

**FROM SOCIAL CONTROL TO FINANCIAL ECONOMICS:  
THE LINKED ECOLOGIES OF ECONOMICS AND BUSINESS  
IN TWENTIETH CENTURY AMERICA**

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**ABSTRACT**

As the main producers of managerial elites, business schools represent strategic research sites for understanding the formation of economic practices and representations. This article draws on historical material to analyze the changing place of economics in American business education over the course of the twentieth century. We use the Wharton School as an illustration of the earliest trends and dilemmas (c. 1900–1930), when business schools found themselves caught between their business connections and their striving for moral legitimacy in higher education. We show how several of the school’s leaders were closely involved in progressive reforms and presided over the development of the empirical social sciences to address questions of labor regulation and control within manufacturing industries. Next, we look at the creation of the Carnegie Tech Graduate School of Industrial Administration after World War II. This episode illustrates the increasingly successful claims of social scientists, backed by philanthropic foundations, on business education and the growing appeal of "scientific" approaches to decision-making and management. We also show that these transformations were homologically related to changes in the prevailing mode of governance in the American economy: business schools became essential sites for the development of tools and methods for the management of the new large, diversified conglomerates (input-output approaches, linear programming, forecasting). Finally, we argue that the rise of the Chicago Business School from the 1960s onwards marks the decisive ascendancy of economics, and particularly financial economics, in business education over the other behavioral disciplines, as well as the decisive ascendancy of business schools as producers of economic knowledge. By following teacher-student networks, we also document the key role of business schools in diffusing “Chicago-style” economic approaches—offering support for anti-regulatory approaches and popularizing narrowly financial understandings of the firm (Fligstein 1990, 2002), which sociologists have described as characteristic of the modern neo-liberal regime.

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With hindsight, no transformation looks as consequential for the history of American higher education—and perhaps American society—as the extraordinary rise of business schools and business degrees in the twentieth century. Started around the 1900s as vocational programs dominated by practitioners with claims to moral leadership and ethical progress, business education has turned into a large and highly organized field controlled by disciplines with scientific claims. The first notable change was quantitative: in 1920, 1,576 students graduated from American universities with a BA in business; by 1940, the number had climbed to 18,549; by 1950, it reached 72,137 (Silk 1960, p. 14); by 2001, no less than 266,000 students, or 21 percent of all BAs, were exiting American higher education with a business degree—a far greater proportion than the 13 percent who did so in the 1940s (US Department of Education, National Center for Education Statistics). Transformations at the graduate level were even more striking: The number of MBAs went from 110 in 1919 to 5,205 in 1958. Between 1960 and 1980, MBA education grew at an average annual rate of 12 percent. More than 55,000 MBAs were granted in 1981, surpassing the total number of law and medical schools' degrees combined. In 2006, the number of MBAs awarded annually in the United States exceeded 120,000 (Association to Advance Collegiate Schools of Business (AACSB)). Once an almost exclusively American phenomenon, the MBA degree is now granted in more than 100 countries and well on its way to becoming a globalized credential (Moon 2002).

The second significant change was qualitative. Business schools have evolved from being dominated by practitioners and struggling for academic legitimacy to become the largest employers of disciplinary trained social scientists, sometimes rivaling traditional departments in the size and distinction of their faculty. In 2003–2004 for instance, there were 549 economics PhDs teaching in the top 20 US business school, as compared to 637 in the top 20 economics departments (American Economic Association 2004). The absorption of increasingly large contingents of economics PhDs has turned business schools into formidable players within economic science itself—a transformation that is attested by the remarkable string of Nobel Prizes in economic science awarded to business school scholars since 1990 (Fourcade 2008).

Broadly speaking, we can identify three historical (though partly overlapping) trends in the transformation of the American business school over the course of the twentieth century. In the early phase, which begins with the creation of the Wharton School at the end of the nineteenth century, the business school was seen primarily as a vocational institution with a moral dimension. Its curriculum was shaped by the dominant institutionalist understanding of economic life in which practical problems in industry (for instance questions of scale, anti-trust, government regulation and, most prominently, labor relations) occupied a place of choice. Courses were practically oriented, and indeed often taught by practitioners without specialized degrees, such as engineers (for example, Frederick Taylor, the father of scientific management, at the Tuck school) or accountants (for example, George O. May of Price Waterhouse).

A second phase begins in the 1950s and marks the advent of a new vision of the contribution of business to society with the rise of 'management science.' Characteristically, this scientization of the business disciplines did not originate in the core (which remained faithful to more institutionalist approaches) but at a brand new institution striving for academic legitimacy, the Graduate School of Industrial Administration at the Carnegie Institute of Technology. It is there that institutional mavericks with a background in operations research transplanted the decision-making techniques they had crafted for government and the military during World War II to the new corporate forms (for example, large, diversified conglomerates) of the post-war era.

The third phase, which we illustrate here by the rise of the Chicago Graduate School of Business, but really cuts across many other institutions, signals the triumph of neoclassical economics in all business matters. It is associated not only with the widespread institutionalization of a strong core of economists within business schools, but also with new developments in economic analysis (for example, financial engineering, agency theory, or transaction-cost economics). We argue that this transformation helped produce and sustain new understandings about the nature of the firm, with far-reaching consequences for the discipline of economics and for economic relations in society.

To be sure, economists were prominently involved in all three phases of this process: as we will see, they laid claims on business education from the very beginning. But the long term trend is unmistakably one of increased, if contested, interpenetration between economics and business, particularly noticeable in the most

recent period. From representing one subject among others at the turn of the century, economics has become the largest discipline found in business schools; in addition, it has come to exert commanding influence on all other aspects of the business curriculum—including organization studies, marketing, operations, strategy, and most important of all, finance. Conversely, the association with business education has transformed economics in important ways, both in terms of the discipline’s economic standing and in terms of its substantive orientations. It also has had consequences for changing the paradigm about the purpose of the corporation and the power relations among various participants in determining the direction and performance of corporations in ways that favor the interests of owners of economic capital.

In this chapter, we suggest that the co-evolution of economics and business studies in the twentieth century must be analyzed as an instance of “linked professional ecologies.” Abbott (2005) developed this concept to account for jurisdictional developments that take place in several different professions at once [*hinges*, in Abbott’s terminology], or through the expansion of an existing profession into a new ecology [*avatars*]. Medical licensing, which serves to develop both a medical jurisdiction within society and a licensing jurisdiction within the state, is an example of a hinge. The migration of an academic discipline such as economics into the applied world of professional practice is an example of an avatar. The production of an avatar, however, is not straightforward and automatic. Rather, it is an eminently political process, resulting from the mobilization of individuals and institutions around particular professional tasks and involving a complex array of convergent legitimating projects. This chapter is about one of the projects that helped establish the business avatar of economics in twentieth century America: the institutionalization of economics’ claims with respect to business-relevant knowledge and the training of businessmen.

## **THE MORAL EDUCATION OF AMERICAN BUSINESSMEN**

It is important to disentangle the vast expansion of business education at the undergraduate level, which mainly occurred in public universities, from the much more exclusive form, which institutionalized in private universities around a graduate-level only curriculum (Veysey 1965; Jencks & Riesman 1969). In the

first case, the development of colleges of business seems to have been largely conceived as a response to public demands in a competitive environment, as well as a natural extension of the “practical” mission laid out in many of these universities’ public charter. Private universities, by contrast, pioneered the concept of the business school as the privileged training ground for what they defined as the emerging new tasks of management, understood to apply very broadly—the corporation, indeed, was just one outlet for this training, along with public service and philanthropic work. Modeled after other established professional schools,<sup>1</sup> business schools at elite universities (Harvard, Penn, Chicago, Dartmouth...) were to recruit educated liberal arts undergraduates and turn them into moral leaders with administrative competence. They saw themselves as gateways into the elite, and crafted their institutional project accordingly. The creation of the first Master of Business Administration by Harvard in 1908, the drive toward professionalization (with the establishment of doctoral programs in business, special reviews, and associations during the 1920s), the conscious choice to confine business education to the graduate level at Dartmouth (1900), Harvard (1908), later Chicago (1946), Columbia (1952), and Carnegie Tech (1952), were all efforts to protect the selectivity and exclusivity of management training, to affirm its status and seriousness of purpose vis-à-vis the rest of the university, and to establish the scientific rigor of management as a discipline.

While we are well aware of the pervasive influence of business schools in undergraduate education throughout the country, we want to focus our attention on those institutions that have dominated this field over the course of its history, and provided the institutional and intellectual models others have tried to emulate. Because the topic of the transformation of business education over time is vast and complex, we have chosen to limit our analysis to a small number of institutions, which we see as characteristic of the broader patterns within each period. Partly because of its status as the world’s oldest such institution, we begin this history with the Wharton School. We use this example to illustrate early trends in American business education, when the newly created institutions were still trying to define their place within the broader field of higher education and often facing profound dilemmas between their business connections and their striving for moral legitimacy. Certainly these dilemmas played out differently in different places. But, in a way more broadly characteristic of the Progressive period, their solution always involved professionalization and the search for moral

grounding. It is during the earlier part of the twentieth century, for instance, that business ethics emerged and flourished (Abend 2008), and that the ideology of professions as normative institutions (Parsons 1939) took root in American sociology. Different institutions took different paths: Harvard Business School, for instance, embraced a vocational model confidently, developing a practical case-based curriculum and directing faculty output toward influencing practicing managers. Perhaps there was greater certainty that Harvard's reputation would not be seriously affected by what happened in the basement of Harvard's economics department, and later on the other side of the Charles River. Other schools, such as the School of Commerce and Administration at the more recent (1892) University of Chicago, were more conservative and remained committed to the liberal arts as the normal foundation of business education—as of any form of education. The Wharton School stood somewhere between these two extremes and emphasized the empirical social sciences, which seemed then to offer a path between practical relevance and moral education—but also, as we will see, exposed the institution to political criticism from unsympathetic constituencies.

The creation of the Carnegie Tech Graduate School of Industrial Administration after World War II illustrates the second phase in our historical narrative. It is through this example that we discuss the increasingly successful claims of social scientists, backed by philanthropic foundations, on business education and the growing appeal, in the 1950s, of “scientific” approaches to decision-making and management. Gone were the days when the liberal arts were seen as relevant to the education of American businessmen. Rationality was the new *modus operandi*, and what was now called the “behavioral sciences”<sup>2</sup> seemed to offer the greatest promise for solving the problems of American society and economy. As we show in this chapter, these transformations were also homologically related to changes in the prevailing mode of governance in the American economy: in particular, business schools became essential sites for the development of tools and methods for the management of the new large, diversified conglomerates (input-output approaches, linear programming, forecasting), which had developed as a result of economic mobilization during World War II.

Finally, the rise of the Chicago Business School—which really begins in the late 1950s—marks the decisive ascendance of economics, and particularly finance, over the other social-scientific disciplines laying claims on the business curriculum. Conversely, the diffusion of “Chicago-style” economics toward business

schools also became a powerful vehicle for the transformation of the field of economics itself. It helped produce both the microeconomic turn in modern economic analysis and the emergence of narrowly financial understandings of the firm, which would ultimately help re-orient business practices toward what Fligstein (1990) has termed the “financial” conception of the firm, or the idea that the sole purpose of management and the essential social mission of the corporation are the maximization of shareholder value.<sup>3</sup>

#### BUSINESS EDUCATION BETWEEN VOCATIONALISM AND PROGRESSIVISM

When the first colleges of administration, commerce, accounting, and finance were established at the turn of the twentieth century, economics almost instantly appeared as one of the natural foundations of the curriculum—for better or for worse. Writing in 1913, Leon C. Marshall, dean of the Chicago College of Commerce and Administration, wrote of the school’s beginnings in the following way: “this college succeeded in little more than making provision for the grouping of existing courses in economics and closely related subjects” (1913, p. 98). Northwestern University’s dean described the business school as “a very ill-defined institution. It may begin with the freshman year; it may start only after graduation from college; or it may start anywhere in between. It may represent courses in economics regrouped and relabeled, or it may omit all so-called economic courses and center exclusively on practical courses in administration” (Hotchkiss 1920, p. 92). The fact is that the professors in charge of establishing business schools within the institutional framework of the university tended to approach the problem of business education from the point of view of the dominant academic perspective. In particular, they crafted the business curriculum around those disciplines that were then thought to embody the highest promise of social and moral progress, namely the social sciences. Marshall, again, was particularly explicit about this: students at the University of Chicago College of Commerce and Administration had to start their studies with a “broad cultural foundation” in the liberal arts, followed by a “broad survey of the social sciences,” before receiving specialized instruction in one of three possible careers: business, civic service, charitable and philanthropic service (Marshall 1913, p. 100). More often than not, early business school leaders were social scientists themselves; indeed many (for example, James Patten, and McCrea at Wharton; Gay at Harvard; Laughlin and Marshall at Chicago; Day at Michigan) were professors of



political economy, as the subject was then known. But they also aimed to appeal to business audiences, which they did by emphasizing the contribution of business to the progress of American society, and by privileging a relatively pragmatic—and easily transmitted—approach to economic and social questions.

#### INSTITUTIONAL ECONOMICS AND THE SOCIAL RESPONSIBILITIES OF CORPORATIONS

It is in this context that a number of so-called “new school economists”—broadly progressive in their political outlook, interested in social reform, rejecting the abstract legacies of a certain Marshallianism in favor of a resolutely empirical approach to political economy, found themselves closely associated with the construction of business schools: Edwin Gay, the founding dean of Harvard Business School, was an economic historian (Heaton 1952); Edmund James, the first director of the Wharton School (1883–1896), was a railway and public utilities specialist. His successor at Wharton, Simon Patten (1896–1912), was an early promoter of experimental economics. All three had been trained in Europe.

The trajectory of Edmund James may serve as an illustration of the more general path. Trained in political economy in Germany during the heyday of the historical school, James was initially somewhat of a radical interested in social reform. Like his friends Richard T. Ely and Simon Patten, whom he had met on the old Continent, he was also a critic of the deductive approach to economics. And like them, James became an outspoken promoter of professionalization as a way to make policy advocacy publicly legitimate and acceptable (Furner 1975). He was one of the original organizers of the American Economic Association in 1885, after the failure of an earlier venture, the Society for the Study of National Economy, which he and Patten had modeled after the German *Verein für Sozialpolitik*. He was militantly involved in the movement to separate administration from politics and was a founder of the National Municipal League in 1894, a progressive organization which sought to make government less corrupt and more efficient. Finally, his campaign for rationalization included business—partly because the boundaries between public and “industrial” administration were not all that well drawn then anyway. Business, James argued, was as legitimate a subject of study as law and medicine, and as legitimate a venture point for rational social reform as any. Now that was a position that resonated well with the aspirations of the new wealthy elites.

In 1881, Joseph Wharton, a devout Quaker and successful Philadelphia industrialist, gave \$100,000 to the University of Pennsylvania to establish a school of finance and commerce.<sup>4</sup> Management of the business enterprise was growing evermore complex and technical innovations were radically shifting the context within which businesses were operating. But of even greater importance among Wharton's motivations was the feeling that American elites needed to embrace their social role and responsibility for serving a nation that was undergoing tremendous social change as a result of industrialization. The proposed School was to train future leaders to "manage" competently while also working toward the welfare of society: "No country", he argued, "can afford to have this inherited wealth and capacity wasted for want of that fundamental knowledge which would enable the possessors to employ them with advantage to themselves and to the community." (Joseph Wharton, Vision for Wharton School, 1881, as quoted in Sass 1982, p. 23)

The Wharton School of Finance and Economy attracted the attention of the American Bankers Association as "the only institution of higher rank which was busying itself with the [problem of professional education for the business classes]." (James 1898: xv) In 1890, the Association sent James to Europe for one year to study how business was being taught. Published as *The Education of Business Men in Europe* (James 1898), James' study detailed the history and curricula of commercial schools in the leading industrialized countries of Austria, Germany, France, Belgium Italy, and England. Upon returning from Europe, he traveled throughout the country, repeating his call for the establishment of business studies into the higher education curriculum.

Characteristically, James was an opponent of laissez faire dogmatism and also of the application of mathematics to economics. In 1885, for instance, he wrote a scathing critique of Simon Newcomb's *Principles of Economics* for the *Princeton Review*, igniting (together with Ely) an American version of the German Methodenstreit. (Newcomb was then America's foremost mathematician and astronomer) Others at Wharton held similar positions. At stake was not only the proper approach to economics (the integrated and historical view of society as opposed to the search for universal laws) but also the relationship between economics and politics. Simon Patten, also a Wharton professor and James' successor at the head of Wharton, was quite straightforward on the subject. According to him, there could be "no full discussion of economic problems

without bringing political and moral principles into relation with the economic.” In fact, Patten defined the laws of economics not as explanations, but instead as enumeration of “what qualities must be impressed upon men in the struggle for the higher civilization which the conditions of life permit” (Sass 1982, p. 100). Under his leadership the Wharton school embarked on an ambitious program to study the social problems of the day.

As Furner (1975) and Ross (1991) have shown, the institutionalization of social science in American universities was a generally contested process, and business schools were no exception. Some of the initial enthusiasm in favor of the development of political economy at the University of Pennsylvania (certainly on Wharton’s part, for instance) had been fueled by the desire to promote the protectionist doctrines of Philadelphia native economist Henry C. Carey. The fact that Patten was a staunch defender of protectionism had made him eminently attractive to Wharton—and indeed there is evidence that Patten spread the protectionist gospel quite effectively among his students (Sass 1982). But the question of social reform was much more difficult to negotiate with the trustees, and on these matters Patten found himself, like many of his colleagues, much at odds with the interests of those who funded and controlled the university. In 1915 a conflict erupted at Wharton over the teachings of political economy professor Scott Nearing. A member of the Pennsylvania Child Labor Committee, Nearing had been convinced by his work there of the responsibility of local businessmen in keeping local youngsters into their factories and preventing the passage of laws regulating child labor. During the 1910s Nearing published a series of works denouncing this practice, and more generally attacking workers’ low wages, industrial accidents, monopoly, urban congestion and sanitation problems as major sources of inefficiency in the American economy (see, for example, Nearing 1911). This position had irritated members of the state legislature (which partly bankrolled the university), as well as prominent trustees, and Nearing was promptly fired—one of the many victims of the “academic freedom” persecutions so well chronicled by Mary Furner (1975).<sup>5</sup> With Nearing gone, the “trustees encouraged a general exodus of Progressive economists” from Wharton. Patten himself, now seen as an unwanted agitator, was forced to resign in 1917 (Sass 1988, p. 139).

Still, the Progressive ideology that rational expertise should be the main instrument of progress for American society had become well anchored. The point of social and economic reforms was not to make

American society more just (though socialist overtones were certainly not absent from some Progressive writings), but more significantly to make its functioning moral and *therefore* more efficient. By the 1920s, this perspective received further vindication from philanthropic foundations and government agencies, in the form of commissioned projects and the founding of new, empirically oriented, research organizations. In Washington, Secretary of Commerce (1921–1927), then President (1928–1932), Herbert Hoover was enrolling social scientists into his new technocratic economic order (Barber 1985) and business schools officials actively sought the connection. In 1921 the first research center devoted to the study of the “economic and social problems of business” was founded, with Carnegie and Laura Spelman Rockefeller Memorial Fund support, at the Wharton School as the Industrial Research Department (IRD). Its direction was given to a PhD graduate (in economics) from the University of Pennsylvania, Joseph Willits, who used it as a platform to advocate for personnel management policies as a way to prevent social crises.<sup>6</sup> Much less radical than Nearing and Patten, Willits worked mainly through cooperative studies with selected local industries to develop new labor relations techniques that would help improve business conditions.

At the forefront of the preoccupations of businessmen during World War I and the 1920s was the rapid turnover of the workforce. The need to stabilize industrial populations was not only the central industrial problem of the day, but solving it also provided a way to reconcile the Progressives’ aspirations for social betterment with American corporate practices. It is in this context that American philanthropies became heavily involved in sponsoring studies of working conditions and financing the emergence of the social work profession. Beardsley Ruml, who headed the Laura Spelman Rockefeller Memorial Fund, explained the move in the following terms: “it was felt that through the social sciences might come more intelligent measures of social control” (cited in Magat 1999, p. 56). Willits’ Industrial Research Department first studies, for instance, were concerned with what was then called “social mobility”; it is also there that a young Australian psychologist named Elton Mayo did his first U.S.-based work on the effect of employee fatigue on turnover.

Other business school leaders played similar roles as institutional power brokers between universities, foundations, and government: like Willits, Edwin F. Gay from Harvard Business School was actively involved in the Social Science Research Council (SSRC) and the founding and activities of the National Bureau of

Economic Review (NBER), the Council on Foreign Relations, while also leading the development of federal statistics. Edmund E. Day, who became the founding dean of Michigan Business School after chairing the Harvard economics department, went on to head the social sciences division of the Laura Spellman Rockefeller Memorial (later integrated into the Rockefeller foundation) and “played a crucial role in tying together the SSRC to Rockefeller philanthropy” (Fisher 1993, p. 72).

Where did all this leave the place of economics in the business curriculum during the interwar? In most places there remained a general, though perfunctory, agreement that economics—particularly the empirical, institutional economic knowledge so prized by philanthropic foundations and public institutions—had an essential role to play in business education. The lack of specialized training for business school faculty meant that economics graduates still provided a natural pool of educated men to recruit from. Moreover, some believed that keeping economics associated with business was essential if one wanted to avoid the growing schism between business schools and economics departments. Roswell McCrea, who followed Patten as Dean of the Wharton School, thus argued that:

“Economics, where ever else it may or may not belong, does belong in the school of business. Both business and economics need to be saved from themselves. Without the presence of economics in some vital form, the work of a school of business is likely to degenerate into detail description of business organization and procedure, with no organizing principle other than the possible one of search for effective competitive devices, and with no clear vision of the social goal of business activity. And economics, divorced from business, is too likely to spend itself either in closet philosophizing by traditional modes, altogether too little affected with a present interest, or in fortifying predilections regarding public policy with broadly garnered data too remote from the intimate, work-a-day world of fresh experience to yield much more than a crop of articles, books, and book reviews. If schools of business realize their opportunities, the economic theory of the future will grow out their researches and will be formulated by their teachers. The joining of socially motivated thinking with a knowledge of concrete, shifting reality, such as can be effected in a school of business, may well escape the

puttering of the strict vocationalist on the one hand, and the futility of the closet philosopher on the other. The foundations of wise business policy can be laid in this as in no other way.” (McCrea 1925, p. 222) <sup>7</sup>

The ambitions voiced in this quote, however, were rarely achieved. Business schools and economics departments competed for students, and did not always work well with each other. Business courses rarely addressed broad social and economic questions and often developed on an ad hoc basis, as a response to practical demands and the concerns of employers in the local economy; and strong disagreements about the place of academic research at those institutions continued to divide the business education community.

The abysmal failure of American businesses to deliver prosperity after 1929, the foundations’ aggressive promotion of social scientific research as a means to improve governance, and the activist stance of the Roosevelt administration in social and economic matters were in part responsible for the broad re-evaluation of the place of business schools in American society and higher education that took place during the 1930s (Khurana 2007). Schools throughout the entire field—not simply at elite institutions—began to approach their societal role in more elevated terms and to actively embrace academic research. For example, the University of Mississippi’s business school, whose pre-Depression mission statement emphasized narrow technical skills, revised it to include the advancing of knowledge on “fundamental questions of economics and philosophy which influence the course of a dynamic age.” The University of Oklahoma whose mission statement stressed the economic value of its degree prior to 1930 shifted to wanting to “enable [students] to understand the public problems, particularly those having to do with the interrelationships between different businesses, between business and government, and between the employer and employee.” Similar changes could be found at the University of Michigan, New York University, and the University of California.

Economics had a role to play in this new environment, both to help restore the legitimacy of the corporation as a moral institution and to assist government at all levels in crafting a path out of the economic malaise (the New Deal administration attracted a unprecedented number of university social science graduates into government employment). Hence during his deanship of the school from 1933 to 1939, Joseph Willits

called for a return to Wharton's original mission to produce research on economic and social problems. In the words of Columbia's Dean Woodbrige, who created a series of joint appointments between the economics faculty and the business school, the Depression served as "an appropriate occasion for welding these separate units [Business and Economics] at least as far as graduate work was concerned, into a closer integration. Everybody recognizes that under our more or less arbitrary, but certainly unavoidable scheme of departmentalization there are subjects and interests appropriate to professional schools of business that might properly be included under a graduate department of economics. Conversely, there are manifestly subjects and interests that not only may be, but should be included in both" (Van Metre 1954, p. 78).

There is no question that many of these changes were symbolic, ceremonial acknowledgements that remained relatively decoupled from the still very vocational orientation of business courses and activities—nothing but "glittering and general phrases, designed to command the respect of our academic colleagues, but having little reference to vocational or professional aims...", as the dean of Northwestern's fledgling business school put it. (AACSB 1926). After World War II, however, the true effects of this reorientation of business schools would be felt on a new scale, with academic scientism becoming much more central not only to the institutions' rhetoric about themselves, but also to their curriculum and understanding of their vocational mission. Characteristically, it took an outsider—a brand new institution not beholden to traditional methods and existing constituencies—to effect the change. But before we discuss how Carnegie-Tech changed business education, let us step back a little to consider the disciplinary and institutional environment that brought this small school to the center stage of business education in the 1950s.

## **FROM SCIENTIFIC MANAGEMENT TO MANAGEMENT SCIENCE**

By the late 1950s, American economics had undergone a dramatic transformation. The dominant approach during the interwar, institutionalism, was on its way out, displaced by the rise of mathematical economics in the wake of the Keynesian revolution (Yonay 1998). The collection of large streams of data by federal agencies and the construction of national accounts (accomplished by Kuznets in 1937 at the National

Bureau of Economic Research), combined with the birth of macroeconomics, were spearheading a new, theoretically oriented, approach to empirical work. The shift to model-building as the alpha and omega of the economist's craft was most dramatically announced by the publication of Paul Samuelson's *Foundations of Economic Analysis* in 1947, in which he laid out the new approach to economics as an instance of mathematically-driven deduction, much like theoretical physics. The new economics, Samuelson wrote, was to embrace

“the method of comparative statics, meaning by this the investigation of changes in a system from one position of equilibrium to another without regard to the transitional process involved in the adjustment. ... This method of comparative statics is but one special application of the more general practice of scientific deduction in which the behavior of a system (possibly through time) is defined in terms of a given set of functional equations and initial conditions.” (Samuelson 1947: 7–8)

This did not, in fact, sit well with all audiences. Foundations officials were disheartened by the esoteric potential of the new economic approach. More importantly, segments of the business world were quite annoyed by the Keynesian orientations of the young generation of neoclassical economists. As Samuelson, again, put it, “Keynesianism was a naughty word politically long after the war,” frequently lumped together with communism in right-wing circles (in Colander and Landreth 1996, p. 170). Neoclassical economists, many business officials felt, had replaced the celebration of the private enterprise system and opposition to regulatory frameworks by a new fascination with macroeconomic aggregates and, as time progressed, a growing acceptance of government intervention in business matters (Bornemann 1957, pp. 135–136). A survey of the teaching of economics carried out for the Sloan Foundation plainly expressed this dissatisfaction with what some perceived as a new form of radicalism (McKee and Moulton 1951). Characteristically, one response from the business world and foundations was to sponsor new economic research institutions, the most important of which was the Committee of Economic Development, a think tank filled with economics faculty



and graduates from the University of Chicago, some of them closely affiliated with the Graduate School of Business (Collins 1978).

But macroeconomics and regulation was not all that was important about the new face of economics in the post-war period. To a large extent, the most consequential developments for the future of business education came not from the consolidating neoclassical mainstream in universities, but from a rather unlikely source: the nebulae of institutions and research centers sponsored by the U.S. military. It is in this sector that we can identify the intellectual sources of a new “scientific”—that is, quantitative and highly technological—approach to management, to be taken up and systematized on a massive scale through the financial and moral influence of American foundations. The new era in the relationship between economics and business can thus be understood as the outcome of three joint developments: first, the emergence of “management science” as an outgrowth of the general transformation of the social sciences under the influence of operations research and military funding during and after World War II (Simon 1991; Mirowski 2002); second, the disciplinarization of the business curriculum, which reflects the institutionalization of a new power configuration in business school education largely driven by the Ford Foundation; and third, the emergence of the conglomerate model of corporate organization, which, as we will see, bore more than an “elective affinity” with the new techniques being developed in economic research circles. The dramatic success, barely a few years after its founding, of the Graduate School of Industrial Administration at the Carnegie Institute of Technology provides a powerful illustration of all three trends, as well as of their interpenetrating logics.

#### THE GSIA AND ADMINISTRATIVE BEHAVIORISM

We already saw that the founding (and often subsequent) deans of the business schools at Wharton, Harvard University, the University of Chicago, the University of Michigan, were all economists. The new business school at the Carnegie Institute of Technology, which William Larimer Mellon (a member of the powerful Mellon family and founder of the Gulf Oil Company) helped establish in 1949 was no exception to this rule: its first dean, Lee Bach, was a Chicago economics graduate and, at the time of his appointment, the chairman of the Carnegie economics department.

The Graduate School of Industrial Administration (henceforth GSIA), as it came to be known, would go on to offer a new model for studying and teaching business. The approach would be decisively technical and methods-oriented, and quite scornful of traditional, practitioner-dominated forms of training, as well as disciplinary mainstreams. Indeed, it is perhaps the GSIA's relative marginality vis-à-vis dominant business schools and academic departments, which enabled it to cultivate a certain intellectual autonomy and play a decisive role as an incubator of new approaches within economics in the 1950s and 1960s (including behavioral economics, modern finance theory and—perhaps most significantly—the theory of rational expectations.)

The original mandate says it all. Funded with a six million dollar grant by Mellon, the Graduate School of Industrial Administration was to "...help the growing need in American industry for potential executives trained in both engineering and management" (Fact Sheet: Official Dedication, Carnegie GSIA 1952). But where did this new orientation come from? To some extent from Dean Bach himself. A graduate of the University of Chicago's economics department, Bach had been deeply affected by the Depression and frustrated at the lack of relevance of the social sciences, especially economics, to solving social problems.<sup>8</sup> With degree in hand, Bach received a U.S. Navy commission and spent most of World War II working on post-war economic reconstruction planning. At the end of the war, he accepted an appointment as chairman of the economics department at Carnegie where he became a close confidant of William Larimer Mellon who had a strong interest in business education. Bach eventually succeeded in convincing Mellon to underwrite a new type of business school. As the dean-elect of the yet-to-be built school, Bach spent a year visiting the classrooms of the country's leading business schools.

With the exception of Harvard, "which was lively and intrigued with the advantages of the new 'case method,'" Bach felt that most of the business school programs tended to be either applied general economics or simply a "how-to-do-it" picture of prevailing best practices among leading business firms. There was little in the way of participative learning. Little research was being done, and, where there were any at all, doctoral programs were weak. Business schools tended to be at the bottom of the academic pecking order, often ranking below programs in agriculture and education schools.<sup>9</sup>

Bach's vision for the GSIA represented a radical departure from existing practices. He saw business education as an extension of the social sciences, rooted in quantitative analysis and the behavioral disciplines (Bach 1960a). As Herbert Simon put it in his autobiography, "Almost none of the founding fathers of GSIA had extensive backgrounds in management or business education. We were social scientists who had discovered in one way or another that organizational and business environments provide a fertile source of business ideas and who therefore did not regard basic and applied as antithetical terms" (Simon 1991, pp. 138–39).

Along with Lee Bach, the other two original pillars of the school were Herbert Simon and William Cooper. Cooper owed his higher education to luck and the benevolence of a wealthy patron, who sponsored his studies in economics at the University of Chicago (he then went on to do graduate work at Columbia). Like many in his generation, he found himself caught up in government service (he worked at the Tennessee Valley Authority) during the last years of the Great Depression. He stayed in government during World War II, where his statistical skills drew him into operations research. As for Herbert Simon, Mirowski describes him as the "consummate cold war intellectual . . . a master polymath" (2002, pp. 454–455). Trained as a political scientist specializing on bureaucracy, Simon was fascinated by mathematical formalization (his mentor at the University of Chicago was the economist and mathematician Henry Schulz). Later on, while on the faculty at the University of Illinois, Simon found himself (at Cooper's instigation) drawn to the Cowles Commission for Economic Research, which "started [him] on a second education in economics" (Simon 1991). The same Cowles connections also led Simon to forge contacts at the RAND Corporation and particularly one of its subsidiaries, the Systems Research Laboratory, where he worked on computer simulations and completed the first artificial intelligence program. Indeed, according to Mirowski, it is this context—much more than his behaviorist influences—that shaped Simon's distinctive conception of administrative behavior, which later earned him the Nobel prize in economics.

In some non-trivial way, all three individuals were institutional and social mavericks—Simon describes Cooper as completely unembarrassed by convention, for instance; and Simon's own autobiography and correspondence shows a rather brash (if charismatic) personality. All three had a connection to the

University of Chicago, yet none was a typical representative of what would later be called the “Chicago view”—the staunch preference for the free enterprise system. Indeed Simon—like many Cowles affiliates—was originally somewhat of a leftist (though firmly anti-communist), and Reder writes of G. L. Bach that he “would not be thought of as [an example] of the Chicago genre.” (1982, p. 6) Though they were all firmly committed to the application of mathematical and statistical methods to decision-making, their attachments to economic orthodoxy were weak—indeed they were mainly involved in all sorts of applied projects (Bach 1960b). Finally, their orientation toward business school education and research was competitive and opportunistic: “American business education at that time [was] a wasteland of vocationalism that needed to be transformed into science-based professionalism.” (Simon 1991, p. 139). The GSIA was to be the antithesis of all this and demonstrate the relevance of serious academic research to business education.<sup>10</sup> And truth to tell, transforming the business school into a social-scientific research powerhouse was a necessary precondition to making the distinctive scientific program these people envisioned academically legitimate. What was at stake in the GSIA experience was nothing less than the redefinition of the dominant form of intellectual capital in the field of business education, which would soon imply the replacement of business practitioners with corporate experience by academics trained in the social sciences. That transition, in turn, was permitted, first, by the mobilization of technical capabilities and the rhetoric of science; and, second, by the backing of other academics-dominated institutions, namely powerful philanthropic foundations.

In describing the qualifications for his school’s faculty, Bach stated: “we wanted a block of faculty members to provide the disciplinary foundations for the applied fields to business. For this group, we preferred people from the disciplines (economics, political science, the behavioral sciences, operations research) and the quantitative methods (mathematics, computers, statistics, accounting).”<sup>11</sup> The GSIA also sought to recruit different people. Advanced training in quantitative analysis and a background in engineering were prerequisites for admission—in sharp contrast with Harvard Business School, where most of the MBAs had a liberal arts background. The master degree curriculum was built around four pillars: (1) organizational behavior, (2) economic analysis, (3) quantitative management science, and (4) business and society. Bach legitimated the place of economics in the following way: “It is essential for the businessman, as citizen and as

civic leader, to understand the broad mechanism of the economic system in which his firm operates and to be able to think intelligently and independently in arriving at positions on major public policy issues. Second, economics can provide some tools, but only a modest part of the necessary tools, for making managerial decisions about the conduct of the firm” (Bach 1956, p. 563).

Bach and his colleagues knew that their experiment at Carnegie was fraught with risk. However, they felt the risks were not associated with their approach per se, but with whether or not they would be able to overcome the liability of newness that confronts any new organization, especially one trying to differentiate itself from the existing group. While the school had been able to attract unique “human capital” and “financial capital,” it lacked social recognition. Older, larger and well established institutions still dominated American business education, and GSIA administrators were well aware that their school’s success depended on their ability to influence the outside world’s perception of the quality of what was happening within its walls. But they managed to do so, as we will describe below, largely thanks to the providential backing of the richest and newest foundation in the world. It is, ultimately, the support of the Ford foundation that propelled the recently established and relatively small institution into the inner circle of American business schools, thus legitimating its pedagogical and research models and, correlatively, its faculty.

#### NEW CORPORATIONS, NEW TECHNOLOGIES

Before we analyze the process by which the Ford foundation became involved in supporting the new approach to business education promoted by the GSIA, we need to discuss the broader historical context in which this particular move occurred. Two points need special consideration here, one economic—the emergence of the large conglomerate (or firms operating in multiple industries) as the dominant economic institution—and the other political—the anti-communist obsession of the McCarthy era. Let us turn first to the economic transformation.

The economy that emerged out of World War II was a profoundly transformed one. Replacing the large, horizontally and vertically integrated corporations of the earlier twentieth century, the multidivisional, diversified conglomerate was now well on its way to become a dominant organizational form. Prior to the war

more than 85 percent of all Fortune 500 companies operated in a single 2-digit SIC (Standard Industrial Classification) code, by 1960 more than half of all Fortune 500 firms operated in multiple industries (Nohria 2002). Instead of trying to increase market share through efficient work organization and price leadership, the many firms that followed the new model sought to ensure their survival by growing sales and spreading risk across industries and product lines (Fligstein 1990). In this changed environment, the management of supply chains and the forecasting of demand thus replaced labor productivity and labor process efficiency as the core problems faced by corporate decision-makers.

The management of the war, importantly, posed similar problems. As we saw earlier, military and state demands during the conflict freed up large amounts of resources for experimenting with resource allocation techniques and the development of statistical methods that would help foster a massive increase in production. It was a formative period for a number of economists and operations researchers, many of whom ended up at RAND as soon as the conflict was over, or in more traditional academic bases but with their work sponsored by military agencies. This was the case at the GSIA, where the U.S. Air Force Project SCOOP (Scientific Computation of Optimum Programs) established a research center devoted to the development of mathematical models to address various industrial problems. It was under its auspices, for instance, that GSIA economists Holt, Modigliani, Muth and Simon worked on linear decision rules to plan production, work force and inventory in industrial settings. Originally developed at a Springdale paint company, their approach was later implemented more broadly; and the methods they developed are still widely used in business forecasting. The same is true of the work of Charnes (from mathematics) and Cooper on the planning and control of industrial operations. As Cooper later recalled: “I became the recipient of numerous inquiries as well as visits by personnel from industrial firms eager to learn more about these new methods. [...These academic papers] started a trend in the development of new methods for managing refineries (and other oil company activities) which continues to this day” (Cooper 2002, p. 36). Complementing their intellectual work with institutional activities, Cooper, Simon and Charnes all became actively involved in the founding of management science organizations.

Others followed a different path, and moved directly into the corporate world. Perhaps most notable there was the trajectory of Robert McNamara, who was hired from his teaching post at Harvard Business School to join an operating group in the Army Air Corps to plan for the wartime production of airplanes. Using the earliest computers being developed in government laboratories, McNamara used life expectancies of air crews, the application of stochastic simulation, queuing theory, and other new statistical techniques, to formulate acceptable kill ratios, bombing runs and airplane production runs. After the war, he brought his scientific language and planning, organization, and management control techniques to the Ford Motor Company, as one of a small number of “Whiz Kids” hired to turnaround the corporation.

The GSIA experiment was thus not at all an isolated aberration—in fact it was part and parcel of a broader transformation of conceptions of control in corporations and government that had been ushered in by the move to a militarized economy. In this new understanding, managers were increasingly described as “systems designers,” “information processors,” and “programmers” involved in regulating the interfaces between the organization and its environment and bringing rational analysis to bear on a firm’s problems, whatever they might be—quite a far cry from the problems of labor control that had dominated the preoccupations of managers and scholars’ alike during the 1920s. A 1952 *Business Week* article describing the new managerial technologies proclaimed: “The day of the truly professional general management man isn’t here yet, but it is not far away. That man will be trained for management in general, rather than in any one phase of business. He’ll learn his technique in school, rather than on the job.”<sup>12</sup> Armed with these new tools, proponents suggested, managers could work in an organization without knowing the details of its operations because what mattered was the structure and process of management decision-making.

The other reason why the reform of management seemed urgently needed in the 1950s was political. Since the 1930s at least there was a strong sentiment among some government and business elites that capitalism had failed to deliver its promises, with dramatic consequences for the world. In the context of the cold war, these ideas were recast in a more explicitly political direction, as the necessity to suppress the growing influence of communist ideas. This implied that efforts had to be made to insure not only the competent management of the macro-economy—as the creation of economic advice organizations and think

tanks during the 1940s attests—, but also that of corporations themselves. In a 1948 speech to business executives, Harvard Business School Dean Donald K. David (and soon to be chairman of the Ford Foundation), described effective managers as essential to capitalism’s victory in the contest with communism: “We face a long continuing struggle throughout the world for men’s minds and indeed for men’s souls.... In this conflict of systems, the best way to preserve our system is to make it work. To me the brightest ray of hope in these troubled times is my firm belief that the business men can and will measure up to the task.”<sup>13</sup> During the McCarthy era, political attacks against philanthropies (which culminated in congressional hearings into the foundations’ activities) only made these political motivations more salient. The Ford and Carnegie foundations, in particular, clearly understood that fighting the spread of radical ideas and working toward the improvement of U.S. corporations would help restore their legitimacy in the eyes of skeptics (Lagemann 1987).<sup>14</sup>

#### THE GSIA AS MODEL

In this radically altered landscape, the GSIA seemed to offer a new promise. James Howell, an economist and co-author of the 1959 Ford Foundation report, later revealed that as early as 1954, only one year into Ford’s initial foray into business school programs, the GSIA was immediately recognized as “the advanced projects laboratory, the research and development (R&D) group that [Ford] had to find or create; fortunately, it already existed” (Howell, *The Ford Foundation*, p. 9; in *New Look*, p. 19). Still, personal connections were essential in bringing the GSIA to the attention of Ford. The school’s dean, Lee Bach, was a protégé of Chicago Professor Theodore Schultz, who had the ear of Ford foundation officials and was probably instrumental in Bach’s appointment (Van Overtveldt 2007). More importantly, perhaps, was the close collaborative relationship which developed between Lee Bach, Herbert Simon and Ford Foundation’s vice president Thomas Carroll. Simon closely assisted the Ford foundation in the development of its core programs in the behavioral sciences throughout the 1950s, which sought to bridge the divide with economics and helped craft the distinctively interdisciplinary approach promoted by Ford. As for Bach, who was a member of the



Ford Foundation's external advisory committee, he was recruited by Carroll to work closely with him on a strategy to achieve reforms in business education.

The strategy Carroll and Bach evolved was relatively straightforward: pour extraordinary amounts of resources into "good or promising schools of business (five were to be chosen) which would then be the instruments of change for the rest of the field." Given the amount of money involved, it was felt that the institutions would quickly fall in line with Ford's recommendations.

In an important symbolic message about the future trajectory of business school research, Harvard Business School did not receive the first large grant issued by the Ford Foundation.<sup>15</sup> Instead, that honor went to Carnegie's GSIA—a school that had barely been in operation for five years (1950), but whose character expressed, according to the foundation, the ideal-type of what other business schools should aspire to—the training of doctoral students in the application of the behavioral sciences and mathematics to problems of administration (Carroll 1959, p. 156). As the dispositional logic of habitus would predict, Ford officials—most of whom were academics—were thus contributing to enhance the world they came from by positively sanctioning the scientific, research-oriented (as opposed to practical and vocational) orientation of the GSIA.

Bach also collaborated closely with the Ford and Carnegie foundations in the development of two widely published surveys about the state of business education in the United States. These reports aimed to do for business education what the Flexner report had done for medical education in 1910. Based on an extensive survey of business education curriculum, students, faculty, and research, the two reports presented the GSIA's model of management education as the template for other business schools. MBA courses were to be taught by disciplinary trained scholars steeped in the latest quantitative methods to study various phenomena of business. Business school faculty should mostly be drawn from academic disciplines such as economics, engineering, mathematics, sociology, psychology, and statistics. Business schools were to restructure their own doctoral programs by grounding students in the basic social science disciplines and direct their research toward more fundamental theory. Finally, research was to be organized around interdisciplinary teams rather than individuals (Crowther-Heyck 2006a, 2006b).

A 1965 examination of the impact of the 1959 Gordon-Howell report noted several changes that signaled the foundation's success in building more research-oriented business faculties (Wheeler 1965). First, business schools had significantly increased the number of faculty with doctoral degrees, and many had moved toward adopting academic hiring and promotion processes similar to those found in disciplinary departments. Between 1954 and 1964, for instance, the proportion of fulltime faculty with doctoral degrees at the 25 largest business schools rose from about 69 percent to 83 percent. As a result, the percentage of the largest 25 schools that met AACSB accreditation standards jumped from about 50 percent in 1954 to 100 percent by 1965 (Wheeler 1965). Second, the next generation of business school professors was now being educated in doctoral programs that emphasized disciplinary foundations and quantitative methods. Business schools began not only to hire faculty members from other business schools but also to actively recruit research-oriented, discipline-trained faculty from mathematics, economics, and statistics departments. Third, the greater emphasis on published research by schools had led to an increased number of academic outlets for publishing business school research, which in turn helped promote research activity. For example, Stanford's Graduate School of Business in the early 1950s was a place, according to one observer, where "the amount of time devoted to research was left entirely to individual proclivities" while "[m]ost faculty members devoted their surplus time to consulting" (Wheeler 1965). Nor did the school consider an individual's research output in decisions about promotion and tenure. Between 1959 and 1969, however, Stanford began aggressively implementing the Ford Foundation reforms by recruiting faculty, not only from GSIA, but from the nation's top economics and psychology departments. By 1969, Stanford's business school enjoyed an academic reputation as one of the premier business school research institutions. Even "trickle-down" schools such as Northwestern, Wharton, and MIT deliberately avoided hiring their own doctoral students for faculty positions: "[T]he filling of any new post is now viewed as a sacred opportunity and approached with the greatest of care," wrote Joseph Willits about Wharton's post-1959 reforms (Sass 1982, p. 259).

ECONOMICS VS. THE BEHAVIORAL SCIENCES

It is in this context that the GSIA “became an economics nova,” as James March later put it (March on Tepper school website). No less than six individuals who taught at the GSIA from the mid-1950s to the mid-1970s (Simon, Modigliani, Miller, Lucas, Prescott (and his student, Kydland), Smith) have since then been awarded the Nobel prize in economics—a quite remarkable feat for a recent, small institution, and a business school at that. Even more significant, perhaps, is the distinctive style of research, which took root at the GSIA. Aside from the original behaviorist group around Simon and March, much of the faculty roster reads like a *Who’s Who* of free-market economics and, in particular, announces the monetarist and microeconomics foundations revolutions to come in macroeconomics: in this vein, let us just mention monetarist Allan Melzer; John Muth, who—in a near complete reversal of Simon’s bounded rationality conceptualization—originated the rational expectations hypothesis (Sent 2002); Thomas Sargent, Robert Lucas and Leonard Rapping, who developed it in the context of a critique of macroeconomics. Prescott, who is also important in this line of analysis, was a student of Lucas at the GSIA, and Kydland, a student of Prescott.<sup>16</sup>

It is perhaps not completely surprising that these orientations would develop at the GSIA rather than elsewhere. Being low on symbolic and social capital due to their peripheral location (both geographic and institutional), GSIA economics faculty boosted their academic status by ruthlessly marshalling their scientific purity. Second, Simon’s attempt to “preach the heresies of bounded rationality” to the economists may have been instrumental in pushing them to articulate further their (contrary) views on rationality.<sup>17</sup> As Simon described it retrospectively, “I heckled the GSIA economists about their ridiculous assumptions about human omniscience, and they increasingly viewed me as the main obstacle to building “real” economics in the school” (1991; p. 144).<sup>18</sup> By 1965 the school’s economists were united enough in their views to cause Simon to quit in disgust and find refuge in the psychology department. Third, a large proportion of the GSIA recruits in economics came either from the center of free-market economics—the University of Chicago—or from close affiliates (Allan Meltzer, for instance, who was a pillar of the GSIA since 1957, is a “second generation” Chicagoan—his mentor at UCLA and longtime collaborator, Karl Brunner, was a loyal disciple of Friedman—; all three are key figures of academic monetarism). We may hypothesize that there were not very many top departments hiring Chicago graduates at a time when the domination of Keynesian economics was

overwhelming: hence their relegation to a business school, however remarkable. However, as we describe in the next section, this pattern became, over time and through the massive expansion of business schools in the following decades, a considerable source of strength for the broader diffusion of Chicago approaches.

## **MARKETS TRIUMPHANT**

While University of Chicago-trained faculty had shaped the disciplinary trajectory of Carnegie's GSIA, it was not until the late 1950s that the University's own business school took a disciplinary turn. Allen Wallis, the dean of the Chicago GSB from 1956 to 1962, noted that an earlier attempt to realize this goal had been thwarted by the institution's Chancellor, Robert Maynard Hutchins, who questioned the place of business education at the University and consequently starved the school of resources. Under the new chancellor, Lawrence Klimpton, the effort to restore business school education and research on sounder academic footing was now a priority, Wallis asserted in Chicago's grant application to the Ford Foundation.

W. Allen Wallis was a Columbia-trained statistician, but had spent time in the Chicago economics department during the 1930s. It is there that he started to forge a life-long friendship with two fellow students, Milton Friedman and George Stigler; the three were then united again during the war when all worked at the U.S. Navy-sponsored Statistical Research Group at Columbia University. Partly thanks to Friedman's influence, the University of Chicago recruited Wallis shortly after the war to found the Committee, then Department of Statistics, which soon successfully enlisted the support of the Rockefeller foundation to serve as an engine for the dissemination of statistical methods toward other fields (Olkin 1991).

Together with associated dean James Lorie (another Chicago-trained economist), Wallis defended the idea that a business school should not be very different from a university: it should be oriented toward further learning, as opposed to vocational training, and should have first rate research. The reformed GSB would draw upon disciplinary faculty who were working in areas most closely related to business—statistics, accounting, law, and, especially, economics. Wallis had extensive control over hiring, and leveraged his own

academic reputation to recruit like-minded economists and statisticians. He was described as “shrewd and indeed almost ruthless in carrying out his program” (Gordon to Chamberlain, November 457, FFA 58–140).

An important “coup”—and certainly widely consequential for the business school—was the hiring, in 1958, of Wallis’ friend George Stigler. One member of the Ford Foundation noted “one would expect that emphasis on the economic ingredient of the curriculum (and probably of a traditional Chicago mold particularly if George Stigler accepts the Walgreen professorship) to overwhelm the other social science elements.” [CITE?] This uniting of Friedman (who had been teaching at Chicago since 1946), Stigler and Wallis was, according to Reder, “the key to the development and eventual dominance of the Chicago view” (1982, p. 10) in American economics, which boasts the desirability of limiting government economic power. To this trio we might add Aaron Director, Friedman’s brother in law, who, with support from other conservative foundations (the Volker Fund, the Olin Foundation) helped transform the Chicago Law School into an economists’ powerhouse (Coase 1993, Peck 2007, Van Horn 2008). Importantly, all four—and many others in the economics department and the GSB—shared a firm belief in the power of free markets and a strong distaste for government action. All were early members of the Mont-Pèlerin Society, a select think tank set up by their Chicago colleague Friedrich von Hayek<sup>19</sup> in the 1940s and which many regard as the original vehicle for the elaboration and diffusion of neo-liberal thought. (See, for example, Cockett 1994; Mirowski and Plehwe forthcoming)<sup>20</sup>

#### THE EMBEDDING OF ECONOMICS AT THE CHICAGO GSB: THE ROLE OF PHILANTHROPIES

Meanwhile the Ford Foundation regarded Chicago as the perfect place to promote the approach to business education that had been pioneered by Carnegie’s GSIA (Wallis’ connections to the foundation world certainly helped). Foundation officials felt that, to some extent, the Chicago Graduate School of Business was an even better candidate for their program. Unlike the GSIA, it was embedded inside one of America’s best universities. As one Ford Foundation administrator wrote about the decision to make economics the center of Chicago’s business education, the GSB now “offers a program in business education that is more nearly professional than is characteristic of much business education in that it offers a training which cannot readily

be acquired simply by doing and which might genuinely distinguish the business school educated businessman from those who have not had the advantage of such training.” [1958, FFA] The GSB thus received the second (after GSIA) largest grant as one of Ford’s centers of excellence.

The transformation was swift. Between 1957 and 1963, the number of PhD. candidates in the school’s doctoral programs increased from 18 to 70. Faculty ranks swelled to seventy members, with only 11 of the pre-Ford reform faculty from when Wallis first became Dean. Of the new faculty “about 20 per cent came from faculties of other schools of business, about 40 percent from faculties of other departments (principally economics), about 25 per cent from business and government, and about 15 per cent came to the School directly from their completion of graduate work.” Of the 51 faculty in 1959, 22 had a PhD in economics (Whitley 1986, p. 162). The trend continued into the 1960s with the next Dean, Chicago-trained economist George Schultz. Continuing Wallis’ institutional work, Schulz launched a three-year study of the impact of economic conditions and technological change on labor relations, and used the program to create within the business school an economics department that rivaled the top arts and sciences-based economics departments in the United States.

Revamping Chicago’s business school along the lines of the Ford Foundation recommendations—that is, essentially, by expanding its economics faculty—was also supported by important interests in the business community. The school created an Associates Program, which enrolled the financial commitment of 100 corporations to support the new strategy. James McCaffrey, Chairman of International Harvester, and Fairfax Cone, of Foote, Cone, and Belding and a University trustee, promised to raise \$200,000 to \$400,000 to support the GSB’s curriculum and faculty recruitment efforts. Finally, significant support for the GSB came from private, often conservative foundations, which George Stigler, in particular, pursued assiduously.

One such foundation was the Walgreen Fund, whose history has been recently revealed by Edward Nik-Khah (2008). Its story begins in 1937, when Charles Walgreen, founder of the American chain of drugstores, made a gift of \$550,000 to the University of Chicago to establish a new academic foundation. Earlier Walgreen had removed his niece from the university on the grounds that she was being taught communistic theories; the Walgreen Fund was meant to counterbalance these views by fostering “greater

appreciation of American life and values among University of Chicago students.” It originally served to sponsor public lectures series by high-profile political theorists—it was under its auspices, for instance, that political philosopher Leo Strauss gave his famous lectures on *Natural Right and History* in the 1940s or that Hannah Arendt first presented (in 1958) what was to become *The Human Condition*.

According to Nik-Khah, it is Wallis “who persuaded [University of Chicago] President Kimpton to remove the Walgreen Fund from political science and place it under the care of the GSB.” (2008, n.6, p. 445) Once at the GSB, the Walgreen Fund came under the control of George Stigler, who used it to support his own as well as others’ research, sponsor his famous industrial economics workshop, and generally build up an economics team to his liking by luring faculty away from other universities—toward both the business school and the economics department—(Gary Becker and Robert Lucas, for instance, came back to Chicago under very favorable conditions). Distrustful of large, established foundations and even more of public money, Stigler later on succeeded in securing further support from a host of smaller private donors for a “Center for the Study of the Economy and the State,” which still leaves on today.

These considerable institutional resources helped Stigler, together with Milton Friedman (in the economics department) and Aaron Director (at the law school) push forward an intellectual program that would help profoundly transform prevailing views about government, markets and corporations. With ferocious verve, Stigler’s writings attacked any view of the American economy or American corporations that strayed away from the competitive model, whether it came from institutionalism (Berle and Means, Galbraith) or neoclassicism (Chamberlin). His empirical studies, many of which were produced under contract, uniformly showed the complete disutility of government regulation<sup>21</sup> and the non-threatening character of private monopolies; they did much, indeed, to provide a rationale for the movement of deregulation in the 1980s, on the one hand, and to support the benign view of antitrust defended by much of the Chicago-originated law and economics scholarship on the other.<sup>22</sup>

THE MERGING OF FINANCE WITH ECONOMICS

Perhaps the most direct consequence of the institutionalization of a powerful neoclassical core within American business schools, and at the Chicago GSB in particular, however, was the transformation of finance into “financial economics”—a shift which, as McKenzie (2006) has suggested, had considerable consequences for the development of financial practices themselves. Finance was an old topic in American business schools, but up to the mid-1960s its orientation was mainly descriptive and institutional. Financial knowledge was directed primarily at managers within corporations and practitioners played a non-negligible role within the field. As Whitley (1986) shows, by the 1980s this picture was no longer true. The American Finance Association had become dominated by academics; financial research was based on high level mathematics and statistics, and set in a neoclassical microeconomics framework; and the central questions now had to do with financial markets—not firms.

Interestingly, the GSIA was initially an important locus for the transformation—it is there that Franco Modigliani and Merton Miller produced the contribution that earned both the economics Nobel Prize. But Modigliani promptly went on to MIT, while Miller moved to the Chicago GSB, which arguably became from then on the intellectual center for the development of financial economics. The main asset that spurred Chicago’s ascendancy in the field, however, was not its scholars but the existence of a unique financial database on the university premises. Starting in 1959, the Merrill Lynch bank, whose officials had developed an interest in modern financial theory, supplied the GSB with a series of grants to set up a Center for Research in Security Prices (CRSP), over a period of 22 years the Center would receive a total of \$1 Million). The CRSP was devoted mainly to the gathering of the prices, dividends, and rates of return of all stocks listed and trading on the New York Stock Exchange since 1926.

As MacKenzie points out, this was a turning point: “CRSP’s tapes gave U.S. finance academics from the mid-1960s an advantage over their predecessors: easy access to massive volumes of data in a format that facilitated analysis. Even at the start of the 1960s, researchers such as the Chicago PhD student Arnold B. Moore were still having to construct stock-price series by hand from runs of the *Wall Street Journal*.” (2006, p. 69)



The approach to finance developed at the GSB was quintessential Chicago economics: free-market oriented, and interested only in the predictive power of theory, irrespective of the realism of assumptions. (MacKenzie 2006, pp. 55, 71) Since the technical abilities involved were not trivial, however, “these data bases and their associated skills enabled the leaders of MFT [Modern Finance Theory] to claim ‘positive’ scientific status for their program and to control the production of a massive amount of research (...) regardless of the difficulties involved in relating economic models of perfect markets in equilibrium to stock market price changes and similar phenomena” (Whitley 1986, p. 173). Thus Chicago finance’s perhaps most well-known product, the efficient market hypothesis (Fama 1970), asserted in its strong form that the prices of securities always perfectly reflect all known information. Consequently, it is impossible to game the market and predict what the future value of a stock may be—rather, the movement of stock prices is a “random walk” (Fama 1965). Hence a firm’s stock price is the best reflector of that firm’s fundamental economic value.

As MacKenzie (2006) deftly shows, this view did not sit very well, at least initially, with practitioners and old finance types, who were used to think of themselves as clever analysts with a lot of intuition.<sup>23</sup> Nonetheless, the mastery of the language and techniques of financial economics soon became a credentialing device for practitioners in the financial markets and led many business schools to move beyond training general managers to training professional investors, especially in the areas of private equity, leverage buy-out firms, and hedge funds.

More importantly, perhaps, efficient markets theory had important consequences for the way corporations were viewed and run. At bottom, the theory was rooted in Milton Friedman’s belief that the purpose of the corporation was to maximize financial value (“business”, Friedman (1970) famously said, has “no other social responsibility than to increase profits”). Financial economists saw the large diversified conglomerates that dominated the American economic landscape as examples of managerial behavior that decreased the market value of firms and therefore were harmful to shareholders (Jensen and Meckling 1976; Jensen and Ruback 1983). They took from efficient markets theory the notion that the total market value of a firm’s shares accurately predicts the firm’s future expected cash flows. The theory thus provided a rationale for subjecting corporate strategy and managerial action to the discipline of shareholders, which led its proponents

to endorse the vast expansion in the market for corporate control that took place in the 1980s (Dobbin and Zorn 2005). Second, the theory also offered an argument for compensating managers on the basis of stock and stock options—a quite revolutionary idea at a time when salaries were rarely aligned on share price. Finally, since a basic assumption was that stock price reflects the fundamental value of the firm, then raising stock price should be the exclusive focus of managers’ actions. Together, these propositions came to be known as “agency theory.”

#### AGENCY THEORY AND THE MANAGERIAL REVOLUTION IN REVERSE

The strength of the Chicago GSB was the close connection (indeed deep interpenetration, since a large proportion of the faculty ended up with joint appointments in both)<sup>24</sup> to the economics department. The famous Chicago workshop system helped reinforce these relations. Starting in the mid 1960s, the two institutions jointly set up a Center for Mathematical Studies in Business and Economics (Emmett 2007). Not only was the Chicago economics department one of the world’s premiers, but it trained large numbers of graduate students. As we have seen, many of them would end up in business schools—of particular importance were the GSIA, where Robert Lucas got his first job; another one was the University of Rochester.

In 1963, shortly after launching the first phase of the curricular reforms at the Chicago GSB, Allen Wallis assumed the presidency of the University of Rochester—a job he would hold for 20 years. Once there, he assembled a critical mass of University of Chicago trained economists. Rochester, particularly its school of business, became the eastern outpost of the Chicago school in the process. Rochester scholars edited a series of new scholarly reviews (*The Journal of Accounting and Economics*, *The Journal of Financial Economics*, and *the Journal of Monetary Economics*) and actively sponsored the next generation through conferences, seminars, and special publications.<sup>25</sup> The connection between the two institutions is most evident in looking at the list of the affiliations of all authors who have published in the *Journal of Financial Economics*. Among all the papers published in the journal since its founding in 1974 to 2004, Chicago authors have published the most papers (123) followed by the University of Rochester faculty (114). Four of the five most cited authors in the *Journal* were trained at Chicago (the fifth was trained at Rochester).

Of particular importance within this group is the work of Michael Jensen and William Meckling. Their approach took inspiration from what economists call the principal-agent problem: since managers have self-regarding motives that differ from those of stockholders, monitoring these managers under conditions of wide stock dispersal is a major practical challenge.<sup>26</sup> Because their efforts are not easily observable, Jensen and Meckling argued, managers will fail to work towards stockholder goals. The challenge, they concluded, is thus to create an “alignment of incentives” in which managers’ personal financial interests will come into close correspondence with those of owners. Much of the discussions in these early papers focus on the means by which owners (for example, shareholders) can effectively align these interests. Agency theorists emphasized three mechanisms: monitoring managerial performance, providing comprehensive economic incentives, and promoting an active market for corporate control. Monitoring managerial behavior involves the deployment of complex accounting practices and the appointment of a professional board of directors whose members operate in the stockholders’ interest by virtue of their need to maintain their personal reputations. The alignment of incentives involves remunerating management in the form of company stock and stock options, so that managers and owners face exactly the same incentives, and hence self-interested managers will maximize shareholder value as a byproduct of maximizing their own material gain. The market for corporate control leads to stock prices reflecting firm fundamentals, and ensures that poorly performing “insiders” will be threatened and ultimately replaced by efficiency and profit-oriented “outsiders.”

Agency theory quickly created a unified approach to organizations and corporate governance in American business schools, catalyzing academic revolutions in corporate finance, organizational behavior, accounting, corporate governance, and the market for corporate control. Unlike much of the earlier scholarship in business schools, the core ideas of agency theory were not derived from inductive observation and practical experience, but instead, through the theoretical musings of a newly revitalized neoclassical economic theory. In the early 1970s it thus brought a theoretical, deductive approach to business school research, the lack of which had concerned the academics-dominated Ford and Carnegie Foundations and haunted business education from the start. Drawing on the legitimacy of economics, agency theory in the business school had the authority to redefine managerial action and the nature of the corporation, setting in motion a real

“managerial revolution in reverse,” whereby managers were transformed, both symbolically and materially, into major corporate owners.

What gave particular visibility and influence to agency theorists like Jensen and his colleagues was that—unlike many of their disciplinary brethren but certainly very much in line with a certain Chicago taste (promoted, for instance, by Friedman, Stigler or Hayek) for political activism—they made considerable effort to disseminate their ideas and findings not only through traditional academic channels, such as journals and professional meetings, but into the classroom and the wider world of practice. They skillfully connected their ideas to explain the changing corporate environment and offered a prescriptive set of approaches to improve corporate profitability. Given the dramatic expansion of the consulting market in finance, accounting, and management over the same period, the financial spillovers of these activities were also not negligible.

Agency theory’s rhetorical apparatus significantly influenced the interpretation and legitimation of a variety of new corporate practices. For example, Michael Jensen authored or co-authored several articles and editorials in highly influential and authoritative outlets like the *Harvard Business Review* and the *Wall Street Journal* that helped legitimate the takeover movement, encouraged the proliferation of executive stock options to align incentives between executives and shareholders, and argued that leveraging corporations with debt was the best way to discipline supposedly wasteful managers. *Institutional Investor* in 1985 remarked on the economic sense-making that Jensen provided for the hostile takeover movement, writing that Jensen “has come out in favor of corporate raiders and greenmailers to the point of developing an economic rationale for takeovers.”<sup>27</sup> Jensen argued that the deregulation that enabled hostile takeovers had resulted in a more efficient market within the US economy for the right to control corporate assets. He stated that managers, who are unable to keep their companies efficient, as primarily measured by the firm’s stock price, will suffer the consequences in the form of a takeover. Jensen framed the market for corporate control as one in which alternative managerial teams compete for the rights to manage corporate resources, and he stated that takeover entrepreneurs and imaginative investment bankers will continue to prosper. Jensen described takeover artists, like T. Boone Pickens, not as financial speculators, but as “inventors.”<sup>28</sup> Frank Dobbin and Dirk Zorn (2005,

p. 187) suggest that Jensen's published article on the takeover movement helped legitimize takeover activity by presenting it as a type of societal service that "convinced the world that what [takeover artists] did for a living, far from threatening the corporation, was efficient: that it was in the interest of the shareholder and the broader public interest." It is only later that corporate scandals showed that options, strike prices, and preferred stock had revealed themselves to be mere conventions for facilitating fraud. In the meantime, however, these activities took on a fetishistic character, making the stock price of a company appear as an end in itself. Organizations, such as the Business Roundtable, a group of the chief executives of the largest US companies that actively shapes business policy, changed its corporate governance policy from advocating a "stakeholder view" in corporate decision-making to the "shareholder" maximization imperative.

### **THE LINKED ECOLOGIES OF ECONOMICS AND BUSINESS**

Over a century ago, a vanguard of (in many cases) European-educated economists founded business schools with the aim to promote a better integration of business with American society, sometimes pressing for an explicitly reformist social agenda in the process. From then on, business schools became one of the key organizational vehicles for the crafting, transmission, reproduction, and change of conceptions regarding the place of corporations and their managers in the American cultural landscape.<sup>29</sup> By constructing management as a profession, business schools infused large organizations and their managers with legitimacy in shaping the new social order. This acceptance of managerial authority was, in a sense, America's cultural revolution. This would suggest that, as increasingly large proportions of managers went through these institutions over time, the skills, outlooks, and habits forged in the business school environment have become ever more closely integrated into corporate practices and understandings.

Paradoxically, however, the evolution of American business schools over the long run also displays a move in the other direction—toward increasingly abstract and technical knowledge rooted in the social scientific disciplines, most specifically economics, even *financial* economics. As we have seen, philanthropic foundations, whose boards were generally filled with academics or people with strong academic connections,

were instrumental in spearheading this “scientific” transformation, which achieved its most spectacular results at the GSIA and at the Chicago Graduate School of Business. Consequently, business schools became increasingly intertwined with the long-term evolution of economic thought and technique over the course of the twentieth century, as both recipients and agents of scientific and intellectual change. We can see evidence of this in the growing academic prominence of business school faculty within the economics mainstream or in the increasingly common practice of joint appointments.

But it is useful to remember that things used to be different. Well into the 1960s business school appointments were much less prestigious than departmental appointments for economists. Hence the entrenchment of certain fields (finance), and certain approaches (monetarism, rational expectations, agency theory) in business schools as opposed to economics department denoted their (initially) somewhat marginal or heterodox status relative to the mainstream of the discipline. (Admittedly, it also underscores the more natural connections between these institutions and the corporate world, which often served as a financial backer of intellectual enterprises seen as politically supportive (Stigler’s Walgreen Fund) or materially useful (the creation of the Center for Research on Security Prices at the Chicago GSB, or the Wharton forecasting unit).)

In particular, the GSIA (in the 1950s and 1960s mainly) and the University of Rochester (in the 1970s and 1980s) served as laboratories of sorts for people who, to some extent, operated on the paradigmatic edges of the economics profession and sought, consciously or unconsciously, to bridge their distance from the center of the field by engaging in forms of scientific overcompensation. Contemporaries, for instance, commented on the purist culture at Carnegie and Rochester. One member of the Carnegie GSIA during the late 1950s put it in the following way: “the search for the truth was a core value. The intellectual atmosphere was more than just lively, open, and confrontational. I had found plenty of all those at Chicago, but there the debate was carried on in House of Commons style. There the purpose, I always felt, was more to be clever than to be right. Who had the sharpest wit? The most biting retort?” (Levitt 2004, p. 290)

Part of the self-righteousness displayed in this quote may be explained, on the one hand, by the perception of embattlement faced by these methodological and theoretical positions in a generally unfriendly profession, and, on the other, by a thriving for institutional and personal status (Indeed when Michael Jensen

moved to Harvard Business School, it was perceived by some of his collaborators as a “sell-out”).<sup>30</sup> In a field that rewards scientific prowess above anything else, the strategy paid in the end. The institutional study of people in industrial settings gave way to more technical approaches to management based on decision theory and the early use of computers. Later, traditional macroeconomics was downed because rational expectations theorists argued that its microeconomic foundations were scientifically weak. Traditional finance was killed by financial economics for pretty much the same reasons. By the end of the process, the foundations of both economics and business knowledge had been deeply transformed, with powerful economic and social consequences for how American corporations ought to be run. The new theories provided a new language, new categories of understanding and action, which not only became naturalized in the teachings of American business schools, but came to sustain, and perhaps initiate, profound redefinitions in the nature of American corporations and markets.

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## Endnotes

<sup>1</sup> For instance, when the Harvard Business School was founded in 1908, the medical school had been around since 1782, the law school since 1817, and the divinity school since 1819.

<sup>2</sup> The term of “behavioral sciences” was explicitly employed by the Ford Foundation against the older notion of “social sciences,” which was deemed too political (MacDonald 1955).

<sup>3</sup> The most conspicuous omission in this panorama is, of course, Harvard Business School, which we have excluded for substantive reasons that will become clear in the remainder of the paper. The fact is that in spite of its pioneering role in establishing business education in the United States, Harvard’s trajectory in this domain remained quite disconnected from evolutions at other major schools, including, most prominently, from the reforms pursued by the Ford Foundation after World War II and embraced widely throughout the field. Harvard’s relative impermeability to these changes is largely attributable to its size, financial autonomy from the larger university, preeminent status as one of the oldest business schools in the country, and powerful connections into the business world, which buffered it partly from the competitive pressures that applied elsewhere. Wharton also shared some of these characteristics, but also because of its strong relationship with the accounting profession was more closely linked to changes happening in that field than the larger business context (Sass 1982).

<sup>4</sup> In its early years, the Wharton School, was not a separate collegiate school, but a department within the University’s arts and sciences college.

<sup>5</sup> Also see Nearing (1919).

<sup>6</sup> Willits was, in many ways, a perfect example of the consummate academic insider of the interwar period—he worked on Hoover’s Emergency Committee for Employment, helped found and presided the National Bureau of Economic Research, became dean of Wharton during the 1930s and ended his career as a Rockefeller foundation official.

<sup>7</sup> The University of Pennsylvania is indeed one of the few elite universities in America whose economics department originated from within the business school: it was only in 1974, in fact, that economists decamped to the graduate school.

<sup>8</sup> Bach described an incident in his economics class where “the professor was explaining that theoretically there couldn’t be a lasting depression in a competitive, capitalist-type economy. I looked out the window at a long line of unemployed men, waiting to apply for two WPA jobs the town government had managed to get.” Bach thought there “must be a better way” for economics (Bach in Gleeson and Schlosser 1965).

<sup>9</sup> Interviews carried out by Marion Fourcade with American economists confirmed that as late as the 1970s–80s, business schools were not considered respectable places for young economics graduates to start a career (the Chicago GSB changed all that).

<sup>10</sup> There was particularly hostility toward Harvard Business School and academic disciplines. As one of the GSIA faculty described the GSIA’s view of the world as: “Harvard and those other big, dumb old business-oriented business schools on one side and the nose-in-the-air traditional disciplines on the other. Initially, both Harvard and the disciplines brushed us off, an upstart fly buzzing about in the Pittsburgh smog. Who had ever heard of Carnegie Tech? For our part, we rose to the challenge. We were proud, certain that we were the best and brightest” (Levitt 1996, p. 290). The need for distinction from Harvard and the other disciplines even manifested itself in the design of the physical building, including not installing an elevator which, although the school was on sound financial footing, the GSIA saw as a badge of true seriousness.

<sup>11</sup> Quoted at [http://www.gsb.stanford.edu/history/timeline/faculty\\_bach.html](http://www.gsb.stanford.edu/history/timeline/faculty_bach.html), accessed June 6, 2006.

<sup>12</sup> “Can You Teach Management?” *Business Week*, April 19, 1952, p. 126.

<sup>13</sup> Donald K. David, “Business Leadership and the War of Ideas.” Paper presented at the Magazine Forum, April 27, 1948. In a 1947 article, *The New York Times* applauded Harvard Business School’s brief pamphlet *Education for Business Responsibility* as an intellectual turning point for developing a free-market retort to those academics calling for greater governmental involvement in the economy. (Russell Porter, “Stress Social Responsibility as Factor in American Life,” *New York Times*, September 7, 1947, p. F1.

<sup>14</sup> Amadae (2003, p. 38) dates the sharp shift to the right of the Ford foundation policies and intellectual agenda from the replacement of Hoffman by Gaither as President of the Ford foundation in 1953. Under the latter’s leadership, the Ford foundation decisively re-oriented its activities toward national security and the arguably rather anti-democratic vision of a society managed by experts.

<sup>15</sup> Though Ford ended up supporting HBS more heavily than any other school, our evidence suggests that foundation officials remained much more hands-off in its dealing with the institution, using the connection essentially as a way to legitimate its involvement in business education and treading carefully around the tight personal connections between HBS and the board of the Ford foundation. As one member of the Ford Foundation program on business education described the situation: “[T]hat first year and a half or so was a continuing sort of running skirmish between Don (Donald David, Harvard Business School former dean who went on to become executive chair of the Ford Foundation) and the Program where Don was pushing the Program—where in effect, I think it’s fair to say that Don was saying...” “Look we can easily make a deal here. Just deal us in and I’m your friend. If

you deal us out, I'm going to oppose you at every turn." (FFA, Oral History Project, Berelson 1973) As a result, Ford support to Harvard Business School was largely directed toward increasing the school's endowment and diffusing its case study method, whereas everywhere else the foundation was much more actively pushing schools to embrace a social science model. HBS was thereby essentially able to mute any attempt to change its program and maintain its clinical focus, while other schools rapidly moved toward professionalization along scientific-academic lines.

<sup>16</sup> Kydland was Prescott's student in the early 1970s, and also earned the Nobel Prize in economics with his mentor in 2004.

<sup>17</sup> Robert Lucas, for instance, said that "one can see the extent to which Muth was influenced by and reacting to Herbert Simon's work on behavioral economics, and how this led him to such radically non-behavioral hypothesis as rational expectations. (I once tried to discuss this with Herb, thinking of it as an instance of the enormous, productive influence he had on all of us, but he took offense at the suggestion.)" (McCallum 1999)

<sup>18</sup> A similar story would play out later at the Chicago GSB, where behaviorism faced the strong opposition of economists. (Van Overtveldt 2007).

<sup>19</sup> Hayek, however, taught in the Committee on Social Thought, having failed to secure an appointment in the economics department.

<sup>20</sup> Over the years, the Chicago economics "nebulae" would end up providing a host of Mont-Pèlerin recruits, such as Gary Becker, Ronald Coase, James Buchanan, Gordon Tullock, Harold Demsetz, Armen Alchian, Richard Posner, to cite only some of the most well-known (the first three of these names also won the Nobel prize in economics).

<sup>21</sup> On this topic, also see the work of Stigler's colleagues at the GSB, Sam Peltzman and Merton Miller.

<sup>22</sup> See, for example, Nelson (1987), Noll (1985) on the deregulation movement, and Mercuro and Medema (1997) on law and economics in the United States.

<sup>23</sup> Other achievements of financial economics—all based on the view of efficient financial markets—did not fare much better: the Capital Asset Pricing Model (Sharpe 1964), for instance, held that the only optimal portfolio was the entire market—which analysts found unhelpful at first.

<sup>24</sup> This was an explicit policy. As Wallis said: "if the regular department does not want them, then neither do we."

<sup>25</sup> For example, the Carnegie-Rochester series on public policy, jointly edited by Rochester monetarist guru Karl Brunner (at Rochester) and his student at the GSIA Allan Meltzer. This is, for instance, where Lucas published the famous critique of econometrics, which earned him the Nobel prize (Lucas 1976). According to Jensen, he and Meckling started working on their theory of the firm at one of the Interlaken seminars on analysis and ideology, also organized by Karl Brunner. Source: Michael Jensen, interview with Rakesh Khurana, September 2004.

<sup>26</sup> The earlier developers of principal-agent theory (though not in the financial context) were Armen Alchian and Harold Demsetz, two close affiliates of the University of Chicago economics department and also Mont Pèlerin Society members.

<sup>27</sup> Michael Ver Meulen, "The Iconoclast of M&A," *Institutional Investor*, vol. 19, iss. 8, August 1985, p. 71. Jensen focuses on three benefits of takeovers, stating that they do not harm shareholders. They are an efficient use of a company's resources. And, that golden parachutes which guarantee multi-million dollar payouts to CEOs in the event of a takeover are defensible since shareholders still benefit when a firm is taken over.

<sup>28</sup> Michael Jensen, "A Helping Hand for Entrenched Managers" *Wall Street Journal*. (Eastern edition). November 4, 1987, p. 1.

<sup>29</sup> Industrial settings were another place where these ideas evolved (see Shapin, forthcoming).

<sup>30</sup> Tight, active networks were also important in fostering such perceptual coherence as well as in advancing careers. From this point of view, one of the important lessons of the present study is the significance of personal networks and intellectual genealogies to understand disciplinary change, in a manner not unlike Collins (1998) and Frickel and Gross (2005). The Mont-Pèlerin Society, the Interlaken seminars, the Carnegie-Rochester conferences, and persistent Chicago connections, all provided opportunities to set the scientific and political pace.