86. J. Katz, op. cit.

87. Ibid., p. 9.
Part One Summary and Conclusions

In Part One an attempt has been made to demonstrate the relationship between occupational prestige, social status and educational opportunity as these facets of the socio-economic structure have evolved in America during the first half of the twentieth century. Certain socially dominant ideologies and sociologically predominant theories have been related to empirical findings. In this pursuit, a number of contradictions have emerged, such as: the distinction between functional occupational requisites and ascribed occupational prestige; the behavioural and ideological inconsistencies between the entrepreneurial and bureaucratic models of social ascent; the conceptual and methodological confusion abounding in socio-structural research, especially that which mistakes economically determined changes in the occupational structure (group mobility) for evidence of socially determined structural fluidity (individual mobility); and finally, the failure of the American public education system to achieve a reasonable approximation of either its equality of provision or its meritocratic selection goals.

In an attempt to avoid the pitfalls of evaluating empirical evidence in terms of an ideal or absolute reference criterion, comparative frameworks have been adopted. A number of typological models have been employed to this end as useful in the search for and organization of data. However, these models have been treated heuristically rather than definitively; and where expectations based upon the logic of the abstract model have failed to meet empirical verification, these discrepancies have been interpreted not as anomalous and problematic but as insightful and symptomatic.
The principal conclusions arrived at through these methods are:

(1) The principal avenue of social mobility for individuals in the lower and middle strata of American society is bureaucratic occupations and not individual enterprise.

(2) Occupational prestige ascription is found to be more related to conservative social forces than to progressive, functional requisites. The available evidence strongly suggests that rather than being an autonomous and self-correcting instrument of socio-economic allocation, occupational prestige is instead primarily "functional" in maintaining the continuity of the social status hierarchy.

(3) Although the American political culture still seeks to legitimate its ruling social philosophy in terms of the entrepreneurial "free enterprise" ideology, the predominant socio-structural mechanism is based on the bureaucratic behavioural model. This model dominates not only the work relations of the "new middle-class" but also their entire life-style. Because this "class" is not primarily distinguishable in terms of its property relations but finds its social validation in consumption styles, it must be categorized in Weber's terms as a status group. In terms of the "open society's" equal opportunity commitments, the significance of this shift from entrepreneurial to bureaucratic models of social ascent lies in the shift in primary mobility routes from individual enterprise to meritocratic selection.

(4) Although the American socio-economic structure has in the past demonstrated relatively high rates of upward mobility in terms of changes in the occupational mix such that low productivity, low pay occupations have declined while higher productivity, higher pay jobs have increased, the resultant "group" mobility is seen as a techno-economically determined
process external to, and in some respects antithetical to, the kind of "individual" social mobility implied by the "open society" ideal. By invoking the statistical concept of "perfect mobility" and by making cross-cultural comparisons, it is discovered that the American social structure exhibits a relatively high degree of rigidity compared to other modern industrial societies.

(5) A comparative examination of the American public education system indicates that the original concept of equality of provision was adapted to one of meritocratic selection. Because decisive competition now takes place within rather than beyond the "common" school, advantage accrues to those social groups who directly or indirectly control educational policy and practices.

Under the contemporary community political structure, local school control has come to reflect the most narrow and parochial upper-middle stratum interests. This vested control is further reinforced by residential patterns, school administrative practices, professional teaching norms and teacher recruitment and distribution patterns.

Attempts by federal and state legislative bodies to overcome the educational opportunity disadvantages accruing to the lower strata have not been notably successful, and at least some of the more expensive projects, such as the "open door" colleges, have only further advanced the middle strata opportunities at the expense of those whom they were designed to serve.

Part One of this thesis was intended to provide a critical review of the conventional sociological wisdom with respect to the general socio-structural features of American society as these have evolved
through the 1950's. As such, it stands as the historical context revealing the latent socio-economic contradictions upon which the dialectical analysis of Part Two will be predicated.
PART TWO:

DIALECTICAL PROGRESSION - 1950-1970
Chapter 8

Human Capital and the Human Capital Goods Industry

...the confrontation of civilization will henceforth take place in the battlefields of technology, science, and management... The signs and instruments of power are no longer armed legions of raw materials or capital. Even factories are only an external symbol. Modern power is based on the capacity for innovation, which is research, and the capacity to transform inventions into finished products, which is technology. ...The training, development, and exploitation of human intelligence -- these are the real resources, and there are no others.

J.J. Servan-Schreiber, The American Challenge

Education has always been recognized in terms of its primary function in the socialization of youth into the adult roles. But as both Paul Goodman and Ivan Illich have persistently pointed out, "schooling" is only one, and not necessarily the best, means of achieving this enculturation. In Part One of this thesis other functions of American public schooling were also revealed. From the perspective of the State's social policy goals, schools have been perceived as the essential instrument through which the equality of opportunity rhetoric of the open society could be achieved. From the point of view of the socio-economy, the schools have been seen as functional in both preparing and selecting the essential talent required for the manning of the productive instruments through which the society's predominating economic goals are met. Viewed as an element of the socio-structural institutional matrix, public schools have become the instrument through
which a privileged, though not economically powerful, middle stratum maintains its inter-generational social status.

Although there are obvious contradictions here between the ideological rhetoric of an "open society", the meritocratic requisites of the industrial society and the sociological reality of a "class" society, such contradictions do not necessarily become socially dis-equilibriating. To be more specific, so long as those social groups discriminated against by the education system do not especially value higher education or recognize it as an essential social pre-requisite for achieving their individual life goals, so long as those social groups who most benefit from the institutional and cultural bias contain a sufficiently large pool of willing and able talent to adequately fulfill the high ability occupational requisites of the economic system, and so long as the occupational structure can provide all of those who achieve higher educational certification (whether meritorious or not) with jobs that are recognized as at least minimally within the middle status prestige range, then the fact that the education system is neither as meritocratic nor as functional as it might be does not become socially or economically problematic.

The meritocratic aberrations of the American education system have already been discussed. From an economic viewpoint, education may be considered as either consumption or investment. Education as consumption implies that it is purchased by the individual for its intrinsic value. An example follows from the previously discussed "symbolic" value of education. As Veblen has pointed out, the leisure class may value the cultural embellishment which a liberal education
affords their life-style. Like expensive yachts, large estates and exclusive club membership, education becomes a symbolic validation of existing status rather than a functional means of achieving status.

As investment, education has through the first half of the twentieth century been seen primarily in terms of its net return value on dollars invested by the individual or his family. Numerous studies have correlated levels of education with lifetime earnings and have concluded that the more education, the higher the earnings.\(^6\)

This investment in future earning power through higher education was, in the liberal tradition, considered an individual prerogative and no business of the State. Those individuals who were "future oriented" and willing to "defer gratification" were, as a surviving legacy of the protestant ethic, considered to be more deserving than those who were "present oriented" and unwilling to forego the early and immediate monetary gratification of a labouring job in order to suffer the "deprivations" of college life.

This cultural acceptance of the individual investment for individual future returns was, of course, highly compatible with the inter-generational status maintenance needs of the middle stratum; and given the evolutionary stage of American industry and business from the Depression through the immediate post-war reconstruction era, it was also functional in terms of corporate manpower requisites, since these were for correctly socialized managers, supervisors and public relations personnel rather than for highly skilled research, development and systems technicians.\(^7\) Speaking of the selection needs of American business at this time, William J. Goode noted that,
A college education has become a prerequisite for managerial posts in business, but mainly as a social necessity, having nothing to do with the individual's talent or later achievement.\(^8\)

William H. Whyte, Jr. found that the essential pre-requisites of the "organization man" were social and not technical skills. He also found that although corporations preferred to hire someone with a "practical" degree rather than a "liberal" education, it mattered very little in terms of his subsequent corporate duties whether this degree was in engineering, law or commerce, the latter being especially popular with those of low scholastic aptitude.\(^9\)

But during the same decade of the 1950's, the American economy began to experience difficulties. GNP growth was declining, unemployment was rising, and the efficiencies anticipated as a direct outcome of corporate merger and vertical integration were not forthcoming.\(^10\) The classical economic fiscal policy solutions designed to stimulate development capital were impotent for the very good reason that the problem did not lie in the lack of development capital; indeed, there was a surplus of such capital.\(^11\) The Keynesian inspired policy solutions held more promise inasmuch as demand was not commensurate with national savings. However, unaccountable productivity lags -- which were inconsistent with the availability of capital and labour -- tended to act as a brake on the necessary increases in aggregate demand.

This failure of the traditional economic prescriptions led some economists to theorize that the more technical and esoteric production and organization systems pioneered during the War were now reaching the point of general industrial adaptation. The professional and technical manpower requisites of such production and management systems added an
intervening variable to the once simple substitution relationship between capital and labour. It was now suggested that before capital could be utilized and labour employed in production, the research, design and managerial logistics had to be highly developed and integrated. Any shortage of personnel in these areas would act as a "bottleneck", inhibiting the union of capital and labour in the productive enterprise.

This "bottleneck" theory was given policy significance by such influential economists as Chicago's Milton Friedman and Walter Heller, Chairman of the Council of Economic Advisors. They explained the surplus of ordinary labour and capital by suggesting that "human capital" was replacing fixed capital as the principal factor in the continued growth of industrially advanced economies.

The distinguishing feature of human capital was knowledge. Those who possessed special technical or managerial systems knowledge possessed a highly market-relevant and macro-economically deterministic form of development capital. More important, those nations possessing the largest pool of such "human capital" were -- given the high technology which is the prime artifact of modern industrial society -- predestined to international political-economic supremacy.

This largely speculative and descriptive theory was later to be given some measure of empirical respectability by Edward F. Denison who developed quantitative methods which demonstrate (if the somewhat questionable assumptions upon which they were based are accepted) that in the period 1929 to 1957, ordinary labour and capital were responsible for only a third of the increase in GNP, the remaining two-thirds being attributed to the intrinsically related process of technological innov-
ation and human capital formation. He concluded that today education is the most important factor in economic growth, and, therefore, national policy should logically be the prime element in national economic planning.

However, following the blow to national pride which Sputnik I precipitated, it was hardly necessary to await the development of econometric justifications for a theory that promised to divert attention away from sloppy and inept national economic policies and focus the public debate instead on the locally administered public education system and the private or state sponsored universities.

Peter F. Drucker, a prolific management theorist and one of the more popular ideologues of the "American way", was among the first to launch the populist cry for the "education revolution."

When economists talk of "capital" they rarely include "knowledge." Yet this is the only real capital today. The development of educated people is the most important capital formation, their number, quality and utilization the most meaningful index of the wealth-producing capital of a country....The highly educated man has become the central resource of today's society, the supply of such men the true measure of its economic, its military and even its political potential.

James B. Conant, a scientist, former President of Harvard University and more recently in the service of the State Department during the Eisenhower administration, wrote,

We should think in terms of global strategy, which means thinking in terms of the combined assets of all free [enterprise] nations. Do we do this when we think about the [education of] engineers and scientists? Rarely, if at all. I have seen no statements as to the present and predicted future numbers of scientists, pure or applied, in the free world as compared with the Soviet Union and its satellites. Yet these are the figures that are significant.
Conant was commissioned to conduct a national survey of secondary schools to determine whether the curriculum and methods were adequate for the rigorous preparation and selection of the much needed infusion of human capital. The outcome was one of the most influential books on education policy ever written. 18

Conant was careful to write at a level and in a style designed to influence maximally both the lay public of parents and the local level school policy makers. Its theme repeatedly emphasized the "national purpose" function of secondary education and as often admonished or questioned the predominant pragmatist pedagogical philosophy.

We [Americans] are not worried enough about the future and about areas of action where we could do more to insure our meeting the Soviet competition....I have in mind particularly education....One can only conclude that many people are quite unconscious of the relation between high school education and the welfare of the United States....I have met a few professionals who...tend to resent any reference...to a special national interest which ought to affect educational planning ....Their attention has been centered for so long on the unfolding of the individuality of each child that they automatically resist any idea that a new national concern might be an important factor which should be considered by a parent and a student in planning a high school program. 19

After thoroughly condemning the "student centered" approach, Conant provided a specific set of recommendations which effectively dismissed the residual elements of the equality of provision philosophy and instituted an early and rigorous selection for access to the very unequal curricula, with the academic "track" leading into the most abstract levels of science and mathematics.

At the same time, a President's Commission on Higher Education was preparing the blueprint for an unprecedented infusion of public money into the nation's colleges.
American colleges and universities must envision a much larger role for higher education in the national life. To achieve this goal, we plan within the decade [by 1960] to double the enrollment in our colleges and universities.21

Clearly, the notion of individual investment in education was being rapidly supplemented by a new notion of national investment in human capital based on a policy analogous to the more traditional fiscal pump-priming aimed at stimulating investment capital.

Although the rapid overhaul of both the public high schools and the universities was initiated and justified in terms of the ideology of the Cold War, astute contemporary observers noted that while Sputnik I provided the essential catalyst necessary to overcome the entrenched school philosophies and the reluctance of Congress to supply the funds required to rapidly expand the universities, the real motivation was economically determined by the very rapid change in the occupational structure which the post-war production and organizational innovations had precipitated.

For example, Martin Trow noted that,

These changes in the occupational structure have reflected tremendous changes in the economy and organization of work. Thousands of small firms and businesses have been transformed into large bureaucratized organizations characterized by centralized decision-making and administration carried out through coordinated managerial and clerical staffs.22

Hence, once again, we are reminded of the significance of the shift from entrepreneurial to bureaucratic relations to production. Under the former model, Trow recognizes the American high school as being "terminal", i.e., its prime function was to provide an essentially pragmatic, common core education-for-life curriculum. But by the 1950's it
had become clear that the terminal high school was no longer functional with respect to the predominantly bureaucratic occupational structure. If schools were to remain economically functional, they had to shift to a "preparatory" emphasis where students would be selected and prepared for further post-secondary occupational training.23

An indication of the validity of this explanation may be gleaned from standard sources of occupational statistics. Between 1940 and 1950 the number of engineers in the United States doubled; the number of research workers increased by 50 per cent. Between 1950 and 1960 the total labour force increased by only 8 per cent, but the number of professional, technical and kindred workers grew by 68 per cent.24 All of these, of course, require post-secondary education, whereas the fastest growing occupational sector from 1900 to 1930 -- that of clerical and kindred workers -- required only terminal high school pre-requisites.

As the high schools shifted their emphasis from terminal to preparatory, the universities became the biggest "growth industry" in the nation. Writing at the peak of this period, Clark Kerr outlined the nature of the university's transformation.

Basic to this [economic] transformation is the growth of the "knowledge industry", which is coming to permeate government and business and to draw into it more and more people raised to higher and higher levels of skill. The production, distribution and consumption of "knowledge" in all its forms is said to account for 29 per cent of gross national product...and "knowledge production" is growing at about twice the rate of the rest of the economy.25

In terms of participation, the growth transformation may best be represented graphically. In order to control for the general growth in population, the rates of growth in both high school and university attendance from the Civil War through the 1960's is displayed
in Figure 1 as a proportion of eligible age peers.

In terms of the national investment in this human capital formation, the statistics are even more impressive. Between 1930 and 1965 the public investment in education increased over ten-fold from $3.2 billion to $39 billion, while the GNP over the same period rose by only a factor of five. 26

Figure 1

Secondary and Post-Secondary Enrollments as a Proportion of Population

The rate of increase of employment in the "educational services" industry (elementary, secondary and post-secondary) during the decade of the '50's rose by 63 per cent in contrast to a total employment increase of only 14.5 per cent.27

In socio-economic terms, the most significant outcome of the human capital thesis as the predominant national social policy guideline is the uncritical way in which its assumptions have been accepted. Also significant is the propensity of policy predictors to interpret very high innovation rates as indicative of long-range norms and to extrapolate these lineally rather than asymptotically into the future. In particular, the conclusions of Denison and others have been based upon the correlation between the national rate of university-going and growth in GNP over a very specific period in the techno-economic evolution of the American economy. They have interpreted this correlation causally, such that high rates of university-going are claimed as the primary factor in economic growth. For example, in explaining the pre-eminence of the American economy since World War Two, Servan-Schreiber reviews the major human capital exponents (especially Denison and Chorafas) and assures us that,

The possession of raw materials [and capital] is a secondary factor in the economy of an industrialized country. The cost of raw materials is a diminishing proportion of the cost of the manufactured product. What counts today in the competition between nations is their technical capital, and even more importantly, their "human capital."...The training, development, and exploitation of human intelligence -- these are the real resources, and there are no others.28

Yet whether or not such human capital advocates care to recognize it or not, the United States is one of the most richly endowed resource nations, and it has utilized these natural resources plus
ordinary labour power in order to realize surplus value and to become
the largest capital exporting nation in the world. While in no sense
is it possible to dismiss the important role of technology, including
technological "soft-ware", in a modern economy the causal connection
between national wealth and rates of university attendance seems
tenuous beyond a certain necessary threshold level. Surely, it is
more plausible to explain the extraordinary high rate of college-going
in the United States as a result of national wealth.

To illustrate the point, Table XIV shows the university-going
rates of ten modern industrial societies. To be sure, the United
States has both the highest standard of living and the highest rate of
university attendance.

Table XIV

University-Going Rates of Ten
Modern Industrial Nations

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of students in university or equivalent in 1966</th>
<th>As percentage of age 20-24 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.A.</td>
<td>5,500,000</td>
<td>43%</td>
</tr>
<tr>
<td>U.S.S.R.</td>
<td>4,000,000</td>
<td>24%</td>
</tr>
<tr>
<td>Japan</td>
<td>1,370,000</td>
<td>13%</td>
</tr>
<tr>
<td>France</td>
<td>500,000</td>
<td>16%</td>
</tr>
<tr>
<td>Italy</td>
<td>284,000</td>
<td>7%</td>
</tr>
<tr>
<td>West Germany</td>
<td>280,000</td>
<td>8%</td>
</tr>
<tr>
<td>Canada</td>
<td>230,000</td>
<td>23%</td>
</tr>
<tr>
<td>Britain</td>
<td>165,000</td>
<td>7%</td>
</tr>
<tr>
<td>Sweden</td>
<td>62,000</td>
<td>11%</td>
</tr>
<tr>
<td>Belgium</td>
<td>54,000</td>
<td>10%</td>
</tr>
</tbody>
</table>

Source: Dimitri Chorofas, Brain Gain or Brain Drain, as quoted in
J.J. Servan-Schreiber, The American Challenge, New York, Avon Books,
1969, p. 88.
But Sweden, with the second highest standard of living, is fifth in line in terms of proportional university attendance and ninth in terms of the absolute numerical pool of university-trained talent available.

Britain, which is second only to the U.S. in the development of the single most advanced area of industrial factor design -- computer technology -- occupies the lowest rung (along with Italy) on the comparative university attendance scale and has only about half the absolute numerical pool of higher educated to draw on than Canada, which is the least industrially developed nation of the ten. Yet in terms of proportional university-going rates, Canada is among the big three (barely one per cent behind the U.S.S.R.).

Clearly, economic productivity, industrial sophistication and national wealth have causal factors other than national rates of university attendance. It would appear from the above table and from other economic research sources that the minimum threshold level of relevant age, college-going rate necessary to provide an optimum pool of available talent is somewhere in the neighborhood of ten per cent for mature industrial systems and somewhat higher for underdeveloped systems attempting to catch up. This implies that rates in excess of 10 per cent would appear to be justified in cultural or "consumer" terms but not in economic investment terms.

Yet in spite of these more sober and realistic estimates, the American national policy has remained fixated through the decades of the '50's and '60's on the "human capital" public investment in higher education growth by invoking the theory that increased rates of college attendance will automatically produce higher rates of economic growth.
and an even higher standard of living.

The ludicrousness of this uncritical and unsupported employment of straight-line extrapolation is evident in even the most superficial reading of the predominant government policy documents. For example, in 1966 the U.S. Department of Labor issued a policy document entitled *America's Industrial Manpower Requirements, 1964-75*. At that time, the national college-going rate for youths age 20-24 was already 43 per cent (see Table XV). Yet the Department of Labor happily predicted that by 1975 the nation's labour requirements would be such that an increase of 75 per cent in the college-going rate would be required. Elsewhere in this document, however, it is discovered that the total increase in the labour force over the same period would be 22 per cent; that there appears to be the beginnings of a long-range slump in employment opportunities in certain important sectors of the professional, managerial and technical fields; and that even if some rather wildly speculative "hopes" came to pass with respect to new fields opening for the university trained (mostly in the education industry itself), the most optimistic prediction (of which more later) for the ten-year increase in professional, technical and managerial employment did not exceed 25 per cent. 30

Such a cavalier approach to policy planning and prediction would normally evoke a deluge of scholarly challenges, but so pervasive was the new religion of human capital that few sallied to the lists and fewer still were recognized as worthy of reply. 31 What evidence the human capitalists did put up was feeble indeed.

In general, two arguments in support of the exponential growth
in university-going policy were deployed. First, it was taken as an article of faith that increases in worker productivity must be correlated to the general increase in worker education; hence, high educational levels are in national economic terms beneficial whether or not they lead to the higher status jobs. And second, that human capital, like other forms of capital, will automatically expand its own employment market.

Unfortunately, the research evidence does not support the first argument, and retrospective examination of predictions negates the second. For example, Ivar Berg\(^{32}\) found in a comparative study of college graduates vs. non-college graduates doing the same work that there was "little or no" difference in their ability to perform their duties.

Folger and Nam concluded after studying the increase in employer demand for college-trained men during the period 1950-60 that,

only 15 per cent of the increased demand for [college] diplomas could be accounted for by changes in the nature of work. The other 85 per cent was the result of added diploma requirements for the same jobs.\(^{33}\)

Jaffe and Froomkin\(^{34}\) found that "there is no discernible relationship between changes in output per worker in an industry and the educational levels of white- or blue-collar workers, male or female."

In a controlled experiment conducted by I.B.M., it was found that if those with the least formal education occupying the lowest jobs in one of their plants were given a short, in-plant training programme and then transferred to jobs which were normally filled by those who had the highest education qualifications, their productive performance was equivalent.\(^{35}\)

A recent experimental MDTA project in the field of computer
A manpower study conducted by the New York State Department of Labor revealed that,

...approximately two-thirds of all the jobs in existence in that state involve such simple skills that they can be -- and are -- learned in a few days, weeks, or at most months of on-the-job training.37

Ian Drummond in reviewing the literature on "Labour Markets and Educational Planning" in the Canadian context noted that,

At present, our data do not prove that more education actually raises a man's potential output if he is doing the same work with the same tools as a less-schooled man; further, they do not show which form of schooling -- formal, informal or in-plant training -- is the most socially productive per dollar of educational spending.38

He concluded that what formal education does is "allow people to move from low-productivity to high-productivity occupations"39 or in the case of university graduates, from "productivity measurable" jobs to "productivity immeasurable" jobs.

Again, if increasing productivity provides the economic surplus which allows more and more people to acquire more and more education, then there will be a correlation between rises in productivity and rises in average education level. This correlation does not, however, provide the necessary logic through which it may be concluded that rises in education level are a dominant causal factor in the rising productivity.

The second argument, that increases in human capital supply will automatically create increased demand for such talent, is, of course, a
reformulation of Say's law in human capital terms. In its original form, Say's law applies to the consumer market-production relationship and is predicated on the classical economic assumption that "scarcity" is perennial, and no matter how productive the economy becomes, natural demand will always exceed supply. Hence, any new infusions of capital resulting in new factors of production simply raise the marginal utility line. Whether or not this neo-classical economic doctrine is valid in terms of the contemporary macro-economic input-output ratios is in itself questionable; but as applied to the micro-economics of the labour market it becomes, even in its own terms, specious, since to "raise the consumer margin" for human capital means that higher and higher levels of education become of less and less relative value on the labour market. Far from increasing the investment return of education, the application of Say's law suggests that it will be reduced.

Although this subject will be dealt with in detail in subsequent chapters, it is perhaps of significance to note at this point the early response of the labour economist Seymour E. Harris who replied to this aspect of the human capital thesis with a rigorous projection analysis. Harris begins with the rather sound assumption that in America the vast majority of students go to college primarily because they believe that the degree will assure them entry into certain preferred and rather specific occupational strata, i.e., the professional and executive ranks. Noting the human capital assumptions of the President's Commission on Higher Education, which established a goal of making college or university education available to 49 per cent of the relevant population, Harris asks whether or not a proportional increase in these
occupations could be expected.

Working in the year 1949, Harris took 1940 as his base year and found that only 5 per cent of the jobs in the entire labour force required or attracted college graduates. Looking at the long-term growth rate of such occupations he found that,

The need for executives does not increase in proportion to the growth of population. From 1910 to 1940, while the population was increasing 36 per cent, the number of openings for executives was increasing only 8 per cent. 42

In the case of the professions, the long-term proportional increases were "equally dark." Of course, the possibility that these low rates of increase may have resulted in a current shortage which would have to be overcome quickly was not ruled out. However, Harris correctly argued that "spurts" to overcome past deficiencies should not themselves become the basis of future long-range projections. In any case, the question remained: what was a reasonable rate of increase, even during a period of rapid "make-up"?

In an attempt to answer that question, Harris (working in 1949) took the President's Commission projected college attendance goals for 1960 and then calculated the increase in college graduate occupations necessary to satisfy the job expectations of this cohort. He found that the percentage increase in such jobs over the 1940 base-year would have to be between 200 and 500 per cent, depending on the individual occupations -- the mean for the whole class of occupations being between 300 and 400 per cent. 43 This, Harris believed, was an unrealistic expectation, and hence there would be a major overproduction of college graduates in terms of their occupational expectations and the actual
functional manpower requirements.

Since the anticipated growth in graduates has, in fact, been realized, it is now possible to reflect back to see if Harris's occupational increase predictions were correct or not. Taking standard Bureau of Census data, we find that the average annual rate of increase in those occupations which Harris listed as commensurate with the university graduate's expectations is 2.5 per cent per annum over the twenty-year interval 1940-1960. The twenty-year compound increase at this rate is 160 per cent, or less than half the increase required to meet the occupational expectations of graduates. Of perhaps even more significance is the fact that although there was an increase in the annual rate of new college relevant jobs in the 1940's -- from 2 to 3 per cent over the previous decade -- they have since 1950 steadily declined at the annual rate of 0.1 per cent through 1965 and beyond to the point where today such occupations increase annually at less than 2 per cent (see Table XV), or at approximately the same rate as the total increase in the labour force. Meanwhile, the increase in college-going has reached almost 50 per cent of the college aged population and continues to rise.*

These data confirm Harris's contention that the rise in university graduates would not be paralleled by an equivalent rise in the appropriate occupations; they also confirm his assertion that the shortage of technical and managerial personnel experienced during the immediate post-war period was temporary and should not become the basis for long-range policy planning.

*The current predictions are that the number of university graduates will more than double between 1960 and 1980.45
Table XV

Annual Rates of Increase in Professional and Managerial Occupations

<table>
<thead>
<tr>
<th>Period</th>
<th>Average % Increase over Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900-1919</td>
<td>4.8</td>
</tr>
<tr>
<td>1910-1920</td>
<td>2.8</td>
</tr>
<tr>
<td>1920-1930</td>
<td>3.0</td>
</tr>
<tr>
<td>1930-1940</td>
<td>2.0</td>
</tr>
<tr>
<td>1940-1950</td>
<td>3.0</td>
</tr>
<tr>
<td>1950-1960</td>
<td>2.5</td>
</tr>
<tr>
<td>1960-1965</td>
<td>2.0</td>
</tr>
</tbody>
</table>


Nevertheless, in spite of the research findings which demonstrate little correlation between formal education and occupational performance at all but the highest levels, and in spite of the further demonstration that high level occupations do not show any long-term growth trend, the notion persists that higher mean levels of education are responsible for higher rates of productivity. The principal sociological manifestation of this is the corollary belief that a high level of formal education is increasingly a necessary prerequisite to becoming a secure member of the labour force.

Table XVI compares the changing rates of unemployment in terms of years of schooling completed between 1950 and 1962 -- the period during which the human capital theory was being maximally assimilated.
The effect on employment trends is obvious:

Table XVI

<table>
<thead>
<tr>
<th>Years of School Completed</th>
<th>Unemployment Rates</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 7</td>
<td>8.4</td>
<td>9.2</td>
</tr>
<tr>
<td>8</td>
<td>6.6</td>
<td>7.5</td>
</tr>
<tr>
<td>9 to 11</td>
<td>6.9</td>
<td>7.8</td>
</tr>
<tr>
<td>12</td>
<td>4.6</td>
<td>4.8</td>
</tr>
<tr>
<td>13 to 15</td>
<td>4.1</td>
<td>4.0</td>
</tr>
<tr>
<td>16 and over</td>
<td>2.2</td>
<td>1.4</td>
</tr>
<tr>
<td>All Groups</td>
<td>6.2</td>
<td>6.0</td>
</tr>
</tbody>
</table>


Although unemployment dropped 3.2 per cent during this period, it increased for all groups who had not completed some form of post-secondary education; but it decreased by over 36 per cent for those who had graduated from university.

Charles E. Silberman suggests that such figures have little to do with real functional requirements but rather that "the labour surplus has led to a stiffening of hiring standards all along the line." Edith
Lynton comments that,

The high school diploma, already established as a minimum standard in the white-collar world, is readily becoming the minimum for blue-collar employment and is reaching down into relatively menial service jobs. In some of the larger companies a college or engineering diploma is now mandatory for foremen and salesmen, with some asking for graduate degrees as well. By the same token, a high school diploma is required for driver-salesmen, and it is not unusual to demand it of workers doing purely physical jobs.47

Ivan Illich48 has calculated that during the last three generations the accepted threshold of minimum schooling thought necessary to participate in the modern world rose about two years every decade, or at a rate of five times the increase in life expectancy. He also notes that although the "ideology of schooling" has become central to the sociology of the American middle-class, the human capital mythology is an "elite strategy that insures the succession of middle-class children to status levels which are much lower than those of their parents [with the same education level]."49

If this is correct, and we will pursue the evidence later, it would imply that the human capital mythology exists in contradiction to the middle strata vested interest in the education system that was demonstrated in Chapter 7. It would further suggest that although the human capital thesis emphasizes the meritocratic selection role of education, it does not promise to provide as much opportunity for the disadvantaged to join the middle strata through educational credentials as it suggests a proletarianization for an increasing number of those who acquire higher education irrespective of their strata of origin. As C. Wright Mills pointed out as early as 1950, "Education will work as a means of success only so long as the occupational needs of a society continue to demand
education." But once the supply of labour in any skill range exceeds the demand, then, in Marx's famous aphorism, a "reserve army" of unemployed exists.

It was Veblen who first highlighted the essential role of "knowledge" as the dialectical link between labour and capital. Although the institution of private property legitimized capital's rights to control the instruments through which labour, along with raw resources, is converted into material goods, knowledge, as a collective social product, cannot as easily be alienated from labour. Since this knowledge of how to organize and run the productive machinery is a part of the "immaterial" artifacts of the culture, it is not vulnerable to monopolization through private ownership. This being the case, it is in the interest of "property" to have technological knowledge maximally distributed, for whenever there is an undersupply in a sector of the labour force which possesses knowledge crucial to the operation of industry, it may effectively challenge the rights of property.

At the time when the human capital theory was first being propagated, James Burnham was claiming that the "managerial revolution" was underway. J.K. Galbraith later elaborated the theme:

...the requirements of technology and planning have greatly increased the need of the industrial enterprise for specialized talent and for its organization....Unlike capital it is not something that the firm can supply to itself....The mere possession of capital is now no guarantee that the requisite talent can be obtained and organized. One should expect, from past experience, to find a new shift of power in the industrial enterprise, this one from capital to organized intelligence. And one would expect that this shift would be reflected in the development of power in the society at large....Though the constitution of the corporation places power in the hands of the owners, the imperatives of technology and planning remove it to the technocracy.
However, the French sociologists Mallet and Gertz have pointed out how industrial capitalism has passed through several major technological revolutions. In each case, a characteristic of this process has been the rapid rise of a stratum of workmen who are the essential carriers of the new technological knowledge. The social dynamic of capitalist society has inevitably acted to reduce the potential monopoly power associated with the possession of such knowledge by rationalizing and fragmenting the division of technological labour and making institutional provision for the over-production and hence proletarianization of the group possessing such production skills.

In the following chapters we will investigate the nature of the current economic, technological and sociological changes, and the extent to which the resulting socio-economic adaptations represent a proletarianization trend among the highly educated middle strata.
Notes


6. For example, John Vaizey, Economics and the Cost of Education; W. Schultz, The Economic Value of Education; Andre Daniere, op. cit.; and in the Canadian context, J. Poduluk, Earnings and Employment, (DBS, 91-510).


20. Ibid., pp. 1, 2, 39.


23. Loc. cit.


31. Two notable exceptions are James Bright and Seymour E. Harris, infra.


34. Jaffe and Froomkin, *op. cit.*, p. 87 and Table 6.1.

35. Herman, Sadofsky and Rosenberg, *op. cit.*, p. 223.


37. Ibid., p. 55.


42. Harris, *op. cit.*, p. 69.

43. Ibid., p. 74.

44. Jaffe, and Froomkin, *op. cit.*, p. 76.

45. Ibid., p. 155.


47. Edith Lynton, "Will They Be Hired?" in *ibid.*, p. 222.

48. Ivan Illich, *op. cit.*

49. *Loc. cit.*


Chapter 9

The Economics of Under-Employment

...it is the continuing policy and responsibility of the Federal Government to use all practical means...to coordinate and utilize all its plans, functions, and resources for the purpose of creating and maintaining, in a manner calculated to foster and promote free competitive enterprise...conditions under which there will be afforded useful employment opportunities...for those able, willing, and seeking to work, and to promote maximum employment, production, and purchasing power.

Preamble, Employment Act of 1946, (United States)

Economists recognize four categories of unemployment.¹

(1) Cyclic: Unemployment resulting from the recession phase of "normal" business fluctuations.

(2) Frictional: Unemployment resulting from allocative imperfections in the labour market.

(3) Seasonal: Unemployment resulting from climatic-dependent industries.

(4) Structural: Unemployment resulting from a "mis-matching" between the mix of aggregate demand and the mix of aggregate supply.

Because both frictional and seasonal unemployment are the results of non-economic forces, they are not seen to be subject to economic solutions. On the other hand, cyclic unemployment is clearly the outcome of economic factors, and, therefore, it has become the primary focus of the two dominant economic schools: the neo-Classical and the neo-Keynesian. Structural unemployment is the principal theoretical product of a third and more recent school of micro-economic theory,
that of the so-called "structuralists."

The neo-Classicists see the causes of economic recession, and hence higher rates of unemployment, as a corollary of Say's law, i.e., whenever there comes to exist too low a level of savings and/or poor investment climate, the inevitable result will be insufficient capitalization to properly equip labour for production and thus stimulate demand. Consequently, their solution to cyclic unemployment lies in assuring a propitious climate for investment and profit. Once adequate levels of capital formation are re-established, supply will once again create demand and the economy will accelerate, thus reducing unemployment. 2

The neo-Keynesians reverse Say's law and claim that demand conditions supply. Indeed, it was the essential point of Lord Keynes' 3 original thesis that high rates of savings and surplus capital can, under certain circumstances, not only co-exist with high rates of unemployment, but may actually exacerbate such unemployment. Thus, solutions to unacceptable rates of unemployment lie in direct government fiscal and monetary intervention such that more purchasing power is transferred to the masses of consumers. It is reasoned that as effective demand increases, production will follow, and hence unemployment will decline. 4

Both of these schools focus on economic inputs and outputs and are not particularly concerned with changes in the labour/capital substitution ratios or skill mix of the industrial process which converts inputs to outputs. The structuralists feel that in terms of employment policy this is a serious oversight, and they focus precisely on such intermediate production factors as the shifts in industrial skill mix as well as
proportional changes in labour participation within the various sectors of the economy. Though less theoretically developed than either of the aforementioned schools, the structuralists have advocated in the areas of "retraining" and "labour mobility" quite specific prescriptions designed to overcome the "mis-matching" effects that are not conceptually visible in the other theories.

Thus the structuralists do not offer an alternative fiscal theory to the established macro-economic schools, but rather they propose an alternative micro-economic perspective from which remedial policy may be formulated and aimed directly at reducing the "residual" unemployment, now recognized as considerable, remaining after the traditional ameliorative aggregative policies of the neo-Keynesians have been employed optimally.

Of the two established economic schools, the neo-classicists have been the hardest pressed to verify their hypothesis that the contemporary unemployment problem lies in insufficient capital formation and hence under-installed productive capacity. The evidence is that during the period 1958 to 1963, when unemployment rose drastically, surplus production capacity in excess of demand averaged $25 billion annually and was rising.

It is not surprising, therefore, that during the late 1950's through to the mid-1960's U.S. economic policy focused on Keynesian solutions. Yet despite the allowance of fairly high rates of inflation, unemployment continued to be excessive in defiance of the Keynesian inspired Phillips trade-off formula. Clearly, the Keynesian prescription was failing; but why?
A more general review of economic factors indicates that although there was more than ample capital formation (indeed, a surplus of it) and although there were rises in real wages, corporate profits and public and private consumption, demand was failing to increase at a rate necessary to reduce unemployment. Since virtually all the previously successful stimulants to demand had already been applied, there must be a new factor.

Productivity is the measure of output per man-hour of labour. It has steadily increased in industrial societies as labour is equipped with more capital, i.e., production machines. According to various classical economics formulations, the rate at which capital is substituted for labour depends upon the relative costs of each, these costs in turn being controlled by price and demand elastic limits inherent in the market mechanism. Essentially, this implies that in the long run, labour saving substitution of capital cannot proceed faster than the growth potential of the market; thus, no chronic unemployment can result from the evolutionary shift to capital intensive production.

Table XVII shows the effective growth rates of the economic factors so far discussed over the critical period of rising unemployment, 1958 to 1963. It is clear that the exceptionally high (and steadily rising) growth rates of the first three factors -- profits, productivity and capital investment in automated equipment -- bear some relationship to each other. What is more significant is the considerable discrepancy which the growth in GNP or total productive output (15 per cent cumulative increase over five years) shows over the increased ability to produce per-man-hour-worked (22 per cent cumulative increase over five years).
What this essentially means is that due to the labour saving substitutions made by industry over this period, the economy would have had to grow by 22 per cent in order to maintain the same employment levels of the existing labour force. But because the labour force grew by 6.7 per cent over the same period, the economy would have had to grow by nearly 30 per cent in order to maintain the same employment level of this enlarged labour force. However, the economy in fact expanded by only 15 per cent; hence, unemployment increased, probably at a higher rate than official figures indicate.*

Although this analysis seems both simple and logical, it was not easily accepted by American economists, for during this same period it was found that the cost of capital was higher than the cost of labour per increment of increased production, thus confounding the classical factor substitution assumptions.

But this assumption that rational substitution decisions are based upon the elastic limits of cost factors alone has been seriously challenged by such economists as J.K. Galbraith who has convincingly argued that under monopoly corporate capitalism, major new decision factors such as production systems compatibility, integratability and above all, pre-

*It is generally recognized that "official" unemployment statistics fail to incorporate two groups: those unemployed who have given up and are thus technically out of the labour force, and those underemployed who are looking for full-time work but accept part-time employment. "When California officials made such adjustments for both part-time employment and non-participation in the work force, they came up with an unemployment rate for the State more than twice the figure issued by Washington." A methodology has been developed by Dornburg and Strand which makes use of the "manpower gap" principle to calculate more accurately real unemployment. Using this formulation, they calculated that the 1963 official rates were almost half the actual unemployment.
dictability and future growth potential enter the picture. Whereas the old labour/capital substitution formula assumed a relatively static technology, the rapid advent of new technological systems offering not only future competitive advantage but also immediate organizational rationalization and integration became a new and decisive non-economic imperative.

Table XVII

Percentage Increase over the Five-Year Period, 1958-1963*

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Profits</td>
<td>50%</td>
</tr>
<tr>
<td>Productivity/Man-Hour</td>
<td>25%</td>
</tr>
<tr>
<td>Capital Invested in Automated Equipment</td>
<td>22%</td>
</tr>
<tr>
<td>Real Wages</td>
<td>18%</td>
</tr>
<tr>
<td>Payroll Costs per Unit Output</td>
<td>-7%</td>
</tr>
<tr>
<td>Consumer Prices</td>
<td>5%</td>
</tr>
<tr>
<td>GNP</td>
<td>15%</td>
</tr>
<tr>
<td>Labour Force</td>
<td>6.7%</td>
</tr>
</tbody>
</table>

*Calculated in terms of organic growth from annual rates averaged over the period.


It is somewhat ironic that in the United States, where neo-capitalism ("oligopoly") has reached its highest state of development, economists continued to adhere so tenaciously to traditional models. In Western Europe, where evolution from classical capitalism has been much slower, economists seem more clearly aware of the significant changes in
the American economy. For example, according to a comparative analysis of European and American capital substitution made by the Organization for Economic Co-operation and Development (OECD), it was observed that the post-War European pattern has been to shift quantitatively capital investment toward more of the conventional labour intensive production systems, whereas in America there has been a qualitative shift in the new capital investment pattern toward radically new labour saving equipment.*

The Dutch economist Reinoud notes that this propensity for Western European economies to opt for "deepening capital" (more of the same kind of machines) has increased labour productivity, but not at the expense of labour intensity. Indeed, it has expanded employment greatly in manufacturing and has, due to labour shortages, forced increases in productivity in the primary sector. However, in the U.S., where new capital has opted for radical new factors of production (automation), the effect has been to reduce labour intensity in manufacturing and to shift the burden of employment to the tertiary sector. Unfortunately, productivity in the service industries is only about half that of manufacturing; thus, displaced production workers have far less earning potential, less opportunity for collective bargaining and more competition from part-time "marginals", such as married women and youths, in the labour

*J.J. Servan-Schreiber has demonstrated the long-range effect of this dichotomy upon the Western European economy. Essentially, the greater productivity of American capital causes European investors to invest in American branch plant firms who then import American technologies and place these in competition with the more labour intensive domestic production systems. Thus the U.S. is able to use European capital to build American branch plants, which then purchase the most advanced production equipment from America and earn profits abroad. The outcome, Servan-Schreiber fears, is total economic colonization of Europe by America.
force. Hence, there is not only a chronic state of unemployment, but in addition, a growing rate of under-employment in the U.S. economy.

What seems most incredible about these observations is not that American economists of the 1950's and 60's were unaware of the significant data, but that their preoccupation with the continuing debate over the relative merits of the classical versus Keynesian fiscal models kept so many from recognizing the emergence of revolutionary production and management technologies as important new determinants of chronic unemployment. For the majority of American economists, revolutionary technology began and ended with the steam engine; beyond that, it was all a matter of progressive and normal evolution.*

This inability or unwillingness of economists to develop models of technological change caused Robert L. Heilbroner to reflect on the

*Many critics of economics have dwelt upon the irony that the discipline was born in the technological revolution of early industrialism but has assumed this to be the revolution to end all revolutions and perhaps even evolution. For example, in his The American Mind, Henry Steele Commannder notes that "In economics, as in sociology, the principles of natural law formulated during the eighteenth century were sovereign throughout the nineteenth and not entirely discredited in the twentieth ....[But] evolution affected economic less than sociological or juridical thought....Evolutionary economics would have articulated its doctrines to the facts of the industrial and technological revolution ...but economics attempted instead to articulate these phenomena to their classical doctrines....In short, the economists...achieve the symmetry and beauty of their pattern by discarding experience, annulling history, and ignoring man."21

It was Marx, of course, who first and perhaps most devastatingly attacked the economists on this score: "The economists have a singular way of proceeding. For them there are only two kinds of institution, artificial and natural. Feudal institutions are artificial while those of the bourgeoisie are natural....Thus there has been history, but there were feudal institutions and because in these feudal institutions are to be found relations of production entirely different from those in bourgeois society, which latter none the less the economists wish to present as natural and therefore eternal."22
...curious resistance of the economic mind to the implications of science and technology -- how astonishing that Lord Keynes and Alfred Marshall, the two greatest architects of modern economic theory, both explicitly excluded technological change from their representation of the economic system.23

But in spite of this "resistance", by the mid-1960's the economists of the U.S. Department of Labor were beginning to recognize the impotency of the traditional solutions. Writing in the October, 1963, issue of The Monthly Review, Leon Greenberg cautiously noted that,

We seem to be experiencing high rates of productivity increases in manufacturing in the face of smaller gains in output. This implies a relatively higher impact of technological change...24

By 1965 the Department had established a major programme designed to ascertain the implications of "automation" on the labour force.25 Although the results of these studies have been disappointing in as much as they so clearly demonstrate the poverty of the conventional economics wisdom when applied to technological analysis,26 they have, if nothing else, provided a stimulus for serious re-evaluation within the economics discipline itself.

However, before proceeding to a more detailed and empirical study of the socio-economic impact of recent technological innovations, it will first be necessary to make a brief digression into the specific characteristics and dimensions of technological change.
Notes


4. Wells, op. cit., Chapter IV.

5. Winder, op. cit.


8. Lipsey, op. cit.


23. Ben B. Seligman, *op. cit.*, Chapter VII.


Mechanical labor has most of the economic properties of slave labor. Any labor that accepts the conditions of competition with slave labor accepts the conditions of slave labor. [In] the second [industrial] revolution...the average human being of mediocre attainments or less has nothing to sell that is worth anyone's money to buy.

Norbert Wiener, Cybernetics

As indicated in the last chapter, economists have tended to interpret all technological change, including that which today goes under the heading of "automation", in terms of their macro-economic models. In general they have concluded that "automation is not an industrial revolution...it is a completely normal evolution in which progress is being made in all fields of industry by the application of advanced...techniques". ¹

Sociologists, who have been concerned not with economic inputs and outputs but with man's social relations to production, have viewed changing technology in terms of its effect on the organization of work. The French sociologist Georges Friedmann ² identifies three distinct technological phases within the industrial mechanization epoch. In the first stage, technology consists of worker dependent machines where the worker organizes the material and controls the machine and the pace of production. This initial state of machine technology is thus a final extension of the craftsman's skills as expressed through the mastery of tools which he fully controls.

The second stage of machine technology is reached when "Taylorization" occurs. In stage one, the skilled worker applied various tools
and machines to his material as he molded it into the finished product. Under "Taylorization" the progressive tasks required to complete the product are separated and distributed to semi- or un-skilled workers, each prepared to perform only one fragmentary but rationalized operation. The worker still "operates" the machine, but the pace of the work and the knowledge necessary to conceptualize, organize and complete the production reside elsewhere. The worker thus becomes only an extension of the machine; he does not control but is controlled by the production process.

In the third and final stage of Friedmann's evolutionary "mechanization", the worker is no longer needed to operate individual machines. The material is automatically transported, positioned and processed through the entire "line". The function of the worker is now to oversee the controls which report on the continuity of the flow process, to troubleshoot for potential breakdowns in the machinery components, and to maintain these against such breakdown.

A general sociological conclusion with respect to this technologically determined evolution of work relations has been that it represents progressive stages of worker "alienation". Of course, some industries are not as willing to adopt, or not as adaptable to, technological up-dating as are others. Therefore, the contemporary industrial skill mix contains examples of all stages. Robert Blauner made use of this temporal spacing out of technological innovation when he studied the differential alienation effects upon workers in a residual craft industry, a production line industry and a modern "automated" industry.
As expected, he found increased worker alienation as the technology progressed from craft through the stages of assembly line Taylorization. However, his study of the new "automated" plant indicated an apparent break in this evolution.

The worker in the automated factory "regains" a sense of control over his complex technological environment that is usually absent in mass-production factories.5

Those who argue that "automation" represents a potentially "revolutionary" technological change usually base their arguments on such qualitative sociological observations, while those who argue most strongly that "automation" is simply another stage in the evolution of industrial technology tend to favor the quantitative economics approach, where long-term total employment trends are projected.6

Unfortunately, much of the argumentation between these two schools is confused by the semantic mystification that results from a far too vague and, in normal usage, far too inclusive use of the term "automation". Friedmann, for example, seems to include all advances past the more primitive assembly line technology within this categorically different but apparently internally consistent new technology.

Other writers have made the "muscle-mental" distinction, where mechanization refers to that kind of machine technology which augments physical strength, and "automation" refers to machine technologies which take over human psycho-motor responses and perhaps other mental activities. This seems inadequate, since the more sophisticated Taylor production system, the so-called "Detroit automation", includes both but does not make any significant changes in worker response relations.
A more useful typology was developed by James R. Bright. He identifies technological systems in terms of five qualitatively different control responses. These are: (1) manual control response, (2) mechanical control response, (3) signal response, (4) action response, and (5) anticipatory response.

The first two control responses are characteristic of Friedmann's craft and production line technologies. In the first case, the worker makes "manual responses" as he applies his tools to the material. The custom cabinet-maker is a residual example of this response stage. Similarly, the mechanical response is characteristic of the typical Taylor production line "station" where the machine performs the essential operations in response to pre-set mechanical stops, starts and motions, but where an operator is required to make "set ups" as well as initiate and terminate the major cycles.

"Signal response" technologies are roughly equivalent to what Friedmann suggests is automation. The salient characteristic of "signal response" systems is the presence at each stage of the process of electronic sensory monitors which send "signal responses" to a remote operator who makes any necessary compensatory control adjustments in the production flow.

The fourth response stage, that of "action response", is similar to the third in the sense that all stages of the production process are automatically monitored; but instead of signals being sent to an operator who then takes the necessary independent compensatory action, they are sent directly through "closed loops" to servo-motors that act directly and automatically. The familiar home furnace "thermostat" is a primitive analogue of the "action response" system, and Chrysler's fully
automatic engine plant (untouched by human hands from ingots to test run) has become the industrial stereotype.

The "anticipatory response" technology is the most sophisticated and is the only one which can accurately bear the term "cybernation". Whereas the "action response" consisted of closed loop servo-controls, where each sensor sends signals to one action control point, the "anticipatory response" system consists of open loop feed-back, where sensory signals are fed into a central computer bank which integrates all the input information. This central computer not only sends out standard pre-programmed action responses, but it also stores all signals in its memory bank, constantly scans these and relates them to up-dated contingencies, then automatically evaluates the most advantageous procedures to achieve the established goal. Hence, it "anticipates" responses not only to immediate problems but also to future improvements in efficiency.

In the most advanced form, digital and analogue computers have been combined in order to perform "heuristic self-programming", i.e., to achieve a form of "adaptive" behaviour whereby the master programme is automatically improved when unforeseen contingencies are "discovered" by the computer in process. The unmanned (and to a very large extent, the manned) space flights are examples of this stage of response technology as are the less dramatic but exceptionally efficient data processing, production control, and management "systems" now spreading through the corporate world.

The sociological significance of Bright's typology lies in its emphasis on the continuing qualitative technological changes that have occurred since the initial advent of what is popularly called "automation".
This is a crucial point, for the significant technological features which are generally seen as separating "automation" from earlier machine technology did not represent the socio-economically significant technological break-through. On the contrary, at the time when some scientists and engineers were heralding the first stages of "automation" as a revolution comparable in its social effects to that of early industrialism, social scientific investigations focusing on these early automated systems rightly concluded that while the new technology did precipitate notable changes in work relations, these were far from revolutionary.

At the same time, as noted in the previous chapter, economists found no evidence in this early "automation" to negate their existing macro theories which predicted that the net effect would be similar to that of mechanization, i.e., lower unit costs and increased real wages which together would act as stimulants to demand and inevitably result in job expansion rather than contraction. All this was by and large true of the technological systems which marked the initial phases of automated production -- a phase that lasted some ten or more years and which was therefore thought to be definitive. But as the Bright typology implies, the first stage was anything but typical of later developments, and the really "revolutionary" aspects of automation are not encountered until the advent of the cybernated stage.

For example, while the early stages of automation primarily affected the goods-producing industries, the latter stages are highly adaptable to the service industries. Thus when early automation caused a significant decline in employment in manufacturing, the ameliorative economics solution was seen in the expansion of tertiary employment. But
this has proven only a temporary relief as indicated by the tremendous job displacement resulting from direct dial telephones, automated airline reservation service, and the incipient automation of medical diagnostics and intensive care units, to mention but three examples among a host.

At the very important level of production "flexibility", it is obvious that the evolution from manual responses through the various stages of production line automation constantly reduced flexibility such that the technological logic demanded longer and longer mass production runs, which in turn required more rationalized supply and predictable markets. Indeed, it was this technological imperative which Galbraith, among others, deployed as the principal justification for the growth of vertical integration, oligopoly and other manifestations of monopoly capitalism. However, with the advent of the "anticipatory response" technology came the universal, numerically controlled production machine. This coupling of heuristic computer programming to a single multi-functional automatic machine tool abruptly reverses the long-term trend and offers all the economic advantages of "automation" to discreet single unit custom production.

Similarly, while the earlier stages of automation promised maximal displacement at the blue-collar level, the logic of the cybernated technology renders increasingly redundant not only the clerical aspects of white-collar work, but is now encroaching on progressively higher levels of decision-making and, most incredibly, the heartland of "human capital" itself - research and design work.
Not only is the skilled craftsman automated out of his job, but the engineers who dream up the new machines are not immune either. The most sophisticated examples of automation are turning on their masters and taking over traditional engineering work.... Original design problems involving variations of standard product lines can be solved by a computer in thirty minutes, compared with six days for a man with a slide rule. In one technique the design method itself, rather than past solutions, is stored in the computer. That is to say, the logic of the engineering design is stored, so that when information from a new order for equipment is fed into the computer, it uses its stored knowledge to generate design plans and also produce all the paperwork required to start the manufacturing process. Automatic drafting machines draw aircraft wings and lay out circuits in electronics.... The design problem is put into a computer, which can then produce a drawing or a graphic console in a variety of views. Tapes can then be produced to control automatic drafting machines or numerically controlled machine tools. The functions of an engineer's brains and the work of his hands can thus be given over to an electronic contraption. The automatic drafter utilizes engineering data worked up by a computer... [and thus] eliminates a major engineering bottleneck by quickly producing the hundreds and even thousands of drawings (or machine control tapes) necessary for a complex component.17

The above quotation by Ben B. Seligman was written in 1965, a crucial year as the next chapter will indicate. It was considered to be heretical alarmism then, and Gardner Ackley replied for the mainstream economists:

From the history of our economy, it is clear that technological change has always created more new jobs than it has destroyed.... Demand is the crucial factor... then automation means more goods sold rather than fewer jobs -- and we congratulate ourselves on the wonder of technological progress.18

But by 1967, despite the escalating war in Viet Nam -- which did reduce unemployment in the blue-collar sector -- engineers and scientists began to experience a rapid and unexpected rise in unemployment rates. New entrants into other professional and management categories had been experiencing rising rates of unemployment since 1965 or earlier,19 and by 1970, just as the universities' response for the call for "human capital" was peaking, the job opportunities for graduates in general had declined
to the point where the one-year drop in graduating class job placements from 1969 reached 20 per cent for Bachelor's degrees, 30 per cent for Master's, and over 50 per cent for doctorates. The special case of physics Ph.D.'s is perhaps the most heuristic. According to the Cooperative College Registry survey, 1970, physics doctorate graduates topped the over-supply list with twenty times more applicants than jobs available.

Interestingly enough, while those already employed in managerial and professional capacities in the more traditional industries were being "maintained" on the payroll (though with increasing redundancy), the most technologically advanced industries were unable to await the "silent firing" of natural attrition and began laying off their management and engineering personnel in huge numbers.

For example, in early 1970 Boeing's Seattle plant laid off over 40,000 employees, the majority in middle-management and engineering. Although the Company implied that this was due to a temporary slump in production orders, it is interesting that the heaviest personnel cuts were made in the design and expediting staff at a time when R and D contracts were pouring in. As one top engineer put it, "It looks as though we have designed our own obsolescence." Seligman's predictions were coming true.

Clearly, if the early stages of automation were, as the conventional wisdom assures us, "normal" and "evolutionary", the latter stages would appear to be exceptional and "revolutionary". In terms of social stratification and the structural relationship between occupational prestige, social status and educational opportunity, the cybernated phase
of automation has profound implications primarily because it affects not the blue-collar world so much as the heartland of the middle-class's higher status occupations, and especially those which the "human capital" ideology has emphasized as the most personally rewarding, socially significant and economically necessary. Though the national wastage in human capital investment can no doubt be accepted, the sociological ramifications are not so easily "written off". As Robert Merton long ago demonstrated, unless legitimate and viable routes to the realization of socially ascribed expectations are provided, pervasive anomie, alienation and status inconsistencies will lead to a breakdown in social norms and political legitimacy.

Today in the United States nearly 50 per cent of the emerging work force has been afforded some form of higher educational opportunity which has been predicated on widely accepted expectations of rapidly expanding jobs in high status technological and organizational sectors. Thus the sociological significance of recent technological changes lies in the extent and rapidity with which these higher status jobs are being eliminated or transformed by the leading edge of the "cybernation" revolution. The remaining chapters of this thesis will be devoted to the documentation of this most recent transformation, the immediate sociological effects and the long-term institutional implications.
Notes


3. Loc. cit.


5. Ibid., Chapter VII.


7. James R. Bright, Automation and Management, Boston, Division of Research, Graduate School of Business Administration, Harvard University, 1958.

8. Loc. cit.


Chapter 11

The Changing Occupational Structure

The job structure of an economy is determined by three broad groups of factors, the availability of the different inputs, the composition of outputs, and the production techniques used.

In the two previous chapters the relevant dimensions of the economic and technological factors of employment and unemployment were discussed in terms of how the conventional wisdoms impinge upon the contemporary reality. It was suggested that none of the three schools of labour economics has adequately dealt with the technological change factor and that the predominant sociological wisdom, while reflecting a traditional concern for the social consequences of technological change, has failed to make adequate distinctions within the most recent innovations in the organization of production systems which tend to be lumped together under the generic term "automation".

This critical review implies that mainstream social scientific interest has not led toward the development of explanatory models through which the socio-economic displacements associated with a rapidly changing occupational structure might be anticipated; instead, the conventional wisdom has tended to project untestable hypotheses such as the "human capital" and "end of ideology" theses based on the most superficial interpretation of short-run data and what may well have been a desire to ameliorate the growing contradiction (discussed in Part One) between
the existing legitimating ideologies and social reality. Although these quasi-theoretical reifications were immensely influential in terms of manpower and educational policy, it is now evident that they not only failed to predict correctly the trajectory of technologically determined occupational change, but have likely exacerbated the social and economic problems associated with such change; they have, therefore, become in themselves a prime locus of contemporary contradiction.

It is the purpose of this chapter to pursue in considerable detail the relationship between recent technological change and occupational re-allocation. As previously noted, the rather rigid separation of the predominantly qualitative sociological and predominantly quantitative economic approaches has not well served the development of relevant theory, and therefore both aspects will be explored simultaneously.

Since it is the effect of technological change which is to be isolated as a strong causal factor in the changing occupational structure, an attempt will be made to control for macro-economic factors. However, as discussed in Chapter 9, such new and as yet inadequately explained economic realities as persistent surplus, declining economic growth rate and the continuing rise in the productivity rate may themselves be functional outgrowths of technological change. Indeed, it is strongly contended that the continuing failure of traditional aggregative economic policies to overcome chronic un- and under-employment as well as the persistence of inflation is, contrary to the conventional economics wisdom, now primarily attributable to irrational responses to technological imperatives.
None of this is meant to imply that the business cycle does not have some immediate short-run outcomes on employment and the occupational mix; but this cyclic effect does not act like a pendulum, where each swing returns the situation to the status quo of the previous period, but rather as a ratchet, where each cycle impels a significant horizontal shift in the occupational structure such that change is progressive rather than periodic. Given this analogy, technological change is seen as the primary factor in the continuing, rapid, and growing horizontal motion while the vertical fluctuations in the business cycle are seen as the periodic strokes which "crank" the techno-economy along this occupational change axis.

Since this conceptualization amounts to a "radical" paradigm departure, it is necessary to begin its explication by noting where it diverges from the common assumptions to be found within the more conventional schools' treatment of the relationship between technological change and occupational structural shifts.

In spite of the general lack of interest in technological factors, there is considerable agreement to be found among the traditional economic viewpoints that technological change does occur; that in the last two decades something sufficiently unique to be called "automation" has resulted from this on-going change; and that "automation" has resulted in at least some notable, if not definitive, changes in the occupational structure.  

Although division occurs in terms of degree and emphasis, something close to theoretical consensus exists with respect to the long trend occupational implications of "automation". This consensus may be summarized as follows:
Automation is an economically rational capital growth phenomena that will not proceed any faster than the economy can absorb the increased productivity or the society can manage the occupational displacements.

Automation implies continuous skill upgrading.

Although automation may well reduce the proportion of the labour force employed as direct production workers, this will be offset by a comparative growth in administrative personnel. Thus it may be anticipated that an increasing proportion of workers will be inducted into the "middle-class".

Automation represents a continuing need for more scientists, engineers and technicians to design, build and install automatic machinery and control devices.

Since these statements represent the a priori base upon which the conventional wisdom is founded, they will be examined in turn.

The Growth and Application Imperatives of Automation

The notion that automatic production and/or organizational systems will not grow faster than the market's ability to absorb their production and re-employ the displaced labour derives from the classical economic laws discussed in Chapter 9. The argument is based upon Say's law which states as an empirical fact that the basic function of the economy is to overcome scarcity which is assumed to be universal and unsatiable. Hence, increased productivity inevitably creates its own demand. As machines augment labour power in order to produce more goods, labour may be displaced; but the increase in demand that follows from
the decrease in production costs and increase in real wages will surely result in their re-employment -- provided capital formation is adequate and wages are flexible.\(^3\)

Unfortunately, this classical faith in the responsiveness of the consumer market to production imperatives is not borne out by the evidence. In the first place, production economies realized through technological innovation have not been fully reflected in a proportional rise in real wages and decline in retail prices.\(^4\) In the second place, it is evident that after a certain plateau of "subsistence" income is reached, further increments in "discretionary" income are not proportionally deployed into those areas of goods and service production which would assure the required increase in employment.\(^5\)

This inherent consumption gap between high rates of increased productivity and lower rates of increased free market (private) consumption has been met in capitalist economies in two ways: a steadily rising proportion of public consumption, much of which is redundant and wasteful, and the "building in" of increasing amounts of waste or obsolescence into consumer products.

The evidence for the first assertion, increased public consumption, is clear and unambiguous. At the turn of the century, government spending in the United States represented slightly more than 7 per cent of the total GNP; it rose steadily and exponentially until 1965 it represented over 30 per cent of the GNP.\(^6\) Moreover, the proportion of public consumption is highest in those industries which have adopted the more productive technologies. For instance, direct U.S. government purchasing accounts for 90 per cent of the aviation industry's market, 65 per cent
of the electrical and electronic market, and 42 per cent of the instrumentation market. The various reports of Senator William Proxmire have made it quite clear that a major proportion of this government spending is in direct response to the needs of high technology to "dump" surplus goods and services ("maintain productive continuity", is the euphemism) and to subsidize their market irrelevant investment in advanced technologies.8

By the same token, Baran and Sweezy have demonstrated the growing proportion of waste that is being built into American goods and services. According to their calculations, this waste, redundancy and dysfunctional government subsidy had reached 50 per cent of the GNP by 1951 and had passed 56 per cent by 1963.9

Although many would quibble over the magnitude of these figures, few modern economists would disagree that the American economy is increasingly dependent upon non-competitive public consumption, and not the free market, for its continuing good health, and economists like Sidney C. Sufrin have recently elevated the economics of planned obsolescence, long a reality in American industry, to the respectability of academic theory. They have further seriously suggested that obsolescence must be applied not only to consumer durables but also to home construction, shopping centers and downtown office complexes, if the "free enterprise" economy is to be saved from "stagnation".

Given these new realities, the invocation of classical market concepts which maintain that laissez-faire principles will still assure the most efficient allocation of resources and rewards as well as the most acceptable timing of change seems, in the words of Alice, to get "curiouser and curiouser."
In any event, since the 1950's it has become apparent that whatever the contribution of public spending and planned obsolescence, productivity increases have exceeded the ability of the private and public economy to create the necessary number of jobs. While classical economists like Yale Brozen were mystifying statistics and proclaiming that "those who are concerned about unemployment should welcome rather than fear automation", the facts were that by 1965 automation was reducing jobs to the point where there were only 550,000 new jobs to balance a labour force increase of 1,300,000 people, a gap of some 250 per cent. The long-term figures indicate that the annual rate of job increase over the decade spanning 1955 to 1965 had dropped 100 per cent to 0.9 per cent compared with 1.9 per cent over the previous ten-year increment. Of the jobs that were available, those that exhibited the maximum growth rate were in the lowest paid quartile, while the average and above average industrial wage jobs showed a steady numerical decline.

None of this decline in both the quantity and quality of employment opportunity had been predicted in the long-range trend forecasts, nor had the economic trend analysts predicted anything close to the phenomenal rise in the investment in automated and cybernated production systems.* It would seem more than coincidental if these two forecast errors were not related.

*For example, Charles K. Killingsworth in his testimony before the Clark Subcommittee in September, 1963, noted that the U.S. Department of Labour had estimated in the early 1950's, immediately after the first giant computers were introduced, that only ten or fifteen would ever be needed in the U.S. However, by 1963, 8000 such machines were on order and a "new generation" about to be produced. By 1966 the annual rate of installation was 5000 and growing exponentially.
Figure 2 indicates the actual and the forecast growth in automated and cybernated investment by private business over the period 1955 to 1970. The situation in the government was even more dramatic. The first government computer was installed in 1949. In 1952 the Census Bureau acquired the first UNIVAC, and by 1954 it operated forty-five such machines. Ten years later American government bureaus had 1,770 computers. This was to rise in the following year (1965) to 2,140. Ben Seligman notes that,

"Between 1961 and 1963 alone the increase of computers in the Federal government was twice as great as that of the number of employees required to operate them."

Figure 2

Actual and Forecast Growth in New Technological Investment

Thus the Government employment growth, until then the fastest growing employment sector, was virtually halted and actually declined in many middle-supervisory areas. By 1964 the U.S. Department of Labor conservatively estimated that 200,000 jobs were "affected" by automation each year.

The way in which jobs were "affected" most was not in direct firing, but in the so-called "silent firing" that occurs when natural attrition or various early retirement schemes are invoked. Case study after case study on plant and especially on office automation indicates that "natural attrition" and "job transfer" were the principal and "socially acceptable" ways of eliminating surplus labour after automation. What this adds up to is that the "new entrants" coming into the labour force become the hidden casualties of automation.

...once the [automated] system jells and is operating at full strength, growth in the work force is halted and may even decrease....Instead of "chopping heads off the payroll", the computer is allowed to cut "a hole in the floor". Jobs are simply not filled....The firing, in a sense, is silent, quiet and unnoticed.

Eli E. Cohen, executive secretary of the National Committee on Employment of Youth, has estimated that some 250,000 "entry jobs" a year are displaced as a result of technological change. Mayor Louis C. Miriani of Detroit reported to a congressional committee that "from 1955 to 1960 there has been a 55 per cent loss of jobs for sixteen and seventeen year olds in Detroit." And in Denver a special youth employment service reported that between 1947 and 1957 the "new entrant" labour force grew seven times while the job opportunities only doubled.

Such grim statistics elicited the following testimony from Secretary of Labor Willard Wirtz before the Clark Committee in 1963:
We talk about the [official] unemployment rate in this country of 5.6 to 5.8 and that is bad enough. The unemployment rate... for young Americans in the age group covered by this bill [16 to 24] is [officially] 13 per cent.28

Under questioning, Wirtz went on to say that these figures did not include those who were in school and looking for part-time work, those who had dropped out of the labour force (which he estimated at half a million), nor those who had found part-time jobs but were still looking for full-time work. (This group is variously estimated at between one-third and one-half of those new entrants considered to be "employed.")

These alarming and rapidly growing unemployment statistics for youth just entering the labour force, combined with the various institutional forces recently deployed to keep this age group out of the labour force (and hence the unemployment statistics) caused Edward T. Chase to suggest seriously that "job-hunting youths face a grimmer prospect in the 1960's than their elders did in 1933 at the depth of the Great Depression, when the unemployment figure stood at a record 24.9 per cent."29 Charles E. Silberman would seem to concur when he noted that "teenagers, who represent just 8 per cent of the labour force, account for 22 per cent of the total unemployment and about 35 per cent of the increase in unemployment since the middle 1950's."30

Although this new phenomena of youth unemployment will be explored in more detail later, it is important in the present context because it demonstrates the fallaciousness of the classical economics argument that labour saving substitution in one sector releases labour and stimulates secondary capital for expansion in another sector.31 This contention grew out of the experiences in the earlier railroad
and later automobile investment booms, each of which resulted in not only displacing large amounts of labour, but also stimulating a major growth in secondary investment (such as urban and suburban construction) which then reabsorbed this labour. 32

However, as Walter Buckingham 33 has demonstrated, new investment in automation, especially in the more advanced stages, has not resulted in a secondary wave of investment such as the automobile and railroad industries experienced.

Of course, some of the more obvious aspects of this evidence have not entirely escaped the classical economists, but they lay the blame of continuing high unemployment and the shift in the occupational structure away from new entrants to "institutional rigidities" which interfere in the natural market mechanisms. Principal among these are minimum wage laws, labour unions and other factors which inhibit the downward flexibility of wages in response to the competition from machines. 34

Once again, the classical laws with respect to labour/capital substitution elasticities emerge to tell us that if labour prices itself too high, then the rational economic trade-off will be toward labour-saving capital substitution. Under such circumstances labour (and government) must recognize that the cure for unemployment is to lower real (not necessarily money) wages to the point where capital-saving and labour-using make economic sense.

As truistic as this classical law appears, it fails once again to perceive the radical departure of modern technology. The essential characteristic of later stage automation and cybertation systems is that they are both labour and capital saving at the same time. A typical
case in point will serve to illustrate the devastating effect that this new technological imperative has on the classical economic labour/capital substitution assumptions.

Pennsylvania Railroad automated its Conway marshalling yard operation at a capital cost of 34 million dollars. The new system, which automatically classifies and expedites freight cars, displaced 200 men. According to the classical substitution formulae, the decision to automate or not would depend on whether the capital costs (including loss of interest at prevailing rates) of the automatic equipment could be demonstrated to be more or less than the capital costs of maintaining the 200 men (at prevailing labour costs) on the payroll. As it turned out, the capital cost of labour in this (and most similar cases) was significantly less than the capital costs of the equipment. Yet the equipment was purchased and the men displaced.

The intervening variable was the nature of the technological system itself. Because the computerized system was capable of performing integrated tasks that no individual or team could do, the resulting efficiencies allowed the railroad company to reduce their freight car inventory by 13,000 cars at a capital saving of more than 100 million dollars in rolling stock. Thus the original 34 million dollar investment was not only labour saving (in the sense that it eliminated 200 workers, mostly "white-collar") but also capital saving in the sense that the net capital saving amounted to some 70 million dollars, or over twice the cost of the automated equipment.35

To complete the picture and to illustrate the prior point that automated equipment investment does not result in secondary or "spin off" investment and re-employment, the self-contained nature of the Pennsylvania Railroad's decision to automate becomes clear.
Railroad's computerized system caused no expansion of employment in related subsidiary or service sectors; nor did the manufacture of the equipment create much employment as this is now largely automated also. The installation and initial programming phases did employ a few high skill workers, but they were only temporary.

No doubt many of the displaced 200 workers, those with job seniority but too young for early retirement, were "responsibly" dealt with by the Company by being offered transfers to other sectors of the operation. But for each such transfer, one new job order is deleted and one less "new entrant" inducted into the active economy.

According to the U.S. Department of Labor's own estimates, during the 1960's while the "new entrant" labour force was growing at 5.5 times the increase of the previous decade, automation had cut new entrant job opportunities in half and was decreasing exponentially. 36

In the face of this evidence, it seems incredibly naive to maintain the assumption that automation will respond "normally" to traditional economic imperatives and not proceed faster than the capital and labour market relations can "naturally" absorb the displacement.

The Effect of Automation on Skills

It is somewhat ironic that those economists who assure us most vehemently that "automation" represents no qualitative departure from the continuing technological evolution should also insist that "automation" implies skill upgrading for virtually all workers. The source of the irony comes from the overwhelming evidence that the effect of steadily increasing mechanization in the industrial epoch has progressively lowered the average worker skill level.37 Yet the cry of "automation"
enthusiasts has been from the beginning that "upgrading is the blessing of automation" and that the socially significant outcome of "automation" will be the eventual "upgrading [of] labour into higher caliber, more dignified, satisfying, and valuable social and economic positions." It is difficult to say whether such a position gave rise to the "human capital" and the "end of ideology" hypotheses or whether a too hasty reading of short trend occupational data led to these reifications.

Looking at the later possibility, it is quite clear that as the vanguard elements of the industrial system, the so-called "continuous flow" industries, moved quickly into the first stages of automation, the work force required to build, install and "break in" the new equipment was characterized by a significantly higher level of skill than the old production line personnel. But as Ben Seligman has pointed out,

Once the system jells and is operating at full strength, growth in the [skilled] work force is halted and may even decrease...

The numerous "before and after" automation case studies all confirm this observation, as did a survey conducted by Fortune magazine. Their research demonstrates that,

It is simply not true that new technology is eliminating the demand for relatively unskilled or poorly educated blue-collar workers; nor is technology raising the demand for people with a great deal of education and professional or technical training as rapidly as [Secretary of Labor] Wirtz suggests.

This phenomenon of a temporary increase in skill requirements during the early transition period from a non-automated to an automated production system has its historical parallel in the shortage in craft skill during the initial stages of Taylorized production line innovation.
However, after the "line" itself became a production item, the skill levels required to produce the production machinery declined exponentially.43

In his detailed study of automation, James R. Bright could detect no variation of this historical trend in the case of automation, or more precisely, in the cases of each of the previously mentioned sub-stages of automation.

On the whole, observations indicated that automation seemed to be making skill and training less critical as criteria for employment in the average work force...Automated machinery requires less operator skill, or at least not any more skill, after certain levels of mechanization are passed.44

Thus there is, in Bright's terms, a "hump in skill requirements" associated with each of his (previously mentioned) stages of technology. This is a particularly heuristic concept, for it explains why the trends toward higher skill levels during the early stages of automation (1950's) were short-range rather than long-range. Figure 3 has been adapted from Bright's research exhibits.45 It displays the relative skill requirements for each stage of technology (including and highlighting the substages of automation) along a common time scale.

Since, as Blauner pointed out, during the 1950's all stages of technology coexisted, it is possible to plot also the "resultant" skill level which represents the mean trend. It will be noted that his "average skill level" trend line lags behind the first technological stage, that of the "craft" skills which declined rapidly during the 1950's while the new "technological" skill requirements for the early automation stages were rising. However, by 1960 the early automation systems had "matured" to the point where they passed the "skill hump." At this point the much vaunted need for "technologists" started its rapid decline.
But it was not until 1965 that the need for the highest level, university trained professional skills associated with the design, installation, managerial and operational adaptation of the cybernated technology reached its peak and began a similar rapid decline.
Since, as will be demonstrated, "cybernation" technology replaces not production workers but middle-managers, supervisors and professional technicians themselves, it is clear that although the "hump effect" did put a premium on university trained "human capital" during the 1950's and early 60's, it too has proved "self-liquidating", at least in quantitative terms.

The magnitude of this quantitative decline in the need for higher educated "human capital" along with the associated qualitative changes since 1965 will be subsequently pursued in detail. In the meantime, however, it seems clear that the available evidence does not support the belief that automation represented a long-term shift in the occupational mix toward higher and higher skills in general and professional skills in particular.

The Effect of Automation on the Occupational Mix

As noted in Chapter 3, the long-term trend in the American occupational structure has been toward increasing bureaucratization. Over the period 1910 to 1940, salaried employees increased 127 per cent relative to wage employment growth of 49 per cent. To the extent that over this period salaried white-collar employment was seen to reflect "middle-class" status while wage blue-collar employment was characteristic of working or "lower class" status, it is clear that the "middle-class" was on the rise. However, a large proportion of this "middle-class" growth was in clerical and retail sales which, while seen as more genteel, did not represent any greater amount of individual
mobility or income potential than did unskilled labour. Indeed, by the end of World War Two, the average wage of skilled and semi-skilled labour had surpassed more than half of the white-collar worker income categories. Although this increasingly well paid industrial work force was growing at a slower rate than the salaried work force, it was not until mid-1950 that the proportion of industrial blue-collar workers relative to the entire work force actually began to decline. The relevant data is displayed in Table XVIII below.

Table XVIII

Classification of Workers by Occupation, 1910, 1950, and 1960

<table>
<thead>
<tr>
<th>Category</th>
<th>1910</th>
<th>1950</th>
<th>1960</th>
<th>% Change 1950-1960</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Workers</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>White Collar</td>
<td>22%</td>
<td>37%</td>
<td>43%</td>
<td>6%</td>
</tr>
<tr>
<td>Professional and Technical</td>
<td>5%</td>
<td>9%</td>
<td>11%</td>
<td>2%</td>
</tr>
<tr>
<td>Proprietary and Managerial</td>
<td>7%</td>
<td>9%</td>
<td>11%</td>
<td>2%</td>
</tr>
<tr>
<td>Clerical and Sales</td>
<td>10%</td>
<td>19%</td>
<td>21%</td>
<td>2%</td>
</tr>
<tr>
<td>Blue Collar</td>
<td>37%</td>
<td>41%</td>
<td>36%</td>
<td>-5%</td>
</tr>
<tr>
<td>Skilled</td>
<td>12%</td>
<td>14%</td>
<td>13%</td>
<td>-1%</td>
</tr>
<tr>
<td>Semi-Skilled</td>
<td>14%</td>
<td>21%</td>
<td>18%</td>
<td>-3%</td>
</tr>
<tr>
<td>Unskilled</td>
<td>11%</td>
<td>6%</td>
<td>5%</td>
<td>-1%</td>
</tr>
<tr>
<td>Service</td>
<td>10%</td>
<td>10%</td>
<td>13%</td>
<td>3%</td>
</tr>
<tr>
<td>Farm</td>
<td>31%</td>
<td>12%</td>
<td>8%</td>
<td>-4%</td>
</tr>
</tbody>
</table>

If this data is compared with Bright's "skill hump" formulations, (Figure 3), some interesting correlations may be noted. First, the inflection point where industrial labour actually begins to decline after 1950 temporally corresponds to the average "skill hump" decline in Bright's exhibit. It will be recalled that this is the point at which the mechanical control production line machinery was being rapidly replaced with the first stages of automation, the "signal" and "action" response systems. Since these production systems did not employ machine "operatives", we would expect this semi-skilled category to decline maximally, as indeed it does, dropping three percentage points over the decade 1950 to 1960 compared with only a one percentage point drop for skilled and unskilled labour, neither of which were seriously affected by the early automation systems.

By the same token, the rapid rise over the same period in professional, technical, managerial and clerical categories -- a total of 6 per cent -- corresponds to the rising "skill hump" of those who are most necessary during the installation and operationalization period of the newer cybernated systems. These newer systems were being introduced at an unanticipated rate during this period. It was this temporal coincidence of the declining phase of the manual control technology and the peaking phase of the later "automated" technologies which undoubtedly led analysts to conclude that "automation" tended to reduce drastically "labour" while increasing "management".

However, if Bright's "skill hump" logic is fully understood, it is clear that this need for rapid increases in the number of professionals and managers was only temporary. Therefore, this occupational category
necessarily experienced a rapid proportional decline after the new
cybernated technological systems "jelled."

By the early 1960's a few of the more astute observers began to
have some second thoughts about the continued expansion of professional
and technical education in response to the human capital thesis. In
1961 the organizational theorist H. A. Simon noted that the assumed
invulnerability of the white-collar worker was based on the assumption
that his tasks required a great deal of "flexibility", i.e., they were
not seen to be easily routinized or standardized -- the necessary
pre-requisite for "automation." However, he warned that,

...we will be able technically to produce computers that can
grapple with and solve at least the range of problems that
humans are able to grapple with and solve -- those that are
ill-structured as well as those that are well-structured....
[Therefore] we must be careful not to assume that the particular
activities that now call for this flexibility will continue to do so....In particular, in the light of what has been said of the
feasibility of automating problem solving, we should not make
the simple assumption that the higher-status occupations, and those
requiring most education, are going to be the least automated....
The plain fact is that a great many middle-management decisions
that have always been supposed to call for the experienced human
judgment of managers and professional engineers can now be made
at least as well by computers as by managers. Moreover, a large
part of the total middle-management job consists of decisions
of the same general character as those that have already yielded
to automation. The decisions are repetitive and require little
of the kinds of flexibility that constitute man's principal
comparative advantage over machines. We can predict with some
confidence, I think, that persons making such decisions will con-
stitute a much smaller fraction of the total occupied group
within a few years than they do now.48

It was not long before the evidence in support of this prediction
began to accumulate. While the proportion of white-collar versus blue-
collar workers continued to grow, it was noticed that the majority of
these new salaried employees were not involved in industrial management
or technology but in marginal service employment, much of it part time. However, if we take the college graduate/non-college graduate division as a more relevant distinction than the collar line in separating those with "middle-class" occupational opportunity from those without, it is discovered that college graduates began to experience an "unexpected" reversal in opportunity around 1960 -- in exact accordance with the Bright "skill hump" projections.

Like most trend changes, it is the rates rather than the absolute values which provide the first indicators. However, because unemployment within occupational sub-categories is normally measured in terms of numbers, this reversal in the opportunity for college graduates was not widely noted. Walter Heller was perhaps the first to spot the significant new data. In his testimony before the Clark Subcommittee in September, 1963, Heller pointed out that while unemployment was generally increasing over the period 1957 to 1962, the number of unemployed college graduates had doubled in this time period while the rise in unemployment for men with less than eight years of schooling (numerically the most unemployed group) had increased by only 50 per cent.50

The justification for using the college/non-college graduation criterion for separating those occupations which, in general, offer the potentialities of achieving and maintaining "middle-class" social status lies in the socio-structural arguments developed in Part One of this thesis. If these criteria are accepted as valid, it is clear that the collar line distinction is of little value in relating changes in the occupational structure to concurrent changes in the social structure.

Unfortunately, the Bureau of Labor Statistics seems to have missed this point and has continued to recognize tacitly the collar line
as the essential criterion for assigning the general category status of the new occupations which have recently evolved as a result of technological change. When such new occupations are encountered, they are assigned specific titles in the Dictionary of Occupational Titles, and these titles are then keyed to one of the macro occupational divisions. It is the "job description" rather than its relative pay, status, or future opportunity that is the primary determinant in this process. Thus most of the new and rapidly growing low status, low pay, "white-collar" jobs have found their way into occupational divisions which have traditionally been viewed as exclusively representative of "middle-class" status.

Commenting on the statistical confusion resulting from the Dictionary of Occupational Titles approach of the Bureau of Labor Statistics, Louis Levine notes:

With the advent of more technology, the relationship between occupations and industries diminishes... Some occupations [that] have become obsolete are tending to disappear... [such] as the lower levels of supervision and management....

[But] the definition of a job in the D.O.T. has the appearance of something static; it consists of facts rather than trends.51

The "fact" which these statistics reinforce is that the growth in white-collar work relative to industrial labour indicates a steady reduction in the ratio of Administration to Production (A/P), which has been widely interpreted to mean more and more managers and fewer and fewer workers. The "trend" which is disguised is that the vast increase in "professional, technical and managerial" jobs (of which very few are professional or managerial in the normally accepted sense) has not been in the industrial but rather in the service sector. Most of the reported
66 per cent increase in this assumed "middle-class" occupational category that occurred in the decade 1950 to 1960 was in such "technical" occupations as service station attendants, up 160 per cent; office appliance installers and maintenance men, up 155 per cent; male hospital aides, up 145 per cent; and policemen, up 100 per cent.  The remainder of the "white-collar" occupational increase during this decade occurred mostly in the clerical fields of banking, finance, travel and government bureaus.  

Interestingly enough, according to Kolko's occupational breakdown, the majority of these new "white-collar" jobs fall significantly below industrial labour in terms of income, and virtually none could honestly be appraised as springboard occupations offering any great expectations for future individual mobility. Clearly, it would seem that rather than early stage automation promising to up-grade industrial labour to "professional, technical or managerial" levels in industry -- as is implied by the casual use of existing statistical categories -- the actual trend is to shift the locus of white-collar employment away from the industrial sector, where high productivity implies more opportunity for individual reward and security, to the service sector, where lower productivity (less than half of that of the goods-producing industry) and higher market sensitivity render much of this white-collar work marginal at best.

Ewan Clague reinforced this point when he argued:

...service industries are expanding in employment opportunities while goods-producing industries are contracting, but that the relative wage signals are pointing the wrong direction.
And when Seligman investigated the fate of the industrial worker (or his inter-generational replacement) forced to shift employment from secondary to tertiary sectors, he found that when a worker displaced from a factory or a young entrant ... moves into a service industry...[he] may discover that he can obtain only part-time work or a lower-paying job....Part-time work... represents half the new jobs created between 1953 and 1962.... In 1962, about one-third of those engaged in selling [a "white-collar" growth category] worked part-time...and, among gas-station attendants [who represented the largest growth in "technical" employment]...the proportion was more than half.56

He concludes that "the expanding sectors of the economy do not appear to be offering many viable employment opportunities."57 And we might add that although officially most of these rapidly "expanding" white-collar occupations are cast in with the real "middle-class" professional, technical and managerial category, few of the incumbents could be recognized as representative of middle strata socio-economic status by any of the criteria of occupational prestige, consumption style or educational attainment. Once again we are confronted with the problem discussed in Chapter 4 -- the mistaking of a rapidly changing occupational mix for evidence of an opening of the "middle-class" opportunity structure.

None of this is meant to suggest that during the decade of the 1950's some real and important expansion of certain middle strata occupational areas did not occur. However, this expansion took place overwhelmingly in public sector employment, mostly in education and government service, and not in the private economy. In fact, during the 1950's the Federal government contributed half of all new jobs, some 2.7 million.58 Seligman notes that by 1962:

Government employment totalled 9.2 million, of which 3 million consisted of professional and technical workers, half of them
This last prediction was borne out by 1965 when, as already discussed, the computer revolution hit government and effectively stopped further growth.

As for the exponential growth during the 1950's in white-collar clerical employment in industry and especially finance, insurance and banking, by 1963 the Bureau of Labor Statistics was noting the exponential decline in growth since 1960. In that year clerical employment grew by 4 per cent; in 1961 it increased 2 per cent; and by 1962 it was down to 0.6 per cent. Since the annual labour force growth over this period was 1.7 per cent, it is clear that the data processing revolution affected office staffs to the point where there was a relative decline in employment some three times greater than that necessary to maintain the proportional status quo.

The effect of data processing on clerical employment is now history, but this was only the beginning of the "office revolution."

...when the computer could be adopted as a direct substitute for clerical labor, there was no hesitation in using it.... [Then it was] discovered that the computer could be utilized to marked advantage in inventory control, production scheduling, and engineering planning, as well as in shuffling office paper.

Just as Bright and later Simon had predicted, heuristic computer systems could as easily replace managerial and professional technical expertise. And as already suggested, it would appear that most of this initial supervisory and middle-management displacement is, for public relations and political reasons, not experienced in the form of direct
lay-offs but rather by allowing redundancy until normal attrition can take place.

A recent (1968) and extensive survey of the literature and case studies on the effect of automation on non-manual workers conducted by the International Labour Office reinforced this point.

The tendency for middle-management jobs to disappear as the result of office automation has been masked by the fact that many automated office installations have not yet settled down or achieved their full scope...and perhaps by the personal policies of managements, which have attempted to retain employees in such positions rather than discharge them...The principal measure taken was to allow normal staff attrition to reduce the [management] labor force to the required level...[However] looking ahead, the authors of the survey suggested that entry jobs would not be available...to the same extent as in the past.

The first effects are thus most keenly felt by those who have recently graduated from college and who expected to find open to them junior executive jobs at the lower end of promotion hierarchies.

A survey conducted by the American Foundation on Automation and Employment on thirty-five of America's foremost corporations elicited the following warning:

The storm signals as well as the potential for the future cannot be safely ignored or overlooked...An impressive number of participants in this study have marshalled a persuasive case: The middle manager's job stability in terms of the number and kind of jobs there will be is subject to a far more serious threat and open to greater possibilities than past experience and expected trends in the immediate future would suggest.65

A monograph published by the Industrial Relations Counsellors similarly warns that,

the supervisory function is once again facing a challenge, more dynamic than is yet fully recognized. It is no exaggeration, as many executives hold, that the impact of automation on supervisors is far more critical than its impact on workers.66

And commenting on U.S. Steel's massive investment in automated management systems, Business Week cautions that while
No specific job changes were announced, ... it is plain that they will take place -- literally by the hundreds. It is less plain, but equally inevitable, that there will be a huge loss of jobs ... the management fallout ... will involve dismissal and demotion as well as end many established paths for career growth.

This last point, the effect of management automation on the established executive career path, is a qualitative dimension as important perhaps as the quantitative reduction in middle-class occupational opportunities.

The early systems analysts who sold top management on the advantages of managerial automation did so largely by demonstrating that cybernetics could re-establish central control of the sprawling new business enterprises. It may be recalled in this connection that the prime argument in the Galbraith thesis was that as American business becomes increasingly "oligopolistic," its decision-making functions must inevitably become increasingly decentralized, collectivized and (in accordance with Galbraith's commitment to liberal ideology) pluralized.

Given the then existing bureaucratic information and decision-making process, it was clearly impossible for owners or top corporate executives to monitor, sort and evaluate all the necessary information required to hold their numerous and far-flung operations and branches "on a tight rein." As corporations grew, management theory increasingly emphasized decentralized decision-making. Since it was impossible for top management to maintain direct control, the theory emphasized the necessity of making sure that lower members of the "management team" were kept aware of top management goals and given the appropriate reward incentives to pursue them independently. This latter implied a rise in "staff" relative to "line" personnel, increasingly elaborate management promotion hierarchy, and considerable interaction between the top and
bottom of the ladder. 70

But it is precisely the function of cybertated information
systems to monitor, sort and evaluate information automatically and then
reduce the information glut to making progressive eliminations according
to both pre-programmed and heuristically developed criteria until a
relatively brief set of top level decision alternatives is achieved. 71
The only lower echelon "staff" personnel required in this process are the
computer technicians themselves. "Field" personnel may not be displaced
by the computerized management systems, but their "staff" links with top
management are effectively broken. 72

Thus the early prediction that the effect of office automation
would be to "bring middle-management people closer to the top echelon" 73
has proven quite erroneous.

Robert Baxter of Gulf Oil reported that the principal organizational
outcome of his company's decision to computerize was that the decision-
making and reporting functions of branch plant and middle-management
were wiped out. "I would definitely say there are fewer levels of
responsibility and, therefore, fewer middle management people at those
levels." 74

Fortune magazine concluded from its surveys that,

Whenever a decentralized company has used the computer to
automate operations and particularly when it has installed
management information systems, it has willy-nilly found
itself behaving more like a centralized company. 75

Leavitt and Whisler reported in the Harvard Business Review
that contrary to the popular Galbraith thesis, it appeared that a con-
centrated effort was being made by the top of the organizational
structure to retrieve its power prerogatives:
...the top manager is determined to take back the reins of power he had to surrender under the rule of decentralization, and the computer is helping him to do just that. In company after company, headquarters specialists have been installed to assist top management regain control. In essence, the computer removes control of operations from the middle stratum and hands it over to a small core of specialists responsible only to the top, where planning now takes place. Meanwhile the men in the middle are being pushed down. For the fact is that the alteration in middle management jobs is taking place more rapidly than is the conversion of the skilled machinist into a machine tender. The supervisor and the department head become sergeants rather than company commanders.76

The military analogy is enlightening, but Ben Seligman prefers a more classical sociological metaphor. Making reference to the breakdown in the traditional relationship between higher and lower levels of management he suggests that,

a white-collar worker cannot consider himself part of the management "team" if he has no decisions to make and is in fact isolated from the decision makers. The result is an increasing "proletarianization" of the office force and the imposition of work standards not unlike those of the factory. 77

Of course, much has been made of the "opportunities" to be found in the new jobs that are created by the computers themselves. Aside from the obvious fact that systems analysing and computer programming and tending jobs represent only a small fraction of the jobs which they displace, there is the additional problem that handling computers represents a qualitatively different social relationship to production than handling personnel in bureaucratic information networks. The older supervisory and lower management skills were generalized and public, more related to the appropriate outlook, the demonstration of "leadership", and the successful public reflection of corporate images and conventions. 78 Thus transferability from one management job to another was relatively easy. The situation is quite different, however, for those "experts" hired to tend the office technology. Their jobs are specific and
isolated and are not subject to easy transference; nor do they represent progressive "rungs" on a vertical promotion hierarchy. 79

Although for the most part well paid and ascribed considerable status, at least until their numbers increased and the novelty wore off, the computer men represent a "Taylorization" of the lower and middle-management functions not unlike that which occurred in an earlier period when craft skills were specialized and fragmented into machine tending jobs. 80

The I.L.O. studies on office automation have warned that "automation...has a potentially explosive impact on established job hierarchies and avenues of advancement." 81 And an in-depth study conducted by Ida R. Hoos on the effect of office automation on career paths states that,

Not only are the conventional pyramids tottering, with new hierarchical patterns emerging, but certain traditional concepts of the role of top and middle management are changing....Vice-presidents "in charge of" find their official functions atrophied; there is little for them to be in charge of. 82

We may conclude from this evidence that far from increasing the proportion of "middle-class" occupations, early automation only increased the proportion of "white-collar" marginal employment, for the most part in the service sector -- a sector that is itself currently the subject of increasing amounts of automated applications.

It may be further concluded that within the traditional "middle-class" occupational sectors of business and industrial management, the later stages of automation have not only reduced the quantitative employment potentials, but they have also had qualitative effects,
such as interrupting the individual promotion routes and trivializing much of the work that does remain.

It has been demonstrated (in Part One) that two of the most persistent criteria by which "middle-class" occupations have been identified are the existence of an individual promotion ladder which extends from the entry level to the top of the hierarchy, and the generalized nature of the work which allows considerable latitude for individuals to shift their functions. Given these two criteria, it would seem that the most significant sociological outcome of the adoption of automated management systems is the very severe threat that they imply to the primary occupational identity of the American middle status groups.

There remains the special case of the professional level technical jobs.

**The Effect of Automation on Scientists, Engineers and Technicians**

In terms of career patterns it is not at all clear that any meaningful separation can be made between industrially employed engineers and scientists on the one hand and supervisors and managers on the other. Engineering has always represented one of several entry routes into industrial management, and for engineers promotions past a certain level meant joining the managerial ranks. Even at relatively low levels, it has been customary for American industry to hire engineers for non-engineering tasks such as production supervision and even clerical duties.
A recent survey of American professional engineers revealed that only 10 per cent of this profession were actually employed in jobs which called upon their specific engineering skills. And the most popular post-graduate training for engineers is not in science or engineering but in business administration.

Although industry has not, contrary to earlier predictions, become a major direct employer of pure scientists, the evidence is that those who have been employed have increasingly followed the career norms of their applied science brethren.

Given these career imperatives, W.M. Evans found that an aura of failure often accrues to those professional technical personnel who for one reason or another fail to make the transition into management. He concluded that such people remain "on the margin" of the corporate status hierarchy and thus experience a "sense of deprivation."

Thus as cybernated technology reduces the number of openings in middle-management and intercepts the traditional corporate promotion hierarchy, it would seem that the newly recruited engineer has less upward social mobility opportunities than before, and he may even be more securely bound to his narrow functional role.

At the same time, he is being threatened from below, for the education system in response to the clarion call for more "para-professional" technicians is pouring out ever increasing numbers of "technologists." These para-professionals are the products of the new institutes of technology which have sprung up to replace the old craft oriented apprenticeships and vocational schools. The graduates of these institutes are certified at the "diploma" rather than the "degree" level. These technologists are far more specifically trained and hence in many
ways much more congruent with the more specialized and increasingly "Taylorized" job requirements characteristic of the newly computerized design, test and quality control systems. Just as the new computer technologies have greatly reduced the need for flexible middle-management generalists, so it is with engineers whose technical education has been traditionally broad.

R.C. Quittenton⁸⁶ has noted the competitive advantages of the technologist to industry. Although the diploma student has had only three years of post-secondary instruction compared to the engineer's five, the "chemical engineer receives, in total, 1,687 hours of instruction in chemical subjects...and a chemical technologist, 1,680 hours."⁸⁷ Clearly, in terms of specialization the technologist is competitive. Where he is presumably not competitive is in the more elusive social skills and attitudes as well as the prestige that attends the university graduate. By the same token, he is presumably not imbued with the same salary expectations and promotion aspirations as the university graduate and thus less resentful of closing management opportunities.* Quittenton also alludes to the advantages which industry may expect from these more

*According to the British Columbia Institute of Technology's Annual Report: 1966-67, starting salaries for technologist and management diploma graduates ranged from a low of $333 to a high of $550 and averaged $465. According to the Canadian Department of Manpower and Immigration's Requirements and Average Starting Salaries - University Graduates, the equivalent starting salaries for degree graduates averaged over $600. It is significant that the two lowest starting salaries for BCIT graduates were both in service industries, $333 for broadcast and communications, and $372 for hotel, motel and restaurant management, while the highest were to be found in primary industries: forestry, $517 and mining, $550.
specifically socialized students.

He's ready to work and with high motivation when he leaves the community college...the student technologist has no time for placard-waving, sit-ins, love-outs and the like. He's pushed hard.

Whatever the rhetoric, it is now clear that the initial high demand for technologists, which in the late 1950's reached twice that for engineers, was quickly reversed when the professionals began to run out of job opportunities. By 1962, when the demand for engineers declined by over 60 per cent from its 1960 high, the demand for technologists abruptly fell by nearly 300 per cent (see Table XVIX).

These abruptly reversing rates indicate that the "skill hump" for those skills most relevant to the installation and operationalization of automated equipment had peaked, and as the system "jelled" job opportunities began a rapid decline. All this occurred at a time when the engineering schools and the institutes of technology were responding to the demand for "human capital" by rapidly expanding their output.

Table XVIX

<table>
<thead>
<tr>
<th>Annual Employment Growth Rate</th>
<th>Scientists and Engineers</th>
<th>Technologists</th>
</tr>
</thead>
<tbody>
<tr>
<td>1959-1960</td>
<td>6.4%</td>
<td>8.1%</td>
</tr>
<tr>
<td>1961-1962</td>
<td>4.0%</td>
<td>2.9%</td>
</tr>
</tbody>
</table>


In accordance with the previously described "silent firing" dynamic, the first indicator of this passing of the "skill hump" was not lay-offs but diminishing job opportunities for recent graduates.
And it was the lowest level of graduate, the para-professional technologists, who were most immediately and severely affected. Many of the jobs that would have gone to technologists when engineers were in short supply were being offered to and accepted by the professionals.*

Thus it appears that like the more generally educated middle-management aspirant, the graduating professional engineer had to accept an entry job that was only marginally related to his training and promised a future somewhat less stimulating than his expectations. Clearly, none of this can be interpreted as representing a general rise in occupational skill requirements; in fact, it implies the exact opposite.

A far more insightful interpretation arises out of the Bright inspired view of the effect upon the occupational structure that results from the rapid introduction of progressive stages of automated technology. As each stage is introduced, bottlenecks occur in certain skill areas necessary for the introduction and operationalization of the new technology. But as the object of automated technology is to eliminate the labour associated with the prior technological stage, these bottlenecks are temporary and show up as blips or "skill humps" on a generally declining skill demand line.

Because the most recently operationalized technological systems were designed to reduce the requirements for middle-range "intellectual"

*For example, the Annual Reports of the British Columbia Institute of Technology indicate that as these jobs for technologists declined through the late 1960's, the school responded by limiting enrollment and by increasing the "pass" standards of those who were admitted. The 1968-69 Report indicates that 51 per cent of those who were academically qualified for entry were turned down, and up to 50 per cent of those who were admitted subsequently "failed" or "withdrew." The highest failure rates were in those subjects which were most over-supplied, the average for all subjects being 25.16 per cent, an extraordinarily high rate when the initial degree of selectivity is considered.
occupations, there have been both quantitative and qualitative displacements in the occupational structure. While the available evidence indicates that there is still as much, or perhaps slightly more, room at the top and the bottom (marginals), it is the middle-management and technical occupations which are most threatened by the pervasive introduction of computer systems. Although the middle strata displacement effects have not been initially visible because of the "silent firing" technique, the continued production of highly educated potential managers and technicians has inundated the declining middle-strata job market. University graduates have thus been forced to accept lower level entry jobs. This in turn has displaced the less educated white-collar or white-smock workers who become increasingly unemployable.*

Jaffe and Froomkin have suggested that the downward displacement of university graduates in the occupational structure is currently five per cent and, on the basis of university attendance projections, will shortly double. They go on to say that no doubt "rationalizations will be put forth for using these highly educated persons in jobs that are now filled by workers with less education." But this prediction fails to take into account such factors as socially conditioned expectations with respect to socially defined classes of work. Surely, at some point in this downward progression, those new entrants who have

*For example, Dean Goard, the Principal of the British Columbia Institute of Technology, explained the declining employment opportunities for his "technologist" graduates as follows: "Many industries report that they need more unskilled labour than ever today....Educators may be mesmerizing themselves with their own propaganda, that unless you stay in school for years you can't get a decent job."
through their social and educational conditioning come to expect a "satisfying, rewarding, and respectable" job will no longer be able to delude themselves that the mass of available jobs holds such potentialities. At the same time it is reasonable to expect that employers will recognize university or equivalent education as functionally "inappropriate" to certain classes of menial and manual jobs and hence will not accept such applicants even if graduates were willing to take them. If this should occur, then a reasonable prediction would be that those groups with the highest formal education and most future oriented job expectations would increasingly suffer the highest levels of structural unemployment.

It is this emergent condition of un- and under-employment amongst the most educated segment of the population which threatens to overturn the "retraining" prescriptions of those labour economists who have seen contemporary unemployment in structural terms. So long as the source of structural unemployment was seen to be lack of skills and education, then the route to employment lay in providing mechanisms where under-trained and under-educated workers could be upgraded. This solution, of course, was quite congruent with the sociological imperatives which relate merchantable education to upward social mobility. But given the new problem of "over-education and under-utilization", what does retraining for available jobs mean when the bulk of available jobs are in low-skill, marginal service sectors? And given this, what are the sociological consequences of the existing educational policies and emphases?

We will now turn to the exploration of these emergent problems -- problems which are so clearly antithetical to the conventional solutions.
Notes


4. Supra, Table XVII, Chapter 9.


12. Supra, Table XVII, Chapter 9.


15. Ibid., p. 22.

16. Infra, Chapter 11.

18. Ben B. Seligman, op. cit., p. 211.


20. Loc. cit.


26. M.C. Kohler and A. Fontaine, "We Waste a Million Kids a Year", in ibid., p. 45.

27. Loc. cit.

28. Quoted in Herman, Sadofsky and Rosenberg, op. cit., p. 20.


32. Baran and Sweezy, op. cit., Chapter 8.


34. Yale Brozen, op. cit.; and Sar A. Levitan, "The Role of Minimum Wages in the War on Poverty", in Herman, Sadofsky and Rosenberg, op. cit., p. 177.

35. Herman, Sadofsky and Rosenberg, op. cit., p. 173.

36. Ibid., p. 22.
37. See James R. Bright, op. cit., Note 4, p. 177.


40. Ben B. Seligman, op. cit., p. 211.

41. See Chapter 11, Note 23.

42. Fortune, January-February, 1965, as quoted in Herman, Sadofsky and Rosenberg, op. cit., pp. 53-4.


45. Ibid., p. 187.


49. Ben B. Seligman, op. cit., p. 213.


53. Ben B. Seligman, op. cit., p. 213.

54. Gabriel Kolko, op. cit.

55. Quoted in Wells, op. cit., p. 124, emphasis added.
63. James R. Bright, *op. cit.*
64. Herbert A. Simon, *op. cit.*
70. For example, see any of the numerous works of Warren G. Bennis, e.g., "Conversation with Bennis", *Psychology Today*, February, 1970.
71. Herbert A. Simon, *op. cit.*
72. I.L.O., *Bulletin No. 5*, *op. cit.*


80. Dick Howard, op. cit.


86. R.C. Quittenton in an address to the annual meeting of the Association of Professional Engineers of Ontario, Niagara Falls, Ontario, March 2, 1968.

87. Loc. cit.

88. Loc. cit.

89. I.L.O., Bulletin No. 5, op. cit.

90. The Vancouver Sun, Vancouver, B.C., March 31, 1969, p. 21.


92. Ibid., p. 160.

93. The so-called "structuralists", supra, Chapter 9.

Chapter 12

The New Proletarian Parking Lot

In the last chapter it was argued that while each successive stage of industrial technology does place an early premium on high level associated skills, the persistent dynamic of the industrial organization of production is to reduce this initial demand either by progressively rationalizing, and hence "trivializing", the individual operations (whether these be manual or mental), or by automating such operational procedures altogether. It was further argued, with Galbraith, that as management systems and products development became increasingly the critical factors in the "success" of the private productive enterprise, these managerial and technological occupational functions would become increasingly subject to this rationalizing and technologizing dynamic. The result was to reduce, in contradiction to Galbraith, the qualitative and quantitative dimensions of the middle "technostructural" occupational sector.

Ample evidence has been available for over a decade to indicate that those managerial and technological jobs most associated with "middle-class" status have in fact been undergoing both qualitative and quantitative decline. But the threat that this trend represents to the existing American social structure, with its dependency upon occupational validation and educational certification, has been persistently ignored. It was suggested that the perserviveness of the "human capital" thesis, the excessive reliance upon classical macro-analytic models, the extended use of out-dated statistical categories, and the camouflage effect of
"silent firing" policies, which have been ubiquitously applied to middle-strata occupational incumbents, have all contributed to the general myopia.

However, the failure to recognize the significance of early trend data as these developed through the early 1960's has not, of course, prevented the emergence of irreconcilable anomalies as we move into the 1970's. Foremost among these are the extremely high rates of youth un- and under-employment, currently approximating the general unemployment at the height of the Depression, and especially the exceptional plight of those new work force entrants with the highest formal education attainments.

As has also been pointed out, the early youth unemployment trends reinforced the "human capital" thesis because the highest rates of unemployment were experienced by the least educated youths. But in view of the more recent data on unemployment amongst the higher educated, a more congruent explanation is to be found in the "bumping" analogy, where a general surplus of higher educated new entrant manpower progressively "bumps" lower educated applicants for jobs with relatively low education requisites.

But this "bumping" effect could only be a transitory manifestation of a more fundamental dynamic. Eventually the elastic limit of the downward occupational progression of the higher educated was reached, and un- and under-employment amongst the more educated youth has emerged in the closing years of the 1960's. The above dynamic is made all the more remarkable when it is realized that the United States was at this time (during the '60's) engaged in a war which has "employed" men (especially young men) and materials at a rate in excess of the Second World War.
The fact that the U.S. is still plagued with high skill unemployment and surplus production capacity in spite of this immense manpower and production "sink" certainly underscores the displacement effect of modern technology.

Although somewhat parenthetical, it is perhaps a significant as well as a useful control to note similar occupational trends in Canada, a country which to an exceptional degree reflects the American private economy but has not "enjoyed" the surplus absorption effects of the Viet Nam War. Table XXIV (infra, p. 227) displays the relevant Canadian occupational data with respect to the decline in occupational opportunities for university graduates.

While the application of high technology to the private sector occupations traditionally associated with higher educational requisites must be seen as the fundamental source of the current middle-strata occupational displacement, the related dynamics of the public sector's growing role of surplus absorption should also be examined in the specific context of manpower absorption. The extent of this new government role in economic surplus absorption has received much recent analysis, but the parallel process of surplus manpower absorption has not been the subject of widespread research. This oversight is all the more remarkable given the easy availability of the primary data. In a recent pioneering effort by John and Margaret Rowntree, the basic data were laid out in categorical terms.

The Rowntree analysis begins by noting that,

...in the last 25 years the U.S. economy has been changing from a goods-producing private economy to a government-sponsored economy producing war [materiel] and knowledge. The defense and
education industries, very narrowly defined, now account for more than one-sixth of the actual GNP. Further, these industries have become increasingly interrelated and should be viewed as a single industrial complex.... [But] the true importance of the defense-education complex can only be seen by going beyond its share of the GNP to its very important role in absorbing surplus manpower -- especially young manpower.5

Unfortunately, the standard methods of statistically displaying labour force participation do not provide categories of comparison through which changing proportions in manpower allocations between education, military, defense and goods-producing sectors can be made. However, recent trend changes in the social allocation of manpower, whether this be productive or "socialized", can be made if the total working age population, aged 18 to 64, is divided into the following three categories:

Category One: Those who are "non-employed" in the socialized sectors of the defense-education complex, i.e., non-career soldiers and students.

Category Two: Those civilians directly employed by government defense work or in the education industry as professional or support staff.

Category Three: Those in private or public employment not directly related to either defense or education.

Table XX compares the proportional utilization within each of these categories of the total increase in U.S. working-age population over the fifteen-year period ending 1965.

Thus, through the simple procedure of recasting the available data into these new categories, the Rowntrees have made the truly amazing discovery that,

Between 1950 and 1965, the defense-education complex alone absorbed two-thirds of the total increase in the 18-64 year old labour population. In 1965 more than half the young men 18 to 24 years old were in school, the military or unemployed.6
Table XX

Utilization of 1950-1965 Increase in Labouring Population, 18-64 Years

<table>
<thead>
<tr>
<th>Increase in School Enrollment (18-64 only)</th>
<th>24%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in Armed Forces</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total Increase in Category One:</strong></td>
<td></td>
</tr>
<tr>
<td>Socialized Non-Employment</td>
<td>31%</td>
</tr>
<tr>
<td>Increase in Defense Employment (civilian)</td>
<td>15%</td>
</tr>
<tr>
<td>Increase in Education Employment</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Total Increase in Category Two:</strong></td>
<td></td>
</tr>
<tr>
<td>Defense and Education Employment</td>
<td>36%</td>
</tr>
<tr>
<td><strong>Total Increase in Category Three:</strong></td>
<td></td>
</tr>
<tr>
<td>Private and Public Employment Not Directly Related to Defense or Education, including Those Officially Registered as Unemployed</td>
<td>33%</td>
</tr>
<tr>
<td><strong>Total Increase in Labouring Population, Aged 18-64, over Period 1950-1965</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: John and Margaret Rowntree, "The Political Economy of Youth", Our Generation, vol. 6, no. 1-2, table v.*

By any standards, this is a tremendous shift in total (all age) manpower utilization away from the traditionally accepted productive sectors of the economy. And as expected, the "new entrants", those 18 to 24 years of age, have been most affected to the point where over half their numbers are no longer relevant to the active economy. Even when this "new

*The following footnote is quoted from the source: "...we use an unusual definition of 'labour population'. We include civilian labour force and military personnel plus student enrollment minus, to avoid double counting, enrolled students who are in the labour force,...We labouriously took out 14-17 year olds and 65 year olds and older in order to treat only the labouring population of ages 18-64....Our estimate for the total increase in the 18-64 labouring population still contains an element of double counting, but we think it a defensible estimate with a 1% margin.... The increase in private employment directly resulting from education purchases of goods and services is conservatively estimated at 750,000 jobs, about 1% of the 1965 labour force...."
the "entrant" category is further narrowed to allow those who have chosen job-oriented technological and junior college courses to "hit" the official labour market, it is discovered that,

In 1950 only about 22.8% of all men between the ages of 20 and 24 years were either in the armed forces or in school; in 1965 the figure was 40%; thus, two out of every five young men between 20 and 24 are either in the army or in school. If we add to this the unemployed, then in 1965, 44.5% of all 20 to 24 year old men were in school, in the armed forces, or [officially] unemployed. Since the above statistics do not include those who have "dropped out" of the labour force, it is safe to say that well over 50 per cent of the age group 20 to 24 have not been able to find "productive" employment, and, as previously discussed, a large proportion of those who are officially considered to be "working" are grossly under-employed.

Of course, many will argue that it is unfair to treat the "enlisted", non-professional soldiers and older students as "socialized", non-productive members of the labour force since it is by no means provable that such people are forced to accept the army and school as a sort of respectable substitute for welfare in the absence of suitable employment. However, as the Rowntree's point out, youths are increasingly aware that "if they venture outside army or school they meet unemployment rates two to five times the [all age] average." They are thus increasingly predisposed to "choose" either the army or prolonged schooling as the only rational alternative to joining the growing ranks of the unemployed youth "counter-culture."

The army and particularly the schools have thus increasingly served as holding tanks to keep surplus manpower "occupied" as the techno-economic dynamic continues to reduce proportionally manpower requirements.
in the productive economy. Former Secretary of Defense Robert McNamara has admitted that his proposal for universal compulsory service was inspired more by this absorption need than by military requisites. And former Secretary of Labor Willard Wirtz seriously suggested the extension of compulsory schooling to age 18 as "a solution to the teenage unemployment problem". This solution, by the way, was implemented by the Milwaukee school board for all "unemployed" youth in that city.

The extent to which the army and schools do in fact absorb surplus manpower has been dramatically demonstrated by the Rowntree's who calculated that if the 1965 increase in Category One manpower utilization (army and students) were returned to the 1950 level, 8.7 million young people would join the ranks of the unemployed. This would "increase the 1965 unemployment figures 3.5 times, even if teachers and officers were kept at their posts." But the problem with relying on the defense-education complex to absorb surplus manpower from the private sector is that ultimately the flexibility of the public purse must reach its elastic limit. The Rowntree's ask, "How long can this continue? How large can the army and the schools become?"

If the current predictions of the standard policy-articulating bodies are any indication, the academic "parking lot" is destined to become very large indeed. The National Planning Association (NPA) has developed a set of criteria for establishing national economic and employment goals in the 1970's. Operating from a set of highly optimistic premises with respect to anticipated economic growth, the NPA developed quantitative projections for manpower requirements designed
to meet these specific private and public sector goals. A comparison of the rationales for establishing the higher education growth projections with the anticipated manpower requisites needed by the high education occupational sectors (managerial, professional and technical) is a highly enlightening exercise. For example, the NPA study justifies the continued extrapolation of the past decade's growth rate in higher education enrollment (which doubled between 1955 and 1965) in the following terms:

In higher education, where occupational perspectives are primarily directed to professional, technical, and managerial positions, preparation for employment includes a large amount of general education. Increasing the supply of people trained for these occupations in order to meet the larger needs anticipated in the 1970's is projected to involve more than a doubling in enrollments in colleges and universities, an increase of from 4.5 million in 1964 to 9.6 million by 1975. 16

However, when we turn to the actual projections of anticipated increased employment by major occupational groups over the 1964-75 decade, it is discovered that even if the optimistic economic growth rates assumed by the NPA study are accepted, professional and technical occupations will grow as a proportion of the total labour force by only 2 per cent, while managers and government officials are not expected to make any proportional increase at all. 17 Since the total growth of the labour force over the same period is anticipated to be 22 percent, the projected "goal" of doubling the number of university graduates will effectively create an 80 per cent surplus of available manpower in "professional, technical and managerial" occupational categories according to the NPA's own criteria. Since these criteria do not take into account any of the trends discussed in the last chapter that suggest an increasing proportional decline in these occupational sectors, it seems safe to suggest that this 80 per cent anticipated (but not articulated) discrepancy between
overall supply and demand in the "middle-class" occupational sector is quite conservative.*

Although the NPA projection statistics contain many such contradictions, these are not discussed explicitly in the text. However, oblique allusions do appear. For example, in the above NPA study, Leonard Lecht notes that, "Recent scientific and technological advances, for example, have made much of the professional education of the older generation of engineers obsolete..." But rather than face the logic of this statement with respect to the higher education enrollment projections, Lecht falls back on the classical economics faith in Say's law:

The significance of rising levels of educational attainment can be summarized in the expression that "supply creates its own demand." In addition to raising the requirements for employment, the greater availability of trained and educated people in a growing economy encourages the development of new opportunities for using them, especially in areas where manpower bottlenecks have posed a barrier to expanding those services for which there is substantial recognition of need. To cite a leading instance, a sizeable increase in the supply of psychiatrists and other mental-health personnel would encourage the establishment of mental-health centers presently lacking in many parts of the nation outside the metropolitan areas. In this case the example may be more significant than the law which it attempts to illustrate. Indeed, it is more than likely that a nation populated with increasing numbers of highly educated unemployed may experience a very high demand for specialists in the treatment of mental health symptoms associated with the social pathology of anomie.

It is clear from this and other similar policy oriented studies that the nation's colleges and universities are being quietly institutionally

*See Jaffe and Froomkin, Technology and Jobs, op. cit., table 14.5, p. 163, and preceding text for a more critically developed set of occupational projections over the same time period.
alized as "parking lots" primarily functional in keeping surplus manpower out of the labour force. As noted by John and Margaret Rowntree,

The education industry has a seemingly unlimited capacity to absorb [surplus] manpower by enrolling it in school. This form of socialized investment takes up the slack left by the failing private sector of the economy by reducing the labor supply and by absorbing vast quantities of resources for teachers, buildings, etc. Ironically, however, investment in education increases... the problem of surplus [manpower] disposal in the future. This increasingly difficult problem is being "solved" in two ways: extending the years of schooling, and training students for unproductive labor.22

The first of these two "solutions", that of extending the years of schooling, has already been discussed in Chapter 8 in terms of the general rise in the education level of the productive work force. Table XXI below provides a breakdown on this increase by occupation over the twelve-year period, 1952-1964.

Table XXI
Education Attainment of Employed Males, 18 Years and Older, 1952 and 1964

<table>
<thead>
<tr>
<th>Occupational Group</th>
<th>Percentage Completing 8 Years of Elementary School or Less</th>
<th>Percentage Completing 4 Years of High School Or More</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Occupations</td>
<td>41</td>
<td>26</td>
</tr>
<tr>
<td>White-Collar Occupations:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional and managerial workers</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>Clerical and sales workers</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>Blue-Collar Occupations:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Craftsmen and foremen</td>
<td>41</td>
<td>29</td>
</tr>
<tr>
<td>Operatives</td>
<td>50</td>
<td>34</td>
</tr>
<tr>
<td>Labourers</td>
<td>67</td>
<td>47</td>
</tr>
<tr>
<td>Service Occupations</td>
<td>53</td>
<td>38</td>
</tr>
<tr>
<td>Farm Occupations</td>
<td>67</td>
<td>58</td>
</tr>
</tbody>
</table>

However, a less well discussed aspect of this "stretch out" of education is the increased period of time which university students take to complete their university careers. As it becomes increasingly evident that good jobs are not as available after graduation as they used to be, students are increasingly disposed to return for post-graduate degrees. During the decade of the 1960's when the number of engineering Bachelor's degrees granted doubled, the number of Master's degrees tripled, and Doctorate's grew by a factor of five. Most other disciplines experienced similar proportional growth in graduate education as Table XXII indicates.*

Table XXII

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>350</td>
<td>382</td>
<td>400</td>
<td>516</td>
<td>689</td>
<td>848</td>
</tr>
<tr>
<td>History</td>
<td>314</td>
<td>324</td>
<td>371</td>
<td>378</td>
<td>576</td>
<td>655</td>
</tr>
<tr>
<td>Sociology</td>
<td>134</td>
<td>157</td>
<td>184</td>
<td>208</td>
<td>230</td>
<td>327</td>
</tr>
<tr>
<td>Psychology</td>
<td>550</td>
<td>625</td>
<td>703</td>
<td>844</td>
<td>847</td>
<td>1231</td>
</tr>
<tr>
<td>Home Econ.</td>
<td>46</td>
<td>26</td>
<td>36</td>
<td>45</td>
<td>58</td>
<td>66</td>
</tr>
<tr>
<td>Accounting</td>
<td>14</td>
<td>18</td>
<td>15</td>
<td>23</td>
<td>32</td>
<td>43</td>
</tr>
</tbody>
</table>


At the same time that increasing proportions of university students opted for graduate school, the period of residency within graduate school itself was dramatically increased.

The mean lag between a B.A. and Ph.D. in the physical sciences has increased from 6.9 years in 1920-39 to 7.4 in 1950-59 and 7.8 in 1960-61. In the biological sciences the mean increased from 8.0 years in 1920-39 to 8.3 years in 1950-59 and 8.9 years.

*In Canada the growth in graduate degrees granted has been even more phenomenal. The number of Master's and Ph.D. degrees granted in 1964 was only 4000. By 1974 it will reach 17,000.
in 1960-61. In other fields the current lag is even greater: 10.4 years in the social sciences, 12.0 in the humanities and professional fields, and 15.2 in education.24

The second "solution", that of training students for unproductive labour, may be measured in terms of the redistribution of students within university faculties. As early as 1962, President Kennedy noted the beginnings of a decline in the proportion of students registering in the physical sciences, engineering, and business administration.25 Since then a steady growth has occurred in the proportion of students taking liberal arts and especially social science subjects. However, the most significant trend has been the growth in the number of students entering the teaching profession at either the public or higher education level. In this sense the education industry provides one major source of its own surplus productivity absorption.

Vaizey and Debeauvais note that "education is itself a major consumer of highly qualified manpower. Teaching in schools and higher education takes between a sixth and a third or more of the annual output of higher education..."26 In another context, that of vocational retraining, Paul Goodman quotes a Department of Labor source as follows:

Let me quote from a man in Secretary Wirtz's own Department, in charge of retraining: "We retrain him, but before the course is finished, that job too has vanished. So we begin again. But after the fourth or fifth retraining, he has a job that doesn't vanish: he becomes a Teacher of Retraining."27

It could be argued that this does represent a somewhat distorted form of Say's law, i.e., that supply creates its own demand. But as R.C. Porter28 has rigorously demonstrated, because of the economic and logistic limits placed on student-teacher ratios, the demand effect is always small relative to the eventual effect on supply. And indeed it is!
As Table XXIII indicates, the current Ph.D. "glut" is running between 50 and 500 per cent oversupply, depending on the individual discipline.

Table XXIII

<table>
<thead>
<tr>
<th>Field</th>
<th>Registered Ph.D.'s</th>
<th>Vacancies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration</td>
<td>30</td>
<td>27</td>
</tr>
<tr>
<td>Sociology and Anthropology</td>
<td>109</td>
<td>87</td>
</tr>
<tr>
<td>French</td>
<td>80</td>
<td>34</td>
</tr>
<tr>
<td>Psychology</td>
<td>197</td>
<td>49</td>
</tr>
<tr>
<td>Political Science</td>
<td>228</td>
<td>31</td>
</tr>
<tr>
<td>Physics</td>
<td>243</td>
<td>12</td>
</tr>
<tr>
<td>English</td>
<td>372</td>
<td>69</td>
</tr>
<tr>
<td>History</td>
<td>394</td>
<td>43</td>
</tr>
<tr>
<td>Chemistry</td>
<td>347</td>
<td>29</td>
</tr>
<tr>
<td>Religion</td>
<td>263</td>
<td>14</td>
</tr>
</tbody>
</table>

*Ph.D.'s in search of available academic posts at 315 liberal arts colleges as of March 1, 1970.


Again, this abrupt and officially unheralded reversal in the supply and demand position for Ph.D. level teachers is an indictment of the principal policy formulating agencies and their academic advisors. For example, as late as 1966 the U.S. Office of Education was projecting that the supply of university teachers in the mid-1970's would be 83,000 less than required. But in that same year, Allan M. Cartter developed a university faculty supply and demand projection, based on the most easily available demographic data, that predicted the emergence of a surplus of Ph.D.'s seeking university postings by 1968 -- a surplus supply
that would continue to grow exponentially through to 1985 while the market would decline drastically in the 1970's and 1980's. Figure 4 is reproduced from this source, and to date (1970) Cartter's predictions have been validated. Late data would only suggest that the future supply curve would grow even faster than predicted as the opportunity for Ph.D. employment in other fields declines, thus thrusting considerably more than his assumed 50 per cent of the total Ph.D. pool into the academic market place. By the same token, the demand curve may actually fall faster than Cartter's estimates as policy-makers finally recognize

Figure 4

Supply and Demand of University Teachers

the declining functionality of university graduates and respond pragmatically by reducing the anticipated education expenditures.*

Another early indicator of the current Ph.D. "glut" was the long-term increase trends in faculty positions and graduate school output. Between 1940 and 1964 the number of faculty positions in U.S. colleges rose some 337 per cent. But in the same period, the number of doctoral graduates increased 441 per cent.32

Of course, the reigning "human capital" thesis insisted that the increase in Ph.D. output was necessary because of the anticipated outside industrial demand for post-graduates. But the fact is that this demand, far from increasing, has shown a steady decline since 1960, even in the most industrially employable fields of natural and applied science. The most recently available data indicate, for example, that in the U.S. there has been a 30 per cent drop in jobs outside of university teaching for Ph.D. chemists and physicists in a one-year period, 1968-69.33 In Canada, a total of 45 Ph.D. physicists were employed outside of universities in 1959. In 1969 there were still only 45 physicists so employed. Yet in the same decade, the number of pre-doctoral physics candidates rose from 155 to 595.34 The situation in engineering is even more disastrous

The Science Council of Canada noted in a "confidential" report presented to Prime Minister Trudeau in January, 1969, "that both in government and

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*The NPA estimates are that the annual higher education expenditures will rise from the $10 billion spent in 1964 to $29 billion by 1975 (in 1964 dollars).30 This near tripling of the costs compared with an anticipation of only doubling the enrollment is explained in terms of a still further increase in the ratio of graduate to undergraduate enrollment. The study notes that of the 600,000 degrees awarded in 1964, 115,000 were advanced degrees. By 1975 they anticipate that 1.3 million degrees will be awarded, of which 300,000 will be advanced professional or post-graduate.31
industry the percentage of the estimated total stock of scientists and engineers employed on research and development is dropping.\textsuperscript{35}

Dr. L. Gray, Director of Atomic Energy of Canada Limited, in his 1968 brief to the Senate Standing Committee on Science Policy, issued the following warning:

In 1965 Canada had some 100,000 scientists and engineers, of which about 15,000 were engaged in R and D. In 1978 we will have some 300,000 scientists and engineers, nearly three times as many as we have today.... With increasing numbers at our universities going on to do post-doctorate work, we can expect a larger percentage of scientists and engineers to be available for R and D; perhaps as high as 20 per cent of this professional group.... This means 60,000 R and D professionals. Hence, unless we can employ 45,000 new R and D professionals in the next ten years we will have trained a select segment of our coming generation at a very substantial cost only to find that they are either under-employed, unemployed or that they emigrate.\textsuperscript{36}

A more general picture of the rapidly declining occupational opportunities for graduates and post-graduates may be gleaned from the 1969 Department of Manpower and Immigration Survey, Requirements and Average Starting Salaries: University Graduates, 1969.\textsuperscript{37} Comparing the number of job openings and their starting salaries according to discipline and degree level, the survey found that all areas of post-doctorate employment were down, and with few exceptions, the job market for first degrees had virtually collapsed. Table XXIV summarizes the extent of this decline.

These data show the change in job opportunities over the one-year increment 1969-1970 only. A similar survey conducted the previous year indicated an average decline in jobs available to university graduates of 25 per cent. Clearly, the cumulative effect of such high rates of attrition, combined with a growing number of graduates in pursuit of the available jobs, must be considered unusual.
Table XXIV
Job Opportunities for Canadian University Graduates, 1968-1969

<table>
<thead>
<tr>
<th>Discipline Grouping</th>
<th>Graduating Degree Level</th>
<th>Number of Graduates Required by Employers 1968</th>
<th>Number of Graduates Required by Employers 1969</th>
<th>Per Cent of Change Between 1968 - 1969</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS</td>
<td>B.A.</td>
<td>1221</td>
<td>904</td>
<td>-26%</td>
</tr>
<tr>
<td></td>
<td>M.A.</td>
<td>196</td>
<td>132</td>
<td>-33%</td>
</tr>
<tr>
<td></td>
<td>Ph.D.</td>
<td>43</td>
<td>35</td>
<td>-19%</td>
</tr>
<tr>
<td>SCIENCE</td>
<td>B.Sc.</td>
<td>514</td>
<td>419</td>
<td>-18%</td>
</tr>
<tr>
<td></td>
<td>M.Sc.</td>
<td>96</td>
<td>88</td>
<td>-8%</td>
</tr>
<tr>
<td></td>
<td>Ph.D.</td>
<td>49</td>
<td>51</td>
<td>-4%</td>
</tr>
<tr>
<td>ENGINEERING</td>
<td>B.A.Sc.</td>
<td>1009</td>
<td>1401</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td>M.A.Sc.</td>
<td>112</td>
<td>108</td>
<td>-4%</td>
</tr>
<tr>
<td></td>
<td>Ph.D.</td>
<td>29</td>
<td>20</td>
<td>-31%</td>
</tr>
</tbody>
</table>


But as if this were not bad enough, the detailed information of these manpower surveys points up yet another aspect of the decline in jobs for the higher educated. In those few areas, such as engineering and chartered accountancy where jobs for Bachelor's level graduates did increase, the evidence is, in the words of the study, that "this increase in professional graduate hirings is at the expense of the Arts graduate who formerly found employment as administrative and sales trainees..." But the decline in starting salaries in these areas confirms the fact that professionally trained graduates are "bumping" the more generally educated job candidates. However, this ability on the part of a few professionally trained students to "bump" Arts and Sciences graduates at the Bachelor's level does not extend to advanced professional degree holders who are, no doubt, considered by prospective
employers to be "over educated" for such ordinary jobs. Thus Master's and doctoral level engineers, for example, fare much worse in the job market than do their first degree colleagues, and in general the higher the degree, the less likely the candidate is of getting a suitable, or indeed, any job.

These Canadian data exactly reflect the dominant U.S. trends, although in some areas they represent an "overswing." This "overswing" results, no doubt, from the combined effects of the sudden damming of the "brain drain" migration of educated Canadians to the once lush U.S. job markets and from Canadian industry's "branch plant" over-reaction to American economic shifts. For example, the mid-February, 1970, edition of The Chronicle of Higher Education, a foundation-supported weekly reporting on the U.S. job market for university graduates, states that,

A survey of job offers from business and industry at 141 campuses, conducted by the College Placement Council, showed offers to Bachelor's degree candidates were 20 per cent below last year; Master's degree candidates are even worse off with a 24 per cent decline.

The U.S. Civil Service Commission reported that the Federal government would be hiring only 8,400 college graduates in fiscal 1970 compared with 14,000 in fiscal 1967. Among the big corporate campus recruiters, General Motors admits to a 10 per cent curtailment of hiring in 1970 over its 1969 level. Westinghouse anticipates a 20 per cent decline from 900 to 700, "95 per cent of them in technical fields." The other big corporations sampled estimated a decline in annual hiring of university graduates of between 15 and 25 per cent.

Given this picture, it is not surprising that the response to
finding no suitable jobs after graduation is increasingly to return to graduate or professional school. Professional departments such as law and education, which have traditionally accepted general arts degree holders, are reporting that since 1968 they have been inundated by a totally unanticipated deluge of high calibre applicants.* At the same time, the competition for graduate admission has grown exponentially in spite of the rapid expansion in graduate school places.**

This "stay in school" adaptation to the declining higher education job market was dramatically demonstrated in a recent Canada Manpower survey of Simon Fraser University graduates. In this study, questionnaires were sent to all 774 students who have graduated at all levels from Simon Fraser University since its inception (1965), located in Canada and 34 in other countries. A 55 per cent return of the questionnaire was achieved; of these, 52 per cent do not hold a full-time job. Of those who do not hold a full-time job, 77 per cent have returned to school and "are taking full-time courses of some kind."47

*For example, the Dean of the Law School at the University of British Columbia recently stated on a C.B.C. radio interview that in the decade prior to 1967 the number of qualified applicants (any Bachelor's degree with high standing) remained relatively steady at 250 annually. However, since 1967 the applications have risen to 900 annually, while the number of openings has remained at around 165 annually. And the Dean expressed fears that the number of openings in law may soon decline due to computerization.

** However, recent reports from many large graduate schools, including Yale, Harvard, and the University of California indicate that they are currently cutting their graduate school enrollment by 20 per cent in response to the Ph.D. "glut."45
For those who did find some kind of full-time work, nearly one-third said "they did not need the degree to get the job." Such a statement strongly suggests that they did not find work in the higher status occupational sectors normally associated with high educational attainments.

In any event, for the majority of graduates no suitable work was available, and the most rational alternative available to 77 per cent of them was to return to school. This conclusion is not mere speculation. The final question on the otherwise directive questionnaire was, "Any comments?" The largest single response (by a factor of four) fell into the code category "found it hard to get a job." The following quotations were cited by the survey as "typical."

"First degree useless." "Education useless." "Degree a disadvantage." "Might as well have only grade 12."

Thus many students who did not intend to return to graduate school and who did not originally consider university teaching as a career but who could find no other suitable work and so returned to graduate school find themselves "over educated" to the point where the only kind of work compatible with their education is in academe.

*It should be noted that although Simon Fraser University has a relatively large graduate school, it does not offer any "professional" degrees outside of education. It is thus, in the American categorization a "Liberal Arts and Teachers College." As such it might be expected to have a lower rate of graduate placements than a university offering a full range of professional degrees. However, in a recent radio interview, the head of student placements at the University of British Columbia, which does offer a full range of professional degrees, suggested that his most recent data indicated a close approximation of the SFU study.
And given the current and anticipated oversupply of university teachers plus the virtual non-employability of those who are seen as "over educated" for any kind of work, the structurally imposed "decision" to postpone entry into the active economy in order to "improve one's qualifications" may prove a cruel hoax. In the words of Alan Wolfe,

The automating American economy has begun to develop a vested interest in keeping people off the labor market as long as possible. Like the invention of adolescence, graduate schools contribute to that delay. An increasing number of people have not sought full-time work until they were into their late twenties. Now it seems that they may not find full-time work until much later.50

Thus if it is accepted that the central problem of the American "post-industrial" economic system is surplus absorption, including the absorption of increasing numbers of highly educated manpower, then the emergence of the academic "parking lot" must ultimately exacerbate the contradiction this socio-economic reality makes with the cultural imperative associating higher educational attainments with higher occupational expectations in precisely that area which, given the emerging techno-economic structure, is least able to fulfill these expectations.

Further, given the growing costs of socializing graduate education, it seems doubtful if any additional "stretch out" is possible, in spite of the prediction of President James Hester of New York University that "advanced degrees beyond the Ph.D. are on the way."51 Nor is the growing number of middle-aged "scholars" who are finally pumped out of the professionally oriented graduate schools into the harsh world of intellectual unemployment likely to accept the philosophy of Hans Rosenhaupt who recently advised the rigorously selected Woodrow Wilson Fellows that, "They will have to think of their scholarship as an occupation
carrying its own rewards rather than as a means to professional advancement." His further suggestion that research oriented scholars must learn to accept the inevitabilities of teaching at the junior college and high school levels ignores the plight of those other university graduates who did not choose to attend, or were not accepted by, graduate schools and who adjusted to their under-employment dilemma by taking a year of professional teacher training.

It was only a few years ago that the public school teacher shortage was assumed to be insurmountable. But although the selection standards were often low (see Chapter 7), the supply never lagged seriously behind the demand. Between 1950 and 1965, while the increase in total employment was 21 per cent, the increase in public education employment was 130 per cent. In order to achieve this growth, the concomitant growth in teacher training facilities was immense and generated an institutional momentum of prodigious energy. Today, this machinery has, according to the most recent National Education Association reports, produced an oversupply of teachers currently in excess of 25 per cent and expected to grow to 50 per cent before the current classes of education students arrive on the teacher market.

Figure 5 indicates the changing supply and demand ratios for American public school teachers between 1965 and the present. As with the other middle-class occupation attrition trends, this one was not widely predicted. It is clear, of course, that teachers are not directly affected by the cybernation revolution; but the closure of job opportunities in professional, middle-management and technical sectors has caused those graduates who would not normally have considered teaching to
accept pedagogy as a reasonable alternative career in the face of a saturated job market.

By the same token, many of those who for the same reasons embarked on graduate training as an alternative to un- or under-employment have been forced to look toward high school teaching in the face of a now saturated academic market place. As Newsweek magazine recently reported,

The availability of university positions has so dwindled that many Ph.D.'s have already turned to high schools. Detroit schools have already hired fifteen Ph.D.'s and they plan to add more. And industry cutbacks, especially in southern California, have created another source of well-educated aspirants. "We have a number of engineers in all the specialties who have been laid off coming in to see about teaching," says David Baker, director of secondary placement at the University of Southern California.56
Confronted by this recent turn, the U.S. Bureau of Labor Statistics has hastily reappraised the situation and now predicts "that between 1968 and 1980 there will be 4.2 million teachers entering the market with not more than 2.4 million new openings for them to fill."57

One of the supposed "benefits" of the teacher "glut" is that now, at long last, education faculties can be more selective, and school boards will be able to hire more teachers with advanced degrees.59 However, such optimism has been dashed by the "rational economic behavior" of school boards who, having been caught in the larger economic contradictions associated with the escalating costs of socializing "stretch out" education, are now exercising the prerogatives afforded them by a buyer's market to hire the least qualified applicants. In the dismayed words of Neville Scarfe, Dean of the Faculty of Education at the University of British Columbia,

...the problem is that [teacher] employment opportunities are for the least well qualified rather than the well qualified. The well qualified cost too much, whereas those without proper qualifications are at the maximum advantage in getting jobs because these are the ones that cost less to the school board.60

In the same vein, a recent release by Simon Fraser University's Professional Development Programme (teacher training) stated that,

What you don't have to have in order to teach is a degree! If you have upgraded your teaching certificate to a degree you may find that you are considered over-trained and, therefore, over priced in many school districts.61

*In Canada the situation is similar with the current over-production of qualified teachers currently estimated at 25 per cent and an anticipated oversupply of 50 per cent coming within the next few years.58
The same source quotes one of the Professional Development counsellors as follows:

"We now counsel students differently than we would have three years ago. They must be much more exact in subject preparation but not over-trained. The taxpayer is going to be angry if he thinks he is paying more than twice the tuition fee that is paid by the student to train a teacher. If that teacher is then unemployed, this is an irresponsible investment of money. Certain directives are needed in the profession to guarantee that the number of trained teachers will just satisfy the vacancies." 62

It would seem that at least some of those responsible for teacher recruitment and preparation are responding to the downward encroachment of higher degree holders by institutionalizing an essentially exploitative teacher selection and training programme where "exact subject preparation" is combined with incomplete certification so that minimum wages can be paid competent but minimally certified teachers.

Perhaps more than any other single source, the preceding quotation exposes the contemporary contradictions and (albeit, unwittingly) encapsulates the new educational reality. In essence it buries once and for all the human capital ideology and replaces it with a new pragmatism which tacitly accepts the proletarianization trends occurring within the bureaucratized middle-class occupational sector. It further recognizes the inevitable economic consequences of continuing to socialize the high costs of mass higher education in the face of a supersaturated higher educated job market. Finally, it tacitly accepts the logic of the "technotronic" socio-economy where technological rationality increasingly replaces the free market rationality as the principal determinant in allocating resources -- including human labour. Other implications of a "technotronic" socio-economy are that the permanency
and predictability associated with a "vocation" or a "career" will disappear in the face of a rapid succession of qualitatively different divisions of labour, and that individuals will be forced to alternate periodically between the active and inactive labour force.*

For those youths who originally accepted the "human capital" thesis and later attempted to bolster their declining socio-economic prospects by embarking upon further professional or post-graduate training, the prospect is bleak. Now defined as "over trained", they become a sort of "reserve army" of intellectual lumpens, anticipating at best a future of marginal employment and beset by fears of job insecurity that must inevitably stifle any creative instincts that survive their alienating educational experiences. "The great shame," according to Alan Wolfe, "is not only that trained people will be unable to put their skills to work but that those who do find jobs will be extra careful to keep them."64

And for those whose interests in higher education have been in the direction of developing critical intellectual capacities rather than investing in specific mental skills for future occupational returns, the prospect is even more bleak. As Max Weber noted back in 1919, the scholarly "vocation" was already undergoing the same alienation trends that the skilled artisan of the past experienced under the imperatives

*For example, in the preceding quotation regarding the changed emphasis in teacher training, it would seem that "subject" rather than "professional" preparation would lend itself to a temporary rather than permanent career orientation. If the techno-economic imperatives demand relatively rapid changes in subject content, the "subject" trained teacher could be much more easily and cheaply replaced than the professionally oriented pedagogue.
of industrial social relations to production.

Of late we can observe distinctly [in] the...universities...the same condition that is found wherever capitalist enterprise comes into operation: the 'separation of the worker from his means of production.' The worker, that is, the assistant [literal German translation for "junior faculty"], is dependent upon the implements that the state puts at his disposal; hence he is just as dependent upon the head of the institute as the employee in a factory upon the management...Thus the assistant's [junior faculty's] position is often as precarious as is that of any 'quasi-proletarian.'...This development corresponds entirely to what happened to the artisan of the past and it is now fully under way.65

At the time Weber wrote the above, there was in Germany a surplus of young scholars anxious to secure faculty positions. Thus a "reserve army" of Privatdozent scholars existed who could be exploited by the state operated universities in a number of ways, not the least of which was their visibility to those more fortunate scholars who had achieved faculty positions.

In contemporary America, the abrupt reversal in the supply-demand ratio of faculty has already encouraged a very rapid escalation in faculty "purges."66 Alan Wolfe67 has speculated that this overt administrative intervention in what have euphemistically been touted as "academic freedom issues" will be temporary, lasting only long enough to remove the more overtly "radical" professors who had to be tolerated during the years of faculty shortage and to provide an exemplum for those who might have been encouraged to follow suit. "Let there be unrest at a university, and department chairmen will know where to find replacements for the troublemakers."68 Wolfe further suggests that an intellectual reserve army "will also be a modified form of 'scab' labor."69
Given the surplus, it is fairly easy to limit all junior appointments to three- or six-year terms. Then, instead of being promoted to associate professor status and salary, they are let go and a whole new group of junior faculty is brought in at the minimum rates.\textsuperscript{70}

This is yet another example of the marginality characteristic of the \textit{lumpen proletariat} who alternate between the active and inactive labour force as it suits their exploiters.

The opportunity to sub-stratify the new proletarians into "marginals" and "lumpens" in accordance with the needs and prejudices of institutional power holders is not limited to political considerations only. Recently the well known psychologist David Krech used the Ph.D. "glut" to rationalize the pervasive culture bias against women professionals. Speaking before a University of California Medical Center symposium, Krech stated flatly that "women shouldn't have seats in post-graduate schools",\textsuperscript{71} a sentiment that most male-dominated faculty appointments committees must share since the percentage of women on American university faculties has become progressively lower as the supply of available male faculty has risen.\textsuperscript{72}

Thus the academic "parking lot" which emerged as a latent functionality associated with the proportional decline in middle strata, higher educated occupational opportunities appears to be manifestly functional to those sectors of the society whose vested interests lie in assuring a surplus of manpower in important and hence vulnerable institutional sectors. Burnham,\textsuperscript{73} Galbraith,\textsuperscript{74} and in a somewhat more dialectical vein, Veblen\textsuperscript{75} all noted the importance of technological and managerial expertise to the new capitalism. Each recognized the potential power of knowledge in short supply to overcome the vested interests of capital. Although their political prescriptions
varied, the essential message each offered was that property must ultimately bow to that ephemeral human commodity which was at the same time the most essential and the most scarce in the production mix. Thus as technology expanded, the esoteric knowledge of production technique and organization became the most vulnerable link in the capitalist enterprise and hence the primary "problem" to be overcome by the capitalist system.

The attack on this "problem" was instinctive and two-pronged. On the demand side, industry itself worked, as it always has, to rationalize the most difficult and hence most vulnerable operations. Just as the polivariant manual skills were fragmented and simplified in a previous stage, so generalized and esoteric mental skills became the subject of technological applications. On the supply side, the full force of capitalist rhetoric was applied to the educational institution. What had hitherto been a part of the social superstructure became almost overnight an integral part of the economic infrastructure. "The production, distribution, and consumption of 'knowledge'" became the prime concern of the economy, and the nation's public education system became the principal instrument in the socialization of the new costs of private production.

But as the application of cybernated technology began to reduce the demand for "human capital" and as the institutional momentum built up by the education system was fast producing an oversupply, the function of the schools was subtly shifted from "production" to "consumption" in order to meet yet another emergent problem of neo-capitalist economics, i.e., surplus absorption. The hardware associated with the
"new" education became a profitable item for "spin off" defense production. Oligopolies began to ingest established textbook publishers. And the industrial "systems" consultants moved into the education industry.

Most important, however, the expensive new schools, which had been sold to the public in terms of their human capital production potential, could act as holding tanks for surplus manpower. So long as the classical economics analysis maintained that over-production and under-employment were minor cyclic variations on an endlessly accelerating economic gravy train, then the concept of holding tanks might have some validity. But for all the reasons previously discussed, the evidence points to a qualitative shift in the socio-economy trajectory such that an entirely new set of imperatives objectively exists.

Given these new imperatives, it seems safe to say that the holding tanks must, indeed already have begun, to overflow. As this occurs, the latent socio-economic contradictions, which most clearly center on the defense-education industry, become manifest; and with this manifestation, the socially experienced reality perceived by those contained within this institutional matrix must inevitably shift. Most specifically, if the materially based structural links between education, occupations and social status are perceived to be irrevocably severed, then the functional relationship and the ideology which support such connections must also be perceived as no longer valid.

It is, of course, ironic that it should be predominantly middle-class youth who discover in the university -- the very institution their parents had envisioned as a "dike" against their downward mobility --
the essential contradiction in their cultural heritage, i.e., that education could in and of itself act as a middle-class surrogate for the power and security which private ownership affords the true bourgeoisie on the one hand or that collective association offers a class-conscious proletariat on the other.

But a "false consciousness" based upon an ideological mystification can only be maintained by some modicum of structural verification. As Merton pointed out, a social system must, if it is to remain viable, provide real, if restricted, routes which popularly ascribed expectations may be realized.
Notes


31. Ibid., p. 104.


37. Professional and Technical Occupations Section, Manpower Information and Analysis Branch, Department of Manpower and Immigration, Requirements and Average Starting Salaries: University Graduates, 1969, Queen's Printer, Ottawa, 1970.
38. Ibid., p. 7.
41. Loc. cit.
43. Loc. cit.
44. Loc. cit.
47. Ibid., p. 3.
48. Ibid., p. 3.
49. Ibid., p. 4
53. Loc. cit.
56. Ibid., p. 59.
57. Ibid., p. 59.

62. Loc. cit.


64. Alan Wolfe, op. cit., p. 623.


67. Alan Wolfe, op. cit.

68. Ibid., p. 625.

69. Ibid., p. 625.

70. Ibid., p. 624.

71. Ibid., p. 626.

72. Ibid., p. 626.


74. Galbraith, op. cit.


78. R.K. Merton, op. cit.
This thesis began by noting the difference between the Marxian concepts of social "class" and the Weberian concept of "status groups." In the Marxian schema the principal social cleavage is seen in terms of the objective economic distinction associated with the dichotomous owner/worker relationship to production. Weber's concept of social stratification by status groups is based upon relations to consumption where materially based but socially defined life-styles become the subjective determinants of social division. Although Weber accepted that class relations to production lay as a structural foundation beneath all social hierarchies, he nevertheless argued that under certain stable socio-economic conditions stratification by "status honour" rather than "class" was the more visible condition and was therefore more deterministic of social role behaviour and identity.

It was then noted that American sociology had predominantly taken the Weberian "status group" concept as the theoretical primitive assumption upon which virtually all structural research and analysis was predicated.

It was further noted that the Weberian "status" paradigm was particularly useful in the intellectual transformation of the predominant North American cultural ideology -- that of the "open" society and its "equal opportunity" rhetoric -- from the earlier small entrepreneurial ascent model to the later bureaucratic mobility model. If
social ascent through the independent acquisition and improvement of property was to be replaced by the more dependent mechanism of social mobility up an occupational ladder, then clearly it was more ideologically acceptable to employ "status" definitions rather than "class" characteristics.

This is not to suggest that the pervasive adoption of the Weberian status group assumptions as the foundation for socio-structural studies represented some overt form of intellectual dishonesty. On the contrary, a good case could be made (and often has been) that the socio-economic conditions which prevailed in North America during the first half of the current century closely approximated the ideal-typical conditions under which popular social perceptions would tend toward status identification rather than class consciousness.

However, in this thesis the principal American stratification theorists have been faulted for not recognizing that this period represented but one historical phase in the evolution of the American socio-economy, and therefore could not, as was so often the case, be taken for evidence of the end of either social history or class ideology.

Conventional socio-structural interpretations have been further criticized because their theoretical one-dimensionality has persistently led to misinterpretations of such macro trends as economically determined occupational sector shifts which have been seen as "evidence" of individually achieved social mobility. Indeed, it was a major function of Part One of the thesis to demonstrate that the sociological mystification of occupational change, rather than real social ascent, provided the statistics through which continued large scale growth in the American "middle-
class" was demonstrated.

It was also demonstrated how this latter-day confusion over who should be legitimately included in the American "middle-class" was not only the result of naive statistical categorization, but also arises out of the Weberian focus on consumption patterns. The very rapid evolution of the "affluent society" -- where mass consumerism provided a cheap facsimile of the "middle-class" consumer package to all but the most alienated segments of the society -- may well have been interpreted sociologically as evidence of a general extension of "middle-class" lifestyle.

However, as Weber himself pointed out, the emulation of lifestyle is not a sufficient criterion for inclusion in a status group. "For all practical purposes, stratification by status goes hand in hand with the monopolization of ideal and material goods or opportunities..."\(^1\)

If we define the American middle occupational status group as those who have access to occupations which bestow upon the incumbent a popularly accepted degree of social prestige, allow some modicum of independent decision and action, and above all offer some real probabilities of further individual upward social ascent, then the monopoly which came to define the new bureaucratic middle status group, as it evolved out of its entrepreneurial genesis, was the de facto control which it maintained over the access to higher educational opportunity through which these more privileged jobs were achieved.

But as the techno-economy progressed, the development of middle-management and design technologies, which could efficiently replace or reduce the importance of their human "software", rendered the middle
occupational status group increasingly redundant to the organized economy. The resulting surplus of higher educated manpower has combined with the general economic surplus to the point where the educational monopoly no longer insures status maintenance and where it therefore becomes increasingly difficult to act out status roles and maintain status identities in the face of an emergent economic reality which is rendering the inheriters of the middle status identity déclassé.

Of course, none of this is in any way contradictory to Weber's original status group concept which maintained that a re-emergence of "class" consciousness would occur under conditions of rapid economic change.

When the bases of the acquisition and distribution of goods are relatively stable, stratification by status is favored. Every technological repercussion and economic transformation threatens stratification by status and pushes the class situation into the foreground. Epochs and countries in which the naked class situation is of predominant significance are regularly the periods of technological and economic transformations.²

It now seems incontrovertible that North American society has over the last decade and a half experienced a truly massive (if much mystified) technological and economic transformation. And given the new class behaviour of some of the most educated members of the emerging generation, it seems equally clear that increasingly those most displaced in terms of the material economy are very rapidly developing a dialectical analysis in which they see themselves in terms of and identify with the most economically exploited groups in a class-based society.

Thus in the contemporary context, Weber and Marx would seem to be in close agreement as to the dialectical source of emergent class
consciousness. However, both functionalist sociologists and classical Marxists have for very different reasons tended to misinterpret contemporary events in terms of a too ahistorical or mechanical application of their respective theories. John and Margaret Rowntree offer the following explanation of the new locus of proletarian class consciousness:

Both bourgeois and Marxist analysts mistook the tranquillity during the [techno-economic] shifting process [of the 1950's] for the end of ideology and revolution....By giving in to the organized industrial working class, the U.S. system appeared to be saved once again. [But] A shifting of class roles followed an underlying shift in the production process itself; ...youth are now the essential exploited group for the perpetuation of the existing economic system. The youth occupy the critical work places: they man the war machine and the idea factories....They absorb by their own sacrifice the surplus of which the irrational economic system cannot dispose.3

One does not have to go far for substantive evidence of this "shifting of class roles" following "an underlying shift in the production process" which placed students at the nexus between irrational production and surplus consumption. Writing in the mid-1950's just as the "human capital" requisites had peaked out but were not yet recognized as declining, William H. Whyte Jr. described the social consciousness and expectations of the typical American college student:

They are, above all, conservative....what ideological ferment college men exhibit is not in the direction of basic change....there is no real revolution in them....their feet [are] firmly on the ground in the recruiters' cubicles.... Most are interested in the philosophical only to the extent of finding out what the accepted view is in order that they may accept it and get on to the practical matters....Society is not out of joint for him [the graduating senior]...they argue that at last we have got it. The big questions are all settled...we can be pretty sure of enjoying a wonderful upward rise...."These men do not question the system", an economics professor says of them, approvingly. "They want to get in there and lubricate...they will be technicians of the society, not innovators." ...[on social science
students. They do not wish to protest; they wish to collaborate.\(^4\)

A decade later, students at Berkeley set the pattern for what was to become widespread "campus revolution." Although much mystified by naive observers,\(^6\) the Berkeley Free Speech Movement marked a clear departure from earlier student participation in the southern civil rights movement. Whereas the civil rights movement was an attempt by liberal thinking students to redress the social evils befalling others, the Berkeley insurrection was over the radical issue of students' rights to organize politically on campus in order to deal better with their own problems. It was clear that students were beginning to feel that their education was no longer relevant to the social roles that lay ahead of them in an economic system which was already exploiting them. For the first time, White, Anglo-Saxon, "middle-class" students were not intervening as middle status representatives of the establishment on behalf of oppressed minorities, but rather they identified themselves as a "class" subject to the same system of mass exploitation and, as they were shortly to find out, oppression.

The claim that Berkeley, Columbia, and the many other major campus rebellions were the work of a few "radicals" who were playing on the misguided sympathies of naive young minds may have flattered the prejudices of those in authority. But such a view was hardly borne out by the available evidence. For example, in 1969 the results of a nationwide Gallup poll indicate that fully one-third of all students on U.S.

\(^*\)For a more empirical validation of student attitudes in the 1950's, see Nevitt Sanford, The American College, Chapter 18: "Students and the Occupational World."\(^5\)
campuses had actively participated in civil disobedience demonstrations.\textsuperscript{7} In the same year Standard Oil of New Jersey commissioned the Roper Poll organization to ascertain the nature and degree of social dissent on the nation's campuses. The poll disclosed that 10 per cent of all American college students admitted to an outright revolutionary ideology and that 65 per cent agreed with the goals of the militant Students for a Democratic Society, although most still maintained some hope that these goals might be achieved through constitutional means. These results prompted Gallup to comment that, Those who comfort themselves that the trouble on the college campuses of America is caused by only a handful of students and that the majority is completely out of sympathy with the goals of the militant few would be disabused of this view in the light of the survey evidence.\textsuperscript{8} The rapidity and magnitude of this shift in student attitudes from a conservative to a radical consciousness caught most professional analysts completely off guard. However, the fact of their earlier myopia did not deter academics from capitalizing on the older generation's profound confusion with a flood of "expert" literature purporting to delineate the causes and cures of youthful dissent.\textsuperscript{9} Unfortunately, the great body of this material suffers from the same conceptual errors that prevented the authors from predicting the emergence of the phenomenon in the first place. For example, one of the more popular of these authoritatively written treatises explains the rise of militant campus movements as "a conflict of the generations which can only be understood in Freudian terms as an expression of the Oedipal conflict."\textsuperscript{10}
But such bourgeois interpretations, which focus attention on the psychological aspects of individual radical actors, conveniently ignore the most salient aspect of the youth revolt, i.e., its collective orientation.

It may be reassuring to note that there is nothing new about youth in revolt; but to imply that the militant students of the late 1960's may somehow be categorized with previous generations of America's disenchanted youth is to fail utterly to recognize the gulf that separates the source of their discontentment as well as the style of their response. F. Scott Fitzgerald's "lost generation" was a second filial, rural bourgeois in search of romantic aristocratic ideals because they were repulsed by the vulgarity of America's burgeoning urban nouveau riche. Jack Kerouac's beatnik drop-outs may well have been the first generation to perceive correctly and to articulate the alienating life-style of the new bureaucratic middle-class; but their response was limited to wallowing in individualistic nihilism. The difference between today's disenchanted youth and those of previous generations lies not just in their numbers but in their social style: "trends in youth culture and politics in the last decade show the development from individualist passivity to collectivist activism."¹¹

Nor are the McLuhanesque arguments that the "generation gap" is explainable in terms of a shift in communication technique from mechanical to electronic very convincing. It may be true that the "under-30" generation are the first to have logged more television than classroom hours by age 12; but it is their parents who remain isolated with the video tube, and it is the youth who have opted for direct, face-to-face
and highly collective communication forms. To invoke aphorisms such as "the medium is the message" is to ignore the increasing political content to be found in all forms of youth culture communication media, whether these be rock festivals or underground newspapers.

And the political message that is projected through these various youth culture communication media is consistent and clear: there is no meaning in the organized system because there is no place in that system for youth. Because youth is alienated from the established culture, often including the family, they seek to build their own mutually supportive (hence collective) culture through which they may define their own priorities and attempt to establish their own meaningful identities; and since many of those who occupy power positions in the established culture correctly view the emergence of this "counter culture" as representing alien (class based) values, they have often reacted in oppressive and violent ways. Thus youth, in addition to asking why there is no place for them in the established order, are now forced to ask why they are being oppressed for trying to find their own way. As one observer has put it, "the flower children are being forced to grow thorns."

But the term "youth" itself becomes a misnomer. Because it was the "new entrants" who first experienced the leading edge of the techno-economic shifts which increasingly precluded their entry into the adult world of work, it was naturally youth who first recognized and adjusted to the new reality. But membership in the "youth culture" is increasingly defined as anyone who does not perform the conventional adult roles as defined by the established system (e.g., steady job, family commitments, conventional consumption and display patterns).
However, as the material bases (jobs) for achieving these conventional life-style become less rather than more accessible, and as the conventional socialization routes (education) become increasingly irrational with respect to the newly perceived reality, the ranks of "youth" are becoming noticeably populated by those over thirty and forty.

The observation that it is youths from "middle-class" social origins that predominantly populate the ranks of the militant student movements and the increasingly activist "street culture" has similarly confused the conventional analysts. The conventional psychological prognosis is that the overly "permissive" child-rearing practices adopted by the middle-class parents and middle-class dominated educational philosophies have not provided sufficient socialization to authority. Again it is difficult to believe that the students of the 1950's were brought up in so different a way from those of the 1960's. And again it would seem that the more logical explanation lies in the structural reality experienced by "middle-class" youths who most specifically experienced the economic shifts which so abruptly disjoined the anticipated route to promised adult roles and privileges.

In this respect it has been stressed in this thesis how the rise of the American bureaucratic middle-class was paralleled by a shift in higher education from a consumption oriented, elite institution to a production oriented, mass institution. In the Weberian typology, consumption roles are associated with stratification by "status" while production roles are associated with stratification by "class." Given the Clark Kerr\textsuperscript{12} analysis of the modern "multiversity", it is not surprising that as students began to see their educators treating their
education in terms of a market commodity, they would increasingly react in accordance with economic "class" rather than social "status" interests.

When education becomes seen as an "investment in human capital" and the schools become a factory producing workers and technologists, the rationalization of the purposes of schooling shifts from that of serving non-market or social [status] interests to serving the market or economic class interests. ....The invasion of the school by the market brings the class struggle into the schools. The power of the bourgeois family as a socializer, the creator of self-directed intrepreneurial individuals, declines; the school becomes the socializer, creating socially oriented proletarians. This process results from the development of mass educational systems to replace elite-serving predecessors. The extension of mass education undermines the individualist bourgeois family; when a certain level of comprehensiveness is reached, it becomes possible for some children to grow up in a class setting different from that of their parents. 13

By the time that the higher status job market was beginning to collapse, university students were already acting out working class roles in the university. The typical student viewed his studies cynically as busy-work, and he resented any intellectual pretensions on the part of his professors. But unlike many of his professors, he fully understood that he was already "on the job" and "bucking for the promotion" that would come with the diploma. 14

This period, which coincides with William H. Whyte's earlier descriptions, marks the height of student alienation and false consciousness. The source of the alienation lay in the inability to conceptualize any more meaningful alternative to the ascribed learning and working roles, and the source of the false consciousness lay in the belief that the junior executive job really did represent an escape from the working proletariat which the alienated student had been conditioned to both fear and despise.
Writing at the very end of this period, Joseph Ben-David unwittingly forecasts what was about to happen when the collapse of the higher status occupational market destroyed this false consciousness. Focusing on the phenomenon of "trained unemployability" which Schumpeter and other European observers considered to be an endemic feature of European "intellectual" life, Ben-David makes an historical comparison of the development of the European and American higher education systems.

He notes that the European university has remained an elite dominated institution where certain professions, such as law and medicine, are traditionally seen to be desirable studies. Because of their resulting social acceptability, these professions have habitually been overcrowded and have not provided much or any work for many of those who qualify. These alienated intellectuals have responded to their status inconsistency by adopting revolutionary ideologies and have in fact provided most of the radical leadership throughout European industrial history.

Dissatisfied with their lot, frustrated in their search for a positive occupational identity, and feeling cut off from the bulk of the population, but possessing at the same time a virtual monopoly of articulate self-expression, they become a problematic group, prone to political radicalism and subversion. 16

On the other hand, Ben-David saw in the production oriented American universities the opposite situation:

The educational system of the United States has been closely interwoven with the occupational structure of the mobile middle classes. It readily responded to its changing needs. ...Professionally trained people have...the pragmatic outlook of the specialist rather than the wide ranging interests and involvements of the "intellectual."...This goes probably a long way in explaining the fact that...there did not arise in
America such problems of intellectual unemployability... nor has there emerged in the United States anything but a faint mirror image of the revolutionary intellectual.17

The point need hardly be made that as soon as the American occupational structure began to experience relatively high levels of intellectual unemployment, university students, and increasingly many of their professors, became something more than "a faint mirror image of the revolutionary intellectual."

Thus as the occupational structure breaks down in terms of its ability to maintain an extended and secure occupationally based status hierarchy, so too must the social structure break down in terms of its ability to socialize ideologies based on status identification. Given this perspective, the pervasive rise of "class" behavior on the part of those who have just become conscious of their proletarianization is understandable. So too is the increasing hysteria among those whose real interests or remaining false consciousness causes them to identify with the interests of the established power structure.

Considering the availability of the evidence, the mainstream of North American social science has been exceptionally inept in predicting and explaining these crucial socio-structural changes. It is the bias of this thesis that these analytic failures stem from the theoretical one-dimensionality associated with the predominant functionalist paradigm which fails to account for historically generated material and ideological contradictions. In the words of the anthropological theorist Marvin Harris, "We may take this whole issue as evidence of the extraordinary trauma which social science in the United States has experienced as a result of its isolation from Marxist viewpoints."18
Hopefully, future trends in socio-structural research and analysis will overcome this deficiency and in so doing become not only more congruent with social reality but more directly relevant to those whose daily interactions create new social realities.
Notes


2. Ibid., p. 193.


8. Loc cit.


11. John and Margaret Rowntree, op. cit., p. 23.


16. Ibid., p. 470.

17. Ibid., pp. 467-469.

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