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Technology, Political Economy, and Professionalization: Central Themes of the Organizational Synthesis

LOUIS GALAMBOS

¶ *In this suggestive essay, Professor Galambos surveys the large number of books and articles, published since 1970, that together point toward a new "organizational synthesis" in American history. Expanding upon an earlier, more tentative essay on the same subject published in the Autumn 1970 issue of the Business History Review, he contrasts the widely disparate postures adopted in recent years by historians studying organizational behavior. His survey reveals a rich diversity of opinion, less reliant than was previous scholarship upon abstractions drawn from the social sciences. This diversity of opinion, Galambos concludes, provides the organizational synthesis with much of its continued vitality, and makes possible "the kind of moral judgments that have always characterized the best historical scholarship."*

Some years ago the *Business History Review* published an article on "The Emerging Organizational Synthesis in Modern American History." That piece focused on a new interpretational framework, a context that featured large-scale organizations as the centerpiece of recent U.S. history. Restructured along these lines, our history no longer stressed liberal-conservative political struggles leading to pulses of progressive reform; instead, the primary processes of change involved organization building, both public and private, and the creation of new and elaborate networks of formal, hierarchical structures of authority that gradually came to dominate our economy, polity, and culture. America's rendezvous was not with the liberal's good society. It was with bureaucracy.

In 1970 when that article appeared, the boundaries of the new school were still vague and its judgments contested, but the author confidently predicted "that more and more historians will explore the new field of organizational history in the years ahead."¹ Indeed they have. Scholars in a wide variety of subdisciplines and traditions in history have filled

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¹ Louis Galambos, "The Emerging Organizational Synthesis in Modern American History," *Business History Review*, 44 (Autumn 1970), 279-90; reprinted in Edwin J. Perkins, ed., *Men and Organizations: The American Economy in the Twentieth Century* (New York, 1977), 1-5.

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out the synthesis, giving body and rich detail to this new intellectual construct.² To date, the important breakthroughs have not been produced by those authors who have engaged the synthesis en toto. Robert Wiebe, whose *Search for Order* had originally stimulated historical interest in modern organizations, published *The Segmented Society*, an overview that in essence left unchanged his seminal ideas about the modern (post-1877 or so) phase of organization building.³ In similar fashion, Robert Berkhofer's important article on "The Organizational Interpretation of American History," surveyed in a new way the first three centuries of our nation's history but did not attempt to develop any original ideas about the modern era of large-scale organizations.⁴

The most significant innovations in the scholarship came from the monographic studies of particular types of organizations. Three areas of research and writing have been unusually fruitful in this regard, and the recent contributions in all three have been of such high quality that these subjects now dominate the organizational approach to American history.⁵ The first of these is the study of technology and the corporation. The second concerns the development of a distinctive, twentieth-century brand of political economy in the United States. The third involves the emergence of the modern professions. These are today the three central pillars of the organizational synthesis.

TECHNOLOGY AND THE CORPORATION

No aspect of modern America has excited more concern in recent years than the rise of the large corporation and the special role that technology has played in that development. No scholar has done more to focus attention on that subject than Alfred D. Chandler, Jr. In the early seventies, Chandler's volume on *Strategy and Structure* encouraged scholars to produce a number of studies of diversification and corporate decentralization in the United States and abroad.⁶ More

² See the following: Robert D. Cuff, "American Historians and the 'Organizational Factor,'" *Canadian Review of American Studies*, 4 (Spring 1973), 19-31; Tom G. Hall, "Agricultural History and the 'Organizational Synthesis': A Review Essay," *Agricultural History*, 48 (April 1974), 313-25; Robert F. Berkhofer, Jr., "The Organizational Interpretation of American History: A New Synthesis," *Prospects*, 4 (1979), 611-29.

³ Robert Wiebe, *The Search for Order, 1877-1920* (New York, 1967); Robert Wiebe, *The Segmented Society: An Introduction to the Meaning of America* (New York, 1975). In the latter book, Wiebe offered a gloomier appraisal of organizational change than he had in 1967, and he tinkered with his chronology a bit; but for the most part, he left intact a synthesis stressing the manner in which modern bureaucratic organizations satisfied the need most Americans had for a new, legitimate order. Questions of power and wealth were still left subordinate to questions of value orientation and ideology.

⁴ Berkhofer, "The Organizational Interpretation," 611-29. One other general treatment is my own — see Louis Galambos, *America at Middle Age: A New History of the United States in the Twentieth Century* (New York, 1982) — and I make use of that synthesis in the conclusion to this article.

⁵ Some of this work was done by authors who explicitly placed their studies in an organizational context. But many of the historians — especially those dealing with political history and the history of technology — attached their work to other conceptual frameworks. I have lumped together these disparate analyses when they have, in my judgment, made important contributions to our understanding of the development of America's modern large-scale institutions.

⁶ Alfred D. Chandler, Jr., *Strategy and Structure: Chapters in the History of the Industrial Enterprise*

recently, his Pulitzer Prize-winning *The Visible Hand: The Managerial Revolution in American Business* brought the corporation, technology, and innovations in management to the forefront of our nation's history in both the nineteenth and twentieth centuries.⁷ *The Visible Hand* revitalized business history, in part by generating fruitful intersections between that subdiscipline and the history of technology,⁸ the analysis of economic growth,⁹ and the economics of the firm.¹⁰

The Visible Hand portrayed technology as the prime mover in the evolution of the giant firm. The traditional firm was supplanted when technological advances and a growing domestic market made mass production possible. The resulting multi-unit enterprises developed managerial hierarchies that enabled them to coordinate more efficiently than the market did the complex array of activities they controlled. Within these firms functional specialization took place at a rapid pace, and the techniques of control were greatly improved; at first the combines centralized authority, but then, after undertaking more diversified functions, they adopted a decentralized structure. "By the middle of the twentieth century," Chandler said, "the salaried managers of a relatively small number of large mass producing, large mass retailing, and large mass transporting enterprises coordinated current flows of goods through the processes of production and distribution in major sectors of the American economy. By then, the managerial revolution in American business had been carried out."¹¹

While explicit value judgments did not play a role in Chandler's work, he left his readers with few doubts about the positive outcome of this corporate capitalist revolution. The diversified, decentralized firms were "dynamic"; they were administered efficiently (or they would not have survived); in recent years they "generated by far the largest share of nongovernment funds and provided most of the nongovernment personnel involved in industrial research and development. These same firms were the prime contractors used by the gov-

(Cambridge, 1962). For a few examples of the work related to this book see Jon Didricksen, "The Development of Diversified and Conglomerate Firms in the United States, 1920-1970," *Business History Review*, 46 (Summer 1972), 202-19; Derek F. Channon, *The Strategy and Structure of British Enterprise* (Boston, 1974); Richard P. Rumelt, *Strategy, Structure, and Economic Performance* (Boston, 1974); Harold F. Williamson, ed., *Evolution of International Management Structures* (Newark, 1975).

⁷ Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, 1977).

⁸ See, for instance, David A. Hounshell, "Commentary/On the Discipline of the History of American Technology," *Journal of American History*, 67 (March 1981), 854-65; and the same author's *From the American System to Mass Production: The Development of Manufacturing Technology in the United States, 1800-1932* (forthcoming, Johns Hopkins University Press).

⁹ See Richard B. Du Boff, "Business Demand and the Development of the Telegraph in the United States, 1844-1860," *Business History Review*, 54 (Winter 1980), esp. 478-79.

¹⁰ See Richard E. Caves, "Industrial Organization, Corporate Strategy and Structure," *Journal of Economic Literature*, 18 (March 1980), 64-92; and Oliver E. Williamson, "The Modern Corporation: Origins, Evolution, Attributes," *Journal of Economic Literature*, 19 (December 1981), 1537-68, for recent discussions of the literature and issues.

¹¹ Chandler, *The Visible Hand*, p. 11.

ernment in World War II and in the two decades of the cold war. They were the companies that provided the hardware for its atomic energy and space programs. They, too, were the same enterprises that continued to present the 'American challenge' to European and other businessmen overseas."¹² What more could one ask of a capitalist system that radical critics had long been describing as on the brink of total collapse?

Other scholars developed similar themes — each with distinctive characteristics, but each with an emphasis on the special role of technology in the emergence of America's modern corporate economy. In his perceptive biography of Elmer Sperry, Thomas Parke Hughes traced the activities of an "inventor-entrepreneur" whose career began in the age of the inspired individual (the 1880s) and ended in the era of organized corporate R&D (the 1920s). In effect, Sperry's career helped us see how distinct was the boundary that divided the modern setting of large-scale organizations from America's previous experience. Sperry was successful in both of these settings, but to do so, he had to have an unusual flair for entrepreneurship as well as a unique talent for solving engineering problems.¹³

This same transition from individual to institutionalized research was explored in Reese V. Jenkins's history of the American photographic industry from 1839 to 1925. Jenkins used the novel concept of "business-technological mind-sets," which he said characterized successive stages in the industry's development. Alterations in the mind-set were a product of "precedent-shattering technological change," which normally came from outside the industry. Each mind-set was defined by a dominant technology, and within the stages, the industry regularly evolved from imperfect competition, to perfect, and then to oligopolistic patterns of behavior.¹⁴ Jenkins thus focused more attention than Chandler did on the modern corporation's security-seeking, risk-reducing aspect, a theme that an earlier generation of economists and historians had explored in great detail.¹⁵ But neither Jenkins nor Chandler considered the search for stability as important a feature of business behavior as was technological innovation.

It is also interesting that neither Jenkins, nor Chandler, nor Hughes

¹² *Ibid.*, pp. 474, 476, 483.

¹³ Thomas Park Hughes, *Elmer Sperry: Inventor and Engineer* (Baltimore, 1971).

¹⁴ Reese V. Jenkins, *Images and Enterprise: Technology and the American Photographic Industry, 1839 to 1925* (Baltimore, 1975). Both Hughes and Jenkins worked with Chandler, but they did not thereby come to a single overriding conclusion about technology as a causal factor. Jenkins gives more emphasis than Chandler does (in *The Visible Hand*) to the drive to stifle competition. Hughes looks more than Chandler does to the social and political environments as sources of change; see note 22 below.

¹⁵ See, for example, Arthur R. Burns, *The Decline of Competition: A Study of the Evolution of American Industry* (New York, 1936); Alfred S. Eichner, *The Emergence of Oligopoly: Sugar Refining as a Case Study* (Baltimore, 1969); and the literature discussed in Ellis W. Hawley, "Antitrust," in Glenn Porter, ed., *Encyclopedia of American Economic History*, vol. 2, 772-87.

wrote the history of a single business — in the style promoted some years ago by N.S.B. Gras.¹⁶ The traditional sort of company history was fading into the intellectual background. The most significant work in this branch of the organizational synthesis was either problem-oriented, in the style of Hughes's biography, or aggregate in the style of Chandler (who studied the entire business system), of Jenkins (who looked at an entire industry), and of most of the materials cited in note 17 below. The works of this genre have thus recast business history along new lines, increasing the emphasis in the subdiscipline on careful analysis of the general institutional setting for technological change.

These volumes and numerous other publications in the years since 1970 have solidly established technological change and its related managerial innovations as a central feature in the history of America's modern corporate economy.¹⁷ In an effort to determine with greater precision just how important technological factors have been, numerous scholars have begun to compare American economic institutions with those in other societies.¹⁸ An ambitious survey appeared in Alfred D. Chandler, Jr., and Herman Daems, editors, *Managerial Hierarchies: Comparative Perspectives on the Rise of the Modern Industrial Enterprise*, which included essays on Great Britain, Germany, and France, as well as the United States.¹⁹ In the very long run, this comparison suggested, the firms in each country tended to reach somewhat similar states of organizational development — a pattern consistent with the emphasis that the editors gave to technological considerations.²⁰ But the paths to these endpoints seemed — on the basis of

¹⁶ Louis Galambos, *American Business History* (Washington, 1967).

¹⁷ See, for example, Glenn Porter and Harold C. Livesay, *Merchants and Manufacturers: Studies in the Changing Structure of 19th Century Marketing* (Baltimore, 1971); Thomas G. Marx, "Technological Change and the Theory of the Firm: The American Locomotive Industry, 1920-1955," *Business History Review*, 50 (Spring 1976), 1-24; Michael Massouh, "Technological and Managerial Innovation: The Johnson Company, 1883-1898," *Business History Review*, 50 (Spring 1976), 46-68; William J. Abernathy, *The Productivity Dilemma: Roadblock to Innovation in the Automobile Industry* (Baltimore, 1978); Charles W. Cheape, *Moving the Masses: Urban Public Transit in New York, Boston and Philadelphia* (Cambridge, 1980). See also the literature cited in Thomas P. Hughes, "Emerging Themes in the History of Technology," *Technology and Culture*, 20 (October 1979), 697-711.

¹⁸ See William N. Parker's discussion of this point in "American Capitalism: The Differentiation from European Origins" (Sapporo Cool Seminar on American Studies, Hokkaido University, 1981), esp. 22-24. An International Conference on Business History (the Fuji Conference) has been meeting since 1976 and regularly publishing comparative studies. See also Williamson, *Evolution of International Management Structures*; Rosamund Thomas, *The British Philosophy of Administration: A Comparison of British and American Ideas, 1900-1939* (New York, 1978). Many of the studies in Continental and British institutions have had a built-in comparative concept because they have followed the major analyses of the U.S. experience. See Channon, *The Strategy and Structure of British Enterprise*; Leslie Hannah, *The Rise of the Corporate Economy: The British Experience* (Baltimore, 1976); S. J. Prais, *The Evolution of Giant Firms in Britain* (Cambridge, 1976); John Zysman, *Political Strategies for Industrial Order: State, Market, and Industry in France* (Berkeley, 1977).

¹⁹ Alfred D. Chandler, Jr., and Herman Daems, eds., *Managerial Hierarchies: Comparative Perspectives on the Rise of Modern Industrial Enterprise* (Cambridge, 1980).

²⁰ Herman Daems, "The Rise of the Modern Industrial Enterprise: A New Perspective," in *Managerial Hierarchies*, 203-23, provides the volume's comparative conclusion. He stresses the role of efficiency-producing technology as a common source of a common organizational form. For an earlier and slightly different interpretation see Daems's review of Derek F. Channon's book on British enterprise, *Business History Review*, 49 (Summer 1975), 280-81.

the evidence presented there — to have varied so considerably and to have been shaped so substantially by complex political and social factors that technological determinism provided an inadequate explanation of what happened.²¹

Indeed, Thomas Parke Hughes's most recent book demonstrated convincingly how technologies themselves have been altered by their political, cultural, and economic settings. His careful comparison of the early electrical systems of Great Britain, Germany, and the United States revealed how differently each country applied the ideas originally developed by Thomas Edison. The contrasts between the lighting systems that emerged in Berlin and London were for the most part a result of political factors. As the networks in each country grew, they acquired "a supportive context, or culture. . ." that gave "technological momentum" to the nation's industry. Educational institutions, research and development organizations, and engineering associations all became part of a complex, socio-technological system that was particular to each city, region, and nation. A careful reading of Hughes's book indicated that neither technology nor its corporate setting could be understood without placing these phenomena in their social, political, and economic contexts.²²

A similar conclusion could be drawn from the work done to date on multinational corporations. Perforce, this research is comparative in nature, and the companies examined seem to have adjusted in significantly different ways to their varied social and political environments overseas. If technological imperatives alone had molded these giant firms, then we would have expected to find more consistent patterns of organizational behavior than have actually evolved.²³ Organizational history along these lines seemed then to have acquired a particularistic caste that it had lacked in 1970. The historical emphasis upon place and time, the impact of a particular setting, have made inroads on the sociological preference for universal patterns of action.

The synthesis has also acquired a rich moral emphasis — another break with the sociological tradition. Scholars who stressed the causal role of technology largely followed Chandler's lead and came to very positive conclusions. Modern technology plus effective management

²¹ I dealt with this problem at greater length in my review of this book, *Science*, 208 (May 30, 1980), 1023–24.

²² Thomas Parke Hughes, *Networks of Power: Electrification in Western Society, 1880–1930* (Baltimore, 1983). See, as well, the following selections by Hughes: "Conservative and Radical Technologies," in Sven B. Lindstedt and E. William Colglazier, Jr., eds., *Managing Innovation: The Social Dimensions of Creativity, Invention and Technology* (New York, 1982), 31–44; "The Order of the Technological World," in A. Rupert Hall and Norman Smith, eds., *History of Technology* (London, 1980), 1–16.

²³ Raymond Vernon, *Sovereignty at Bay: The Multinational Spread of U. S. Enterprises* (New York, 1971), and the same author's *Storm Over the Multinationals: The Real Issues* (Cambridge, 1977); Mira Wilkins, *The Maturing of Multinational Enterprise: American Business Abroad from 1914 to 1970* (Cambridge, 1974).

equaled efficiency and economic growth. Market power should have caused no basic fears. A changing technology has always breached the walls of corporate strongholds, and besides, only the efficient firms have survived over the long run.

Other voices have been heard, however. Daniel J. Boorstin absorbed technology into the American democratic experience and then condemned its impact on the United States in the twentieth century.²⁴ Elting G. Morison portrayed our technology taking us *From Know-How to Nowhere*,²⁵ and his gloomy evaluation was seconded by those scholars who were opening the new field of environmental studies.²⁶ Robert L. Heilbroner saw our business civilization in decline, not triumph, as our technology encountered inevitable and unyielding ecological limits.²⁷ For labor, as well, all has not been so rosy in the past; the technological changes applauded by many business historians frequently eroded the workers' social and economic status. David Montgomery and Richard Edwards, who were critical of these developments, held sway in labor history, in part by default.²⁸ The historians of the corporation have for the most part ignored the labor force, perhaps assuming that the technological advances that were good for General Motors were equally good for the men who labored in GM's factories.

The history of corporate technology in modern America has thus acquired some intriguing characteristics. We have learned of late how particular these business institutions were to their American setting. We have found out, as well, that the drive for technical and organizational innovation — along with the security-seeking emphasized by a previous generation of scholars — has become a central feature of our new economic bureaucracies.²⁹ But we have not yet decided how to evaluate these changes, and thus a creative moral and ideological tension has been generated in organizational studies. Some have worried that our society is heading for a deep technological and economic crisis. More have concluded that the history of technology and the modern

²⁴ Daniel Boorstin, *The Americans: The Democratic Experience* (New York, 1973).

²⁵ Elting G. Morison, *From Know-How to Nowhere: The Development of American Technology* (New York, 1974).

²⁶ Joseph A. Pratt, "Growth or a Clean Environment? Responses to Petroleum-related Pollution in the Gulf Coast Refining Region," *Business History Review*, 52 (Spring 1978), 1-29; and the same author's "Letting the Grandchildren do it: Environmental Planning During the Ascent of Oil as a Major Energy Source," *The Public Historian*, 2 (Summer 1980), 28-61; Joseph Petulla, *American Environmental History* (San Francisco, 1977); Samuel P. Hays, "The Limits-to-Growth Issue: An Historical Perspective," in Chester L. Cooper, ed., *Growth in America* (Westport, 1976), 115-42.

²⁷ Robert L. Heilbroner, *Business Civilization in Decline* (New York, 1976).

²⁸ David Montgomery, *Workers' Control in America: Studies in the History of Work, Technology, and Labor Struggles* (Cambridge, 1979); Richard Edwards, *Contested Terrain: The Transformation of the Workplace in the Twentieth Century* (New York, 1979).

²⁹ Recent studies that presented relatively balanced accounts of these two major aspects of corporate development include Glenn Porter, *The Rise of Big Business, 1860-1910* (Arlington Heights, Illinois, 1973), and the books by Raymond Vernon, cited in note 23, above.

corporation is a study in progress. Recent events suggest that the positivists will become even more numerous in the years ahead. The current concern to improve the productivity of American enterprise, to copy those countries that now seem to be excelling in technological advances, to deregulate, to reindustrialize, to lower labor costs — all of these enthusiasms of the eighties will doubtless feed the interest in the history of technology and sustain a largely favorable evaluation of its role in our twentieth-century experience.

THE POLITICAL ECONOMY OF CORPORATE LIBERALISM

In the second major realm of organizational history, political economy, a sharply contrasting, negative evaluation of America's organizational society has emerged. For many decades this viewpoint was not popular. The dominant school of political history was the so-called progressive or liberal interpretation, which gave to the public sector a positive role in the nation's progress toward a more just and humane society; some historians today (and some very good ones, indeed) continue to espouse this reform-centered interpretation.³⁰ Others use the progressive synthesis as a foil, developing revisionist correctives that modify but do not really supplant the progressive vision of the active state in the good society.³¹ But in the years since 1970, more and more scholars have advanced harsh and hostile analyses of the growth of the administrative state in America.

Some of the critics were conservatives who were chagrined, in particular, by the elaboration of regulatory measures in this century and by the inherent inefficiency of the nation's public bureaucracies. Albro Martin traced the beginnings of the decline of America's railroads to the strengthening of federal regulation by the Interstate Commerce Commission. The villains of his history were the Progressive reformers — not the Robber Barons. The liberals, the "archaic Progressives" to Martin, were both stubborn and shortsighted; they drove through the Act of 1910, "that unworkable piece of legislation which caused most of the trouble." For Martin, capitalism unfettered would have been the same sort of innovative system that was responsible for America's economic progress in the nineteenth century.³²

³⁰ Alonzo L. Hamby, *Beyond the New Deal: Harry S. Truman and American Liberalism* (New York, 1973).

³¹ James T. Patterson, *America in the Twentieth Century: A History* (New York, 1976) fits this mold, as does Robert F. Himmelberg, *The Origins of the National Recovery Administration: Business, Government and the Trade Association Issue, 1921-1933* (New York, 1976); see also Barry D. Karl's optimistic article on "Philanthropy, Policy Planning, and the Bureaucratization of the Democratic Ideal," *Daedalus* (Fall 1976), 129-49.

³² Albro Martin, *Enterprise Denied: Origins of the Decline of American Railroads, 1897-1917* (New York, 1971), 359-60.

Jonathan R. T. Hughes, an eminent economic historian, has taken a similar stance in his several, recent publications. He has condemned *The Governmental Habit: Economic Controls from Colonial Times to the Present*.³³ In his presidential address to the Economic History Association in 1981, he offered "a little parable for our times," a description of the Bering Sea fishermen's strike against the salmon packers in 1951; the incident, he said, was "a microcosm of my larger results: regulatory agencies that finally became sponsors of monopoly pricing and output, some with falling or negative profits in older industries like railroads. Regulated results that clearly were not the intentions of those who had framed the original laws are the usual outcomes."³⁴ Others have joined Hughes in condemning liberal policies in our states³⁵ and the nation,³⁶ pointing frequently to the manner in which public bureaucrats have strengthened their own hands while ignoring the costs to the public (whose interests they were ostensibly protecting).

In the years to come, more is likely to be heard from the historians on the right, but to date theirs has been a minor attack on the American system of government compared to the full-scale reappraisal conducted by the scholars in the "corporate liberal" school of interpretation. The central idea in this critique of the U.S. polity is that organized interests — the corporate element — have meshed in various ways with public authority to develop a new, twentieth-century style of government; many of the changes have been introduced by reform-oriented leaders — the liberal element — who proclaimed that they had the public's welfare in mind. Frequently, however, the public interest yielded to private gain. In fact, so close were the relationships that it eventually became very difficult to distinguish what was public from what was private.³⁷ All that was clear was that the United States had acquired a formidable administrative state that either controlled directly or influenced in some fashion a substantial part of the income and wealth of this country.³⁸

The changes in government took place at all levels — local, state, and national. In all three the same sort of functional specialization that

³³ Jonathan R.T. Hughes, *The Governmental Habit: Economic Controls from Colonial Times to the Present* (New York, 1977).

³⁴ Jonathan R.T. Hughes, "The Great Strike at Nushagak Station, 1951: Institutional Gridlock," *Journal of Economic History*, 42 (March 1982), 1–20.

³⁵ Peter D. McClelland and Alan L. Magdovitz, *Crisis in the Making: The Political Economy of New York State since 1945* (Cambridge, 1981).

³⁶ Carolyn L. Weaver, *Crisis in Social Security: Economic and Political Origins* (Durham, 1983).

³⁷ Ellis W. Hawley, "The Discovery and Study of a 'Corporate Liberalism,'" *Business History Review*, 52 (Autumn 1978), 319. All of the articles in this issue of the *Review* dealt with this theme. See also R. Jeffrey Lustig, *Corporate Liberalism: The Origins of Modern American Political Theory, 1890–1920* (Berkeley, 1982).

³⁸ See, for instance, Stephen Skowronek, *Building a New American State: The Expansion of National Administrative Capacities, 1877–1920* (Cambridge, 1982); see also James E. Hewes, Jr., *From Root to McNamara: Army Departmental Organization and Administration, 1900–1963* (Washington, D.C., 1975).

characterized the evolution of the modern corporation took place within political organizations and among the institutions that sought to influence political decisions. Under the banner of liberal reform, municipal governments throughout the country were transformed along lines that appealed to the middle-class citizens who were organizing new sorts of business and professional associations to represent their occupational groups.³⁹ In city, state, and nation, political parties became less important as new functional groups and federations dramatically altered the political process.⁴⁰ The very large, very complex systems that emerged from this long-run transformation operated in ways that frequently baffled the nation's leaders and bewildered the citizens who wanted new government services but neither the increased taxes nor the periodic political crises that characterized the political economy of corporate liberalism.

There have been two distinct wings of corporate liberal analysis — one radical, with links to the New Left; the other moderate, with intellectual ties to the pluralists of political science. The cornerstone of the radical interpretation was a paradox: corporate capitalism, which has had overwhelming power in the twentieth-century United States and which has controlled most of our wealth, has nonetheless been a system on the brink of economic collapse.⁴¹ To stave off failure the corporate leaders promoted an expansionary foreign policy. They organized effectively to push their program in government circles. Empire and influence — a private-public network — provided markets, sources of raw materials, and cheap labor.⁴² But to protect this system, business leaders had continually to enlist the armed support of the state. Frequently they had to counter the forces of revolutionary change abroad, especially when those forces marched behind the banners of socialism or communism.⁴³

³⁹ David B. Tyack, "City Schools: Centralization of Control at the Turn of the Century," in Jerry Israel, ed., *Building the Organizational Society: Essays on Associational Activities in Modern America* (New York, 1972); Samuel P. Hays, "The Politics of Reform in Municipal Government in the Progressive Era," *Pacific Northwest Quarterly*, 55 (October 1964), 157–69.

⁴⁰ Samuel P. Hays, "The New Organizational Society," in Jerry Israel, ed., *Building the Organizational Society*, 5–9.

⁴¹ Gabriel Kolko, *Main Currents in Modern American History* (New York, 1976), 398, described the United States as "a society dangerously adrift and now locked into an enduring, permanent crisis at home and in the world. This increasingly violent experience, this absence of a hope of a better future, was the main heritage that American capitalism had at the end of its first hundred years bequeathed to its people and the international community. . . ."

⁴² See, for example, Carle P. Parrini and Martin J. Sklar, "Periodization and History: The Corporate Reconstruction of American Society, 1896–1914" (a paper delivered at the Organization of American Historians, 1981). Burton I. Kaufman, "United States Trade and Latin America: The Wilson Years," *Journal of American History*, 57 (September 1971), 342–63; the same author's "The Organizational Dimension of United States Foreign Economic Policy, 1900–1920," *Business History Review*, 46 (Spring 1972), 17–44; and his *Efficiency and Expansion: Foreign Trade Organization in the Wilson Administration, 1913–1921* (Westport, 1974). Rodney Carlisle, "The 'American Century' Implemented: Stettinius and the Liberian Flag of Convenience," *Business History Review*, 54 (Summer 1980), 175–91.

⁴³ Robert Freeman Smith, *The United States and Revolutionary Nationalism in Mexico, 1916–1932* (Chicago, 1972); Jules Robert Benjamin, *The United States and Cuba: Hegemony and Dependent Develop-*

At home, corporate power was used to implement policies that directly benefited business and to thwart those reform measures that threatened business's interests. Much of this politicking was done in the name of liberal reform; these were the corporate leaders who graced the boards of liberal organizations and published articles espousing reform causes. Men like Owen D. Young of General Electric and Edward A. Filene of the Filene department stores filled the liberal ranks. These were the sorts of leaders who participated in the Commerce Department's Business Advisory and Planning Council and the Committee for Economic Development. The types of reform these business leaders promoted — the establishment in the 1930s of the National Recovery Administration, for example, or the development in the 1940s of a counter-cyclical fiscal policy — always profited corporate interests and consolidated business's political influence.⁴⁴

The great combines that held sway in this version of our history were also those that Dwight D. Eisenhower had condemned as partners in the military-industrial complex. They were the businesses that profited most from war, either hot or cold. With their influence reaching deeply into the State Department and Defense Department, they could assure that America would stay prepared, poised on the edge of war, so that defense contracts would continue to be forthcoming. Debilitating at home and dangerous abroad, the public policies of corporate liberalism were only a holding action: intrinsic to this analysis was the assumption that ultimately this jerrybuilt system would have to collapse.⁴⁵

Those scholars who espoused a more moderate version of this interpretation were of course less pessimistic about the future and more cautious about the past. Looking back to the origins and evolution of the regulatory commissions, such historians as Thomas K. McCraw, William Doezema, Donald A. Ritchie, William Graebner, and James P. Johnson found evidence of complex interactions between business and government.⁴⁶ At times the businesses had captured the regulators.

ment, 1880–1934 (Pittsburgh, 1977); see also Fred L. Block, *The Origins of International Economic Disorder: A Study of United States International Monetary Policy from World War II to the Present* (Berkeley, 1977).

⁴⁴ Kim McQuaid, "Corporate Liberalism in the American Business Community, 1920–1940," *Business History Review*, 52 (Autumn 1978), 342–68; and in the same issue, Robert M. Collins, "Positive Business Responses to the New Deal: The Roots of the Committee for Economic Development, 1933–1942," 369–91; see also McQuaid's *Big Business and Presidential Power: From FDR to Reagan* (New York, 1981); and Michael E. Parrish, *Securities Regulation and the New Deal* (New Haven, 1970).

⁴⁵ Carroll W. Pursell, Jr., ed., *The Military-Industrial Complex* (New York, 1972); and Paul A. C. Koistinen, *The Military-Industrial Complex: A Historical Perspective* (New York, 1980). Gabriel Kolko, *Main Currents*, 337–47; see also Richard Barnett, *Roots of War* (New York, 1972), 137–238, on "The Political Economy of Expansionism."

⁴⁶ Thomas K. McCraw, *TVA and the Power Fight, 1933–1939* (Philadelphia, 1971); and, also by McCraw, "Regulation in America: A Review Article," *Business History Review*, 49 (Summer 1975), 159–83, and "Rethinking the Trust Question," in Thomas K. McCraw, ed., *Regulation in Perspective: Historical Essays* (Cambridge, 1981), 1–55; William R. Doezema, "Railroad Management and the Interplay of Federal and State Regulation, 1885–1916," *Business History Review*, 50 (Summer 1976), 153–78; Donald A. Ritchie, *James M. Landis: Dean of the Regulators* (Cambridge, 1980); William Graebner, "Great Expectations: The

But frequently, the commissions heeded many interests and sought diverse ends, as did the ICC in the years following 1910. The simple idea that the commissions sought to further the public interest would not encompass all of these experiences — nor would the equally simple idea of “capture.”⁴⁷ Neither in their origins nor their subsequent behavior, James Q. Wilson said, could the commissions be explained as merely “industry-serving”; in his view the commissions themselves had to be seen as “coalitions of diverse participants who have somewhat different motives.” The “careerists,” the “politicians,” and the “professionals” were different sorts of regulators who performed their regulatory functions in different ways.⁴⁸ The “professionals” seemed, for instance, to have played an especially important role in the early activities of the Securities and Exchange Commission, an agency whose history well illustrated the complexity that the moderate branch of this school stressed. The SEC could not be analyzed only in terms of corporate objectives and corporate power; professional accountants — operating from a different organizational base than business — interacted with government officials, politicians, and corporate leaders to shape the activities of the SEC.⁴⁹

What emerged from this literature was an historical perspective that emphasized the coalescence of organized interests — some public, some private — and the interaction of various political coalitions that shifted over time and normally settled for some sort of compromise. Coalition-building was the heart of the political process at all levels of government. Neither businessmen nor public officials nor the other interests involved were ever completely successful in achieving their objectives. As Mansel G. Blackford found in his study of the political economy of one state, “businessmen achieved only partial success. They failed to grasp the full meaning of the changes occurring around them and so were never totally effective in dealing with them.”⁵⁰ Gone from this synthesis was the periodicity of reform history. Thus, Ellis W. Hawley’s work converted the 1920s from an interlude between surges of reform to a decade of important innovations in the public

Search for Order in Bituminous Coal, 1890–1917,” *Business History Review*, 48 (Spring 1974), 49–72, and *Coal-Mining Safety in the Progressive Period: The Political Economy of Reform* (Lexington, 1976); also see James P. Johnson, *The Politics of Soft Coal: The Bituminous Industry from World War I through the New Deal* (Urbana, 1979).

⁴⁷ Thomas K. McCraw, “Regulation in America,” 160–71, makes this point very effectively.

⁴⁸ “The Politics of Regulation,” in James Q. Wilson, ed., *The Politics of Regulation* (New York, 1980), 372–82; see also Samuel P. Hays’s penetrating essay on “Political Choice in Regulatory Administration,” in Thomas K. McCraw, ed., *Regulation in Perspective*, 124–54.

⁴⁹ Thomas K. McCraw, “With Consent of the Governed: SEC’s Formative Years,” *Journal of Policy Analysis and Management*, 1, no. 3 (1982), 346–70. See also McCraw, ed., *Regulation in Perspective*.

⁵⁰ Mansel G. Blackford, *The Politics of Business in California, 1890–1920* (Columbus, 1977), 171; also see Jonathan Lurie, *The Chicago Board of Trade, 1859–1905: The Dynamics of Self-Regulation* (Urbana, 1979).

realm; private groups developed such strong ties to government that Hawley labeled the combination an "associational state."⁵¹

The moderate style of corporate liberal interpretation also eschewed the relatively simple concept of causation that has characterized the radical view. For instance, Robert D. Cuff offered an organizational perspective on the military-industrial complex; he emphasized the complex, shifting coalitions and high degree of discontinuity in this aspect of institutional evolution. He concluded that in the defense realm in the years following World War II, the traditional distinctions between public and private activities, between business and government, and finally between the individual and the state were no longer very useful in understanding what was happening. For his part he offered a synthesis that stressed bureaucratic structure and the "politics of administration," categories that he hoped would transform the subject from one of intense ideological concern to one of intense scholarly analysis.⁵²

In a similar manner, Robert M. Collins saw in *The Business Response to Keynes, 1929-1964* a "conscious effort to build a corporatist socio-political order that would avoid the dangers of both statist regimentation and laissez-faire waste and social tension." Both government leaders and businessmen worked toward this common goal; both of the major political parties made contributions to this effort. The corporatist vision, Collins said, "commingled with the value systems of liberals and conservatives and with the nation's democratic traditions to influence the modern American political economy."⁵³ According to Collins, and to Robert Griffith and Allen J. Matusow as well, presidents as different in style as Dwight David Eisenhower and John F. Kennedy could best be understood from this particular vantage point.⁵⁴

In foreign as well as domestic policy, the moderates broke with the simple radical view stressing big business's dominant position. In the

⁵¹ For Hawley's ideas see the following: "Herbert Hoover, The Commerce Secretariat, and the Vision of an Associative State," *Journal of American History*, 61 (June 1974), 116-40; "Secretary Hoover and the Changing Framework of New Era Historiography," and "Herbert Hoover and Economic Stabilization, 1921-22," both in Ellis W. Hawley, ed., *Herbert Hoover as Secretary of Commerce: Studies in New Era Thought and Practice* (Iowa City, 1981), 1-16, 43-79; "Three Facets of Hooverian Associationalism: Lumber, Aviation, and Movies, 1921-1930," in Thomas K. McCraw, ed., *Regulation in Perspective*, 95-123; see also Guy Alchon, "Technocratic Social Science and the Rise of Managed Capitalism, 1910-1933" (Ph.D. dissertation, University of Iowa, 1982).

⁵² Robert D. Cuff, "An Organizational Perspective on the Military-Industrial Complex," *Business History Review*, 52 (Summer 1978), 250-67; see also Cuff's *The War Industries Board: Business-Government Relations During World War I* (Baltimore, 1973); and "Antitrust Adjourned: Mobilizations and the Rise of the National Security State," in *National Competition Policy: Historians' Perspective on Antitrust and Government-Business Relations in the United States* (Washington, D.C., 1981), 208-59; also see Donald J. Mrozek, "The Truman Administration and the Enlistment of the Aviation Industry in Postwar Defense," *Business History Review*, 48 (Spring 1974), 72-94; and Benjamin Franklin Cooling, ed., *War, Business, and American Society: Historical Perspectives on the Military-Industrial Complex* (Port Washington, 1977).

⁵³ Robert M. Collins, *The Business Response to Keynes, 1929-1964* (New York, 1981), 204-5.

⁵⁴ Robert Griffith, "Dwight D. Eisenhower and the Corporate Commonwealth," *American Historical Review*, 87 (February 1982), 87-122. Allen J. Matusow, "The Unravelling of America: A History of Liberalism in the 1960s" (forthcoming, Harper & Row), ch. 2.

moderate perspective there was still plenty of business input to policy: International Telephone and Telegraph had a great deal to do with U.S. policy toward Spain in the twenties and thirties.⁵⁵ But in this instance and others, businessmen seldom got exactly what they wanted. The State Department often dominated the businessmen, and policy was more often a product of muddling than of conspiracy. William H. Becker's recent book on the relations between the government and manufacturers seeking to promote exports demonstrated how important bureaucratic struggles within the government and congressional politics were in shaping national policies.⁵⁶ Becker's version of the mainsprings of U.S. foreign economic policies was similar to that of Michael J. Hogan, author of *Informal Entente: The Private Structure of Cooperation in Anglo-American Economic Diplomacy*.⁵⁷ For both Becker and Hogan, the crucial determinants of foreign policy were shifting alliances of public and private interests engaged in the politics of "cooperative competition."⁵⁸

The corporate-liberal school — whether moderate or radical in orientation — has thus provided a very broad context for reinterpreting the dramatic organizational developments that have occurred in American government in this century. These historians have begun to describe government itself as a crucial actor in shaping America's development. Stationed around every government agency, every legislator, every executive and court have been organized interests seeking to shape public policy to their own ends. The corporate-liberal analysis focused attention on these interactions; organizational relationships have, in this new perspective, supplanted party politics as the driving force of political history. The scholars building the corporate liberal synthesis have looked beyond manifest political events — those events that were obvious to the participants — and studied latent or underlying factors of which the participants were unaware or only partially aware.⁵⁹ The resulting view of our history has in essence been critical. The analysts writing in this tradition were much more pessimistic about the nation's accomplishments than were the historians of technological change. The corporate commonwealth they described may indeed have

⁵⁵ Douglas J. Little, "Twenty Years of Turmoil: ITT, the State Department, and Spain, 1924-1944," *Business History Review*, 52 (Winter 1979), 449-72.

⁵⁶ William H. Becker, *The Dynamics of Business-Government Relations: Industry and Exports, 1893-1921* (Chicago, 1982).

⁵⁷ Michael J. Hogan, *Informal Entente: The Private Structure of Cooperation in Anglo-American Economic Diplomacy* (New York, 1977).

⁵⁸ The expression is Hogan's. See also Joan Hoff Wilson, *American Business and Foreign Policy, 1920-1943* (Lexington, 1971); Richard Hume Werking, *The Master Architects: Building the United States Foreign Service, 1890-1913* (Lexington, 1977); Irvine H. Anderson, *The Standard-Vacuum Oil Company and United States East Asian Policy, 1933-1941* (Princeton, 1975); Frederick C. Adams, *Economic Diplomacy: The Export-Import Bank and American Foreign Policy, 1934-1939* (New York, 1976).

⁵⁹ See Bernard Bailyn, "The Challenge of Modern Historiography," *American Historical Review*, 87 (February 1982), 9-11.

been productive, but its record was blemished by economic crises, fierce internal struggles, frequent political stalemates, and a skewed distribution of wealth and power.

In my view, the historians of corporate liberalism have been too harsh in evaluating America's domestic policies, leaving out of their purview, for example, government's rather remarkable contributions to technical and organizational change in this century. Concentrating almost exclusively on security-seeking, risk-reducing activities, they have largely ignored the massive subsidies our states have given to university-centered research and to the tasks of training personnel for research (they have thus written a lopsided history, as have those students of technology and the corporation who leave out business's search for security). The federal government has pumped billions of dollars of direct outlays into research and development. Defense-related expenditures have also stimulated research in many of our most advanced industries.⁶⁰ America's modern administrative state has been heavily involved in promoting innovation, as well as economic security, and we should take both functions into consideration, acknowledging how closely related are the developments in corporate technology and the corporate-liberal state.

That accomplished, the historical evaluation of our political system is still likely to be primarily negative, concerned more with the problems Americans have encountered at home and abroad than with the technical and administrative virtuosity they have achieved. Unless our government agencies and legislatures experience a sudden transformation, unless our executive officers become more prescient than they have been in recent years, unless our interest groups become less shortsighted or more public-minded than they are today, the corporate liberal vision will continue to be primarily a critique of the American past.

THE EMERGENCE OF THE MODERN PROFESSIONS

The organizational synthesis has thus acquired a strong moral flavor in recent years. The two contrasting ideologies at work are the negative evaluation of the corporate-liberal school and the positive viewpoint characteristic of the historians of technological and managerial innovation. Elements of both interpretations can be found in the third

⁶⁰ See, for example, John S. Brubacker and Willis Rudy, *Higher Education in Transition: A History of American Colleges and Universities, 1636-1976* (New York, 1976), 256-60, 378, 380-82, 400-4, 415-16; Joseph Ben-David, *American Higher Education* (New York, 1972), 1-2, 42-47, 87-109; J. Stefan Dupré and Stanford A. Lakoff, *Science and the Nation* (Englewood Cliffs, N.J., 1962), 9-19; National Science Foundation, "Report 62-37," in William R. Nelson, ed., *The Politics of Science* (London, 1968), 55-69.

major area of organizational research: the emergence of the modern professions.

Here there is no dominant mode of evaluation, no central pattern of analysis. In part this probably reflects the fact that historical interest in the professions is a relatively recent phenomenon. Moreover, generalization has been stymied by the great diversity in the organizations, intellectual traditions, political activities, elites, and social values of the various professions. One can excuse scholars for being hesitant about advancing interpretations that would have to stretch from such older, traditional professions as law and medicine to the new entries, which include occupations as diverse as nuclear chemistry, museum management, and history itself. Including the quasi-professions — advertising, for instance, or undertaking, or beauty culture — would make the task even more strenuous.

Historians of professionalization have, nevertheless, discovered some general processes of institutional change that characterized a wide range of these occupations and that were, incidentally, similar to those that took place during the last century in the nation's business system and its polity. The essence of professionalization was of course a special form of functional specialization similar to that which occurred in the corporation and in the state in the modern era. In the past one hundred years, thousands of new professions have emerged. Many of them supplied the employees that the newly differentiated corporations needed. Others were oriented to government and to the educational institutions that were experiencing a similar trend toward specialization. Each of these new specialties has created a system of governance to specify and control its boundaries and to define and achieve its professional goals. Normally, one of the major goals of the profession involved innovation, the ongoing process of improving the body of knowledge that each practitioner was supposed to understand better than the layperson. But professionals were also usually interested in exercising power so as to achieve a measure of security — that is, risk-reduction — by controlling their self-defined turf. Quite often they have used the power of the administrative state to satisfy that need.

Those historians who have been primarily interested in the process of intellectual innovation and in the professional networks and values that have contributed to order, efficiency, and systematic social change have for the most part written favorable accounts of the professions. Robert Wiebe — in *The Segmented Society* as in *The Search for Order* — found that the new professional organizations, their codes of conduct, and systems of socialization, all reflected a new set of social values stressing rationalization and order. The common and cooperative ele-

ments that drew specialists together were those that Wiebe emphasized when he reviewed the tremendous growth of professional organizations in turn-of-the-century America. While Wiebe did not explicitly evaluate these developments, his synthesis threw a very favorable light on the professions. After all, they symbolized reason and order. Who could find disfavor with these values?

Even historians who gave more attention than Wiebe did to the conflict arising in professionalization have frequently stressed the positive intellectual results of this social process. One of the most broad-gauged studies in this genre was sponsored by the American Academy of Arts and Sciences, which directed its attention to the development of scientific and scholarly institutions in the United States between 1860 and 1920.⁶¹ All of the essays in the resulting volume did not fit a single pattern, but most of them analyzed the creation of an organized, unitary specialty out of diverse and often poorly coordinated beginnings; most treated conflict within the discipline; and most either discovered that progress was achieved or assumed that the evidence on this point spoke for itself.⁶²

Thomas L. Haskell advanced a similar interpretation in *The Emergence of Professional Social Science*, but he placed his case study of the American Social Science Association — a transitional, semiprofessional institution — in an intellectual rather than a sociological context. The ASSA, he found, provided scholars with a new mode of inquiry at a time (1865–1909) when the traditional forms of explanation were losing respect. Having made its contribution, the ASSA gave way to more specialized groups which offered more “disciplined, intensive communities of inquiry.”⁶³ Professionalization of this sort, Haskell later explained, “ought to be understood as a serious cultural reform movement. . . .”⁶⁴

There were, however, scholars who were less certain than Haskell was that the benefits of professionalization clearly outweighed the costs. Burton J. Bledstein acknowledged that “the culture of professionalism

⁶¹ Alexandra Oleson and John Voss, eds., *The Organization of Knowledge in Modern America, 1860–1920* (Baltimore, 1976); see also Charles E. Rosenberg, “Science in American Society: A Generation of Historical Debate” (Unpublished lecture, 1982).

⁶² The editors explained that the diverse institutional structure created by 1920 “would provide the United States with the ability to achieve, within the next generation, a position of eminence in the intellectual world.” *Ibid.*, vii. On page xix, they note that “American institutions of learning, like industrial corporations, also have been seen as part of a trend toward nationally oriented, impersonal, hierarchical organizations.” See the review essay by Thomas L. Haskell, “Are Professors Professional?” in *Journal of Social History*, 14 (Spring 1981), 485–93; see also Bruce Sinclair, *A Centennial History of the American Society of Mechanical Engineers, 1880–1980* (Toronto, 1980).

⁶³ Thomas L. Haskell, *The Emergence of Professional Social Science: The American Social Science Association and the Nineteenth-Century Crisis of Authority* (Urbana, 1977).

⁶⁴ Thomas L. Haskell, “Professionalization as Cultural Reform,” *Humanities in Society*, 1 (Spring 1978), 103–14. John W. Servos has reminded us that specialization has not always been successful: “A Disciplinary Program That Failed: Wilder D. Bancraft and the *Journal of Physical Chemistry*, 1896–1933,” *Isis*, 73 (267), 207–32.

has allowed Americans to achieve educated expressions of freedom and self-realization, . . ." but he worried because "it has also allowed them to perfect educated techniques of fraudulence and deceit."⁶⁵ Mary O. Furner was similarly ambivalent. She described the struggle in social science between the advocates of social reform and the spokesmen for a science-bred quest for objectivity. The victory of the forces of objectivity "promoted caution, self-scrutiny, care with sources and methods, and a generally heightened rationalism." But the price was high. "Only rarely did professional social scientists do what no one else was better qualified to do: bring expert skill and knowledge to bear on cosmic questions pertaining to the society as a whole."⁶⁶ Furner's critique was a gentle reminder that organizational historians, like their progressive predecessors, could find themselves in an uncomfortable trap if they adopted uncritically the values of their subjects.

There was no threat of that if they followed the lead of Jerold S. Auerbach or the other scholars who have dealt primarily with professionalization as an exercise in power. Auerbach studied the legal profession and its encounters with social change in the past century. He treated, critically, the institutional aspects of professionalization, looking, for instance, at the growth in bar associations (from 16 in 1880 to over 600 in 1916!), the rise of the corporate law firms, and the assumption by law schools of a dominant position in legal education. These changes, Auerbach contended, did not improve conditions. The result was a profession virtually controlled by a WASP elite, which used its power and status to ward off threats from liberal reformers and the country's new immigrants. For Auerbach, the central features of the profession were its elitist institutions and a system that exercised power in order to impede social change.⁶⁷

The modern history of the medical profession has also been in part a study of conflict over boundaries and the drive for professional autonomy. Having achieved a high degree of autonomy in regard to their own activities, medical doctors fought a long-term battle against the osteopaths and others who sought similar (and, not incidentally, competing) positions of power. There was no creative, intellectual interaction between the professions. Only a vicious struggle for control. Ultimately state governments decided the issues, for the most part

⁶⁵ *The Culture of Professionalism: The Middle Class and the Development of Higher Education in America* (New York, 1976), 334.

⁶⁶ Mary O. Furner, *Advocacy and Objectivity: A Crisis in the Professionalization of American Social Science, 1868-1905* (Lexington, Mass., 1975), 323-24.

⁶⁷ *Unequal Justice: Lawyers and Social Change in Modern America* (London, 1976); see also Stephen Botein's review essay, "Professional History Reconsidered," *American Journal of Legal History*, 21 (January 1977), 60-79. The essays in Thomas L. Haskell, ed., *The Authority of Experts: Historical and Theoretical Essays* (ms.) are for the most part highly critical of their subjects. Haskell sees in the 1970s a "crisis of the professions."

leaving the doctors to regulate themselves but at the same time protecting the rivals they wanted to define out of medicine.⁶⁸

David F. Noble and E. Richard Brown were also interested almost exclusively in power, but in their viewpoint the professions and professional schools were dominated by corporate capital. According to Noble's *America by Design*, the scientific and engineering professions, the educational institutions that sustained them and their research, and the government that issued patent rights to protect the fruits of that research were all "merely a means to corporate ends. . . ."⁶⁹ Brown found more evidence of professional autonomy, but he concluded that America's great corporate combines worked through their foundations, the government, and the professional associations to exercise a substantial degree of control over medicine in this country.⁷⁰ In this radical perspective, the power and wealth of big business imposed hierarchical order on all of the professional institutions that mattered and controlled all of the scientific and technical advances that promised to yield profits to the corporation.

The idea of consensus by corporate command has, however, won few adherents among the historians of professionalization. Judging from the work done by those historians who have studied professionals engaged in research and engineering within the large firm, the radical interpretation was like one of those formal organizational charts that tell you much about the goals of planners and very little about how an organization actually works. Instead of a simple hierarchy, these scholars found tension between competing centers of power and value systems. Edwin T. Layton, Jr., stressed this theme in *The Revolt of the Engineers*, as did Leonard S. Reich, who analyzed the research and development conducted by the American Telephone & Telegraph Company.⁷¹ Reich concluded that initially AT&T's concern for market control dominated its desire for science-based innovation; as the firm and Bell Labs matured, however, the R&D organization and the professions had an important impact on the company's leaders, who were thus

⁶⁸ James Gordon Burrow, *Organized Medicine in the Progressive Era: The Move Toward Monopoly* (Baltimore, 1977); Norman Gevitz, *The D.O.'s: Osteopathic Medicine in America* (Baltimore, 1982).

⁶⁹ *America by Design: Science, Technology, and the Rise of Corporate Capitalism* (Oxford, 1977), 321.

⁷⁰ E. Richard Brown, *Rockefeller Medicine Men: Medicine and Capitalism in America* (Berkeley, 1979). For a more moderate approach see Robert E. Kohler, "The Management of Science: The Experience of Warren Weaver and the Rockefeller Foundation Programme in Molecular Biology," *Minerva*, 14 (Autumn 1976), 279-306; and "A Policy for the Advancement of Science: The Rockefeller Foundation, 1924-29," *Minerva*, 16 (Winter 1978), 480-515.

⁷¹ Edwin T. Layton, Jr., *The Revolt of the Engineers: Social Responsibility and the American Engineering Profession* (Cleveland, 1971); Leonard S. Reich, "Research, Patents, and the Struggle to Control Radio: A Study of Big Business and the Uses of Industrial Research," *Business History Review* 51 (Summer 1977), 208-35; and the same author's "Industrial Research and the Pursuit of Corporate Security: The Early Years of Bell Labs," *Business History Review*, 54 (Winter 1980), 504-29; and "Irving Langmuir and the Pursuit of Science and Technology in the Corporate Environment," *Technology and Culture*, 24 (April 1983), 199-221; also see John W. Servos, "The Industrial Relations of Science: Chemical Engineering at MIT, 1900-1939," *Isis*, 71 (no. 259), 531-49.

encouraged to develop a strong interest in scientific and technological innovation. Stuart W. Leslie's work on General Motors pointed to similar conclusions. There was tension between the goals and values of the scientific professions and the firms that employed their practitioners. While corporate objectives were normally overriding, compromises were reached and policies framed to appeal to both the business and the professional systems.⁷² For Layton, Reich, Leslie, and others, there was no doubt that the two systems were in large part independent sources of authority. Even on the corporation's home turf, America's new scientific and engineering professions made their influence felt.

The history of accounting, a profession that has had a very close symbiotic relationship with business, also suggested that lines of authority in America's organizational society were tangled in ways that a radical perspective will not help us understand. Advances in corporate management have clearly spurred innovations in the field of accounting;⁷³ but in many cases large corporate clients have also prevented accountants from adopting the standard principles promoted by their professional associations. Over time, however, the increasing complexity of the business environment, the new role played by government regulators, and the development of new interests (e.g., investment groups) with a stake in standardization have increased the profession's autonomy.⁷⁴ Again, more than one center of power was involved — there were several in business; one in the public sector; another in the profession itself.

These historical studies have indicated that many highly organized networks — not one — have emerged in the past century. This is a subject dealt with explicitly by Hugh G. J. Aitken, author of the path-breaking *Syntony and Spark — The Origins of Radio*.⁷⁵ Aitken explored the relationships between science and technology. In his conceptual framework, there were crucial boundaries between the scientific, technological, and economic systems; at these frontiers, he found some very unusual individuals — Heinrich Hertz, Oliver Lodge, and Guglielmo Marconi — men who functioned as "translators." When they were successful, the three systems were able to interact in a creative fashion, producing those innovations that have played such a crucial role in our economy in this century.

⁷² Stuart W. Leslie, "Charles F. Kettering and the Copper-cooled Engine," *Technology and Culture*, 20 (October 1979), 752–76; Stuart W. Leslie, "Thomas Midgley and the Politics of Industrial Research," *Business History Review*, 54 (Winter 1980), 480–503; Stuart W. Leslie, *Boss Kettering* (New York, 1983).

⁷³ H. Thomas Johnson, "Management Accounting in an Early Multidivisional Organization: General Motors in the 1920s," *Business History Review*, 52 (Winter 1978), 490–517.

⁷⁴ Stephen A. Zeff, *Forging Accounting Principles in Five Countries: A History and an Analysis of Trends* (Champaign, 1972).

⁷⁵ Hugh G. J. Aitken, *Syntony and Spark — The Origins of Radio* (New York, 1976).

Aitken's framework helped us see how closely linked were the organizational changes taking place in business, in government, and in the professions — a theme that was also skillfully developed in Robert E. Kohler's *From Medical Chemistry to Biochemistry: The Making of a Biochemical Discipline*. Kohler compared the evolution of this discipline in Germany, Great Britain, and the United States. The distinctive American institutions — organs of governance as well as systems of scientific ideas — were shaped to a great extent by political and economic factors. His "political economy of science" provided a model that should help other historians of the professions explain the particular paths that innovation followed and the manner in which these paths related to the need for "institutional consolidation," that is, the quest for power and security.⁷⁶

The history of the professions has thus provided an intellectual bridge between the work being done on technology and the modern corporation and the research directed at America's emerging corporate liberal state. Whether in the future the historical evaluation is primarily favorable toward or critical of the professions will not, I think, be as important as the manner in which this scholarship has already demonstrated the high degree of interdependence between the basic institutions of the organizational society. One of the most significant results of the reorganization of America has been the emergence of a set of professional institutions highly particular to the United States. They have helped a large and important part of middle-class America achieve a good measure of security and at the same time promote technical and organizational innovation. Neither these two goals nor the professions themselves were of special importance to the United States before the great reorganization took place. Now they play a crucial role both in our society and in the organizational synthesis.

THE ORGANIZATIONAL SYNTHESIS TODAY

What then does the organizational synthesis look like today? Have we learned anything that we did not already know in 1970? We have of course learned more about the emergence of the professions, the development of the corporate liberal state, and the evolution of a technologically oriented business system. But what in general does this tell us about modern America?

⁷⁶ Robert E. Kohler, *From Medical Chemistry to Biochemistry: The Making of a Biochemical Discipline* (Cambridge, 1982); see also Kohler's "Medical Reform and Biomedical Science: Biochemistry — a Case Study," in Morris J. Vogel and Charles E. Rosenberg, eds., *The Therapeutic Revolution* (Philadelphia, 1979), 27–66.

The literature reviewed here suggests several answers to this question, one of which deals with the degree of change. Organizational historians have, in my judgment, established the revolutionary nature of the changes that have taken place in America's institutions in the past century. The changes have taken place across a very broad front and have penetrated deeply into the society. They have involved our most important institutions and have created a new economy, polity, and culture. All Americans have to some degree been touched by the manner in which this nation has been reorganized.

We can now recognize several general patterns of organizational change: one was that of functional specialization within and between organizations. Another involved the centralization of authority and the development of elaborate managerial hierarchies to coordinate and control our new, large-scale institutions. While these organizations did a multitude of specific tasks, they performed two general functions that were of overriding importance in modern America. They used their power to protect themselves, reducing risks by bringing under control the relevant parts of their environment; they also promoted technical and organizational innovation in a systematic fashion.⁷⁷ Where these two functions — the search for security and the drive to innovate — came into conflict, American institutions developed deep fault lines — alternating, for example, between centralized and decentralized structures in an effort to achieve a satisfactory balance between the need for flexibility and the powerful drive for stability.

Organization-building diffused power and tangled lines of authority in America. The changes were of such breadth and complexity that they were to my mind beyond the control of any group or any coherent social class. This was true even though many of the most fundamental transformations were closely interrelated. The technological innovations associated with the modern corporation were, for instance, linked to the development of our modern professions. Both were tied in numerous ways to the emerging administrative state. But functional specialization sliced across class lines. Organization-building generated intraclass conflict and social tension even when the outcome was a consensus within and between the new institutions. Consensus was not achieved by accident. The politics of institutional change involved above all the engineering of consensus and coalitions by organized interests which developed over the years elaborate networks to protect their interests.

⁷⁷ These two themes provide an opportunity for organizational historians to draw upon some recent developments in personality theory, a subdiscipline which has to date produced few concepts that historians have been comfortable using. See Robert Hogan, "A Socioanalytic Theory of Personality," in *Nebraska Symposium on Motivation*, 1982 (Lincoln, 1983), 55–89.

While we have thus found out a great deal about the process and the implications of organizational change, we know all too little about the general sources of these broad alterations in our society. In my own view, the crucial synthetic principle is provided by the fundamental transitions that began to take place in America's economy, geopolitics, and demography around the end of the nineteenth century. Then, a fast-growing "extensive" economy gave way to a slower-growing "intensive" system. Population growth slowed. The nation's frontiers stabilized. These conditions created a need for new institutions that would provide Americans with a greater measure of security and with the kinds of ongoing technical and organizational innovations essential to our economic success over the long run. The result was America's organizational revolution.⁷⁸

In analyzing that transformation organizational historians have gone beyond the sociological theory of bureaucracy which was such an important influence in 1970. The theory highlighted universal patterns of social change. But comparative research to date has emphasized the differences, not the similarities, between America's modern organizations and those in other countries. Historians have also broken with the sociological tradition by bringing the creative individual — the leader of an organization with substantial discretionary power, for instance, or the "translators" who moved across institutional boundaries — back into history.⁷⁹ Historians have as well parted ways with modern social science by infusing the organizational synthesis with the kind of moral judgments that have always characterized the best historical scholarship.⁸⁰ As yet, these moral questions are far from settled; no single, dominant interpretation has emerged. But in the meantime, ideological debate has blended with behavioral analysis and detailed historical research to make the organizational school one of the most interesting, vital fields of historical scholarship in the United States today.

⁷⁸ I have developed these ideas more fully in *America at Middle Age*.

⁷⁹ See *ibid.*; Harold C. Livesay, "Entrepreneurial Persistence Through the Bureaucratic Age," *Business History Review*, 51 (Winter 1977), 415–43; Hugh C. J. Aitken, *Syntony and Spark*, esp. 327–36.

⁸⁰ Gordan Wright, "History as a Moral Science," *American Historical Review*, 81 (February 1976), 1–11.