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Elaborations, Revisions, Dissents:
Alfred D. Chandler, Jr.'s, *The Visible Hand*
, after Twenty Years

Two decades have passed since the publication of *The Visible Hand*, Alfred D. Chandler, Jr.'s, magisterial account of the rise of the modern business enterprise in the United States. Although Chandler's pathbreaking work has been widely hailed as a landmark in business history, only rarely has anyone considered systematically its influence on the large body of historical scholarship on related topics. This essay is intended to help fill this gap. It is divided into two sections. The first section reviews Chandler's argument, touches on the relationship of Chandler's *oeuvre* to his personal background, and locates *The Visible Hand* in the context of American historical writing. The second considers how three groups of historians have responded to Chandler's ideas. These groups consist of *champions* who creatively elaborated on Chandler's intellectual agenda; *critics* who probed anomalies between Chandler's argument and their own research; and *skeptics* who rejected Chandler's analysis outright.

The Visible Hand has, of course, been influential in many fields outside of American history. Chandler has always aspired to reach a

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cross-disciplinary audience and, to an extent that may well be unprecedented among historians of the United States, has entered successfully into a fruitful interdisciplinary dialogue with scholars throughout the social sciences.¹ Political scientists, economists, sociologists, organizational theorists, specialists in business administration, and historians of Europe, Japan, and multinational enterprise have all drawn fruitfully on Chandler's ideas. So, too, have business consultants in the United States and abroad.²

¹ For a brief introduction to Chandler's influence on nonhistorians, see Thomas K. McCraw, "The Intellectual Odyssey of Alfred D. Chandler, Jr.," in McCraw, ed., *The Essential Alfred Chandler: Essays Toward a Historical Theory of Big Business* (Boston, Mass., 1988), esp. 13-14. For various interpretations of Chandler's ideas by sociologists and political scientists, see William G. Roy, *Socializing Capital: The Rise of the Large Industrial Corporation in America* (Princeton, N.J., 1997); Neil Fligstein, *The Transformation of Corporate Control* (Cambridge, Mass., 1990); Langdon Winner, *The Whale and the Reactor: A Search for Limits in an Age of High Technology* (Chicago, Ill., 1986); and James R. Beniger, *The Control Revolution: Technological and Economic Origins of the Information Society* (Cambridge, Mass., 1986). For Chandler's influence among economists, see William Lazonick, *Business Organization and the Myth of the Market Economy* (Cambridge, 1991), and Oliver E. Williamson, *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting* (New York, 1985).

Though Chandler's influence among economists falls outside of the scope of this essay, Oliver Williamson's "transaction cost" interpretation of Chandler's ideas deserves a brief mention, since it has sometimes been mistakenly assumed to reflect Chandler's ideas. According to Williamson, Chandler claimed that the principal cost savings in the modern corporation derived from the ability of managers to economize on transaction and information costs. Chandler, however, always distinguished between the modest cost savings obtainable through reduction of transaction and information costs and the much larger cost savings obtainable through administrative coordination. "The savings resulting from such [administrative] coordination," Chandler observed, "were much greater than those resulting from lower information and transaction costs." To clarify this distinction, Chandler contrasted the cost savings obtainable through the establishment of a federation of otherwise independent business firms with the cost savings obtainable through the establishment of a modern business enterprise. Federations, Chandler wrote, "were often able to bring small reductions in information and transactions costs, but they could not lower costs through increased productivity. They could not provide the *administrative coordination* that became the *central function* of modern business enterprise." Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, Mass., 1977), 7-8 (italics added). See also idem, "Organizational Capabilities and the Economic History of the Industrial Enterprise," *Journal of Economic Perspectives* 6 (Summer 1992): 79-100, and Lazonick, *Business Organization*, 191-261. "By imposing a transaction cost interpretation on Chandler's historical material," Lazonick declared, "Williamson failed to comprehend the nature of the dynamic interaction between organization and technology that is central to [Chandler's] approach," 195.

² Chandler's influence on management thought has been so pervasive that, according to Chandler, a manager once advised a colleague that he could save the \$100,000 fee that McKinsey & Company was charging corporations to oversee their reorganization by reading a copy of Chandler's *Strategy and Structure*, which could be purchased for \$2.95. Chandler, "Comparative Business History," in D. C. Coleman and Peter Mathias, eds., *Enterprise and History* (Cambridge, 1984), 16.

Indeed, Chandler's ideas may well have had more impact outside of the historical profession than within it.³ Given current trends in American historiography, this is not particularly surprising. Yet it is unfortunate, since this relative neglect has served to obscure the distinctiveness of his achievement. Few of the non-historians who have drawn on *The Visible Hand* share Chandler's historiographical preoccupation with issues of periodization, causation, and narrative design. Fewer still have focused on what may well be its single most suggestive contribution to the social sciences: namely, its linkage of an empirically grounded model of the stages of American economic development with a technologically based explanation of organizational innovation. This essay brings these often neglected issues into the foreground. By focusing on Chandler's stage model and his explanatory scheme, it is my hope that we can enrich our understanding of one of the most seminal works of historical scholarship to have been published in the United States during the past fifty years.⁴

Like many great works of history, *The Visible Hand* revolved around a deceptively simple question. How, Chandler asked, could the rise of the modern business enterprise in the United States best be explained? To answer this question, Chandler surveyed the history of every industrial enterprise in the United States in 1917 that had assets of more than \$20 million. Chandler's survey revealed that the largest firms in the American economy clustered in a relatively small number of industries. Certain industries, such as oil refining and steel, were dominated by large firms. Others industries, such as textiles and shoes, were not. To explain this pattern, Chandler looked at these firms' functional characteristics. The largest firms, Chandler observed, could be found in those sectors of the economy in which the "visible hand" of management had supplanted the "invisible hand" of the market in coordinating the production and distribution of goods. The principal reason for this pattern, he concluded, was technological. Industries

³ For Chandler's influence on historical scholarship, see Louis Galambos, "Technology, Political Economy, and Professionalization: Central Themes of the Organizational Synthesis," *Business History Review* 57 (Winter 1983): 471-493, and Alan Brinkley, "Writing the History of Contemporary America: Dilemmas and Challenges," *Daedalus* 113 (Summer 1984): 132-134.

⁴ Chandler is by no means the only economic historian to devise institutional models of economic development. So, too, has Douglass C. North. See, for example, North's *Institutions, Institutional Change, and Economic Performance* (Cambridge, 1990).

dominated by a small number of firms took advantage of technological advances in production and distribution; industries that remained decentralized did not. The persistence of economic competition in decentralized industries owed less to the entrepreneurial failings of their managers than to these industries' technological character. Chandler readily conceded that business leaders might introduce new technologies for a variety of reasons, including a desire to secure market power or social control. In the long term, however, only those firms that deployed new technologies to increase efficiency remained prosperous and powerful.⁵ The main determinants of organizational innovation—Chandler observed, in reviewing the work of a historian who had reached a different conclusion—were to be found neither in the social nor the political setting, but, rather, in the “technological imperatives” of mass production and mass distribution in urban, industrial mass societies such as the United States.⁶

Although Chandler regarded technology as a major determinant of industrial structure, he remained much impressed with the role of the market as a catalyst for change. “The new bureaucratic enterprises did not, *it must be emphasized*,” Chandler explained, “replace the market as the primary force in generating goods and services” (*italics added*). What the modern business enterprise did, rather, was to supplant the market in coordinating the flow of goods and services from the producer to the consumer.⁷ Whether or not consumers made intelligent choices was a subject that Chandler left for others to decide.

⁵ “Although mergers and acquisitions were carried out in a wide variety of industries for a wide variety of reasons,” Chandler explained, “these combinations remained profitable and powerful over the long haul only if they rationalized the facilities acquired or merged, completed the process of integrating production with distribution, and most important of all, created an extensive managerial hierarchy to coordinate, monitor, and allocate resources to the operations units acquired or merged. Even when this course was followed, an enterprise was rarely able to dominate, to become part of an oligopoly, unless it could benefit from lower unit costs achieved through administrative coordination—that is, unless the technology of that industry permitted the volume production of standardized products for national and international markets.” Chandler, “Historical Determinants of Managerial Hierarchies: A Response to Perrow” [1981], in McCraw, ed., *Essential Alfred Chandler*, 460. For a critique see Charles S. Maier, “Accounting for the Achievements of Capitalism: Alfred Chandler’s Business History,” *Journal of Modern History* 65 (Dec. 1993): 771–782. “It is appropriate to ask,” Maier wrote, “as a historian, whether the organizational forces Chandler adduces were in fact the critical ones for successful development, as he claims, or whether other impulses—the state, the work force, entrepreneurial genius, or ‘animal spirits’—might not have been. With respect to this question, I believe, a level of indeterminacy remains despite the vastness of the scholarly enterprise,” 781.

⁶ Alfred D. Chandler, Jr., review of David Noble, *America by Design*, in *Technology and Culture* 19 (July 1978): 572.

⁷ Chandler, *Visible Hand*, 11.

New technologies and burgeoning markets were necessary but not sufficient preconditions for the rise of the modern business enterprise. Even more important was the establishment of an administrative hierarchy to coordinate the flow of resources through the firm. Lacking such a hierarchy, business leaders could never hope to realize the potential “economies of speed” that modern technology made possible.⁸ Organization, in short—even more than technology and markets—was the key to efficiency, longevity, and economic growth. With the publication of *The Visible Hand*, as one early reviewer posited, the organization chart found its historian.⁹

Chandler’s focus on organizational innovation thrust into the spotlight a group of historical agents who, prior to the publication of *The Visible Hand*, had only rarely been treated in much detail. The pivotal figures in the making of the modern business enterprise, Chandler concluded, included not only legendary business leaders such as Andrew Carnegie and John D. Rockefeller, but also the army of forgotten middle managers whom the Carnegies and the Rockefellers relied on to administer their firms. Though middle managers had been often overlooked in older accounts, Chandler credited them with a more central role in the operation of the American economy than the oft-discussed inventors, empire builders, and financiers.¹⁰

Taken together, technologically based organizational innovations hastened a “managerial revolution” that transformed the American economy in the decades between 1840 and 1920. At the core of this revolution were the technologically sophisticated, capital-intensive firms that have come to be known as big business. In addition to fueling economic growth, these firms pioneered industrial research and development, equipped the American military during the Second World War and the subsequent cold war era, and built the hardware for the atomic energy and space programs.¹¹ Only occasionally did Chandler pause in *The Visible Hand* to spell out the broader social and cultural implications of the managerial revolution, possibly because he

⁸ Chandler’s preoccupation with the administrative coordination of *tangible* resources is worth underscoring, given the significance that certain economic historians have assigned to *informational* economies as the key element in the functioning of the modern business enterprise. Whatever the merits of this position, it is quite distinct from, and incompatible with, Chandler’s position in *The Visible Hand*. Peter Temin, “Introduction,” in Temin, ed., *Inside the Black Box: Historical Perspectives on the Use of Information* (Chicago, Ill., 1991), 2.

⁹ H. V. Nelles, review of *The Visible Hand*, *Labour/Le Travailleur* 4 (Winter 1979): 272.

¹⁰ Chandler, *Visible Hand*, 491.

¹¹ *Ibid.*, 483.

considered them self-evident. There can be little question, however, that he understood this revolution to be a major event in world history, with far-reaching implications for virtually every phase of American life. Not even the urban revolution of the eleventh to the thirteenth centuries that created the first modern market economies, he observed matter-of-factly, marked a more radical break with the past.¹²

Chandler grounded his account of the managerial revolution in a three-stage model of economic development. In the first stage (1790–1840), the market was the primary mechanism for the production and distribution of goods and services and the modern business enterprise remained unknown. In the second stage (1840–1880), the modern business enterprise emerged to coordinate the epochal changes in transportation and communication set in motion by the steam railroad, the electric telegraph, and the widespread utilization of anthracite coal. In the third stage (1880–1920), the completion of the railroad and telegraph network hastened the emergence of the modern industrial enterprise.

By the First World War, the managerial revolution was complete. During the 1920s, however, still another round of organizational innovation began, spurred by the planned administrative decentralization at Du Pont and General Motors. Chandler had previously analyzed these organizational innovations in *Strategy and Structure*, a landmark study published in 1962 of the adoption of the multidivisional form of business organization at Du Pont, General Motors, Standard Oil, and Sears.¹³ While some readers found Chandler's decision to downplay this organizational innovation in *The Visible Hand* hard to explain, it was consistent with his narrative design. Had Chandler featured multidivisionalism in *The Visible Hand*, he would have risked diverting the reader's attention from the even more fundamental organizational innovations in American business he believed to have taken place in the period between the 1840s and the 1910s.¹⁴

The first stage of Chandler's model of economic development was an economic *ancien régime*. In the half century between 1790 and 1840, Chandler wrote, no new economic institutions were established

¹² Alfred D. Chandler, Jr., "The Emergence of Managerial Capitalism," *Business History Review* 58 (Winter 1984): 474.

¹³ Alfred D. Chandler, Jr., *Strategy and Structure: Chapters in the History of the American Industrial Enterprise* (Cambridge, Mass., 1962).

¹⁴ An analogous logic helps explain why Chandler devoted so little attention in *The Visible Hand* to the concept of the industrial revolution. Had he given this concept more attention, it would have risked diverting his readers' attention from the managerial revolution that was his primary concern.

and no revolution in business methods occurred.¹⁵ Chandler readily conceded that the late-eighteenth-century British industrial revolution spurred demand for American agricultural staples such as cotton and wheat, and that the establishment of a strengthened central government under the Constitution of 1787 hastened the creation of a national economy. He denied, however, that these events had fundamental consequences for the organizational structure of the firm. The central theme in American business history in the early republic, Chandler wrote, was the increasing functional specialization made possible by market expansion.¹⁶ Prior to the coming of the railroad and telegraph, business activity continued to be dominated by the same single-unit enterprises that had flourished since the Middle Ages. Transportation and communication were simply too slow, irregular, and uncertain to make possible the high-volume throughput that was a necessary precondition for the emergence of the modern business enterprise.¹⁷ By the end of the first stage of Chandler's model in 1840, functional specialization had advanced so far that American society had become a "believable illustration" of the "untrammelled market economy" that political economist Adam Smith had so eloquently described in the *Wealth of Nations*.¹⁸

During the second stage of Chandler's model (1840–1880), the balance between the Smithian market and the Chandlerian firm was decisively transformed by a triad of epochal technological advances: the railroad, the telegraph, and the widespread utilization of anthracite coal. Though this stage coincided with the American Civil War, Chandler devoted little attention to the possible implications of the war upon economic development. Far more consequential was the expansion of the market hastened by the completion of the national transportation and communication network. There was no theoretical reason, Chandler declared, why these technological advances *necessarily* had to precede the establishment of the modern multiunit business enterprise.¹⁹ In Europe, for example, market expansion rather than technological advance had served as a catalyst for organizational innovation. In the United States, however, the market in the pre-railroad era was simply too geographically dispersed to provide business

¹⁵ Chandler, *Visible Hand*, 16, 49.

¹⁶ *Ibid.*, 48.

¹⁷ *Ibid.*, 84.

¹⁸ *Ibid.*, 28.

¹⁹ *Ibid.*, 49.

leaders with the necessary impetus to expand the scale of their operations beyond the single-unit firm.

The third, final, and most transformative stage of Chandler's model of American economic development began around 1880, with the integration of mass production and mass distribution in the modern industrial enterprise. Firms such as American Tobacco, Armour, McCormick Reaper, and Singer Sewing Machine integrated vertically, hastening organizational innovation in middle management. Other firms, including Standard Oil, General Electric, United States Rubber, and Du Pont integrated horizontally, encouraging organizational innovation in top management. Many firms went through a similar metamorphosis, which began with horizontal combination and legal centralization and ended with vertical integration and administrative coordination. The consolidation process culminated with the great merger movement of the late 1890s and early 1900s that led to the creation of industrial giants such as U.S. Steel. Government efforts to slow the emergence of big business—such as the passage of antitrust legislation—worked, paradoxically, to hasten its rise. From the perspective of a business leader in 1840, the sudden emergence during the following decades of these giant firms was nothing short of astonishing. And with good reason. From the business leader's standpoint, the American economy in 1840 had more in common with the world of a fifteenth-century Italian merchant than it would with the world that the business leader's grandchildren took for granted in 1917.²⁰ The impetus for all of this organizational activity, Chandler contended, was "easy to explain": it was the "rational economic response" to the completion of the railroad and telegraph networks and the perfection of their operational techniques.²¹

Chandler's account of the managerial revolution was resolutely unsentimental. Prior to 1940, he freely conceded, these changes almost certainly had been opposed by a majority of the American people. Furthermore, he well knew that, by investing with great power a class of economic agents who were accountable neither to investors nor the electorate, this revolution posed a major challenge for American democratic ideals. Still, he regarded its triumph as largely inevitable, even in countries where opposition to it had been even more widespread than in the United States.²² The rise of the modern

²⁰ Ibid., 455.

²¹ Chandler, "Comparative Business History," 17.

²² Chandler, *Visible Hand*, 497–500.

business enterprise, Chandler explained, was an organizational response to fundamental technological advances in mass production and mass distribution made possible by the utilization of new sources of energy such as electricity and the increasing application to industrial technology of scientific knowledge grounded in recent advances in chemistry and physics. As such, it was little affected by public policy, capital markets, or entrepreneurial talents.²³ The modern business enterprise, in short, was the product not only of a congeries of contingent events specific to the United States, but also, and more fundamentally, of a basic transformation in the relationship between humanity and the environment. In this way, as one early reviewer perceptively observed, Chandler's explanatory scheme was grounded in a materialist, "technologically determinist" analysis of institutional change.²⁴

Historians have sometimes expressed surprise that Chandler focused exclusively in *The Visible Hand* on changes that occurred within the firm. This surprise is somewhat puzzling, since Chandler was quite explicit about the parameters of his study. The purpose of *The Visible Hand*, Chandler explained in his introduction, was to write a history of the internal dynamics of the modern business enterprise, and to deal with broad political, demographic, and social developments only as they impinged directly on the ways in which the enterprise carried out the processes of production and distribution.²⁵ In keeping with this deliberately narrow focus, Chandler defined business history as a "small subfield of economic history" and stressed that his work had left unexplored a whole range of contextualist issues that other historians would do well to consider.²⁶

In the years since the publication of *The Visible Hand*, Chandler has remained true to this internalist agenda. The theme of *Scale and Scope* (1990), as he explained in the introduction to this most recent major work, was the "internal history" of a central institution in managerial capitalism, rather than the broader impact of the managerial

²³ Ibid., 376. See also Chandler, "Government Versus Business: An American Phenomenon" [1979], in McCraw, ed., *Essential Alfred Chandler*, 425–431.

²⁴ Nelles, review of *Visible Hand*, 272.

²⁵ Chandler, *Visible Hand*, 6.

²⁶ Chandler, "Comparative Business History," 3.

enterprise on the polity or the society.²⁷ In one respect, Chandler narrowed his topic still further, since he now defined the central institution in the American economy to be not the business enterprise—the subject of *The Visible Hand*—but, rather, the industrial enterprise, and, more specifically, those enterprises that specialized in the manufacture of technologically sophisticated goods such as chemicals, electrical machinery, and automobiles.²⁸ For Chandler, the history of modern American enterprise thus became more or less synonymous with the history of the leading firms in the most capital-intensive sectors of the economy. Rarely before had any historian devoted so much attention to this particular kind of economic activity or assumed it to be quite so essential to the making of the modern United States.

Chandler's characterization of American business in *Scale and Scope* built on arguments he advanced in *The Visible Hand*. Though Chandler broadened his canvas to embrace Great Britain and Germany as well as the United States, and expanded his chronology to include the period after 1917, he remained highly impressed with the emergence in the United States during the final decades of the nineteenth century of the large-scale, capital intensive, technologically advanced firm. The principal shift of perspective between these two works can be found in the greater significance in the latter that he accorded creative entrepreneurship, cultural tradition, and government regulation in shaping the organizational dynamics of the modern industrial enterprise. The key to business success, Chandler now claimed, was not merely the administrative coordination of the flow of resources through the firm by a team of middle managers—as, for example, it had been in *The Visible Hand*. Rather, it was the “three-pronged” investment by creative entrepreneurs in production, distribution, and management. The creation of these organizational capabilities, Chandler posited, was the “central dynamic” of modern industrial capitalism.²⁹

²⁷ Alfred D. Chandler, Jr., *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge, Mass., 1990), 13. In the second, corrected edition, Chandler modified his claim slightly by substituting the indefinite for the definite article. Managerial enterprise, he now contended, was “a” central institution in managerial capitalism, rather than “the” central institution, as he had formerly contended. “The phrase taught me a good lesson”—Chandler observed, in explaining his decision, which he made *prior* to learning of Hughes's critique: “Don't use ‘the’ when you can use ‘a.’” Alfred D. Chandler, Jr., to Richard R. John, 31 Oct. 1996, in author's possession.

²⁸ Chandler, *Scale and Scope*, 14.

²⁹ *Ibid.*, 596.

It has long been recognized that Chandler's preoccupation with the history of large-scale enterprise in the United States owed something to his personal background. Chandler's patrician upbringing, his first-hand familiarity with prominent business leaders, and his service during the Second World War as a naval officer responsible for analyzing photographs of U.S. bomber runs over Germany and landing sites for the proposed American invasion of Japan, combined in complex ways to fix his attention on the role of organizational innovation in economic development.³⁰ So, too, did the years Chandler spent in the 1950s editing the wartime papers of Dwight D. Eisenhower.³¹ Also influential was Chandler's frequent interaction during the 1970s and 1980s with specialists in organizational innovation at the Harvard Business School, where he taught during the years he completed *The Visible Hand* and *Scale and Scope*. Indeed, Chandler himself has repeatedly contended that he could not have completed either work in any other setting.

Yet the single most important cultural influence upon Chandler's general outlook was almost certainly the epochal reorientation in intellectual assumptions about the relationship of the United States to the rest of the world that was brought about by the Second World War. In 1941, one year after Chandler graduated from college and joined the navy, *Time* magazine publisher Henry Luce predicted the dawning of an “American Century,” during which the United States would hasten the global spread of capitalism and democracy. During the next five years, Chandler participated in the greatest military mobilization in the history of the world. The experience heightened Chandler's respect for the role of American business—and, in particular, big business—in creating the unprecedented arsenal that the allied military forces relied on to triumph over Germany and Japan and to save Great Britain from possible defeat. “What Rome was to the ancient world,” predicted the respected journalist Walter Lippmann at war's end in 1945, “and what Great Britain has been to the modern world, America is to be to the world of tomorrow.”³² Chandler spent his formative years in an environment shaped by the American-centric world view that

³⁰ McCraw, “Intellectual Odyssey,” 4–5.

³¹ Chandler, with Stephen E. Ambrose, ed., *The Papers of Dwight David Eisenhower: The War Years*, vols. 1–5 (Baltimore, Md., 1970).

³² Cited in James T. Patterson, *Grand Expectations: The United States, 1945–1974* (New York, 1996), 7–8.

Lippmann described, and began his graduate education at precisely the moment when the United States was poised to take its place as a key player on the world stage.

Such a proud and cosmopolitan perspective, shaped by the promise of Luce's dawning "American Century," has informed most of Chandler's major writings and was particularly conspicuous in *Scale and Scope*. Chandler's *oeuvre*, one historian has recently written, furnished an "imposing historiographical testimony to a civilization convinced that it created and controlled unprecedented economic progress."³³ Not even the economic reverses that American business has confronted since 1970 have dimmed Chandler's conviction that the United States was the principal "seedbed" of the managerial revolution and a major source of organizational innovation for business leaders in Great Britain, Europe, Japan, and other nations of the industrial world.³⁴ While it would be an oversimplification to dismiss Chandler as an apologist for big business, neither *The Visible Hand* nor *Scale and Scope* was value-neutral in its import. By tracing American economic development to technological advances rooted in the natural world, *The Visible Hand* helped to legitimize big business as a feature of American life. *Scale and Scope*, similarly, can be read as a cautionary tale of how Great Britain—the first industrial nation—was confronted during the Second World War with a major challenge to its political survival because its leaders failed to invest adequately in its industrial base.

Chandler's personal background was but one of the factors that helped shape the writing of *The Visible Hand*. No less important was the prevailing historiographical tradition that he reacted against. When Chandler began writing business history in the 1950s, the principal debate in American business history concerned the moral evaluation of American business leaders. Were they malevolent "robber barons," as Matthew Josephson contended, or praiseworthy "industrial statesman," as Allan Nevins claimed? Chandler shared Josephson's and Nevins's commitment to business biography. In addition to writing

³³ Maier, "Accounting for the Achievements of Capitalism," 782.

³⁴ Chandler did not, however, claim that organizational innovations invariably originated in the United States. For example, in *Scale and Scope* he credited managers at Siemens, a German firm, with having introduced the multidivisional form prior to their counterparts at DuPont and General Motors. Chandler, *Scale and Scope*, 469–471, 544.

biographical studies of the business analyst Henry Varnum Poor and the industrialist Pierre Du Pont, he researched the historical sections of Alfred P. Sloan's *My Years with General Motors*.³⁵ Yet he had scant patience with the robber baron-industrial statesman dichotomy. The business enterprise loomed too large in the American past, he believed, for its history to be reduced to a morality play. "What could be less likely to produce useful generalizations," he later reminisced, "than a debate over vaguely defined moral issues based on unexamined ideological assumptions and presuppositions?"³⁶

Chandler was hardly the first business historian to devise a stage model of American economic development. His model, however, differed in major respects from those of earlier historians. Unlike N. S. B. Gras—who, as the first individual ever to hold a chair in business history, did much to establish the boundaries of the field—Chandler traced the beginnings of big business to the railroad, rather than to the sedentary merchants who, in the pre-railroad era, dominated overseas trade.³⁷ To buttress his point, Chandler rejected George Rogers Taylor's thesis that the transportation revolution began with the canal boom in the years immediately following the War of 1812, several decades prior to the coming of the steam railroad. In addition, he challenged Robert G. Albion's claim that the communication revolution began with various improvements in the late eighteenth century, more than half a century before the commercialization of the electric telegraph.³⁸

Equally innovative was Chandler's treatment of the American industrial revolution. Before the publication of *The Visible Hand*, most

³⁵ Chandler, *Henry Varnum Poor: Business Editor, Analyst, and Reformer* (Cambridge, Mass., 1956); idem, with Stephen Salsbury, *Pierre S. du Pont and the Making of the Modern Corporation* (New York, 1971); Alfred P. Sloan, *My Years with General Motors* (Garden City, N.J., 1964). On Chandler's involvement with Sloan's memoir, see McCraw, ed., *Essential Alfred Chandler*, 156–157.

³⁶ Chandler, "Comparative Business History," 7. See also Glenn Porter, "Technology and Business in the American Economy," in Joseph R. Frese and Jacob Judd, *An Emerging Independent American Economy, 1815–1875* (Tarrytown, N.J., 1980), 1–23.

³⁷ N. S. B. Gras and Henrietta Larson, *Casebook in American Business History* (New York, 1939), 6.

³⁸ George Rogers Taylor, *The Transportation Revolution, 1815–1860* (New York, 1951); Robert G. Albion, "The Communication Revolution," *American Historical Review* 37 (July 1932): 718–720. See also Harry N. Scheiber and Stephen Salsbury, "Reflections of George Rogers Taylor's *The Transportation Revolution, 1815–1860: A Twenty-Five Year Retrospect*," *Business History Review* 51 (Spring 1979): 79–89; Harry N. Scheiber, "The Transportation Revolution and American Law: Constitutionalism and Public Policy," *Transportation and the Early Nation* (Indianapolis, Ind., 1982), 1–29; and Richard R. John, "American Historians and the Concept of the Communications Revolution," in *Information Acumen: The Understanding and Use of Knowledge in Modern Business*, ed. Lisa Bud-Frierman (London, 1994), 98–110.

business historians had traced the origins of the industrial revolution in the United States to the establishment in New England during the 1800s and 1810s of large-scale, water-powered textile mills filled with machinery made mostly of wood and leather. These historians, in turn, were reacting against the social historian Charles Beard, who in the 1920s had linked the triumph of industrialism with the Union victory in the Civil War. Chandler's account was quite different. The beginnings of the industrial revolution in the United States, he declared—in an article that appeared in 1972, shortly before the publication of *The Visible Hand*—could be found neither in the 1800s and the 1810s, nor in the Civil War. Rather, its origins dated to the 1830s and 1840s, following the opening of the anthracite coal fields of eastern Pennsylvania. Anthracite coal was the first fossil fuel to be widely used in the United States and, Chandler contended, quickly and irrevocably replaced water, wood, and charcoal as a major power source. In addition, it greatly facilitated the manufacture of iron, metal machinery, and metal products of all kinds, since the mass production of these goods depended on easy access to a reliable, cheap, and high-intensity energy source. Since alternative sources of coal soon became available, Chandler doubted that the opening of the Pennsylvania fields was, like the coming of the railroad and the telegraph, a necessary precondition for American economic development. Yet he regarded it as an important contingent event that had a major impact on American economic history.³⁹

Though Chandler had, in his 1972 article, highlighted the importance of the American industrial revolution, in *The Visible Hand* he accorded the concept little role in either his stage model or his explanatory scheme. From Chandler's standpoint, coal, iron, and steam power were necessary but not sufficient preconditions for the managerial revolution that was his major concern. In Great Britain, after all, an industrial revolution had taken place, beginning in the late eighteenth century, without hastening a managerial revolution that was in any way comparable to the managerial revolution that occurred in the mid-nineteenth-century United States. Interestingly, Chandler used the industrial revolution concept sparingly in *The Visible Hand*; the phrase itself appeared only once in the index, in reference to developments in eighteenth-century Great Britain.⁴⁰ By deploying the con-

³⁹ Chandler, "Anthracite Coal and the Beginnings of the Industrial Revolution in the United States" [1972], in McCraw, ed., *Essential Alfred Chandler*, 307–342.

⁴⁰ Chandler, *Visible Hand*, 19.

cept in this carefully delimited way, Chandler minimized the possibility that readers might exaggerate the significance of either the early-nineteenth-century New England textile industry or the transportation and communications revolutions that antedated the railroad and telegraph. In addition, this decision enabled him to hint, if only implicitly, at a theme that he would later develop in *Scale and Scope*—namely, that in the United States, but not Great Britain, the managerial revolution followed the industrial revolution with little pause or delay.

Just as Chandler's analysis of industrialism broke with convention, so, too, did his account of the late nineteenth-century merger movement. Once again, Chandler reinterpreted a familiar sequence of events in an original way. Most previous scholars had assumed the merger movement to be economically inefficient and ethically suspect. Chandler, in contrast, treated it as an appropriate response to the organizational opportunities made possible by market expansion and technological advance.

Chandler's conviction that technological advance and organizational innovation could go together set apart his approach to economic development from that of political economists such as Thorstein Veblen. According to Veblen, business leaders intent on maximizing profits routinely stifled technological advances pioneered by engineers. Chandler, in contrast, highlighted the interdependence of science, technology, and business. In Chandler's account, engineers like Alfred P. Sloan found corporate America congenial, while business leaders like Theodore N. Vail made industrial research a linchpin of business strategy. Chandler's work, as economic historian Paul Uselding observed, laid to rest Veblen's idea that the cultures of science and business were necessarily antithetical as well as the related idea that business objectives must invariably be opposed to the attainment of the material goals of society.⁴¹

Chandler's outlook owed a good deal to his well-known impatience with hypothetical alternatives, or what economic historians have termed counterfactuals. Throughout his career, he has been more interested in what did happen than in what might have taken place had circumstances somehow been different. He had great respect, as one early reviewer perceptively noted, for "what we may call the social reality principle."⁴² That some alternative scenario might have been

⁴¹ Paul Uselding, "Business History and the History of Technology," *Business History Review* 54 (Winter 1980): 445.

⁴² Robert D. Cuff, "From Market to Manager" [review of *The Visible Hand*], *Canadian Review of American Studies* 10 (Spring 1979): 53.

préférable was, for Chandler, as it most emphatically was not for Veblen, an idle question.

Among the most innovative features of *The Visible Hand* was Chandler's rejection of the well-established notion that American economic development was best measured against a British norm. Historians have traditionally taken it for granted that the industrial revolution began in Great Britain and was only later imported into the United States. "There was one leader, Britain," declared David S. Landes in his classic study of the technological change of Western Europe, "and all the rest were pursuers."⁴³ Chandler never challenged this convention outright. Instead, he subtly subverted it by highlighting the even greater significance of the managerial revolution that began around 1840 in the United States, and which, in Europe, Landes termed the "second wind." In the managerial realm, the United States, rather than Great Britain, led the way. The United States, Chandler explained in *Scale and Scope*—expanding on a metaphor that he had introduced in *The Visible Hand*—was the "seedbed" of the organizational innovations, that, by the twentieth century, had spread from the United States to Germany, Great Britain, and the rest of the industrialized world.⁴⁴ From such a standpoint, the problem to be explained was no longer the time-lag in the transfer of industrial technology from Great Britain to the United States. Rather, it was the reluctance of British business leaders to adopt the organizational innovations that had already gained wide acceptance in the United States.⁴⁵

⁴³ David S. Landes, *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present* (Cambridge, 1969), 538.

⁴⁴ Chandler, *Visible Hand*, 498.

⁴⁵ By considering British economic development from the standpoint of the United States, Chandler provided a new perspective on the well known reluctance of British universities to train engineers and other technical professionals. This reluctance, Chandler posited, was institutional rather than cultural. That is, it sprang from the failure of British business leaders to call forth the engineering talent necessary for the proper administration of the modern business enterprise, rather than from the supposed anti-technological bent of British elites. Had such a demand existed, Chandler predicted, even upper-class youths would have flocked to technical fields. Alfred D. Chandler, Jr., "The Growth of the Transnational Industrial Firm in the United States and the United Kingdom: A Comparative Analysis," *Economic History Review* 33 (Aug. 1980): 409–410. On this theme, see also David C. Mowery, "Firm Structure, Government Policy, and the Organization of Industrial Research: Great Britain and the United States, 1900–1950," *Business History Review* 58 (Winter 1984): 504–531.

The influence of *The Visible Hand* on business and economic historians would be hard to exaggerate. Few areas of historical inquiry have been so decisively shaped by the work of a single scholar. Among business historians, reported a popular journalist in 1990, "B.C." has become synonymous with "before Chandler."⁴⁶ During the past few years, reflected business historian and former Chandler student Glenn Porter in 1992, Chandler's writings virtually became business history. "No other historian," Porter added, "has ever exercised such a strong influence" over the field: "Virtually every work now written on the history of modern, large-scale enterprise must begin by placing itself within the Chandlerian analytical framework."⁴⁷ Chandler's ideas shaped a leading business history casebook (which Chandler co-authored), two popular business history texts, a business history reader, and several general accounts of the role of business in American life.⁴⁸ Chandler's ideas have also been frequently discussed by economic historians, a major tribute to their explanatory power, since his comparative case study approach to economic development has for the past few decades been out of favor among the leading practitioners in this field.⁴⁹ Even business and economic historians who challenged Chandler's approach found themselves impressed by the influence of his ideas. *The Visible Hand*, declared the non-Chandlerian economic historian Gavin Wright in 1986, has been perhaps the "most influential

⁴⁶ "Corporate Giants: The Origin of the Species," *Business Week* (9 July 1990): 12.

⁴⁷ Glenn Porter, *The Rise of Big Business, 1860–1920* (Arlington Heights, Ill., 1992), 128.

⁴⁸ Alfred D. Chandler, Jr., Thomas K. McCraw, and Richard S. Tedlow, *Management Past and Present* (Cincinnati, Ohio, 1996); Mansel G. Blackford and K. Austin Kerr, *Business Enterprise in American History* (Boston, Mass., 1990); C. Joseph Pusateri, *A History of American Business* (Arlington Heights, Ill., 1984); Richard S. Tedlow and Richard R. John, eds., *Managing Big Business: Essays from the Business History Review* (Boston, Mass., 1986); Maury Klein, *The Flowering of the Third America: The Making of an Organizational Society, 1850–1920* (Chicago, Ill., 1993); Stuart Bruchey, *Enterprise: The Dynamic Economy of a Free People* (Cambridge, Mass., 1990); Robert Sobel and David B. Sicilia, *The Entrepreneurs: An American Adventure* (Boston, Mass., 1986); James Oliver Robertson, *America's Business* (New York, 1985); Harold A. Livesay, *American Made: Men Who Shaped the American Economy* (Boston, Mass., 1979); and Porter, *Rise of Big Business*.

⁴⁹ Between 1978 and 1994, *The Visible Hand* was cited in the *Journal of Economic History* 42 times. This exceeded the 28 cites for Robert W. Fogel and Stanley L. Engerman's *Time on the Cross* (1974), a much discussed econometric study of slavery that had been written by two of the leaders of the new economic history. During the same period, Thomas C. Cochran's *Frontiers of Change* (1981), a major study of early industrialism, was cited 3 times, while Galambos's landmark 1970 *Business History Review* essay on the organizational synthesis was not cited at all. These totals are derived from the CD-ROM version of the Arts and Humanities Citation Index.

book in American business and economic history" to have been published during the past decade.⁵⁰ "Chandler's vision"—conceded business historian and Chandler critic John N. Ingham in 1991—"has captivated an entire generation of historians."⁵¹ Had Chandler never lived, business history would probably have eventually moved beyond the robber baron-industrial statesman debate. But scholars today would almost certainly know far less about the strategy, structure, and organizational dynamics of the modern business enterprise.

Perhaps the best barometer of the magnitude of Chandler's achievement has been the extent to which the tag phrase "Chandlerian" has joined Marxian, Weberian, and Schumpeterian as a convenient shorthand for an entire tradition of scholarship. Significantly, the shorthand has been adopted not only by Chandler's champions, but also by his critics, a sure sign that Chandler's ideas have proved hard to dismiss. Another measure of Chandler's influence is the propensity of book reviewers to treat the Chandlerian framework as the template against which every new work in business history must be judged. One book reviewer in the *Business History Review* made this point particularly well. The book in question, the reviewer noted, with evident surprise, made no reference to Alfred D. Chandler, Jr., or to other modern historians of business.⁵² For the past dozen or so years, few criticisms of a new monograph in business history have seemed less controversial, or more to-the-point.

The Visible Hand influenced business history in a number of ways. More than any other single work, it dispelled the nagging fear that the intensive, time-consuming, and often tedious study of internally generated business records—the *raison d'être* for business history as a specialized area of inquiry ever since the establishment of the first professorship in the field in 1927—would never yield anything more than a steady stream of fact-studded monographs on isolated and seemingly unrelated topics.⁵³ With the publication of *The Visible Hand*, this suspicion was laid to rest. Chandler always stressed the interdependence of theory and empiricism; in *The Visible Hand*, he showed how they could be successfully combined. Indeed, one suspects that much of the appeal of Chandler's approach for business historians can be found

⁵⁰ Gavin Wright, "Regulation in America: The Human Touch," *Reviews in American History* 14 (June 1986): 166.

⁵¹ John N. Ingham, *Making Iron and Steel: Independent Mills in Pittsburgh, 1820-1920* (Columbus, Ohio, 1991), 3.

⁵² *Business History Review* 64 (Autumn 1990): 531.

⁵³ On the emergence of business history as a distinct field, see Louis Galambos, *American Business History* (Washington, D.C., 1967).

in its happy marriage of broad-brush generalization and pointillist detail. Though *The Visible Hand* lacked the descriptive richness of industrial community studies such as Anthony F. C. Wallace's *Rockdale*, it was firmly rooted in the existing scholarship in the field, attentive to chronology, individuals, and events, and committed to setting the record straight—the basic responsibility, Chandler declared in his introduction, of the historian's craft.⁵⁴ Brimming with citations to virtually every major work in American business history, it did more to legitimize business history as a scholarly field than a score of even the best-crafted company histories.

The Visible Hand has been particularly influential in shaping the business and economic historians' intellectual agenda. Focused as it was on the largest enterprises in the most capital-intensive sectors of the economy, it encouraged business and economic historians to treat these firms and industries as their primary subject. In the process, it pushed to the margins of inquiry a host of other topics, including small business, government-business relations, and the role of business in American life.

Following the publication of *The Visible Hand*, non-Chandlerian approaches to the history of American business suddenly came to seem out-of-date. It pointedly revealed, as administrative historian Robert D. Cuff explained in 1979, the intellectual inadequacy of the "culture-personality axis" that many business historians had formerly relied on to make sense of the past.⁵⁵ This was true even though *The Visible Hand* focused on the organizational evolution of the modern business enterprise, which, Chandler freely conceded, was a decidedly limited theme. Also eclipsed, at least temporarily, was the more capacious, "geo-cultural" approach to business history favored by Thomas C. Cochran, a business historian whose contribution to the field was matched only by Chandler's. The contrast between Cochran and Chandler was marked. For Cochran, culture and geography—or, what one today might call the environment—were the essential elements in any adequate account of the role of business in American life. For Chandler, in contrast, culture and geography were best treated as background factors, or "givens," that business historians could safely leave for others to explore.⁵⁶ With the publication of *The Visible Hand*, Chandler's de-emphasis of culture and geography came close to

⁵⁴ Chandler, *Visible Hand*, 6.

⁵⁵ Cuff, "From Market to Manager," 52.

⁵⁶ Alfred D. Chandler, Jr., "The Beginnings of 'Big Business' in American Industry" [1959], in McCraw, ed., *Essential Alfred Chandler*, 47.

becoming an intellectual orthodoxy. Though Chandler's approach has not gone unchallenged, it has shaped the outlook of many business and economic historians from 1977 to the present.

Equally influential has been Chandler's commitment to social science methods. *The Visible Hand* was the product of a tradition of historical writing that aspired to frame plausible, middle-level generalizations about large-scale processes such as organizational innovation. Characteristically, *The Visible Hand* opened not with a dramatic set piece, but, rather, with a series of general propositions. By framing his narrative in this way, Chandler provided a veritable how-to guide for historians interested in emulating his example.

Particularly important in shaping Chandler's method was his exposure in graduate school to Talcott Parsons, a sociologist who had developed a structuralist-functionalist approach to the study of institutional change. Parsons, Chandler reminisced, exerted a far greater influence on his intellectual assumptions than all the historians under whom he studied in graduate school. In particular, Chandler credited Parsons with instilling in him the notion that carefully framed comparisons could provide social scientists such as himself with a technique that was roughly analogous to the controlled experiment in the physical and natural sciences.⁵⁷ Comparative institutional history, Chandler explained, in a programmatic essay that he published six years before *The Visible Hand*, provided business historians with a major intellectual heritage that opened a dialogue with a galaxy of renowned, institutionally minded social theorists that included Parsons, Joseph Schumpeter, and Max Weber.⁵⁸ It was a heritage and a dialogue that *The Visible Hand* has done much to promote.

The cornerstone of Chandler's method was his decision to apply Parsons' structuralist-functionalist method to the study of business behavior. This decision had the disadvantage of depriving Chandler's account of many of the features that have traditionally made historical writing compelling. Institutional business history, Chandler freely conceded, might well be less lively, less dramatic, and less personal than more traditional historical narratives of business leaders and enterprises. But it had the compensating advantage of enabling business histo-

⁵⁷ Chandler, "Comparative Business History," 11. For a related discussion—which chronicles, and provides a notably sympathetic account of, historians' longstanding preoccupation with models drawn from natural science—see Joyce Appleby, Lynn Hunt, and Margaret Jacob, *Telling the Truth about History* (New York, 1994).

⁵⁸ Alfred D. Chandler, Jr., "Business History as Institutional History" [1971], in McCraw, ed., *Essential Alfred Chandler*, 305.

rians to make unique contributions that could broaden knowledge and understanding of the "industrial, urban, technologically driven, modern world."⁵⁹ By operating at such a relatively high level of abstraction, Chandler found it possible to frame credible generalizations that transcended the limitations of time and space, and, in so doing, to give his analysis a good deal of explanatory power.

Chandler's method culminated in his creation of a sweeping narrative of American economic development. Seven years prior to the publication of *The Visible Hand*, Chandler's collaborator Louis Galambos drew attention in an influential review essay to the emerging "organizational synthesis" of American history.⁶⁰ Such a synthesis, Galambos posited, revolved around the organizational evolution of large-scale institutions, rather than the ebb and flow of liberal reform. Twentieth-century America's "rendezvous," Galambos provocatively declared, had been "not with the liberal's good society. It was with bureaucracy."⁶¹ Galambos had worked closely with Chandler and at the time was broadly sympathetic to Chandler's general approach. It was, thus, hardly surprising that Galambos highlighted the centrality to the organizational synthesis of the rise of the modern business enterprise. The emergence of this new institution, Galambos declared—and, more broadly, of giant, complex organizations—was the "single most important phenomenon in modern American history."⁶² This phenomenon had preoccupied Chandler since 1959, when he published a landmark essay on "The Beginnings of 'Big Business' in American Industry" in *Business History Review*. In *The Visible Hand* he provided a fully documented, narrative account of this epic theme.

Just as Chandler deserves to be remembered as a founder of the organizational school of American historians, so *The Visible Hand* should be recognized as one of its crowning achievements. Prior to 1977, the organizational interpretation of American history lacked a story line; with the publication of *The Visible Hand*, the organizational interpretation acquired a coherence lacking in American labor history, the history of American technology, or several other related fields. Its most important historiographical contribution—observed Alan Brinkley, in a judicious review essay on recent American historical writ-

⁵⁹ Chandler, "Comparative Business History," 26.

⁶⁰ Louis Galambos, "The Emerging Organizational Synthesis in American History," *Business History Review* 44 (Autumn 1970): 279–290.

⁶¹ Galambos, "Technology, Political Economy, and Professionalization," 471.

⁶² Louis Galambos, *The Public Image of Big Business in America, 1880–1940: A Quantitative Study in Social Change* (Baltimore, Md., 1975), 3.

ing—was its careful delineation of the “essential differences” between the twentieth century and the centuries that had gone before.⁶³ During a period when American historians were routinely derided for their inability to produce a synthetic narrative account of major transitions in the American past, this was no small achievement. The great challenge of modern historical scholarship, declared Bernard Bailyn in 1982, was the fashioning of “essential narratives,” grounded in the relevant specialized literature, dominated by a sense of movement through time, and organized around critical transitions from the past toward the present. Judged by this criterion, *The Visible Hand* met Bailyn’s challenge to a greater extent than all but a handful of works.⁶⁴ With its publication, organizational historians acquired for the first time a compelling intellectual agenda, or what the French would call a *problématique*.

While the influence of *The Visible Hand* among business, economic, and organizational historians is indisputable, its importance for historians of the United States who are not specialists in these fields is harder to gauge. Although *The Visible Hand* remains a staple of graduate student reading lists, and has served as a crib for countless lectures in undergraduate U.S. history surveys, its broader influence, even twenty years after its publication, can by no means be taken for granted. It may well be, as Galambos declared in 1985, that Chandler helped make business history a net exporter of ideas to the rest of the profession.⁶⁵ And it is certainly conceivable, as historian of technology Thomas P. Hughes recently predicted, that, a century from now, the phenomenon Chandler described will be hailed as one of the most remarkable achievements of the twentieth century. But there is reason to question Hughes’s hopeful claim that *The Visible Hand* is not only the prevailing interpretation of the rise of modern management but also mainstream American history.⁶⁶ After all, it is not hard to find prominent historians who continue to write about the rise of big busi-

⁶³ Brinkley, “Writing the History of Contemporary America,” 133.

⁶⁴ Bernard Bailyn, “The Challenge of Modern Historiography,” *American Historical Review* 87 (Feb. 1982): 10.

⁶⁵ Louis Galambos, “Editor’s Introduction,” in Robert W. Garnet, *The Telephone Enterprise: The Evolution of the Bell System’s Horizontal Structure, 1876–1909* (Baltimore, Md., 1985), xiv.

⁶⁶ Thomas Hughes, “Managerial Capitalism Beyond the Firm,” *Business History Review* 64 (Winter 1990): 698–699.

ness in a decidedly non-Chandlerian way. One recent survey of U.S. history in the decades between 1880 and 1920, for example, said virtually nothing about the organizational innovations in mass production, mass distribution, and management that, for Chandler, loomed so large in the period.⁶⁷ Equally oblivious to these innovations were major recent studies of Reconstruction and the late-nineteenth-century labor movement.⁶⁸ Several historians have gone so far as to challenge the organizational interpretation outright. “To understand the twentieth century United States”—wrote Michael McGerr, in a recent essay—“we need to go beyond our faith in the power of organizations to transform people and culture. The limited impact of corporations has left a heterogeneous society—less organized, less modern, less susceptible to change than we have assumed.”⁶⁹ It is, thus, perhaps not quite so surprising that one current textbook persists in dramatizing the rise of big business as a struggle between robber barons and industrial statesman, precisely the duality that Chandler had hoped in *The Visible Hand* to transcend.⁷⁰

It has long been commonplace for historians to subject the most truly seminal works to detailed, line-by-line scrutiny. Measured by this criterion, *The Visible Hand* has still to take its place as one of the central works in American historiography. Even the venerable frontier thesis of Frederick Jackson Turner is currently a livelier topic of historiographical disputation, now that it has been imaginatively reformulated by a new generation of historians of the American West.

To be sure, Chandler’s ideas have found their way into several popular textbooks, while *The Visible Hand* is frequently cited in the leading historical journals. Though citation counts are, at best, a highly imperfect measure of scholarly influence, they can provide a benchmark for comparison. Between 1978 and 1994, *The Visible Hand* was cited 26 times in the *Journal of American History*, the *American*

⁶⁷ Nell Irvin Painter, *Standing at Armageddon: The United States, 1877–1919* (New York, 1987).

⁶⁸ David Montgomery, *The Fall of the House of Labor: The Workplace, the State, and American Labor Activism* (Cambridge, 1987); Eric Foner, *Reconstruction: America’s Unfinished Revolution, 1863–1877* (New York, 1988). For a pointed critique of Montgomery’s neglect of the organizational implications of technological advance, see William Lazonick, “The Breaking of the American Working Class,” *Reviews in American History* 17 (June 1989): 272–283.

⁶⁹ Michael McGerr, “The Persistence of Individualism,” *Chronicle of Higher Education* 39 (10 Feb. 1993): A48.

⁷⁰ “Jay Gould: Robber Baron or Industrial Statesman?” in *Firsthand America: A History of the United States*, ed. David Burner, Virginia Bernhard, and Stanley I. Kutler (St. James, N.Y., 1996).

Historical Review, and *Reviews in American History*. This total exceeded that of most other major works in business and economic history that had been published at roughly the same period. Robert W. Fogel and Stanley L. Engerman's *Time on the Cross* (1974), for example, was cited 24 times, Galambos's 1970 essay on the organizational synthesis, 10 times, and Cochran's *Frontiers of Change* (1981), 6 times. In addition, *The Visible Hand* was cited more frequently than several well known and influential works from related disciplines, including Clifford Geertz's *The Interpretation of Cultures* (1973), 21 cites, and Michel Foucault, *Discipline and Punish* (1975), 12 cites. *The Visible Hand* was, however, by no means the most cited work by an American historian. Several of these more frequently cited works focused, not surprisingly, on topics in social history. These included Paul Johnson's *Shopkeeper's Millennium* (1978), 28 cites; Herbert G. Gutman's *Work, Culture, and Society in Industrializing America* (1976), 32 cites; Edmund S. Morgan's *American Slavery American Freedom* (1975), 34 cites; E. P. Thompson's *Making of the English Working Class* (1963), 36 cites; and Eugene N. Genovese's *Roll, Jordan, Roll* (1974), 47 cites.⁷¹

The citation count reveals that *The Visible Hand* has been hardly ignored. Only occasionally, however, has it been the focus of extensive discussion at the annual meetings of the Organization of American Historians or the American Historical Association. Indeed, it would be hard to name more than a handful of essays in the *Journal of American History* or the *American Historical Review* that have engaged Chandler's work in detail. Even such a central Chandlerian metaphor as the visible hand has yet to receive the thoughtful attention that historians have devoted to concepts such as the separate spheres, republicanism, corporate liberalism, and the "market revolution."⁷² This is true even though *The Visible Hand* received the prestigious Pulitzer and Bancroft prizes, was widely hailed as a classic in the major historical journals upon its publication, and is generally regarded as the most

⁷¹ These totals are derived from the CD-ROM version of the Arts and Humanities Citation Index.

⁷² Any generalizations about the influence of Chandler's ideas on U.S. history textbooks must be tentative, since no one has made a thorough study of this topic. But there is good reason to suspect that Chandler's ideas are getting a hearing. Out of a sample of 10 leading college survey textbooks, all but 2 treated the rise of big business in a more-or-less Chandlerian spirit. For a possible model from a related field of how one might generalize about the treatment of business in history textbooks, see J. L. Heilbron and Daniel J. Kevles's "Science and Technology in U.S. History Textbooks—What's There and What Ought to Be There," *Reviews in American History* 16 (June 1988): 173–185.

important historical study of the modern business enterprise to have been published at any time and in any language.

Much of the explanation for this relative neglect can be traced to the oft-remarked disinclination of business historians to reflect in print on the state of the art. Unlike intellectual historians, women's historians, or historians of technology, business historians only occasionally have taken the trouble to prepare historiographical overviews of recent developments in the field. No one, for example, has prepared a survey of the literature of business history that is even remotely comparable to John M. Staudenmaier's *Technology's Storytellers*, with its lucid, comprehensive, and theoretically informed analysis of recent work in the history of technology.⁷³ Indeed, had Louis Galambos not published his various review essays, one could hardly speak of a historiographical literature in business history at all.⁷⁴

Chandler's unconventional subject matter has, one suspects, further limited his influence. Most historians have long been suspicious of big business, and, accordingly, unwilling to invest the requisite time and energy necessary to master a book that is as long, dense, and analytically complex as *The Visible Hand*. Though at least one prominent social historian hailed it as a "masterly synthesis" that finally broke through the well-guarded barriers of academic subdisciplines, this is by no means a prevailing view.⁷⁵ When *The Visible Hand* was published in 1977, it was widely assumed that the "new" social history—with its distinctive preoccupation with marginalized groups, oppositional social movements, and small-scale, tightly knit communities—was on the cutting edge of American historiography. The goal, as the phrase went, was finally to tell the story of the American past "from the bottom up." The influence of the new social history on American historiography was pervasive. As Michael Kammen declared in 1980 in *The Past Before Us*, a major survey of recent historical writing that had been commissioned by the American Historical Association, the new social history might well lay claim to having emerged, during the 1970s, as the "cynosure" of historical scholarship in the United States.⁷⁶ Under

⁷³ John M. Staudenmaier, *Technology's Storytellers: Reweaving the Human Fabric* (Cambridge, Mass., 1985).

⁷⁴ See, in addition to the essays cited above, Louis Galambos, "What Makes Us Think We Can Put Business Back into American History?" *Business and Economic History* 20 (1991): 1–11; and idem, "What Have CEOs Been Doing?" *Journal of Economic History* 48 (June 1988): 243–258.

⁷⁵ Zunz, *Making America Corporate*, 6.

⁷⁶ Michael Kammen, *The Past Before Us: Contemporary Historical Writing in the United States* (Ithaca, N.Y., 1980), 34.

the circumstances, it is not hard to understand why *The Visible Hand*, with its tight focus on the strategic decision making of a managerial elite, fell outside of the historiographical mainstream. Kammen, for example, felt no compunction to include an essay on recent developments in business history in *The Past Before Us*. Neither, for that matter, did Stanley I. Kutler in *The Promise of American History*, an influential survey of American historiography that originally appeared in 1982 as a special issue in *Reviews in American History*. And neither did Eric Foner in *The New American History*, an overview of recent historical writing, published in 1990, that, like *The Past Before Us*, bore the imprimatur of the American Historical Association.⁷⁷ Chandler was similarly neglected in Peter Novick's *That Noble Dream*, a major study of the quest for a value-neutral history, even though Chandler had been engaged in just such a search for almost forty years.⁷⁸

More recently, the new social history has been supplanted by cultural studies as the dominant tradition of scholarship in American historical writing. Notwithstanding this shift, it seems unlikely that the current generation of historians will display a more generous appreciation of Chandler's achievement. Chandler always treated culture as a residual category and rarely devoted much attention even to conventional approaches to the history of ideas. And it is far from self evident that *The Visible Hand* has much to contribute to current debates over multiculturalism, identity politics, or the social construction of race, class, and gender. No longer can it be taken for granted, as Galambos recently warned, that Chandlerian business history will soon come to exert a major influence on the way most American historians write about the past.⁷⁹

While the influence of *The Visible Hand* in American historiography may well be more limited than many business historians might wish or assume, many imaginative historians have adopted, revised, or rejected Chandler's managerial thesis. Most of these historians fall into one

⁷⁷ Stanley I. Kutler and Stanley N. Katz, ed., *The Promise of American History: Progress and Prospects* (Baltimore, Md., 1982); Eric Foner, ed., *The New American History* (Philadelphia, Pa., 1990).

⁷⁸ Peter Novick, *That Noble Dream: The "Objectivity Question" and the American Historical Profession* (Cambridge, Mass., 1988). Chandler was cited only once in Novick's book, in a passing reference to non-leftist historians, 439.

⁷⁹ Galambos, "What Makes Us Think," 6.

of three broad categories: *champions* who elaborated on Chandler's analysis and share his basic approach; *critics* who probed anomalies between Chandler's framework and their own research; and *skeptics* who challenged Chandler's basic assumptions and rejected his argument outright. These categories, it should be stressed, are best thought of as points along a continuum rather than as mutually exclusive positions. It is entirely possible, for example, to be simultaneously a champion of Chandler's method, a critic of certain features of his explanatory scheme, and a skeptic with respect to some of his more speculative claims. Yet this schema does help to organize into an intelligible pattern a range of views that might otherwise defy easy categorization, and, in this way, to clarify the major interpretative trends.

Just as the Second World War shaped Chandler's intellectual outlook, so, too, more recent events have informed the perspective of historians who have grappled with Chandler's ideas. For most, the Second World War is far less prominent as a frame of reference than the social movements of the 1960s, the economic recession of the 1970s, and the recent collapse of communism in Eastern Europe and the former Soviet Union. These events have spawned a more jaundiced view of large-scale institutions—whether in business or government—as well as a heightened sensitivity to the cultural and environmental consequences of economic growth.

Among Chandler's champions are several of his students and a number of colleagues and former colleagues at the Harvard Business School. Though these historians have written on a wide variety of topics, they had a similar intellectual agenda. Like Chandler, they shared a basically favorable assessment of the managerial revolution, stressed its technological and organizational dimensions, and assumed that it played a positive role in economic development and in sustaining the international competitive position of the United States. Intimately familiar with Chandler's ideas, often through first-hand acquaintance with the seminars Chandler participated in at Harvard, they applied Chandler's managerial thesis to phenomena that Chandler chose to neglect. Their project, in short, at least with regard to Chandler's ideas, has been largely one of creative elaboration.

Chandler's champions have included historians of technology interested in the relationship of the modern business enterprise to industrial research. These historians echoed Chandler's conviction that the modern business enterprise promoted technological advance. Most highlighted the extent to which even seemingly incrementa

technological changes involved substantial investments. All stressed the major difference between the initial invention of a new product or production process, which often involved a relatively small financial outlay, and its successful commercialization, which almost always required the kind of investment that only a large organization could make. Though these historians recognized that business leaders could deploy industrial research to stifle competition, they rejected the Veblenian charge that the goals of business and industry were necessarily opposed.⁸⁰ If anything, these historians faulted Chandler for paying insufficient attention to the dependence of technological advance on creative entrepreneurship. "In my opinion"—wrote W. Bernard Carlson, in a recent study of industrial research at General Electric that was heavily indebted to Chandler's ideas—"an analysis of the origins of managerial capitalism without a detailed examination of the corresponding technologies is only half the story; to understand fully the profound changes that occurred in the American economy between 1880 and 1920, we must understand how individuals shaped technology to sustain and reinforce new business arrangements."⁸¹

Resolutely Chandlerian in outlook was Richard S. Tedlow's recent history of mass marketing. The origins of modern mass marketing, Tedlow posited, following Chandler's lead, were to be found in the new business environment created by the mid-nineteenth-century revolutions in transportation and communication. Like Carlson, Tedlow highlighted the role in the decision making process of creative entrepreneurs. Indeed, at times, Tedlow flirted with the decidedly non-Chandlerian position that entrepreneurial mass marketers could create consumer demand. In the end, however, Tedlow affirmed Chandler's conviction that the market remained an unpredictable, independent force, outside of business control. "No customer owes any company a living," Tedlow declared, in summarizing his position: "But it is the company that takes the active role, and therein lies its power....The customer disposes. But the company proposes."⁸²

⁸⁰ W. Bernard Carlson, *Innovation as a Social Process: Elihu Thomson and the Rise of General Electric, 1870-1900* (Cambridge, 1991); David A. Hounshell and John Kenly Smith, Jr., *Science and Corporate Strategy: Du Pont R&D, 1902-1980* (Cambridge, 1988); Leonard S. Reich, *The Making of Industrial Research: Science and Business at GE and Bell, 1876-1926* (Cambridge, 1985). See also John Kenly Smith, Jr., "The Scientific Tradition in American Industrial Research," *Technology and Culture* 31 (Jan. 1990): 121-131.

⁸¹ Carlson, *Innovation as a Social Process*, 353 n20.

⁸² Richard S. Tedlow, *New and Improved: The Story of Mass Marketing in America* (New York, 1990), 375.

Chandler's analysis of the managerial revolution also shaped several recent accounts of law and public policy.⁸³ Like *The Visible Hand*, these accounts focused on the challenge that the rise of the modern business enterprise posed for prevailing modes of corporate governance. Interestingly, historians most directly influenced by Chandler stressed the *limited* demands that the leaders of the modern business enterprise placed on Congress, administrative agencies, and the courts. To a far greater extent than most previous historians, these historians minimized the influence of the largest business firms on the political process. Most regulatory initiatives in the decades between 1880 and 1920, they contended, had been spurred not by the supporters of big business, but, rather, by small business leaders fearful of the changes being wrought by the managerial revolution. U.S. trade policy in the early twentieth century—explained William H. Becker, in a penetrating study of business-government relations that was explicitly indebted to Chandler's approach—was shaped less by large firms in highly concentrated industries than by small firms in highly competitive sectors of the economy.⁸⁴ Equally Chandlerian have been several recent accounts of government-sponsored regulatory ventures. The "inherent nature of an industry," wrote Thomas K. McCraw, in a celebrated review article on regulatory commissions, was "the single most important context in which regulators must operate."⁸⁵ Lawyer Louis Brandeis was wrong—McCraw added, in a Pulitzer-Prize winning account of government regulatory policy—to treat the failure of mergers in sectors where consolidation brought few benefits as proof of the

⁸³ Herbert Hovenkamp, *Enterprise in American Law, 1836-1937* (Cambridge, Mass., 1991); Morton Keller, *Regulating a New Economy: Public Policy and Economic Change in America, 1900-1933* (Cambridge, Mass., 1990); idem, "Regulation of Large Enterprise: The United States Experience in Comparative Experience," in *Managerial Hierarchies: Comparative Perspectives on the Rise of the Modern Industrial Enterprise*, ed. Alfred D. Chandler, Jr., and Herman Daems (Cambridge, Mass., 1980), 161-181; Tony A. Freyer, *Regulating Big Business: Antitrust in Great Britain and America, 1880-1990* (Cambridge, 1992); idem, *Forums of Order: The Federal Courts and Business in American History* (Greenwich, Conn., 1979); Charles W. McCurdy, "The Knight Sugar Decision of 1895 and the Modernization of American Corporate Law, 1869-1903," *Business History Review* 53 (Autumn 1979): 304-342; idem, "American Law and the Marketing Structure of Large Corporations, 1875-1890," *Journal of Economic History* 38 (Sept. 1978): 631-649. Chandler's institutional approach to government-industry relations has also shaped the work of several leading historians who have focused primarily on the period after 1917. See, for example, Richard H. K. Vietor, *Contrived Competition: Regulation and Deregulation in America* (Cambridge, Mass., 1994).

⁸⁴ William H. Becker, *The Dynamics of Business-Government Relations: Industry and Exports, 1893-1921* (Chicago, Ill., 1982). See also John Braeman, "The New Left and American Foreign Policy during the Age of Normalcy: A Re-Examination," *Business History Review* 57 (Spring 1983): 73-104.

⁸⁵ Thomas K. McCraw, "Regulation in America: A Review Article," *Business History Review* 49 (Summer 1975): 181.

ineffectiveness of mergers in sectors where consolidation hastened major efficiency gains.⁸⁶

McCraw predicated his analysis on the Chandlerian distinction between center and peripheral firms. Managers in center firms could take advantage of technological advances to consolidate their market position; managers in peripheral firms could not. This basic difference, McCraw posited, was far more important than political, cultural, or social factors in explaining how the American economy evolved. "The economic and technological characteristics of certain industries"—McCraw explained, in a formulation that was plainly indebted to Chandler—"encourage them to assume either a center or peripheral configuration and to maintain that configuration over a long period of time. These characteristics now seem much more important than do differences in legal systems or national cultures; in fact they appear to determine the relative size and organizational structure of firms within the industries represented."⁸⁷

While Chandler's champions have creatively elaborated on his stage model and explanatory scheme, his critics have fixed the spotlight on anomalies in his account. Some of these critics have been recent Ph.D.'s intrigued by the disjunction between certain features of Chandler's analysis and their own research. Others were established historians troubled by the normative implications of Chandler's findings. A few contended that Chandler understated the significance of the managerial revolution; others that he exaggerated its import. All agreed that there were important phenomena that Chandler's analysis failed to explain. Their task, in short, has been basically one of revision.

The emergence of such a critical tradition was a largely inevitable byproduct of Chandler's achievement. Broad-ranging works invite criticism, and *The Visible Hand* was no exception. No one has been more aware of this than Chandler himself. "A historian's task," Chandler wrote in 1971, "is not merely to borrow other people's theories or even to test their theories for them. It is to use existing concepts and models to explore the data he has collected in order to answer his own particular questions and concerns. If a concept does not seem to

⁸⁶ Thomas K. McCraw, *Prophets of Regulation: Charles Francis Adams, Louis D. Brandeis, James M. Landis, Alfred E. Kahn* (Cambridge, Mass., 1984), esp. 99–101; idem, "Rethinking the Trust Question," in idem, ed., *Regulation in Perspective: Historical Essays* (Cambridge, Mass., 1981): 1–55.

⁸⁷ McCraw, *Prophets of Regulation*, 77.

help, he should throw it away."⁸⁸ Chandler's critics, to a greater extent even than Chandler's champions, have taken this particular piece of Chandlerian advice to heart.

Few historians have written explicitly about Chandler's treatment of the American economy in the early republic. Yet it is not difficult to point to differences between Chandler's analysis of this period and the leading specialists' accounts. Some historians questioned the role that Chandler assigned to anthracite coal as a catalyst for mass production.⁸⁹ Dolores Greenberg, for example, has published a pair of intriguing essays that, without citing Chandler directly, raised major questions about his account of the role of new energy sources as agents of change.⁹⁰

Particularly problematic has been Chandler's characterization of this period as an economic *ancien régime*. Specialists have been far more inclined to stress the economic vitality of the early republic, and, in particular, to endorse Thomas C. Cochran's un-Chandlerian contention that American culture in this period was a major catalyst for economic development. "Entrepreneurial attitudes and strategies for upward economic mobility pervaded the free population of the British North American colonies throughout the first two centuries of European settlement," declared financial historian, and former Chandler student, Edwin J. Perkins, in endorsing Cochran's position: "In retrospect...Cochran was on the mark when he first stressed the revolutionary character of the American economic system and the depth of business values within the society."⁹¹ While Chandler never disputed the notion that entrepreneurial values in the early republic were widely shared, he accorded them far less significance than technological advance in explaining the coming of industrialism. Cochran and Perkins argued for a shift in emphasis from institutions to culture, and several historians have followed their lead.

⁸⁸ Chandler, "Business History as Institutional History," 305.

⁸⁹ James Livingston, *Pragmatism and the Political Economy of Cultural Revolution, 1850–1940* (Chapel Hill, N.C., 1994), 28. See also Thomas R. Winpenny, "Hard Data on Hard Coal: Reflections on Chandler's Anthracite Thesis," *Business History Review* 53 (Summer 1979): 247–258.

⁹⁰ Dolores Greenberg, "Reassessing the Power Patterns of the Industrial Revolution: An Anglo-American Comparison," *American Historical Review* 87 (Dec. 1982): 1237–1261, and idem, "Energy, Power, and Perceptions of Social Change in the Early Nineteenth Century," *American Historical Review* 95 (June 1990): 693–714.

⁹¹ Edwin J. Perkins, "The Entrepreneurial Spirit in Colonial America: The Foundations of Modern Business History," *Business History Review* 63 (Spring 1989): 160–186, quotation on 185–186, and Thomas M. Doerflinger, *A Vigorous Spirit of Enterprise: Merchants and Economic Development in Revolutionary Philadelphia* (Chapel Hill, N.C., 1986).

Cochran's alternative account of American economic development in this period highlighted the importance of organizational innovations that antedated the railroad and the telegraph. These included the creation of a canal network, the expansion of the postal system, and the emergence of a political order to facilitate manufacturing and commerce. Cochran also questioned, at least implicitly, Chandler's claim that the American market in the pre-railroad era was too geographically dispersed to encourage organizational innovation within the business enterprise. "Nowhere else in the world of 1800"—wrote Cochran in *Frontiers of Change*, a major study of early American industrialism that appeared four years after *The Visible Hand*—"were two cities as big as New York and Philadelphia only eighty miles apart and brought into close contact by waterways and level terrain."⁹² Taken together, Cochran posited, these changes spurred a "business revolution" that greatly speeded the flow of commercial information, but which owed little to the railroad, telegraph, or anthracite coal.⁹³

In large measure, the contrast between Chandler's and Cochran's approach to the industrial revolution was a matter of interpretation. Chandler retained the traditional understanding of the industrial revolution as a technological phenomenon that hinged on the widespread utilization of iron, steam power, and fossil fuel. As a consequence, he dated its advent in the United States to the 1830s, when anthracite coal first became widely adopted in American industry. From Chandler's perspective, thus, the United States lagged behind Great Britain by half a century. Cochran, in contrast, regarded the industrial revolution as a cultural phenomenon that could take a variety of technological forms. No longer was the concept identified, as Chandler had understood it, with technological advances in factory production, metal working, and energy utilization. Rather, Cochran redefined it to embrace a constellation of cultural values that included positive attitudes toward work, industry, and innovation. Following the establishment of American independence, Cochran contended, this cultural outlook hastened the emergence of the all-purpose artisan as a key figure in American economic development.

⁹² Thomas C. Cochran, *Frontiers of Change: Early Industrialism in America* (New York, 1981), 18–19.

⁹³ Thomas C. Cochran, "The Business Revolution," *American Historical Review* 78 (Dec. 1974): 1449–1466. For Chandler's critique of the "business revolution" theme, see Alfred D. Chandler, Jr., review of Cochran, *Two Hundred Years of American Business*, in *American Historical Review* 83 (Feb. 1978): 264–265.

To put it somewhat differently, developments that Chandler regarded as precursors but not preconditions to the managerial revolution became for Cochran the most revolutionary phase in the industrialization of the United States.⁹⁴ For Chandler, the industrial revolution *followed* the widespread utilization in the 1830s of anthracite coal. For Cochran, in contrast, the industrial revolution had by this time *already* occurred. "Certainly by 1825," Cochran wrote, "the first stage of the industrialization of the United States was over. If industrialization is thought of as 'revolutionary,' the 'revolution' had occurred."⁹⁵

Especially controversial has been Chandler's neglect of the political dimension of economic development. Few historians have followed Chandler in claiming that the main theme in the economic history of the early republic involved nothing more than a shift from unspecialized to specialized enterprise. Rather, they treated the economy and the polity as interrelated and highlighted the gradual transformation of the United States from a mercantile to an unregulated economy.⁹⁶ The "roots of corporate development," declared McCraw, lay "deep within the political state." This conclusion was markedly at variance with Chandler's claim that the modern business enterprise traced its origin not to the polity, but, rather, to the novel organizational challenge posed by the railroad and the telegraph.⁹⁷ Had Great Britain *not* stifled the economic development of its British North American colonies, Cochran posited, in an unusually forthright and necessarily speculative assertion of this view, Britain's North America's colonies might well have industrialized in the eighteenth century, beginning around 1750. This was because, Cochran explained, American culture was even *more* conducive than Britain's to entrepreneurial achievement, and, thus, in the absence of restrictive commercial regulations, might well have industrialized first.⁹⁸

Other critics have pointed to the pivotal role in American economic development of large-scale public ventures such as the army, the military armory, government-chartered state and federal banks,

⁹⁴ Chandler, review of Cochran, *Two Hundred Years*, 265.

⁹⁵ Cochran, *Frontiers of Change*, 77.

⁹⁶ Walter Licht, *Industrializing America: The Nineteenth Century* (Baltimore, Md., 1995). For a more extended discussion of recent scholarship on law, public policy, and political economy in the early republic, see Richard R. John, "Governmental Institutions as Agents of Change: Rethinking American Political Development in the Early Republic, 1787–1835," *Studies in American Political Development* 11 (Fall 1997): 347–380.

⁹⁷ Thomas K. McCraw, "Business and Government: The Origins of the Adversary Relationship," *California Management Review* 26 (Winter 1984): 50.

⁹⁸ Thomas C. Cochran, *Challenges to American Values: Society, Business, and Religion* (New York, 1985), 23.

and the postal system.⁹⁹ The postal system, for example, hastened the creation of a national market for commercial information a generation before the railroad established a national market for goods.¹⁰⁰ A few historians have pointed to the institutional ramifications not only of the administrative apparatus of the state and central government, but also of the courts, political parties, and the legal order. In a suggestive monograph on the political economy of industrialization in the United States and Prussia, Colleen A. Dunlavy demonstrated how the "structuring presence" of the state shaped railroad policy in both countries. In contrast to most previous historians—who, like Chandler, stressed the weakness of the American state in the early republic—Dunlavy concluded that the various American state governments were more active than the Prussian central government in promoting economic development. A similar political dynamic, Dunlavy observed, explained why early American railroad leaders proved unable to establish effective trade associations that were truly national in scope and why American engineering societies retained a decentralized cast.¹⁰¹

Dunlavy was by no means the only historian to raise questions about Chandler's treatment of the railroad during its formative years. Labor historian Walter Licht, for example, challenged Chandler's contention that rationality was the primary goal of early railroad managers. "Bureaucratic work organizations" on the early railroads, Licht observed, were not the results of some "naturally immanent, inevitable, uniform movement" toward greater degrees of rationality and organization. Rather they emerged as part of a complex unfolding process that involved people, conscious decision making, personal

⁹⁹ Merritt Roe Smith, *Harpers Ferry and the New Technology: The Challenge of Change* (Ithaca, N.Y., 1977); David A. Hounshell, *From the American System to Mass Production, 1800-1932: The Development of Manufacturing Technology in the United States* (Baltimore, Md., 1984); Smith, "Army Ordnance and the 'American system' of Manufacturing, 1815-1861," in Merritt Roe Smith, ed., *Military Enterprise and Technological Change* (Cambridge, Mass., 1985), 40-86; Richard R. John, *Spreading the News: The American Postal System from Franklin to Morse* (Cambridge, Mass., 1995); Charles F. O'Connell, Jr., "The Corps of Engineers and the Rise of Modern Management, 1827-1856," in Smith, *Military Enterprise*, 87-116; Richard Sylla, John B. Legler, and John J. Wallis, "Banks and State Public Finance in the New Republic: The United States, 1790-1860," *Journal of Economic History* 47 (June 1987): 391-403; and Edwin J. Perkins, *American Public Finance and Financial Services, 1700-1815* (Columbus, Ohio, 1994). For a critique of the Smith-Hounshell thesis regarding the importance of military armories for mass production, see Donald R. Hoke, *Ingenious Yankees: The Rise of the American System of Mass Production in the Private Sector* (New York, 1990).

¹⁰⁰ John, *Spreading the News*, chap. 2.

¹⁰¹ Colleen A. Dunlavy, *Politics and Industrialization: Early Railroads in the United States and Prussia* (Princeton, N.J., 1994), 4.

interests, and human conflict.¹⁰² Others doubted that the railroad proved quite so successful as Chandler assumed in wresting from the express industry the carriage of high-volume freight.¹⁰³ Still others questioned Chandler's claim that the economies of speed that the railroad made possible loomed larger than political considerations in explaining the major reductions in postal rates that took place in 1845 and 1851.¹⁰⁴

For the most part, however, Chandler's analysis of organizational innovation by railroad managers has gone unchallenged.¹⁰⁵ No one, for example, has yet attempted a full-scale history of the Pennsylvania Railroad during the mid-nineteenth century, even though this enterprise was, for Chandler, the pre-eminent managerial enterprise in the United States. At a number of junctures, however, critics have raised questions about certain features of Chandler's argument. In a suggestive article, Charles F. O'Connell, Jr., demonstrated that the Army Corps of engineers helped devise organizational innovations such as the line-and-staff principle that would later be adopted by American management.¹⁰⁶

Others questioned Chandler's contention that the railroad was the first American enterprise to call forth a demand for middle managers. In a recent history of the postal system in the early republic, for example, Richard R. John documented that, according to Chandler's own criterion, public administrators had established in the postal system a three-tiered administrative hierarchy, with a cohort of middle managers, several decades *before* the coming of the railroad. The key organizational innovation was the establishment in 1800 of a network of specially designated postal distribution centers, staffed by middle managers, to coordinate the stagecoach-based hub-and-spoke sorting scheme. Chandler dated the establishment of these distribution centers to the 1850s, following the switchover from the stagecoach to the

¹⁰² Walter Licht, *Working for the Railroad: The Organization of Work in the Nineteenth Century* (Princeton, N.J., 1983), 270-271.

¹⁰³ Peter Zigmund Grossman, "Contract and Conflict: A Study of the Express Cartel" (Ph.D. diss., Washington University, 1992).

¹⁰⁴ Richard R. John, "Private Mail Delivery in the United States during the Nineteenth Century—A Sketch," *Business and Economic History* 15 (1986): 131-143; idem, *Spreading the News*, 254-255.

¹⁰⁵ Characteristic of recent scholarship in American railroad history is Albro Martin's resolutely Chandlerian *Railroads Triumphant: The Growth, Rejection, and Rebirth of a Vital American Force* (New York, 1992). Also important is James D. Dilts, *The Great Road: The Building of the Baltimore & Ohio, the Nation's First Railroad, 1828-1855* (Stanford, Calif., 1993).

¹⁰⁶ O'Connell, "Corps of Engineers and the Rise of Modern Management," 87-116.

railroad as the principal means of conveyance on the most heavily traveled routes. John contended, on the contrary, that public administrators had established these distribution centers decades earlier, following the prior changeover from postriders to stagecoaches that had been hastened by the Post Office Act of 1792.¹⁰⁷

Historians of telegraphy have raised a number of analogous issues. Chandler's treatment of the telegraph industry was necessarily sketchy, since, when he published *The Visible Hand*, the history of telegraphy remained largely unwritten. But this did not prevent him from accord- ing the industry a major role as an agent of change. In addition to facil- itating the coordination of production and distribution by business managers, Chandler posited, the telegraph, like the railroad, furnished business leaders with the "most relevant administrative models" for the modern industrial enterprise.¹⁰⁸

But if the telegraph industry were indeed this important, then, or so contended several of Chandler's critics, the history of industrial enterprise would have to be significantly revised. The military, these critics observed, loomed far larger as a precedent for telegraph man- agement than Chandler allowed. While Chandler was correct to high- light the significance of the line-and-staff principle for telegraph man- agement, telegraph historian Edwin Gabler observed, he downplayed this organizational innovation's unmistakably military provenance.¹⁰⁹ Others questioned the role of telegraphy in railroad scheduling, raising questions about another Chandlerian theme.¹¹⁰ Curiously, no historian has systematically documented *how* the telegraph shaped American business enterprise, though this relationship was integral to the tech- nologically driven account of economic development at the core of *The Visible Hand*. It is suggestive, in this context, that Chandler's student Menahem Blondheim wrote a history of the early years of Western Union that paid no more than incidental attention to the railroad at all.¹¹¹ The continuing influence of the artisan-based craft tradition on telegraphic research and development, has, similarly, been highlighted by Paul Israel, making the industry seem decidedly less pathbreaking

¹⁰⁷ John, *Spreading the News*, 75, 303 n49; Chandler, *Visible Hand*, 196.

¹⁰⁸ Chandler, *Visible Hand*, 79.

¹⁰⁹ Edwin Gabler, *The American Telegrapher: A Social History, 1860-1900* (New Brunswick, N.J., 1988), 219 n25.

¹¹⁰ See, for example, Joanne Yates, *Control through Communication: The Rise of System in American Management* (Baltimore, Md., 1989), 23, 106.

¹¹¹ Menahem Blondheim, *News over the Wires: The Telegraph and the Flow of Public Information in America, 1844-1897* (Cambridge, Mass., 1994).

than Chandler's account might lead one to suppose.¹¹² Equally un- Chandlerian was Richard B. DuBoff and Edward S. Herman's account of the political machinations of telegraph managers, business lobbyists, and public officials in shaping government-industry relations.¹¹³ Taken together, this scholarship—most of which, it must be underscored, remains quite fragmentary—was materially at variance with Chandler's analysis in *The Visible Hand* of the telegraph as a prototype of the mod- ern, technologically driven industrial enterprise.

Similar questions about Chandler's explanatory scheme have been raised by historians who specialize in the period between 1880 and 1920. The completion of the railroad and telegraph network, specu- lated legal historian Charles W. McCurdy, may have been less impor- tant in establishing the preconditions for the modern industrial enter- prise than the creation by lawyers and business lobbyists of a national market. "What the NAACP Legal Defense fund accomplished for black Americans under the Fourteenth Amendment in the twentieth century," McCurdy provocatively concluded, "the legal-defense war chests" of I. M. Singer & Company and the four leading meatpackers accomplished between 1875 and 1890 for the vertically integrated industrial firm.¹¹⁴ Mass marketing was far more successful than Chandler assumed, others claimed, in shaping the pattern of consumer demand.¹¹⁵ Economic efficiency was far less pivotal than market con- trol, contended still others, in the turn-of-the-century merger move- ment. Case studies of the consolidation process at Standard Oil, Carnegie Steel, Du Pont, and AT&T have each raised questions about the dynamics of change.¹¹⁶ In each case study, business leaders turned

¹¹² Paul Israel, *From Machine Shop to Industrial Laboratory: Telegraphy and the Changing Context of American Invention, 1830-1920* (Baltimore, Md., 1992).

¹¹³ Richard B. Du Boff and Edward S. Herman, "Alfred Chandler's New Business History: A Review," *Politics and Society* 10 (1980): 102-104.

¹¹⁴ McCurdy, "American Law and the Marketing Structure," 649.

¹¹⁵ William Leach, *Land of Desire: Merchants, Power, and the Rise of a New American Culture* (New York, 1993); Susan Strasser, *Satisfaction Guaranteed: The Making of the American Mass Market* (New York, 1989).

¹¹⁶ Naomi Lamoreaux, *The Great Merger Movement in American Business, 1895-1904* (Cambridge, 1985); Thomas J. Misa, *A Nation of Steel: The Making of Modern America, 1865-1925* (Baltimore, Md., 1995); idem, "Retrieving Sociotechnical Change from Technological Determinism," in *Does Technology Drive History? The Dilemma of Technological Determinism*, ed. Merritt Roe Smith and Leo Marx (Cambridge, Mass., 1994), 115-141; Joseph A. Pratt, "The Petroleum Industry in Transition: Antitrust and the Decline of Monopoly in Oil," *Journal of Economic History* 40 (Dec. 1980): 815-837; Yates, *Control through Communication*; Kenneth Lipartito, "When Women were Switches: Technology, Work, and Gender in the Telephone Industry, 1890-1920," *American Historical Review* 99 (Oct. 1994): 1074-1111; Garnet, *Telephone Enterprise*, esp. 8-9; Richard B. Du Boff, *Accumulation and Power: An Economic History of the United States* (Armonk, N.Y., 1989), 51-54.

out to be neither as prescient nor as rationalistic as Chandler assumed. Particularly challenging has been the observation of economic historian Gavin Wright that it would be a mistake to regard the stability of the American industrial order in the period between 1917 and the present as evidence of the economic efficiency of the modern industrial firm.¹¹⁷ And even if one could successfully defend Chandler's highly rationalistic account of industrial consolidation, some worried about its lack of dramatic appeal. Chandlerian business history—complained the widely read business biographer, and former Chandler student, Harold C. Livesay—was the historiographical equivalent of a “neutron bomb” that killed off the entrepreneurs while leaving the organization intact.¹¹⁸

Perhaps the most suggestive and conceptually challenging of these criticisms focused on the social origins of the modern business enterprise. The establishment of a “new class” of middle managers to staff the modern business enterprise, declared Olivier Zunz in *Making America Corporate*, the most successful of these studies, was a triumph of the power of deductive reasoning rather than empirical research.¹¹⁹ To fill this gap, Zunz and several other historians have begun to investigate the social background of the men and women who brought the managerial revolution to the United States.

Social explanations for the rise of the modern industrial enterprise have taken two principal forms. At its most ambitious, proponents of this view have posited, following Martin Sklar and James Livingston, that the managerial revolution was best understood as a social movement spearheaded by a small yet purposeful “corporate liberal” coalition.¹²⁰ Intent on consolidating its position at the apex of American society, this coalition pursued a complex social agenda that simultaneously quelled labor unrest, eroded worker autonomy, blunted class conflict, destroyed small-scale competitors, and legitimized capital as a

¹¹⁷ Wright, “Regulation in America,” 167.

¹¹⁸ Harold C. Livesay, “Entrepreneurial Dominance in Businesses Large and Small, Past and Present,” *Business History Review* 63 (Spring 1989): 1–21, quotation on p. 5; idem, “Entrepreneurial Persistence through the Bureaucratic Age,” *Business History Review* 51 (Winter 1977): 415–443.

¹¹⁹ Olivier Zunz, *Making America Corporate, 1870–1920* (Chicago, Ill., 1990), 6. For a useful review essay, see William H. Becker, “The Impact of America's Becoming Corporate: A Review Essay,” *Journal of Policy History* 5 (1993): 355–365.

¹²⁰ Martin J. Sklar, *The Corporate Reconstruction of American Capitalism, 1890–1916: The Market, the Law, and Politics* (Cambridge, 1988); Livingston, *Pragmatism and the Political Economy of Cultural Revolution*; idem, “The Social Analysis of Economic History and Theory: Conjectures on Late Nineteenth-Century American Development,” *American Historical Review* 92 (Feb. 1987): 69–95.

factor of production. Though the corporate liberals drew on the support of various groups outside of their ranks, and while their victory was hardly a conspiracy, Sklar, Livingston, and the other historians who shared their outlook characterized the managerial revolution as the work of a tiny, mostly homogeneous elite.

For Zunz, in contrast, the pivotal agents of the managerial revolution were far more varied in social background and less single-minded in their objectives. Using the case study method that Chandler had deployed so effectively in *Scale and Scope*, Zunz analyzed organizational innovation at Du Pont, Ford, Metropolitan Life, McCormick Reaper, and the Chicago, Burlington, and Quincy Railroad. Notwithstanding the claims to the contrary of Sklar, Livingston, and others, Zunz documented how a large and remarkably heterogeneous segment of the American population found in big business a congenial home. In Zunz's account, middle-level managers actively shaped the managerial firm in order to guarantee themselves a secure livelihood and a challenging career. Or, as he put it, a large and diverse group of “rank-and-file capitalists” willingly relinquished individualism in order to participate in some of the most significant and challenging tasks of their generation.¹²¹ “The diverse group of individuals who staffed the early corporation”—Zunz concluded, in summarizing his position—“did not so much react to the corporation as they did design it.”¹²² In the process, they created a new work culture and a new middle class and hastened a relative simplification of the American cultural order: “Their multifaceted effort to create and live with giant organizations ended in a more homogeneous society.”¹²³

Zunz's account put flesh and blood on Chandler's middle managers. So, too, have several recent monographs on the highly gendered assumptions that shaped power relations within the modern business enterprise. Building on recent studies by social historians, the authors of these works extended Zunz's efforts to explore the social foundations of the managerial revolution beyond middle-level managers to lower-level secretaries and clerks.¹²⁴ In so doing, they have begun to explore

¹²¹ Zunz, *Making America Corporate*, 6, 49.

¹²² *Ibid.*, 8.

¹²³ *Ibid.*, 203. For an opposite assessment, which highlighted the role of the corporation in promoting cultural heterogeneity and undermining social stability through a divisive assault on unions, see McGerr, “Persistence of Individualism,” A48.

¹²⁴ Angel Kwolek-Folland, *Engendering Business: Men and Women in the Corporate Office, 1870–1930* (Baltimore, Md., 1994); Sharon Hartman Strom, *Beyond the Typewriter: Gender, Class, and the Origins of Modern American Office Work, 1900–1930* (Urbana, Ill., 1992); Lisa Fine, *The Souls of the Skyscraper: Female Clerical Workers in Chicago, 1870–1930* (Philadelphia, Pa., 1990); Susan Porter Benson, *Counter Cultures: Saleswomen, Managers, and Customers in American Department Stores, 1890–1940* (Urbana, Ill., 1986).

the dynamics of conflict and accommodation within the modern firm. Though these historians rarely acknowledged an indebtedness to Chandler, they helped advance the Chandlerian agenda of moving business history beyond the study of heroic individuals.¹²⁵ Much more research is needed before historians will be able to generalize confidently about the social dimensions of the managerial revolution. Yet, thus far, recent scholarship strongly implies that many historians, including Chandler, significantly underestimated this revolution's popular base of support.

The active role of the work force in shaping business behavior has found additional confirmation in the work of labor historians interested in management-labor relations on the shopfloor. Few labor historians found persuasive Chandler's blanket assertion that, except in the case of the railroads, the work force had little impact on managerial decision making until the 1930s.¹²⁶ Rather, these critics highlighted the myriad ways in which even low-level workers shaped the decision making process. "In spite of his many virtues," complained two historians of the modern welfare state, Chandler all too often wrote of business leaders as if they were "isolated in an industrial universe in which labor's position was entirely that of a dependent variable."¹²⁷ Ordinary workers, conceded Sanford M. Jacoby, may not have shaped managerial decision making with regard to production or distribution. Yet the rank-and-file played a vigorous and often pivotal role in the important realms of personnel policy and management-labor relations. Chandler's account, thus, gave a "misleading picture" of the modern business enterprise as "something that was not, and very likely cannot be, affected by social norms and restraints."¹²⁸

For these revisionists, workers shaped managerial policy in several ways. At a most basic level, their labor made possible the economies of speed that propelled Chandler's managerial revolution.¹²⁹ Sometimes they slowed the reorganization of the shopfloor in order to retain control of the labor process.¹³⁰ At other times, they hastened organizational innovations such as the establishment of internal labor

¹²⁵ I am grateful to Mary A. Yeager for bringing this point to my attention.

¹²⁶ Chandler, *Visible Hand*, 493.

¹²⁷ Edward D. Berkowitz and Kim McQuaid, *Creating the Welfare State: The Political Economy of Twentieth-Century Reform* (Lawrence, Kans., 1992), 233-234.

¹²⁸ Sanford M. Jacoby, *Employing Bureaucracy: Managers, Unions, and the Transformation of Work in American Industry, 1900-1945* (New York, 1985), 8.

¹²⁹ Laznick, *Business Organization*, 134-135.

¹³⁰ Ernest J. Englander, "The Inside Contract System of Production and Organization: A Neglected Aspect of the History of the Firm," *Labor History* 28 (Fall 1987): 429-466.

markets and job ladders in order to increase job security and limit the power of foremen and subcontractors. Workers in small firms, in contrast, rarely enjoyed such a predictable working environment.¹³¹ In a few cases, historians even credited workers with helping to institute the various business-sponsored welfare programs known today as corporate paternalism.¹³² No longer reflexively dismissed as little more than forums for anti-union propaganda, these programs have come to be seen as forerunners of the social policies that today have become identified with the modern welfare state.¹³³

To be sure, many historians sympathetic to labor's cause remain sharply critical of the transformation Chandler described. Missing from *The Visible Hand*, warned two early critics, was any acknowledgment of the possibility that technology afforded a "potentially wide spectrum of choices" or that machines were inherently hazardous and imposed various degrees of tension and strain on their operators.¹³⁴ Few labor historians today, however, echo Harry Braverman's once-fashionable notion that management had a virtually free hand in imposing on the work force various forms of social control. On the contrary, most assume that everyone was constrained, managers and workers alike. And for a small but growing number of labor historians, the most significant constraints on the work force could be traced to the American polity, and, in particular, to the determination of anti-labor lawyers, judges, and legislators to limit the workers' ability to improve their common lot.¹³⁵ Chandler neglected these political considerations, convinced that they were far less important than technological advances in shaping management strategy. For these critics, however, technological advances were far less central to the patterning of management-labor relations than what political scientist Victoria Hattam called the "distinctive institutional structure of the American

¹³¹ Howell John Harris, "Getting it Together: The Metal Manufacturers' Association of Philadelphia, c. 1900-1930," in *Masters to Managers: Historical and Comparative Perspectives on American Employers*, ed. Sanford M. Jacoby (New York, 1991), 111-131.

¹³² Gerald Zahavi, *Workers, Managers, and Welfare Capitalism: The Shoeworkers and Tanners of Endicott Johnson, 1890-1950* (Urbana, Ill., 1988); Charles W. Cheape, *From Family Firm to Modern Multinational: Norton Company, a New England Enterprise* (Cambridge, Mass., 1985); Daniel Nelson, "The Company Union Movement, 1900-1937: A Reexamination," *Business History Review* 56 (Autumn 1982): 335-357; idem, *Managers and Workers: Origins of the New Factory System in the United States, 1880-1920* (Madison, Wisc., 1975).

¹³³ Berkowitz and McQuaid, *Creating the Welfare State*, chaps. 1-3.

¹³⁴ Du Boff and Herman, "Alfred Chandler's New Business History," 93.

¹³⁵ Sanford M. Jacoby, "American Exceptionalism Revisited: The Importance of Management," in Jacoby, *Masters to Managers*, 180-184.

state"—and, in particular, the prominent role of an anti-labor judiciary in the resolution of work disputes.¹³⁶

More broadly, these criticisms raised some general questions about the adequacy of the organizational synthesis as an explanatory scheme. Can Chandler's managerial thesis—with its narrow focus on the technological and organizational dimensions of corporate behavior—explain the full range of influences that have shaped the modern business enterprise? Can it account for the motives of the highly diverse group of individuals who helped bring the managerial revolution about? Can one plausibly treat politics as a mere background factor? In 1991, Louis Galambos addressed these questions directly. It was a mistake, Galambos now contended, in an apparent rejection of his previous view, to treat *The Visible Hand* as a synthetic work. Rather, he declared, it was best read as a "climax of specialization" that, unfortunately, had placed the history of modern American business firms in "relative isolation, separated from their social and political settings."¹³⁷

Closely related to Galambos's critique were the many questions that historians have raised about Chandler's decision to make the firm the unit of analysis. The managerial enterprise, observed historian of technology Thomas Hughes, was not the central institution in managerial capitalism but a central institution in its rise. No less important were various "firm-transcending enterprises" such as the electrical power grid.¹³⁸ Equally skeptical was the Marxian economist William Lazonick. Though Lazonick conceded that the firm may well have been the appropriate unit of analysis for the period Chandler considered in *The Visible Hand*, he doubted that it remained the relevant unit of analysis today. "In the past," Lazonick wrote, the business firm was "a prime locus" of superseded markets, just as Chandler contended. Since 1917, however, this locus has shifted from the business firm to the multifirm and often multi-institutional business organization that linked business firms engaged in interrelated productive activities.¹³⁹

¹³⁶ Victoria C. Hattam, *Labor Visions and State Power: The Origins of Business Unionism in the United States* (Princeton, N.J., 1993), ix.

¹³⁷ Galambos, "What Makes Us Think," 6.

¹³⁸ Hughes, "Managerial Capitalism Beyond the Firm," 698–703. For an informative comparison of Hughes and Chandler, see David A. Hounshell, "Hughesian History of Technology and Chandlerian Business History: Parallels, Departures, and Critics," *History and Technology* 12 (1995): 205–224. For Hughes's assessment of Chandler's contribution to the history of technology, see Thomas P. Hughes, "The Order of the Technological World," in *History of Technology*, ed. A. Rupert Hall and Norman Smith (1980), 7–10.

¹³⁹ Lazonick, *Business Organization*, 8.

Chandler remained unpersuaded by these various attempts to supplant the business enterprise as the unit of analysis.¹⁴⁰ At times, however, even Chandler found his commitment to the firm unduly restrictive. Indeed, one of the most important, though least-noted, historiographical contributions of *The Visible Hand* has been Chandler's popularization of the concept of infrastructure as a catch phrase for an interrelated configuration of institutions that shaped the business environment in areas such as transportation, communication, or energy. Curiously, Chandler confined his discussion of infrastructure primarily to the period between 1840 and 1880. Largely omitted from his account was any sustained discussion of the possible role in the period after 1880 of electricity, telephony, and the automobile in shaping the modern business enterprise. Whether or not business historians will shift their unit of analysis from the firm to the infrastructure remains to be seen. If they do, they will be building once again on insights developed in *The Visible Hand*.

While various critics of *The Visible Hand* have raised important questions about Chandler's analysis of the rise of the modern business enterprise, most have shared Chandler's conviction that the managerial revolution was a major turning point in the making of the modern United States. Their quarrel focused primarily on Chandler's explanatory scheme rather than his narrative design. For a small but not uninfluential group of skeptics, both Chandler's explanatory scheme and his narrative design are open to question. Some radical skeptics questioned the adequacy of any master narrative that sought to explain the rise of the United States to world power.¹⁴¹ Others proposed competing alternatives for the narrative that Chandler sketched.

Prominent among the skeptics is the small but growing group of historians who are intent on rewriting the history of the rise of the modern business enterprise in the United States as a tale of missed chances and possibilities foreclosed. To a far greater extent than champions or critics, skeptics refused to limit their assessment of the modern business enterprise to economic criteria. Even if the modern business enterprise could be shown to promote economic growth (and not

¹⁴⁰ Alfred D. Chandler, Jr., "Response to the Contributors to the Review Colloquium on *Scale and Scope*," *Business History Review* 64 (Winter 1990): 744.

¹⁴¹ Philip Scranton, "Determinism and Indeterminacy in the History of Technology," in Smith, *Does Technology Drive History?*, 143–168.

all skeptics find even this claim persuasive), they warned of its complexity in morally questionable practices that ranged from dubious marketing, production, and investment decisions, to environmental degradation and the militarization of the Third World.¹⁴² Few skeptics doubted that a managerial revolution occurred. What they questioned, rather, as Howell John Harris explained, was its inevitability, universality, and positive moral import.¹⁴³

The skeptics' case has been advanced most forcefully by Michael J. Piore and Charles F. Sabel in *The Second Industrial Divide*, a provocative study of American industrialism, published in 1984, that took *The Visible Hand* as a foil. The origins of the recent problems confronting American business, Piore and Sabel contended, could be traced to the establishment by Chandlerian middle managers of an inflexible, Fordist production strategy that supplanted well-trained and independent artisans with unskilled and dependent workers. American business leaders made a tragic mistake, they contended when during the nineteenth century they crossed the first "industrial divide" that separated labor-intensive craft manufacture from capital-intensive mass production. Their twenty-first century counterpart should correct this error by crossing the "second industrial divide" and abandoning mass production in favor of an alternative manufacturing strategy that is more flexible, specialized, and labor-intensive.¹⁴⁴

Many business historians found Piore and Sabel's brief for flexible specialization simplistic, implausible, and somewhat naive. Indeed even some sympathetic scholars detected in it a certain amount of creative wishful thinking.¹⁴⁵ Still, several skeptics remained impressed. *The Second Industrial Divide*, declared leading labor historian David

¹⁴² For a critique on Chandler's linkage of organizational innovation and economic growth, see William N. Parker, "Historiography of American Economic History," in G. L. Porter, ed., *Encyclopedia of American Economic History: Studies of the Principal Movements and Ideas* (New York, 1980), 1: 10.

¹⁴³ Harris, "Getting it Together," in Jacoby, *From Masters to Managers*, 113.

¹⁴⁴ Michael J. Piore and Charles F. Sabel, *The Second Industrial Divide: Possibilities for Prosperity* (New York, 1984). See also Charles Sabel and Jonathan Zeitlin, "Historical Alternatives to Mass Production: Politics, Markets, and Technology in Nineteenth-Century Industrialization," *Past & Present* 108 (Aug. 1985): 133-176. The latter essay, though cited by historians of the United States, deals primarily with Europe. It does, however, include their assertion that Piore and Sabel intended the Second Industrial Divide as a critique of the Chandler model," 140.

Piore and Sabel have been roundly criticized by business and economic historians among other shortcomings, neglecting to provide any quantitative demonstration that production could, in fact, be economically competitive with mass production. Williams, et al., "The End of Mass Production?," *Economy and Society* 16 (Aug. 1985): 405-439.

¹⁴⁵ Harris, "Getting it Together," in Jacoby, *Masters to Managers*, 112.

Brody, in a major review, expanded historians' intellectual horizons by forcing them to consider when and how craft-based manufacturing might have been cost competitive with mass production. More generally, Brody added, Piore and Sabel encouraged historians to ponder whether the technological advances that Chandler highlighted could explain the present "paradigm of industrialism."¹⁴⁶ Chandlerian business history left too much out, warned Philip Scranton, a distinguished historian of specialty manufacturing who has long criticized business historians' Chandlerian preoccupation with mass production in the largest, most capital-intensive industrial sectors. This limitation was particularly evident, Scranton believed, in *Scale and Scope*, which was not the inclusive theory of industrial dynamism that Chandler claimed it to be, but, rather, an exhaustive history of the corporate form. For these historians, Chandlerian business history was like a wedding reception at which the master of ceremonies arbitrarily confined the musical offerings to the greatest hits of the Boston Pops.¹⁴⁷

Some historians of small business, to be sure, took pains to demonstrate the compatibility between Chandler's findings and their own research.¹⁴⁸ Others pointed to the limitations of Chandler's narrative. By focusing "obsessively" on "bigness and greatness," complained John N. Ingham, Chandler created a picture of American industry in the nineteenth century that was "curiously skewed and false."¹⁴⁹ Small business, Mansel G. Blackford reminded us, has in the past accounted for much technological advance, and has always provided the lion's share of new jobs for women, minorities, and other marginalized groups. Why, then, should it be left out of historical accounts?¹⁵⁰ To focus, as Chandler did, on the rise of big business, Scranton declared, kept historians from recognizing the broader material and sociocultural

¹⁴⁶ David Brody, "The Second Industrial Divide," *Reviews in American History* 13 (Dec. 1985): 612-615.

¹⁴⁷ Philip Scranton, review of *Scale and Scope*, in *Technology and Culture* 32 (Oct. 1991): 1102-1104, quotation on 1104. See also idem, "Diversity in Diversity: Flexible Production and American Industrialization, 1880-1930," *Business History Review* 65 (Spring 1991): 27-90; and idem, "Small Business, Family Firms, and Batch Production: Three Axes for Development in American Business History," *Business and Economic History* 21 (1991): 99-105; and idem, *Endless Novelty: Speciality Production and American Industrialization, 1865-1925* (Princeton, N.J., 1997). I am grateful to David B. Sicilia for the musical analogy.

¹⁴⁸ Steven Fraser, "Combined and Uneven Development in the Men's Clothing Industry," *Business History Review* 58 (Winter 1983): 522-547.

¹⁴⁹ Ingham, *Making Iron and Steel*, 19.

¹⁵⁰ Mansel G. Blackford, *A History of Small Business in American Life* (New York, 1991). See also idem, "Small Business in America: A Historiographic Survey," *Business History Review* 65 (Spring 1991): 1-26. See also Juliet E. K. Walker, "Racism, Slavery, and Free Enterprise: Black Entrepreneurship in the United States before the Civil War," *Business History Review* 60 (Autumn 1986): 343-382.

al context in which American business evolved: "Manufacturers outside the main line of development seem peculiar, anachronistic, and doomed, and workers become mere ciphers. Culture, family, and religion are viewed through a filter that merely assesses their acquiescence, resistance, or indifference to the inevitable."¹⁵¹

Among the exemplary case studies that challenged Chandler's narrative was John K. Brown's recent study of the Baldwin Locomotive Works. Faulting Chandler's account as "unabashedly teleologic," Brown drew attention to the "vast range of unexplored topics" in business history that Chandler neglected.¹⁵² Though Baldwin had assets of more than \$200 million in 1917—and, thus, was included among the firms that Chandler focused on in *The Visible Hand*—it was never a center firm.¹⁵³ It lacked middle managers, produced for a specialized rather than a mass market, relied on a well trained cadre of skilled artisans, and never made the Chandlerian three-pronged investment in production, distribution, and management. Still, Brown protested, its history was by no means peripheral to the history of the American economy. A Chandlerian might respond that Baldwin's history illustrated a major Chandlerian theme. Though Baldwin had successfully manufactured steam engines for decades, General Motors summarily destroyed it in less than a decade when, following a downturn in the automobile market, it introduced the gas-powered diesel. Though General Motors lacked Baldwin's proud craft tradition, it boasted far greater organizational capabilities, and, thus, was far better positioned to capitalize on technological advance.¹⁵⁴ Brown, however, drew a different conclusion. Focusing on the period prior to General Motors' entry into the engine market, he contended that Baldwin's history challenged Chandler's synthesis, and, indeed, suggested that "synthesis of any sort may prove difficult to achieve." Yet, Brown added, his history of Baldwin also heralded the promise of a "new industrial history" in which variety, contingency, and choice would replace economic, organizational, and technical determinisms as a guiding theme.¹⁵⁵ Historians who have focused on the period between 1880 and 1920 have been slow to envision what the American economy might

¹⁵¹ Philip Scranton, *Proprietary Capitalism: The Textile Manufacture at Philadelphia, 1800–1885* (Cambridge, 1983), quotation on 8. See also idem, *Figured Tapestry: Production, Markets, and Power in Philadelphia Textiles, 1885–1941* (Cambridge, 1989).

¹⁵² John K. Brown, *The Baldwin Locomotive Works, 1831–1915* (Baltimore, Md., 1995), 252 n5.

¹⁵³ *Ibid.*, 274 n6–8.

¹⁵⁴ Chandler, *Scale and Scope*, 211.

¹⁵⁵ Brown, *Baldwin Locomotive Works*, 240.

have looked like had the managerial revolution somehow been forestalled. In part, this is because many of Chandler's sharpest critics have assumed that the superior alternative to the Chandlerian managerial revolution would have been a managerial revolution in which the central government assumed a much more prominent role in economic planning. At least one skeptic, however, has made the case for the viability of a regional republican alternative to the corporate liberal polity that emerged by the First World War.¹⁵⁶ Focusing on the railroad, political scientist Gerald Berk observed that much of the industry's expansion after 1870 was unnecessary, an assessment, interestingly, that Chandler shared. But Berk extrapolated from this finding the decidedly un-Chandlerian conclusion that technological and market considerations played a smaller role in the making of the modern industrial enterprise than political struggles in Congress, the courts, and regulatory agencies such as the Interstate Commerce Commission. These struggles, Berk concluded, "determined" the technological and market considerations that Chandler treated as exogenous. In this way, Berk kept alive a critique of the modern business enterprise that dated back at least as far as the Progressive era, and that was revived briefly in the 1960s, when New Left historians such as Gabriel Kolko portrayed turn-of-the-century business leaders as desperate reactionaries skillfully manipulating the levers of power to preserve capitalism from collapse. Berk had greater confidence than Kolko in the viability of a regionalist (as opposed to a socialist) alternative to corporate liberalism, and in the continuing viability of the craft-based economic order that Piore and Sabel described. Notwithstanding these differences in emphasis, Berk shared Kolko's conviction that the economic order that did emerge was a tragic mistake.

Historians who have specialized in the half century between 1790 and 1840 have, perhaps not surprisingly, devoted more attention to the possibility that American economic development might have taken a different course. Since few capital-intensive institutions existed in this period, the future seemed more open-ended. None of these historians opposed industrialism outright. But many shared Cochran's conviction that the American economy reached an impressive plateau prior to the managerial revolution. From the skeptics' standpoint, to treat Chandler's managerial revolution as more fundamental than Cochran's business revolution was tantamount to taking a moral stand in an ongo-

¹⁵⁶ Gerald Berk, *Alternative Tracks: The Constitution of American Industrial Order, 1865–1917* (Baltimore, Md., 1994).

ing debate over the compatibility of big business and American values. For these historians, the benefits of American industrialism had been largely attained by 1840, while its costs would become increasingly evident following the emergence, after 1880, of the Chandlerian industrial firm. Though this debate focused primarily on culture and politics, occasionally it touched on economic issues as well. Cochran, for example, has gone so far as to claim that the American economy expanded *faster* in the period before 1840 than it did after this time, and, thus, to imply that the managerial revolution has been associated with a general *slowdown* in the rate of economic growth.¹⁵⁷

Cochran found particularly troubling the disjunction between the hierarchical structure of the modern business enterprise and the democratic ideals enshrined in the American political tradition. "There was, and has continued to be," Cochran believed, "a tension between the deference system necessary to the smooth running of an authoritarian bureaucratic organization and normal Americans."¹⁵⁸ Given this tension, skeptics wondered if the modern business enterprise could ever be made politically accountable, as Chandler had hoped. From their standpoint, it was morally indefensible to treat politics, culture, and the environment as mere background factors that business historians could in good conscience leave for others to explore. Building on Chandler's claim that organizational innovation was a strategy, as well as his critics' contention that technology and markets could be shaped by human will, the skeptics urged their peers to pay more attention to the choices their forebears made in the hope that the current generation might recognize the full range of their available options and build a future that was very different from the past.

Since its publication in 1977, *The Visible Hand* has sparked a lively debate among historians about the role of organizational innovation in American business. No other book has contributed more to our understanding of the rise of the modern corporation and its internal dynamics. Few have better demonstrated the possibilities of a comparative social scientific approach. In particular, *The Visible Hand* demonstrated how a stage-based model of economic development could focus

¹⁵⁷ Cochran, *Challenges*, 49–50.

¹⁵⁸ *Ibid.*, 64.

attention on the radically disjunctive nature of historical change. Some historians championed Chandler's analysis as a persuasive and compelling account of American economic development. Others were less convinced. Critics found troubling the extent to which Chandlerian business history was overly rationalistic, technology-driven, and strangely detached from what William James once called the booming buzzing confusion of everyday life. Skeptics rejected his narrative design as unhelpful or false and urged historians to abandon it altogether. The "seductive appeal" of the visible hand metaphor—warned one senior British economic historian, in an unusually harsh assessment—might well lead scholars into a world as "unreal as that of neo-classical economics."¹⁵⁹

Though no consensus has emerged with regard to what Scranton has puckishly called the "post-Chandler sweepstakes," many historians have found merit in supplementing Chandler's internalist analysis of corporate dynamics with a more contextualist account of the wider cultural, political, and social setting. Such a shift in focus is not without its problems. Subfields, by definition, cannot embrace everything, and business history is no exception. "The business historian," declared Henrietta M. Larson in 1948, "hopes that by providing facts and generalization he will help political, social, and cultural historians to write more intelligently about business and business men as these touch their various fields. He should not attempt to do this himself."¹⁶⁰ A similar caveat was voiced as recently as 1988 by Mira Wilkins, a well known historian of multinational enterprise. "Too frequently," Wilkins warned, business historians permitted their subject to become "diluted and subsumed" under others: "Our field is not economic history, not the history of an industry, not business biography, not social history, it is business history and as such requires specialized, although never narrow attention."¹⁶¹

Notwithstanding Larson's declaration and Wilkins' warning, it seems not only likely but also desirable that, in the future, business historians will devote more attention to the wider political, cultural, and social context in which American business evolved. In so doing, business historians can be expected to build on concepts and insights

¹⁵⁹ B. W. E. Alford, "Chandlerism, the New Orthodoxy, of U.S. and European Corporate Development?" *Journal of European Economic History* 23 (Winter 1994): 643.

¹⁶⁰ Henrietta M. Larson, *Guide to Business History: Materials for the Study of American Business History and Suggestions for their Use* (Cambridge, Mass., 1948), 31.

¹⁶¹ Mira Wilkins, "Business History as a Discipline," *Business and Economic History* 17 (1988): 1.

drawn from cultural studies, semiotics, and other currently influential approaches.¹⁶² But they would miss an opportunity for creative synthesis if they abandoned the comparative institutional approach to historical change that lies at the core of the Chandlerian tradition. Such an intellectual reorientation will, almost certainly, limit the ability of business historians to make broad-brush generalizations of the kind that gave *The Visible Hand* its impressive explanatory power. But this limitation should be offset by the heightened ability of business historians to contribute to an ongoing dialogue with social, political, and cultural historians about the main themes of the American past.

Interestingly, Chandler himself has hailed the possibilities of contextualism, even though it is an approach that he deliberately chose not to pursue. The historian, Chandler wrote in 1984, has "at least two exacting and exciting challenges." The challenge Chandler embraced was to develop concepts that, while derived from events and actions that occurred at a specific time and place, could be used as guideposts by scholars interested in related themes. The second challenge, Chandler explained, was to locate specific human events and actions to their political, cultural, and social setting.¹⁶³ Chandler wisely restricted himself to the first of these challenges, well aware of the rigorous empirical and analytical demands that it presented. Building on Chandler's achievement, business historians are gradually turning their attention to the challenge that Chandler deliberately eschewed. If the trends surveyed in this essay persist, this latter, contextualist approach—grounded in specific institutional settings, though not necessarily in the business firm—will become a dominant mode of inquiry for business historians in the United States.

¹⁶² On the possibilities of cultural studies for business history, see Kenneth Lipartito, "Culture and the Practice of Business History," *Business and Economic History* 24 (Summer 1995): 1-41. The very fact that Lipartito's essay won the Business History Conference's coveted Newcomen Prize is indicative of the extent to which business history practitioners are recognizing the merits of contextualist and non-Chandlerian themes.

¹⁶³ Chandler, "Comparative Business History," 3. "One of the most challenging tasks of business history," Chandler has recently written, is the "placing [of] businessmen and their activities in a broad cultural setting." Chandler, "Editor's Introduction," in Robert F. Dalzell, Jr.'s, *Enterprising Elite: The Boston Associates and the World They Made* (Cambridge, Mass., 1987), vii.