Economic, demographic and political trends are three major forces affecting the educational system. Since 1945, rapidly changing technology has increased demands for expert manpower and eradicated or considerably decreased the need for unskilled labor. The educational system responds to this challenge by preparing professionally qualified manpower. A growing participation in education is evidenced by a steadily increasing student population. Now viewed as an investment in human resources, education is becoming politically relevant and emerging as a national concern. The Federal Government, private foundations, and national associations directly involved in matters concerning US political economy are including educational programs as part of their activities. Stabilizing efforts within the educational community include alliances of smaller colleges to compete with larger universities, curricular and other adjustments within single institutions, and educational decision-making arrangements between private concerns and local, state and federal agencies. In order to shift educational control away from the political arena, coordination of autonomous educational institutions is proposed for interorganizational administration of policy and practice. (WM)
SOCIAL TRENDS AND EDUCATIONAL ORGANIZATION

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Among the many social trends that swirl around the school and college in the last half of the twentieth century, three broad sets of forces stand out. One set is economic, the second demographic, and the third political. These forces set problems to which the educational system must respond, and, in responding, set in motion certain waves of effects that reverberate in the system and alter its structure. Educational organization is changing, and the direction and style of change is only partly predicted by the traditional understanding of organization, by the theory of bureaucracy and associated conceptions of administrative behavior. I wish to explore some changes taking place that, if we follow them for a step or two, carry our research vision off at a tangent from the study of bureaucracy. I will first review the primary trends and outside forces that confront education and point to the way these external changes catch up the school and college in new orders of society. I will then specify in some detail a relatively new pattern of influences on educational decision-making and practice in the United States, as illustration of the adaptation of organization to social trends. I will then, finally, turn to what is thereby required by way of an additional research perspective that will help us understand education in the new world of the atomic era and at the same time contribute to theories of influence and organization. It is essential that we develop a comparative approach in which we compare what goes on between organizations and what goes on within organizations. Interorganizational analysis and analysis of webs of autonomous organizations is needed if we are to comprehend the ways that action is
concerted in American education. Anywhere that we attempt to compare centralized and decentralized "systems" of action, we need to understand the similarities and differences between influence intra-bureaucracy and influence inter-bureaucracy, communication within the organization and communication between organizations, initiative and innovation within the house and parallel effort in a loosely joined federation or alliance or \textit{ad hoc} confluence of interests.

SOCIAL TRENDS

The primary force of the economy on education lies in rising educational preparation and repreparation for work.\textsuperscript{2} One qualifies for work through education and the threshold of qualification constantly rises as the bottom of the structure of occupations shrinks (unskilled positions retired from the labor market), the middle of the structure is upgraded in skills, and the top of the structure (professional and technical) expands rapidly. The instrumentalities of formal instruction are charged with the task of getting men over the educational threshold of work and of allocating them to an ever wider spectrum of job specialties, thus coming under heavy pressure to be evermore oriented to the provision of expert labor. This pressure, already greatly expanded since 1945, is intensified by the emerging task of keeping men qualified to work through repreparation, as a rapidly changing technology eradicates old skills and jobs and creates new demands of competence. With this, education becomes more a part of the economic order than ever before. Seen as investment in human resources,\textsuperscript{3} education is
thereby increasingly viewed as part of the local economy, the state economy, and particularly the national economy.

The pressures generated on education by the growing economic utility of the years spent by the individual in the schoolhouse and academy are extended measurably by growth in the general population and by growing participation in education. A much enlarged school population results from a combination of high birthrate, which widens the population base, and high aspiration and high enrollment rate, which causes the school population to more fully represent the base. Mass education ascends the ladder of the school grades. Whatever education does to and for the individual, at different levels of schooling, must be done in much greater quantity, a quantity that evermore approaches population limits.

The growing economic relevance and the growing demographic relevance of education contribute to a third major trend, one particularly significant for our purposes, and that is the growth of political concern, the growth of the political relevance of education. If education is investment rather than consumption, if it is a major form of economic capital, then it must become a concern of those responsible for public policy. If there is growing involvement of the population in the schooling process, then, especially in democratic societies, education becomes a worthwhile political issue, one on which parties and candidates can appeal to the electorate. The state of the educational system is probably now the most important single issue in community government in the United States and its importance as an issue in state government is growing rapidly. Most important, education has emerged
as a national concern. The last fifteen years have seen a sense of nationhood emerge in our thinking about education. Spokesmen for the national interest have been popping up all over the place. Those who have been attempting to perform in what they construe to be the public interest in education include nationally visible individuals (Conant, Rickover), major private foundations (Carnegie, Ford), established national associations (National Education Association, American Council on Education), and newly formed groups (Physical Science Study Committee, Council for Basic Education).

The national concern has its most potent form in "the Federal interest," the interest of the Federal Government in the outputs of education. The critical interest here lies in education's role in training men for work, with a particular focus on scientists and engineers for the research and development establishment. The Federal interest in education, of course, is actually an array of interests, interests that are defined by the missions, the maintenance needs, and the organizational character of the Department of Defense, the Atomic Energy Commission, the National Aeronautics and Space Agency, the Department of Labor, even the Bureau of the Budget, as well as the National Science Foundation which has a general mandate to strengthen science, and the Office of Education, which has a general mandate to serve education.

The interests that have emerged at the national level in the last twenty years are strong, not weak; central, not peripheral; permanent, not temporary; genuine, not spurious. They have to do with manpower and unemployment, leadership and creativity, urban and rural renewal, military strength and diplomatic posture, aid to industrializing societies. Compelling in nature,
the national interests call out attempts at national programs, and these efforts must find ways of working through the existing educational structure, or of changing that structure, or of bypassing that structure.

Economic, demographic, and political trends of the last two decades have, therefore, wiped out the economic and political innocence of education. No longer is education seen to have only long-run, indirect, and undifferentiated consequences, the effects subsumed under the global terms of cultural transmission and socialization of the young. Education is implicated in the provision of experts for the labor force of five years hence. It is involved in the innovative efforts of research and development in the here and now. It is a large and rapidly growing public expenditure in which the needs of allocation, coordination, and responsibility call up the attention of politicians and planners. It thereby becomes part of a larger order, that of political economy.

THE ORGANIZATIONAL RESPONSE

As modern social forces recast education as part of the economic and political institutions of society, numerous adjustments and adaptations are bound to occur within the single organization, major segments of the educational system, and the system as a whole. For example, there is a move toward alliance among private colleges (Great Lakes Association, Associated Colleges of the Midwest, The College Center of the Finger Lakes). The impulse here comes from the maintenance and enhancement needs of existing organizations. Small colleges seek to share expensive facilities and faculties and engage in joint fund-raising, as they compete with the large
university. This tendency to band together has in a few years proceeded sufficiently far that officials involved refer to it self-consciously as a movement. The colleges that move toward confederation are attempting to solve organizational problems: how to grow and yet remain small; how to coordinate across a larger pool of activity while protecting the autonomy of constituent units.

Other kinds of adjustment can be found within the single educational organization: adaptation of new technologies; the elaboration and professionalization of public relations, fund-raising, and other boundary roles and activities. I will not attempt to catalog the many adjustments, but rather will pursue at some length one major line of adjustment in the educational institution that is fraught with implications for educational administration and for research on organization. That line is the structure of influence and control.

The decentralized structure of formal educational control in the United States has, through a long history, become tuned to the concerns of the individual school or college, the local community, the separate state. What major responses can we discern in this structure as it comes under increasingly heavy pressure to accommodate to modern social forces, particularly to the concerns that are national in scope and are defined by federal agencies and private national bodies? There is some shift upward in the formal location of educational decision-making, primarily from the local to state level in public education, and secondarily from local and state to the national level in the form of such programs as the National Defense Education Act of 1958. But much of the change taking place is located in
arrangements that lie in part outside the hierarchy of public offices. Indirect and subtle means of influence are being developed by many groups, means that we now only dimly perceive. The emerging patterns depend on voluntary relations among public offices and private groups. In some degree, these arrangements serve as substitutes for or as alternatives to formal internal administration, that is, to the national-state-local line of ministerial authority that we find in other countries. The patterns represent ways of influencing the grass-roots level of operation in a field where no formal authority can impose cooperation.

One pattern is that of the private committee serving as connector between public authorities, notably between federal agencies and local authorities. The curricular reform movement has adopted this pattern. The prototype was the work of the Physical Science Study Committee, the group of professors and secondary teachers of science, under Professor Zacharias of MIT, who have done so much since 1956 to affect instruction in high school physics. The Committee was financed by a Federal agency, the National Science Foundation, and review committees of the agency kept an eye on the work of the Committee. The purpose of the Committee was to improve the quality of science teaching in the secondary schools of the nation; the quality at the time was viewed as a national weakness. The granting of funds for this purpose was well within the broad missions of the National Science Foundation, established by Congress in 1950, to strengthen basic research and education in the sciences. The first major component in the pattern of influence, then, was an agency in the executive branch of the
Federal Government, an agency whose breadth of mandate allowed initiation of influence within the agency without seeking legislative approval of specific formal programs. Private foundations also soon entered into the financial support of the curriculum reform group.

The Committee to whom the problem was delegated and the funds allotted was private and voluntary, having some of the attributes of an independent and impartial group of civic leaders. The Committee, wanting to change what was taught in the high school courses in physical science throughout the nation, set out in effect to write a course for national school use, something that no federal agency could do directly because of Congressional and popular opposition. For a Federal agency to tamper with the curriculum, that sacred domain, would be to send a number of Senators up the wall, and when they came down they would find the budgetary ax. Working away from the political arena, in quiet but hectic offices at MIT, the Committee, in two years' time (1956-1958), provided a "complex of schoolbooks, homework assignments, laboratory guides, films, teacher's guides, laboratory apparatus, and classroom and college-entrance tests."9

The Committee then saw to it that these materials would be actively pushed as well as made widely available throughout the nation by putting the materials into normal commercial channels. During the winter of 1959-60, the Committee handed over its printed materials to a schoolbook publisher, its new scientific equipment to a manufacturer of scientific apparatus, and its films to an educational film distributor.10 In these simple moves, the Committee found an important mechanism of national influence.
It had, in effect, made itself a research-and-innovation arm of the textbook industry—more broadly, the course-materials industry—doing the research and development that the industry itself was not doing. No publisher, not even the fat cats of today, has venture capital of the magnitude of three to five million dollars to develop the instructional materials of a course. No publisher is willing to take chances of that magnitude. The course-materials industry has been relatively passive, gearing innovation largely to market research and very little to pure research and development. Thus the commercial market itself provided little money and little impulse for improving courses. In the absence of national standards, where there are no nation-wide governmental prescriptions about instructional materials, it is precisely the national market for course-materials that determines the quality of these materials. The Committee affected American education by changing what was available in the market, and, more important in the long-run, by changing the passive relation of the course-materials industry to the market. The Committee, now incorporated as Educational Services, Inc. (an important organizational phenomenon in its own right) promises to revise its materials periodically and thus to remain an active, innovative arm of the industry. It is a national center of textbook revision.

Teachers also had to be taught how to handle these materials. This task has been performed by another independent party in the pattern. The National Science Foundation initiated and funded a program of summer
institutes that are voluntary throughout, for the colleges that put them on, the professors that direct and staff them, the teachers who come as students. The curriculum and the students of the institutes were made the responsibility of the individual college. The Committee had to convince the directors of these institutes to use its materials. The directors were looking for the latest and best materials, they adopted the new package, and the institutes became part of the implementation of the new physics course.

Finally, local educational authorities enter the pattern. They retain formal discretion to adopt or not to adopt the new materials. They must voluntarily choose to enter in.

This pattern of influence sums up as follows: it was set in motion from the top, by a Federal agency and a national private committee. Its object was to affect grass-roots educational practice which was seen as a national weakness. The flow of influence is downward, through a chain of independent groups and organizations who find it to their interest to enter the alliance or compact. A Federal agency provides the funds; a private non-profit group receives the money and develops a new course; commercial firms carry the new materials to all corners of the existing decentralized structure; dispersed universities and colleges train teachers in all regions of the country to the new materials; existing local authorities adopt the materials and allow their teachers to reshape the local courses. Decision-making in this pattern, right down the line, is heavily influenced by the prestige of expertise. The National Science Foundation was expert and
prestigeful; so also were the Committee, the Institutes, the teachers trained in the new materials. The very materials themselves traveled under the same aura.

Considering the voluntary character of the participation of each party, especially that of adoption by the local school district, the outcome of this pattern of influence is impressive. The new materials did not hit the field until after 1958. In 1963-64, 40 to 45 per cent of the students taking high school physics in the United States were studying the new materials. Given the educational backwardness of some of the states, some of the rural areas, and some of the slums, it is doubtful if a national ministry with full authority over a national curriculum would have effected a change of greater magnitude in the same period. The voluntaristic pattern has a major dysfunction in its present form, however, in that it undoubtedly extends the inequalities of educational provision that are already very large between the rich and the poor, the progressive and the backward, of the school districts. The "forward-looking" districts will seek to adopt; the backward, much less so. This weakness suggests that the pattern needs a corollary compensatory program, where effort is directed to encouraging the backward districts to catch up.

INTERORGANIZATIONAL PATTERNS AND ANALYSIS

This pattern of influence, in which relatively small private groups serve as connectors between large public organizations, is one that, with minor variations, is now in wide use in the curriculum reform movement that
is rapidly altering educational practice in the United States. (The secretariats of national academic organizations, such as the American Association for the Advancement of Science, the American Anthropological Association, are also increasingly an important contributor to this pattern). In this pattern, the elements of bureaucracy are not crucial. The pattern is a way of concerting action without bureaucracy. It is one of a class of patterns whose growing importance calls us back to the realization that bureaucracy is just one way of consciously concerting action to achieve a purpose. These patterns, interorganizational in character, lie somewhat between the ways of concerting action that are commonly found within organizations, hence to be understood by a theory of bureaucracy, and the ways of concerting action that are commonly found in political arenas characterized by a formal decentralization of authority, and which are to be understood by a theory of political influence, such as that which Edward Banfield has so brilliantly attempted to construct in his book *Political Influence*. We need an interorganizational theory, or a theory of multiple organization; if we were to develop generalizations toward such a theory, we should find many points of contact and overlap with what we know from the study of politics as well as what we know from the study of internal administration. These interorganizational patterns converge with and become somewhat a part of political influence in that they are the result of efforts to coordinate autonomous agencies, to unite effort without the authority of formal hierarchy and employee status.

One way to approach these new patterns is to think of them as in lieu
of bureaucracy. This is a necessary approach for comparative analysis of educational influence, since in other countries the study of influence must begin with the fact that there is a national organization of education with important elements of hierarchical and formal control from national ministries to the region, the community, the individual school or college. In other countries, when one says educational organization or educational administration or educational policy, one thinks of this formal national system. We do not in the United States because we do not have it; but now we are attempting to insert influence from the center without sizeable increase in formal control from the center. Therefore it is fruitful to compare the inter-agency patterns of influence with what we believe to be the normal character of influence intra-agency. I will take several features of bureaucracies and suggest in each case the kind of relation between concerted organizations that approximates the function of that feature.

(1) Authority and Supervision. In the bureaucracy, we have an internal delegation of authority, and hence of problems (responsibilities). In interorganizational patterns, where authority of position is in short supply, we have a putting-out of problems by those who have problems but no authority. Problems are farmed out to find competence, to elude the constraints of bureaucracy and the constraints of formal political accountability. Problems are received by cooperating organizations who in seeking their own self-interest discover advantage in the relationship.

A corollary of the internal delegation of authority in the bureaucracy is accountability back up the line and supervision by those who occupy positions higher in the line. In the patterns that function in lieu of bureaucracy, accountability and supervision is often provided largely by the
contract. Two or more independent organizations voluntarily enter into a federation, bound together over limited time and limited activities by the terms of a contract. Then, in lieu of a superior official who commands and reviews, there exists the stipulations of the contract and legal enforcement.

In short, the contractual putting-out of problems, and hence of domains of work, is a counterpart to authority. It is an organizational invention, or rather an interorganizational invention, of no slight consequence for a web of organizations where authority is heavily decentralized.

(2) Work Standards. In the bureaucracy, from the administrators' code to the standards of the inspectors at the end of the production line, there is explication, formalization, and universal application of standards of work. In interorganizational patterns, standards setting is usually much less formal and much more indirect. One device is to change the quality of materials available in the market and then pay premiums of prestige, green stamps of prestige, for the use of top quality materials. Where the element of prestige behind the top quality is quite strong, say, leading scientists, or leading foundations, or leading public officials, the prestige has a semi-commanding aspect. A second device, where down-the-line authority over field units is lacking, is to construct models of performance and encourage imitation. Prestige here again usually plays a significant part.

(3) Personnel Assignment and Replacement. Within the single organization, administrative performance is periodically reviewed and officials are replaced and reassigned to correct weaknesses in the system. In interorganizational patterns, weak sectors will be attacked in other ways. The
authority to reshuffle and replace men is lacking usually; but certain parties to the relationship can pump-prime with resources they do possess--money and often prestige. When men at the center, in federal or private offices, thought they saw a national weakness in the curriculum of the secondary school, they were in no position to order change in state and local personnel. They were in a position to use the leverage of money and, as it turned out, the prestige of science to cause local authorities to favor certain kinds of teachers and certain kinds of teaching materials. The influence of money in interorganizational affairs is a vastly understudied phenomenon. We know, at a minimum, it can lead to voluntary and quite pleasureable seduction.

(4) Research and development. In the modern organization, a research and development wing is often created to guarantee a flow of new ideas and innovations. In the patterns that are in lieu of bureaucracy, major agencies subsidize private innovative groups, farm out innovation, and then facilitate dissemination of the innovations to the field. Since this combination of subsidized research and dissemination of results is a habit of many private foundations, we can call this "the foundation mechanism."

(5) Decision-making. In the bureaucracy, solutions to problems take the form of deliberate central decision. The organization assembles the elements of the problem, alternatives are weighed, and some kind of a purposeful or deliberate decision is made. In the patterns of influence that connect autonomous organizations, on the other hand, solutions to problems will be less formally and consciously determined. The solutions move part
of the way toward the situation we find in decentralized political systems, where the solution is a "social choice," that is, a resultant of the interaction of interested, autonomous organizations. Influence exerted in a web of autonomous organizations often involves a "decision" that occurs in increments over time. In the pattern of curriculum reform reviewed above, all the interested parties did not come together at one time. Their self-interest was not relevant at every stage. Different parties were involved in the stages of creating new materials, retraining teachers, and putting the new physics into effect in a local school district. There was a rolling federation or alliance; there was a "proposal" for action that was never a unified proposal but one composed of increments determined at different times; there was a "decision" that resulted from the interaction of different parties at different stages.

These few sketchy parallels I have drawn between bureaucratic and interorganizational patterns are perhaps sufficient to suggest that there is a vast terrain of social action where human effort is organized in quasi-formal or quasi-conscious ways, outside of the formal organization and outside of normal political arenas. A main burden of my remarks is that modern social forces, at least in the case of education, are greatly increasing the importance of this no-man's land. If so, then those of us who believe that the study of formal organization is a valuable part of social inquiry ought to extend our arsenal of research perspectives so that we can comprehend interorganizational affairs, so that we can bring to view and state systematically the determinants of policy and practice that operate within loosely-joined sets of organizations.
Footnotes


8 Marsh and Gortner, *op. cit.*, p. x.


