How Entrepreneurship Evolves : The Founders of New Magazines in America, 1741–1860

Heather A. Haveman, Jacob Habinek and Leo A. Goodman

Administrative Science Quarterly 2012 57: 585
DOI: 10.1177/0001839212467168

Administrative Science Quarterly
57 (4)585–624

DOI: 10.1177/0001839212467168
asq.sagepub.com
SAGE

How Entrepreneurship Evolves: The Founders of New Magazines in America, 1741–1860

Heather A. Haveman,[1] Jacob Habinek,[1] and Leo A. Goodman[1]

Abstract

We craft a historically sensitive model of entrepreneurship linking individual actors to the evolving social structures they must navigate to acquire resources and launch new ventures. Theories of entrepreneurship and industry evolution suggest two opposing hypotheses: as an industry develops, launching a new venture may become more difficult for all but industry insiders and the socially prominent because of competition from large incumbents, or it may become easier for all people because the legitimacy accorded to the industry simplifies the entrepreneurial task. To test these two conflicting claims, we study the American magazine industry from 1741 to 1860. We find that magazine publishing was originally restricted to publishing-industry insiders, professionals, and the highly educated, but most later founders came from outside publishing and more were of middling stature. Gains by entrepreneurs from the social periphery, however, were uneven: most were doctors and clergy without college degrees in small urban areas; magazines founded by industry insiders remained predominant in the industry centers. Our analysis demonstrates the importance of grounding studies of entrepreneurship in historical context. It also shows that entrepreneurship scholars must attend to temporal shifts within the focal industry and in society at large.

Keywords: entrepreneurship, organizational founding, industry evolution, status

In a pioneering analysis, Stinchcombe (1965) proposed that entrepreneurial dynamics are influenced by historical conditions. Large-scale changes such as urbanization, the creation of new policy regimes, and technological breakthroughs may change the resources available to entrepreneurs, altering organizational founding rates by transforming the entrepreneurial task itself. Yet much research on entrepreneurship remains ahistorical. It assumes that the factors that make people more or less likely to create new organizations do not

[1] University of California, Berkeley

vary over time or across space. Perhaps more important, it assumes that the direction and magnitude of these factors' effects on entrepreneurial activity do not vary (see Isaac and Griffin, 1989, on ahistoricism in organizational analysis). In most studies of entrepreneurship, temporal and spatial variation in the economic, cultural, and political landscape is either ignored entirely or controlled by design, by focusing on a narrow slice of time and space.

Research that takes a longer perspective has shown that the effects of changing social context are often surprisingly complex. Changes in one set of factors (e.g., government regulation, economic conditions, or technology) can prompt changes in another set of factors (e.g., competition or cultural mores) that, in turn, alter entrepreneurial dynamics in unexpected ways. For instance, founding rates of Massachusetts railroads varied greatly across regulatory regimes, which determined both the availability of resources entrepreneurs needed to get their railroads running and the nature of competition among incumbent railroads (Dobbin and Dowd, 1997). In the same vein, declines in federal grants to universities weakened scientists' concerns about communalism and disinterestedness and increased their acceptance of property-rights claims on scientific discoveries (Etzkowitz, 1989); this normative shift made scientists more likely to participate in new biotechnology ventures (Stuart and Ding, 2006). To give a final example, capitalist development can either increase or decrease rates of entrepreneurship, depending on whether it occurs through endogenous development or is imposed by external fiat (Ruef and Reinecke, 2011). As these examples show, attention to history can solve puzzles about entrepreneurial dynamics by revealing how interactions among multiple factors open and close different paths to entrepreneurship.

Our goal is to add to this stream of research by building a model of entrepreneurship that is sensitive to historical context, one that ties individual actors directly to the evolving social structures they must navigate to acquire the resources they need to found organizations. In doing so, we seek to reconnect agency and structure (Sewell, 1992) by showing how entrepreneurs' access to resources varies at any point in time between people in different social positions and over time for people in any single social position. Social position refers to any characteristic or combination of characteristics (such as age, race, gender, income, education, occupation, or location) that stratifies people's access to the resources they need to launch new ventures. As Stinchcombe (1965) explained, secular trends in society at large can improve or degrade the resources available to people in any particular social position. But over time, entrepreneurs' own actions also alter access to resources for subsequent entrepreneurs by shaping the path of industry development. As a result, the benefit of being in any social position, even one that offers superior access to resources, will vary over time.

Building on theories of industry evolution, we propose two opposing hypotheses. First, if as an industry develops it becomes increasingly easy to acquire resources and launch new ventures, then the earliest entrepreneurs will be socially prominent and come from occupations related to the focal industry or those with high prestige, while later entrepreneurs will be less distinguished and industry outsiders. Second, if as an industry develops it becomes increasingly difficult to acquire resources and launch new ventures, then the earliest entrepreneurs will come from the social periphery and a wide array of occupations, while later entrepreneurs will include more members of the social elite

and more industry insiders. We focus on three aspects of social position—occupation, education, and geographic location—that have been shown to stratify entrepreneurs' access to resources (e.g., Sorenson and Audia, 2000; Burton, Sørensen, and Beckman, 2002; Shane and Khurana, 2003; Backes-Gellner and Werner, 2007).

Analyzing the effects of occupation, education, and location on entrepreneurship in a way that is sensitive to both trends in the focal industry and in society at large presents both empirical and methodological challenges. Empirically, it requires data covering long time periods—however long it takes for a new industry to become legitimated, demand to grow, and some incumbents to grow large—and data that span multiple locations. In this paper, we analyze geographically comprehensive data on one industry, American magazines, over a 120-year period. Our analysis begins in 1741, when the first American magazines were published, and ends on the eve of the Civil War in 1860, by which time the industry had become well established. Methodologically, it requires us to account for how historical trajectories of occupational status, educational stratification, and locational attractiveness jointly alter entrepreneurs' access to resources and how altered access is conditioned on industry development. We accomplish this by using statistical techniques that can reveal temporal shifts in associations among multiple aspects of entrepreneurs' social positions. To ground our study in historical context, we begin by tracing the expansion of the American magazine industry, focusing on how shifting resource levels, increasing legitimacy, growing customer demand, and intensifying competition altered the challenges facing entrepreneurs in this industry.

ENTREPRENEURSHIP IN THE MAGAZINE INDUSTRY IN AMERICA

The first American magazines appeared within three days of each other in February 1741, produced by rival printers Andrew Bradford and Benjamin Franklin. Their founders expected these publications would have long lives, but both were short-lived: Bradford's lasted only three monthly issues and Franklin's six. In the wake of these pioneering ventures, the American magazine industry struggled. Only 21 magazines were founded in the 35 years before the Revolution began.

Not until peace was restored did magazine publishing gain a firm foothold on American soil. Between 1790 and 1830, the founding rate rose from two to 91 per year. Foundings began to outstrip failures and the number of magazines in print rose from 12 in 1790 to 346 in 1830. Industry growth continued to accelerate, and by 1860, almost 1,000 magazines were in print. As magazines grew in numbers, they became increasingly robust. The fraction that stayed in print for 25 years or more tripled, from 3.9 percent of magazines founded in the eighteenth century to 11 percent of those founded in the 1840s and 1850s.

Some magazines also began to reach mass audiences. Data on circulation are available for only a few magazines at scattered points in time, but 79 of the 245 magazines published between 1841 and 1860 for which data are available had circulations over 10,000; 15 boasted circulations over 100,000, including *Frank Leslie's Illustrated Magazine* (1855–1922, circulation 164,000 in 1860) and *Harper's Weekly* (1857–1916, circulation over 100,000 in 1860). To put this in perspective, by far the best-selling antebellum book, *Uncle Tom's Cabin*, sold 310,000 copies; the next-best-selling book sold fewer than 80,000 copies

(Zboray, 1993: 122). Mass-market publishing was centered in New York City, Boston, and Philadelphia. In the 1840s and 1850s, over 80 percent of the magazines published that we know had circulations greater than 10,000 were published in these three cities, and New York City, the largest in the nation, was home to over one-quarter of all magazines in print. Mass-market publishers like Harper & Brothers, the largest publishing house in the world at that time (Schlesinger, 2000), benefitted from economies of scale, and the vast resources they commanded made them fierce competitors: they could pay popular authors like James Fenimore Cooper and Nathaniel Hawthorne handsomely for original poetry and prose.

At the same time as magazine publishing became concentrated in New York City, magazines spread westward across the continent. The Blau index of geographic heterogeneity (Blau, 1977), scaled to reflect both the number of locations with printing presses and the number in which magazines were published, rose from 0.22 in 1793, when magazines were published in six of the 22 states and territories that had printing presses, to 0.46 in 1800, when magazines were published in 13 of the 24 states and territories that had printing presses. In the nineteenth century, this index rose slowly and in the 1840s and 1850s, it averaged 0.66.

A number of factors contributed to American magazines becoming so numerous and robust, with some of them cultivating mass audiences. Technological, economic, and legal changes made the basic resources involved in magazine production, distribution, and contents more readily available everywhere. In addition, magazines gained legitimacy in the eyes of the reading public and found a wide array of audiences.

Magazine Production and Resource Acquisition

To launch new magazines, entrepreneurs needed three main kinds of resources: for basic production, they needed printing presses and paper; to fill pages, they needed written and pictorial material; and to reach subscribers, they needed distribution channels. Below, we discuss how each of these resources developed from 1741 to 1860 and how these developments transformed the entrepreneurial task.

Production. Early on, the scarcity of printers and printing presses greatly hampered the magazine industry. Printing presses were slow, cumbersome, manually powered mechanisms that required skilled craftsmen to operate (Berry and Poole, 1966; Moran, 1973), which made all publishing efforts, including magazines, costly and dubious ventures. Printing spread slowly to the backwoods (Wroth and Silver, 1951) as journeyman printers moved to find clients (Silver, 1967). Then in the first decades of the nineteenth century, a series of technological advances greatly improved the speed and quality of printing and so dramatically reduced printing costs (Berry and Poole, 1966; Moran, 1973). By the 1830s, steam-powered presses that could be run by less-skilled workers appeared in every state and territory. These new presses were also far more efficient: while manual presses in 1800 could produce perhaps 200 sheets per hour, in 1840, a steam-driven press could print as many as 8,000 sheets per hour. These technological innovations transformed printing from an art to an

industry by greatly increasing printing speed and reducing reliance on skilled workers, thus reducing costs (Lehmann-Haupt, 1951).

Paper making in the eighteenth century was also slow and required skilled labor: cotton or linen rags were soaked in water and macerated to reduce them to pulp; mesh screens were then dipped into the wet mixture, pressed, and set to dry; dried sheets of paper were pulled off the screens, pressed again, and trimmed to size (Weeks, 1916; Berry and Poole, 1966; Smith, 1979). This cumbersome process also made paper very expensive. Technological advances improved paper making after the turn of the century. The introduction of new devices, such as the Fourdinier machine, made it possible for paper to be produced on an industrial scale; this and subsequent technological innovations substantially decreased paper prices (Moran, 1973; Smith, 1979). In constant dollars, the cost of a ream of paper declined over 85 percent between 1810 and 1854 (Hunter, 1952; Starr, 2004).

Contents. The earliest magazines were beset by problems of supply: few people were willing to contribute engaging original prose or poetry. In the eighteenth century, the typical American man of letters was a gentleman-scholar whose output was an avocation. These patricians wrote to further personal political, artistic, religious, or scientific objectives, not to make money (Charvat, 1968; Dauber, 1990). Only men with independent means or sinecures that were remunerative but not strenuous could indulge in writing at this time; those who sought to earn their living by writing were doomed to fail. Perhaps the most prominent example of this is Charles Brockden Brown, who is often recognized as America's first professional novelist. Unable to earn a living from the seven novels he published between 1798 and 1801, he was forced to work in his brothers' export firm for several years, until he found an outlet for his literary ambitions by publishing magazines (Dauber, 1990).

The situation was exacerbated by the fact that copyright was virtually nonexistent before 1790 and not applied to magazines until the 1820s (Bugbee, 1967; Charvat, 1968). As a result, magazines were free to reprint material from other sources. For instance, *New York Magazine* (1790–1797) reprinted 86 articles from the vaunted *Edinburgh Magazine*, including travel stories, articles about new inventions, essays on morality and science, character sketches and short stories, and biographies (Pitcher, 2000: 129–149). The volume of reprinted material in American magazines was substantial; for example, almost half of the articles printed in the first three volumes of the *Balance & Columbian Repository* (1801–1811) came from other periodicals or books, both American and European (Pitcher, 2000: 151–181). Although magazines could glean free content from other publications, they had no legal protection for any original material developed by their own contributors, which hindered their ability to differentiate themselves from rival periodicals.

Understandings of what it meant to be an author changed slowly between 1820 and 1860, as America became a more market-oriented society and as literature evolved to connote commodities created by professionals that were traded for profit. But even in 1860, few authors could earn enough from writing books to support themselves (Charvat, 1968; Dauber, 1990). A slow cultural shift from author as gentleman-scholar to author as professional was propelled by and reflected in an economic innovation by magazine publishers: in 1819,

the *Christian Spectator* (1819–1838) pioneered the practice of paying contributors, offering $1 per page. This innovation diffused widely and had enormous economic and cultural impact. The first large-circulation magazine to pay contributors was *Atlantic Magazine* (1824–1825); many others followed suit over the next decade, notably *Godey's Lady's Book* (1830–1898) and *Knickerbocker* (1833–1865). As a result, writers like Edgar Allan Poe and Henry Wadsworth Longfellow could supplement what little they earned from publishing books by selling short stories and poems to magazines (Charvat, 1968). In 1843, the editor of one prominent literary review commented on this nascent market for literature:

> Literature begins to assume the aspect and undergo the mutations of trade. The author's profession is becoming as mechanical as that of the printer and the bookseller, being created by the same causes and subject to the same laws. . . . The publisher in the name of his customers calls for a particular kind of authorship just as he would bespeak a dinner at a restaurant. (*North American Review*, 56: 110)

Even literary reviews, whose contributors were most likely to view themselves as gentlemen-scholars, adopted this market-oriented practice; for example, the *North American Review* (1815–1940) did so in the mid 1820s. Thus the norm of magazine publishers paying for content made it possible for professional writers to literally scratch out decent livings with their pens.

Distribution. Eighteenth-century magazines' circulations were local: they were sold primarily at their printers' shops or at tobacconists and general stores in nearby towns. Of the 50 eighteenth-century magazines whose pages gave any indication of their geographic reach, two-thirds were sold in a single city or town. To reach subscribers farther away, magazine founders had to build distribution networks from scratch. For instance, the *American Magazine & Historical Chronicle* (1743–1746), published in Boston, assembled a team of printers and booksellers in Philadelphia, New York, New Haven, and Newport who were responsible for distribution outside its city of publication. Similarly, the *Royal American Magazine* (1774–1775), also published in Boston, developed a network of sales agents throughout New England and south to the Carolinas.

The development of the postal system created an extensive, reliable, and fast distribution channel for magazines. In 1741, when the first magazines were launched, there were only 31 post offices connected by a mere 1,500 miles of post roads (Rich, 1924; Kielbowicz, 1989; John, 1995). By the eve of the Revolution, the number of post offices had almost doubled, to 61, although the network of post roads had increased only slightly, to 1,800 miles. In the early republic, political elites viewed the postal system as a tool for creating a national community that would transcend state boundaries (Rich, 1924; Kielbowicz, 1989; John, 1995; Starr, 2004). Accordingly, Congress established the U.S. Post Office as a permanent arm of the state in 1794 and mandated the system's expansion. After that, the postal system grew exponentially; by 1860, it included over 28,000 post offices and covered 240,000 miles of post roads (Kielbowicz, 1989; John, 1995). Although the postal system was virtually complete by the late 1820s (John, 1995), the federal government continued to invest heavily to expand it to cover the nation's growing landmass.

Improvements in transportation kept pace with the growth of the postal system, as mail transport shifted from horseback over unpaved pathways or ''corduroy'' log roads to horse-drawn carriages over paved roads, and as the post relied increasingly on steamboats, canals, and railroads (Kielbowicz, 1989; John, 1995). As a result, between 1800 and 1860, travel speeds increased greatly. For example, travel time from New York City dropped 88 percent for trips to Boston, 80 percent to Charleston, 81 percent to New Orleans, and 95 percent to Chicago (Carter and Sutsch, 2006).

As the postal system developed, magazines evolved from serving mostly local audiences in a handful of Eastern cities to reaching national audiences (Mott, 1930, 1938; Kielbowicz, 1989). For example, the *American Journal of Science & Arts* (1818-1938) was originally sold from Boston south to Georgia and west to Ohio. In November 1820, at the close of its second volume, the editor claimed that his was ''not a *local* but a *national* undertaking'' that was ''sustained by *original* communications . . . from the East and the West, the North and the South, and even occasionally from other countries'' [''Preface,'' *American Journal of Science & Arts*, 2 (2): 176]. This was no idle boast: by the mid 1840s this magazine had built a subscription base that reached across the continent, even across the Atlantic to London, Paris, and Hamburg.

Audience Demand and Magazines' Legitimacy

Perhaps the most fundamental fact standing in the way of the earliest American magazines was the lack of an audience, as the number of potential readers in the colonies was small: in 1740, the thirteen colonies had a population just over 900,000 (U.S. Census Bureau, 2006), most of whom were subsistence farmers who had little cash to spend on magazines. And because they were novel cultural products, the earliest magazines required considerable explanation and exhortation to attract readers. Andrew Bradford's *American Magazine* (1741) began with eight pages detailing what it would and would not contain. In a crass attempt to demonstrate legitimacy, Mathew Carey's *American Museum* (1787–1792) devoted twelve pages up front to a list of subscribers, highlighting support from luminaries like George Washington and Benjamin Franklin. Carey's unsubtle plea for legitimacy worked: his venture was one of the most successful magazines of the eighteenth century (Charvat, 1968; Mott, 1930), eventually enrolling 1,250 subscribers and producing twelve complete semiannual volumes.

Early American magazines also stood in the shadow of British ones. They resembled British magazines in terms of physical format and contents, they used similar conventions for their layouts, and they reprinted many essays and poems by celebrated British authors from British periodicals. The founders of the *Literary Gazette* (1821) commented on this widespread practice: ''The numerous scientific and literary journals of Great Britain are still found to be attractive to the American public, and the most popular of our journals are in a great measure filled with selections from them'' (''Prospectus,'' 1821: 3). Such a strong and lasting connection to the British press should not be surprising, for these Americans were originally British subjects and most were descended from British subjects. They took pride in their heritage and admired their mother country's culture.

Notwithstanding American magazines' tendency to resemble British ones, some magazine founders argued that British periodicals did not provide

adequate coverage of American affairs. The Preface to William Smith's *American Magazine & Monthly Chronicle* (1757–1758) put this most plainly:

> It has long been a matter of just complaint among some of the best friends of our national commerce and safety that the important concerns of these colonies were but little studied and less understood in the mother country. . . it is complained that the difficulty of acquiring any tolerable notion of American affairs has been discouraging to many . . . it was proposed by some booksellers and others . . . to undertake a monthly magazine for the colonies, offering at the same time to procure considerable encouragement for it. . . .

Entrepreneurs like Smith sought to provide locally relevant alternatives to British magazines by publishing local government proceedings, accounts of American religious revivals, essays on local politics, letters from travelers to the frontier, and information about Atlantic and Caribbean trade. Other American magazine founders, even in the colonial era, viewed their ventures as keystones of political freedom. This sentiment intensified during the Revolution, when magazines such as Hugh Henry Brackenridge's aptly named *United States Magazine* (1779) argued the importance of instilling civic virtues in all citizens.

Over time, the situation facing American magazine entrepreneurs improved greatly. First and most basically, the number of potential readers grew enormously. The population rose to 5.3 million by 1800 and then to 31.4 million by 1860 (U.S. Census Bureau, 2006). At the same time, the market economy grew while subsistence agriculture and barter declined (North, 1961; McCusker and Menard, 1991; Howe, 2009). As a result, the standard of living rose above the level in most European countries (McCusker and Menard, 1991). The growth of the money economy outstripped population growth: in constant dollars, GDP per capita increased 150 percent from 1790 (the first year data are available) to 1860 (U.S. Census Bureau, 2006), and industrial output per capita increased 400 percent (Davis, 2004). Together, these trends expanded the potential audience for magazines: there were many more people with much more cash to spend on magazines.

Perhaps more importantly, magazines' legitimacy improved markedly. Those who were involved in launching and running magazines were well aware of this; for instance, just two years after starting *Hopkinsian Magazine* (1824–1832), the editor noted that ''The peculiar difficulties attending the commencement of such a work, if not entirely removed, are greatly diminished. The importance of a cheap, periodical publication . . . is more and more felt. . .'' [''Preface,'' 2 (2): iii]. In addition, the development of the norm of paying authors for their contributions meant that magazines became a primary channel for original essays, stories, and poetry (Charvat, 1968). The proliferation of original material made magazines more desirable to readers and in 1825, the industry entered its first ''golden age'' (Mott 1930, 1938; Tebbel and Zuckerman, 1991). Magazines became the preeminent means of disseminating literature, both original pieces and works reprinted from British sources.

Demand increased as the range of material magazines published expanded. In the earliest years, magazines focused on ''serious'' literature (meaning ponderous essays about philosophy, religion, politics, and natural philosophy) and were livened only a little by poetry. By the 1840s, magazines also published short stories and serialized novels, plus articles about less-weighty topics,

including sports, fashion, home life, education, travel, puzzles, and professional interests. Large publishing houses launched multiple magazines, each targeting a different, specialized audience. For instance, Frank Leslie launched six magazines, including a German-language general-interest journal, a humor magazine, and a ladies' fashion magazine, while Harper & Brothers published a religious journal and two mass-market literary magazines.

Demand for magazines also increased because new audiences developed, first among the members of the many different religious communities that flourished in this era. Magazine entrepreneurs created specialized periodicals for virtually all faiths, not just large ones like the Congregationalists, Baptists, and Presbyterians, but also small ones like the Mormons, Swedenborgians, Plymouth Brethren, Moravians, and Christadelphians. By the middle of the nineteenth century, religious periodicals had become ''the grand engine of a burgeoning religious culture, the primary means of promotion for, and bond of union within, competing religious groups'' (Hatch, 1989: 125–126). Religious magazines rose from 15 percent of magazines founded in the eighteenth century to 22 percent of those founded in the 1840s and 1850s. In these two decades, religious magazines outnumbered general-interest periodicals 568 to 540, and some, like the *American Messenger* (1843–1923), gained nationwide audiences. Religious fervor also spawned 181 magazines in the 1840s and 1850s that were devoted to reform efforts, including the abolition of slavery, temperance, protection for widows and orphans, and strict observance of the Sabbath (King and Haveman, 2008).

Magazines helped the members of the emerging professions and other specialized occupations develop common standards of practice and distinct identities. Although in the eighteenth century, only two magazines were published for specialized occupations, both medical magazines, in the 1840s and 1850s, some 350 occupation-specific magazines were launched, not just for physicians, but also for lawyers, businessmen, engineers, and journeymen. These occupational communities were often cleaved by debates, many of which were carried in the pages of magazines. For example, among members of the evolving medical field, homeopaths, Thomsonians, eclectics, mesmerists, magnetists, hydropaths, Grahamites, phrenologists, and osteopaths vied for legitimacy with allopaths (Starr, 1982). All of these camps launched magazines to promote their view of medical practice.

The growing concern for ''scientific'' solutions to social problems promoted the founding of specialty agricultural, educational, and scientific magazines. The diffusion of crop rotation, the development of mechanical equipment like rakes and reapers, and the careful breeding of plants and animals boosted production and kept previously cleared farmland in use (McClelland, 1997). This agricultural revolution was supported by the publication of some 258 agricultural magazines in the 1840s and 1850s. Several of these had nationwide circulation; for instance, *Country Gentleman* (1852–1955) had over 25,000 subscribers between 1852 and 1860, while *American Agriculturist* (1842–1931) had 50,000 in 1860. Others, like the *American Silk Grower's Magazine* (1844) and the *Pomologist Magazine* (1842–1843), targeted narrow audiences. Like agriculture, education became more formalized and ''scientific'' in the nineteenth century, as it slowly shifted from home to school (Douglas, 1977; Kaestle, 1983; Zboray, 1993). The proponents of different pedagogical systems competed for the attention of the new education profession (Kaestle, 1983), and many used

magazines to spread their pedagogical theories and practices. Some 125 education periodicals were published in the 1840s and 1850s, including Henry Barnard's *Connecticut Common School Journal* (1838–1866) and Horace Mann's Boston-based *Common School Journal* (1838–1852), the most famous educational periodicals of the era (Mott, 1930: 490–492). Finally, the increasing valorization of science led to and was reinforced by the publication of 69 scientific and engineering magazines in the 1840s and 1850s, including *Scientific American* (1845–the present).

The Evolving Challenges of Entrepreneurship

Between the appearance of the first American magazines in 1741 and the outbreak of the Civil War 120 years later, the resources needed to publish magazines became more readily and universally available, the industry became more legitimate, and demand grew, especially for specialist magazines that targeted members of particular religious communities, reform movements, and occupations. But these developments were offset by the increasing cost of content as authorship became a paid occupation and by fierce competition from large publishers. The question remains as to what effect these changes had on the kinds of people who launched magazines.

Competition and exclusion from resource acquisition. A long tradition in sociological research suggests that the entrepreneurial task becomes more formidable as industries develop. In new industries, most organizations are young and small, and so little-known and resource-poor. Therefore barriers to entry for other new ventures are low. But as industries develop, they often come to be dominated by a few very large and old organizations that have forged strong ties to suppliers and distributors. Because the large, established firms that dominate older industries are both widely recognized and resource-rich, they are powerful competitors, and their presence may make it hard for others to launch new enterprises (Hannan and Freeman, 1989). This idea harkens back to Adam Smith (1970) and Karl Marx (1977), who argued that small businesses find it hard to compete against large incumbents, which benefit from economies of scale and so can pursue technological innovations and aggressive pricing strategies that small enterprises cannot afford. Another consideration is that ties to suppliers and distributors strengthen as industries develop (DiMaggio and Powell, 1983). It is more difficult for outsiders to penetrate the settled social relations that characterize long-established industries than the fluid situations that prevail in new industries (Fligstein, 2001). This line of argument suggests that as industries develop, entrepreneurs will have more difficulty acquiring and deploying the resources they need to launch new businesses. Successful entrepreneurs will increasingly be either industry insiders or outsiders with considerable wealth or other resources, as only insiders and elites will have the resources needed to scale rising barriers to entry. Outsiders without wealth, connections, or reputations will be increasingly excluded.

Legitimacy and easier access to resources. Other organizational research suggests instead that launching new ventures may be harder in newer industries than in older ones. In new industries, customers and suppliers are

uncertain, even skeptical (Aldrich and Fiol, 1994), so entrepreneurs must struggle to define opportunities, identify resources, and pry resources away from existing organizations (Rao, 1998). Given this difficulty, entrepreneurs in new industries must depend on their personal reputations and connections to prominent others, which substitute for direct measurement of worth by customers and suppliers (DiMaggio, 1982; Granovetter and McGuire, 1998). Such relationships create halos that instill entrepreneurs' activities with normative and pragmatic legitimacy (Crane, 1965; Merton, 1968; David, Sine, and Haveman, 2012). But as industries develop and expand, they become increasingly legitimate (Hannan and Freeman, 1989), which makes it easier for entrepreneurs to recruit employees, acquire funding and equipment, and solicit sales (Aldrich and Fiol, 1994). In addition, as industries expand, deep pools of industry-specific resources build up (Hannan and Freeman, 1989), smoothing the path to entrepreneurship. Moreover, as industries develop, entrepreneurs learn what to do—and what not to do—from observing their predecessors (Aldrich and Fiol, 1994). This line of argument suggests that acquiring and deploying the resources needed to launch new ventures becomes easier as industries develop. If so, entrepreneurs in older industries will have less need for great wealth, high personal standing, or prominent friends than their counterparts in younger industries.

The Evolving Value of Social Position: Occupation, Education, and Location

As Stinchcombe (1965: 147) argued, the likelihood of people becoming entrepreneurs depends on social structure and people's position within that structure, which jointly determine their access to the resources needed to start their ventures. At any point in time, people in occupations related to the focal industry, in high-status occupations, with prestigious educational credentials, and in central locations will have easier resource access than people in unrelated occupations, in low-status occupations, with less-prestigious educational credentials, and in peripheral locations. Moreover, entrepreneurs' resource access will change as occupational status, educational stratification, and locational attractiveness evolve over time. Therefore, to test the arguments derived above, we must delve into the particularities of our research site and, guided by historical research, explain how the resources provided by magazine entrepreneurs' social positions changed over time.

Occupation. Occupation is an indicator of a variety of economic, social, and cultural resources. Prior experience in a related occupation gives entrepreneurs knowledge and skills that will help their ventures thrive; it also signals the legitimacy of the new venture to resource providers (Spence, 1973; Freeman, 1986; Burton, Sørensen, and Beckman, 2002). Through their prior work experience, entrepreneurs also forge ties to resource providers (Freeman, 1986; Shane and Khurana, 2003). In addition, people in occupations, like the professions, that can claim specialized expertise and that are sanctioned by state authorities may have better access to economic and cultural resources than people in other occupations (Weeden, 2002). For all these reasons, people in the professions or in occupations related to the focal industry are more likely than people in other occupations to be able to acquire the resources they need to launch new ventures.

In the samples we analyzed, four out of five magazine founders belonged to three occupational groups: the publishing trades (printers, publishers, editors, booksellers, bookbinders, and engravers), writers, and the traditional professions (physicians, ministers, and lawyers). Other magazine founders we studied were music composers and/or publishers, merchants, manufacturers, engineers, state officials, and teachers.

In the eighteenth century, printing presses were rare and difficult to operate, and thus printers were highly skilled craftspeople. Although few received much formal education, many had ties to political elites: they printed official documents for government officials, and many were appointed as postmasters. Moreover, in eighteenth-century America, especially after the Revolution, the wealth, income, and lifestyle of skilled artisans like printers were similar to those of merchants and others in non-manual occupations (Botein, 1981). Because print shops served as post offices, publishing houses, and bookstores, they were focal points for the exchange of news and intellectual engagement, serving the same civic function as English coffee houses, French salons, and German *Tischgesellschaften* (Wroth, 1931; Habermas, 1962; Everton, 2005). As the landlords of the eighteenth-century American public sphere, printers were well positioned to acquire content and oversee production, gain access to distribution channels, and attract audiences. A final consideration is that many printers had experience as newspaper publishers, which they could leverage when they launched magazines.

During the nineteenth century, however, the social, cultural, and economic resources associated with printing declined. Printing became industrialized (Lehmann-Haupt, 1951), and printers were deskilled as printing presses became easier to use (Stott, 1990). Technological improvements, driven in part by demand from the growing magazine and newspaper industries, reduced printers from being proprietors of small businesses to being mere employees of publishing houses. Thus printers, like other skilled manual workers, saw their incomes, social status, and work autonomy decline (Commons et al., 1918; Stott, 1990). The impact of these technological and economic changes on magazine entrepreneurship is clear: by the mid-nineteenth century, magazine founders could easily hire printers; they did not have to be printers themselves. These changes also lessened writers' and editors' dependence on printers, which made it more difficult for printers to acquire content.

In contrast, other publishing-industry occupations (publishers, editors, and booksellers) continued to provide access to many resources needed to launch magazines. Their focus on the written word always demanded deep knowledge and possession of considerable cultural resources. Moreover, as publishing-industry insiders, they had ready access to persistently valuable social resources, such as ties to writers and to publishing houses. Therefore members of other publishing trades remained well placed to acquire original content for their new magazines and to hire printing presses to produce them.

As explained above, eighteenth-century writers were almost all patricians: gentlemen-scholars who wrote for their own amusement and for the edification of others (Charvat, 1968; Dauber, 1990). They had the funds to support lives of leisure and the cultivation to write with style and thus had immediate access to both financial support and content. By contrast, mid-nineteenth-century writers were more heterogeneous: although some were members of the social and economic elite, an increasing number earned their living by

writing. Mid-nineteenth-century writers included not only belletrists, but also hack journalists, technical writers, and bohemians; thus their economic, social, and cultural resources varied considerably. This means that writers became generally less likely to have independent wealth or useful social connections, and more likely to be restricted in their cultural resources to narrower areas of practical expertise.

Like writers, professionals' status underwent a dramatic shift. In the eighteenth century, most were members of the educated elite. Lawyers occupied the apex of colonial society; they were highly educated and well remunerated, and many were directly involved in colonial politics (Ferguson, 1984; Haber, 1991; de Tocqueville, 2000). Many of the eighteenth century's most accomplished gentleman-authors were lawyers (Ferguson, 1984). Ministers, too, were well educated and, in nine of thirteen colonies, they were supported by official, state-sanctioned churches (Ahlstrom, 1972; Haber, 1991). Although physicians were not quite so distinguished as lawyers or ministers, in part because they competed with low-status barbers, midwives, and lay practitioners, medicine was still an acceptable occupation for younger sons of well-to-do families (Starr, 1982; Haber, 1991).

As the nineteenth century progressed, however, all three professions became contested. As the legal profession expanded, self-directed study or apprenticeship became a common alternative to college training, and lawyers became more diverse in class, training, and credentials (Larson, 1977; Haber, 1991). Ministers were challenged as disestablishment isolated them from political elites and made them economically dependent on their local congregations (Douglas, 1977; Haber, 1991). Moreover, interdenominational disputes about theology and church organization undermined ministers' claims to authority (Ahlstrom, 1972; Hatch, 1989). Traditional physicians faced increasing challenges from homeopaths, mesmerists, phrenologists, Thomsonians, and eclectics (Larson, 1977; Starr, 1982). Their incomes fell, and many had to supplement their medical practices with farming, ministerial work, or trade (Haber, 1991). By the mid-nineteenth century, membership in the legal, medical, and ministerial professions implied little of the wealth, power, or prestige that had distinguished these occupations during the eighteenth century, and so professionals had very limited access to the economic or cultural resources needed to launch magazines.

Education. Education both affects and reflects entrepreneurs' access to economic, social, and cultural resources. Most prosaically, education provides entrepreneurs with valuable knowledge and with ties to fellow students. Education also signals entrepreneurs' social ties and knowledge to customers and resource providers alike; such signals are especially important in the context of entrepreneurship because of the great uncertainty surrounding new ventures (Spence, 1973; Lazear, 1977; Backes-Gellner and Werner, 2007). Signals of cultural competence, based on education, may be more important in an industry like magazine publishing that produces cultural goods whose use value is at least partly symbolic than in industries that produce more prosaic goods. For magazines, cultural competence entails knowledge of what others might want to read, which is based on the erudition developed through education. Overall then, people with more-prestigious educational credentials may find it easier to acquire resources to launch new ventures, especially in cultural industries.

Throughout our study period, education marked a stable pathway into the American social elite. College graduates were from wealthy families and, because of the erudition they acquired in college and the relationships forged there, they also had substantial cultural and social resources. Although the number of college students increased greatly, they were still rare: in 1800 there were a mere 2.7 college students per 10,000 Americans; in 1860, there were still only 10.5 per 10,000 (Burke, 1973: 22, Table 2.3). Collegiate life in the eighteenth and nineteenth century, which emphasized the classics, fostered the composition of the essays and belles lettres that formed the basis of many magazines' contents. Students at several colleges even launched their own magazines, such as the *University of North Carolina Magazine* (1844–1948) and the *Kenyon Collegian* (1856–the present).

Location. Finally, location stratifies access to a variety of resources. Many of the resources needed to start any organization—employees, materials, equipment, and information networks—are rooted in place because people do not readily relocate for jobs (Dahl and Sorenson, 2010), and information networks concentrate in space (Sorenson and Audia, 2000). Economies of scale, transportation costs, and spillovers of industry-specific tacit knowledge through flows of personnel all tend to concentrate organizations in specific locations (Krugman, 1991; Saxenian, 1994). Organizational legitimacy may also depend on the existence of proximate organizations: the more organizations in a location that are similar to a focal organization, the more local customers, resource providers, and regulatory authorities will view the focal organization as a reasonable way to achieve valued goals (Hannan and Freeman, 1989; Sorenson and Audia, 2000). Location in areas where industry incumbents and resources cluster thickly together provides entrepreneurs with better access to the resources they need to start new businesses than locations where customers and incumbent organizations are spread thinly. But superior access to resources is tempered by stronger competition (Hannan and Freeman, 1989).

At the time the first American magazines were launched in 1741, printing presses were crude devices requiring great skill to operate (Berry and Poole, 1966; Moran, 1973), and they were found in only eight colonies (Wroth and Silver, 1951: 69–70). Printing presses gradually spread across the nation, and in the early nineteenth century, a series of technological improvements made printing presses increasingly efficient and easy to operate. Countering these trends is the fact that during the nineteenth century, large publishing houses that produced mass-market magazines arose in Philadelphia, Boston, and New York, and they remained concentrated in those cities. Because these cities were the centers of the magazine industry, entrepreneurs located there had access to deeper pools of human and financial resources and to superior information about their industry than did entrepreneurs located elsewhere (Friedland and Palmer, 1984; Kono et al., 1998). Thus people in Philadelphia, Boston, and New York continued to have advantages over people in other locations. But entrepreneurs in these cities also had to overcome stiff competition from the large publishing houses that clustered in there.

Predictions

Because the status of many social positions changed greatly between the mid-eighteenth and mid-nineteenth century, the economic, cultural, and social resources available to people in many social positions also changed. Printers' status and access to resources declined, while those of other publishing occupations remained strong. Writers became less patrician and more heterogeneous, so their access to resources generally declined, although their access to resources specific to publishing remained valuable. Professionals were initially members of a cultivated elite, but during the nineteenth century, their knowledge and credentials became contested, and new practitioners without the education, social ties, or wealth of their predecessors came to predominate—although lawyers' consistently high incomes may have buffered them from this trend. College education always indicated high status and was a consistently valuable source of cultural and social resources. Finally, although access to printing presses became widespread, location in Philadelphia, Boston, and New York still indicated high status and so retained considerable economic and cultural value. Table 1 summarizes these trends.

Table 1 also shows the predictions generated by combining the two models of industry evolution (competitive exclusion from access to resources vs. legitimation and increased access to deeper pools of resources) with historical knowledge about how resource access changed over time for people in different occupations, with different education, and in different locations. On the one hand, if the rise of large publishing firms and the increasing cost of original content raised barriers to entry and made it more difficult for entrepreneurs to acquire the resources needed to launch new magazines, we would expect that magazine entrepreneurship would become increasingly confined to people in social positions that gave them superior access to these resources. Concretely, this competitive-exclusion model suggests that members of publishing trades (other than printers) should become more common among magazine founders

Table 1. Change in the Status of Social Positions from the 18th to the mid-19th Century and Predictions about the Prevalence of Founders from those Positions*

		Predictions about the Prevalence of Magazine Founders	
Social Position	Change in Status	Competitive exclusion model	Industry legitimation model
Occupation			
Printer	Declined	↓	–
Other publishing trades	Remained high	↑	↓
Writer	Declined	↓	↑
Professional	Became contested	↓	↑
College education	Remained high	↑	↓
Location in Philadelphia, Boston, or New York City	Remained high	↑	↓

* An ↑ indicates that magazine founders were more likely to be in this social position in the mid-nineteenth century than in the eighteenth century; ↓ indicates that magazine founders were less likely to be in this social position. As explained in the text, we make no legitimacy-based prediction about the change in the likelihood of printers being magazine founders.

because people in those occupations could tap into ever-more-valuable industry networks. By the same token, industry outsiders, printers, writers, and professionals should become less common among magazine founders because people in those occupations had declining access to economic, cultural, and social resources. In addition, college education should become more common among magazine founders because in this era college was always reserved for the economic elite and provided access to great cultural and social resources. Finally, more new magazines should be published in Philadelphia, Boston, and New York, as entrepreneurs in those cities always had access to superior economic and cultural resources.

On the other hand, if the legitimation of magazines and the consequent increase in demand and industry-specific suppliers made it easier to gain access to the resources needed to found magazines, we would expect the opposite: over time, magazine entrepreneurship should be more open to people in all social positions, even those that afforded little access to cultural, economic, or social resources. Concretely, this industry-legitimation model suggests that people in the increasingly contested professions and other industry outsiders should become more common among magazine founders, as should writers, while members of publishing trades (other than printers) should become less common as industry connections became less critical. In addition, college graduates should become less common among magazine founders because the economic, cultural, and social resources associated with college education became less important. Finally, fewer new magazines should be published in Philadelphia, Boston, and New York because access to the superior economic and cultural resources concentrated in those large cities became less important.

Nearly all of our predictions fall into two neatly opposing patterns. The sole exception is printers. The two models do not yield clearly diverging predictions about the fraction of printers among magazine entrepreneurs. On the one hand, if technological change transformed printers from proprietors of the public sphere to mere employees of publishing houses, rendering them marginal to the task of acquiring content and handling production, printers would not accrue the same benefits as other industry insiders from competitive exclusion, and their representation among magazine founders would decline. On the other hand, if insider resources mattered less over time because of industry legitimation and increased demand, the direction of change in the fraction of printers would depend on which fell faster, the resource demands of founding magazines or the resource advantages of printers.

METHOD

Research Design

We tested these predictions by analyzing original data on American magazines published between 1741, the year the first American magazines were founded, and 1860, the year before the outbreak of the Civil War. The dataset, gathered from nine primary and 88 secondary sources, encompasses virtually every magazine published during this time period, according to Mott (1930, 1938), whose history of the industry remains a standard reference.[1]

[1] To save space, we do not cite these sources. A complete list is available from the first author.

Following historians of magazines, we defined a magazine as a publication containing a variety of written and pictorial material, with more than transient interest, published at regular intervals (Mott 1930, 1938; Tebbel and Zuckerman, 1991). Accordingly, our dataset explicitly excludes newspapers, pamphlets, and occasional tracts. Magazines' contents were more varied than those of pamphlets and newspapers, and they were of longer-lasting interest than those of newspapers. To exclude newspapers, pamphlets, and occasional tracts, the first author determined the nature of all publications using information in histories of publishing (e.g., Albaugh, 1994), descriptions in bibliographies of the newspaper industry (e.g., Brigham, 1962), and inspection of archived copies of periodicals.

We focus in this paper on American magazines founded in two time periods: from 1741 to 1800, during which time they were few in number, poorly understood, and small, and from 1841 to 1860, when they were common, generally accepted means of communication, and many reached mass audiences. We ended our analysis in 1860 because the Civil War brought with it a sudden decline in magazine publishing. We limited our analysis to these two time periods to maximize the temporal contrast between the early years of this industry's history and the period in which it was well established. We did not study the intervening years because many of the causal factors we described above changed at different rates, so we cannot make clear predictions for these years.

We sought social-position data on the founders of all 148 magazines launched between 1741 and 1800, and on the founders of a random sample of 150 magazines from the 2,678 founded between 1841 and 1860. The first period is long because so few magazines were founded before 1783, and we needed a reasonable number of observations on magazines and their founders to conduct statistical analyses. Because we could not observe everyone who tried to start magazines, but only those who succeeded, our analysis, like many other analyses of entrepreneurship, is biased toward success (Aldrich and Wiedenmayer, 1993). We mitigated this bias by sampling from *all* magazines, including those that failed after publishing a single issue.

To gather data on founders' social positions, we searched the *American National Biography* (2000), the *Oxford Dictionary of National Biography* (2006), *Who Was Who in America, 1607–1896* (1967, rev. ed.), and *Appleton's Cyclopedia of American Biography* (1887–1889).[2] We also pored over histories of publishing (Thomas, 1874; Wroth, 1931; McMurtry, 1936; Oswald, 1937; Lehmann-Haupt, 1941, 1951; Silver, 1967) and accounts of intellectual and literary life (Bender, 1988; Bercovitch, 1994). We supplemented these sources with data gleaned from the many sources we tapped to build the magazine dataset. Finally, we searched online for various combinations of founder name(s), magazine title, magazine founding date, and location (city and/or state). For the 148 magazines published in the eighteenth century, we identified the founders of 143 magazines, which were launched by four organizations and 165 individuals (all men). We uncovered data on all but three of these men. For the sample of 150 magazines from the mid-nineteenth century, we were able to identify founders of 125 magazines, which were launched by 17 organizations

[2] Although *Appleton's* has many biased entries, basic data about education and occupation are usually reliable (Dobson, 1993).

Table 2. Descriptive Statistics on the Two Magazine Samples*

	18th century (N = 148)	19th century (N = 150)
No. of magazines with known founders	143 (96.6%)	125 (83.3%)
No. of magazines with unknown founders	5 (3.4%)	25 (16.7%)
No. of magazines founded by individuals	139 (97.2%)	108 (86.4%)
No. of magazines founded by organizations	4 (2.8%)	17 (13.6%)
No. of known individual founders (information available)	162 (98.2%)	104 (83.2%)
No. of known individual founders (no information available)	3 (1.8%)	21 (16.8%)

* The first four rows in this table compare the number of magazines over time; the last two rows compare the number of founders over time.

and 125 individuals (120 men and five women). We were able to gather data on 104 of these individuals. The details of our samples are shown in table 2.

Measures

Founders' social positions. Many magazine founders had multiple occupations; e.g., lawyer and writer or printer, publisher, and postmaster. We first coded all occupations held by each individual—printer, other publishing trade, writer, minister, lawyer, doctor, other—as a series of dummy variables. We then coded each individual's primary occupation as a series of dichotomous variables (printer, other publishing trade, writer, minister, lawyer, doctor, other), based on biographies and histories. For the vast majority of cases, this task was straightforward; for instance, we coded any professional who was also a college professor as a professional, because the former occupation was a prerequisite for the latter. For the few ambiguous cases, we coded the earliest occupation as the primary one. There were seven such cases: five professionals who later embarked on careers as writers, one lawyer who became a prominent landowner, and one writer who became a social reformer and lecturer.

The American occupational structure changed greatly between the eighteenth and mid-nineteenth century. It may be that any observed change in the fraction of magazine founders from a particular occupation was due to a change in the size of that occupation, rather than to industry dynamics or changes in occupational status. For example, if over time more magazine founders were ministers *and* more Americans were ministers, the first increase could be due entirely to the second. To account for shifts in occupational structure, we would want to scale the fraction of magazine founders in each occupation and time period by the fraction of Americans in the focal occupation and time period. Unfortunately, there are no occupational data in censuses conducted before 1850 and no historical demographic analyses of most occupations. But we were able to piece together data on the members of the three traditional professions—ministers, lawyers, and doctors—at the midpoints of the two time periods, 1770 for the first and 1850 for the second.

For 1850, we obtained data from the census (U.S. Census Bureau, 2006). For 1770, we combined data from several sources. For clergy, the count for 1770 is based on our analysis of prosopographies of colonial clergy (Weis, 1950, 1976, 1977, 1978). For lawyers, the estimate for 1770 is based on Massachusetts

counts in 1740, 1775, and 1840 from a history of the legal profession in that state (Gawalt, 1979: 14, Table 1), combined with national and Massachusetts counts in 1850 from the census. For doctors, the estimate for 1770 comes from a history of the medical profession (Starr, 1982: 40). We then calculated the fraction of professionals among magazine founders in each time period relative to the fraction of professionals in the general population at the midpoint of each time period. Doing so allowed us to determine whether or not any observed change in the fraction of magazine founders who were professionals was due to a change in the fraction of Americans who were professionals.

Because education was generally not formalized during our study period (Cremin, 1970a, 1970b; Douglas, 1977; Kaestle, 1983), the only education data we could obtain were about attending college. Accordingly, we coded education as a dummy variable indicating whether or not the founder had attended college. To account the fact that there were more college-educated people in the mid-nineteenth century than in the eighteenth century, we would have liked to gather data on the number of Americans with college educations, but such data are simply unavailable. The closest measure available is the number of college students per capita. We gathered college enrollment data in 1800 (the first year such data are available) and 1850 (the midpoint of the second period) from a history of colleges in the U.S. (Burke, 1973: 22, Table 2.3). We used these counts to calculate the fraction of college-educated magazine founders in each time period relative to the fraction of Americans who were college students in each time period.

Magazine location. We created a trichotomous ordinal variable indicating whether a magazine was published in one of the three biggest cities (Philadelphia, Boston, or New York), another urban area, or a rural community. We distinguished between urban and rural areas using historical data on the populations of municipalities (Moffat, 1992, 1996; Purvis, 1995; U.S. Census Bureau, 1998). To make sure we had complete data on smaller urban places, we also conducted a series of Internet searches. Following the Census Bureau's standards for this era, we used a threshold of 2,500 inhabitants to distinguish urban areas from rural ones. To take into account the increasing urbanization of America, we measured the populations of the three biggest cities and of all other urban areas in 1770 and 1850, the midpoints of the two time periods. To compare the locations where magazine founders launched their new ventures with the locations where the typical American lived, we first scaled the fraction of magazines founded in the three biggest cities in each time period by the fraction of the population in those cities at the midpoint of each time period. We also scaled the fraction of magazines founded in other urban areas in each time period by the fraction of the population in other urban areas.

Methods of Analysis

Bivariate analysis. To assess whether there were statistically significant changes over time in the frequencies of founders' occupations and college education, we analyzed 2×2 contingency tables and conducted χ^2 tests.[3] The

[3] When cell counts are lower than five, the χ^2 test is not accurate; for tables with low cell counts, we used the Fisher's exact test instead.

unit of analysis here was the individual founder. For each occupation, we conducted a separate analysis, comparing frequencies of magazine founders in the focal occupation with frequencies of founders in any other occupation. This allowed us to assess the statistical significance of time trends for each occupation separately, which is necessary because historical trends in access to resources varied across occupations.

For location, we assessed the statistical significance of time trends by analyzing a 3×2 contingency table (three locations by two time periods), again using the χ^2 test. The unit of analysis here was the magazine because all founders of a single magazine were in a single location.

As explained above, the distributions of occupations, educational statuses, and locations from which founders were drawn changed greatly over our observation period. We took these changes into consideration as much as possible, given limitations on the data available. We scaled the fraction of magazine founders who were professional and college-educated by the fraction of professionals and college students in the general population, respectively. This allowed us to compare the likelihood of a magazine founder being a professional or having a college education, relative to the typical American, in each time period. We also scaled the fraction of magazines launched in the three biggest cities and in other urban areas by the fraction of the population living in those locations. This allowed us to compare the likelihood of a magazine's founder(s) being in urban areas, relative to the typical American, in each time period.

We augmented this quantitative analysis with a qualitative analysis of magazine founders' backgrounds; specifically, their education, their ties to other magazine founders and to prominent Americans, their careers, and the honors they garnered. These qualitative data, which we gathered from the archival sources described above, add rich historical detail to the statistical results.

Multivariate analysis. Next, we analyzed temporal variation in the frequency of magazines with different combinations of founder occupations, education, and location. Because none of the resources associated with the social-position variables were stable over time, we must concern ourselves with not only with changes in the prevalence of founders from each social position, but also with changes in relationships among social positions. For example, if the proportions of both physician-founders and college-educated founders increased over time, the increase in founders who were college-educated and physicians might or might not account for the increase in physician-founders.

Because all the variables in our analysis are categorical, and many conditional relationships may exist in the data, we used log-linear techniques (Goodman, 1970; Bishop, Fienberg, and Holland, 1975), which extend the analysis of two-variable contingency tables to multi-variable tables and so allow us to analyze conditional relationships among many categorical variables. In recent years, there has been a great deal of interest in modeling these kinds of relationships among categorical variables. In particular, qualitative comparative analysis (QCA), a technique developed by Charles Ragin (2000, 2008), is now common in organizational research (e.g., Fiss, 2011). But log-linear analysis offers significant advantages over QCA. Whereas QCA uses techniques drawn from Boolean algebra to identify minimum combinations of variables sufficient to produce a given outcome, log-linear analysis builds on existing statistical theory

and therefore is compatible with using tools of statistical inference to select between models and assess model fit.

Because many organizational scholars are not familiar with them, we explain the basics of log-linear techniques and compare them with the more familiar multiple regression techniques (see also Knoke and Burke, 1980: 24–29). Like multiple regression, log-linear analysis assesses relationships—main effects and interactions—among a set of variables. But log-linear analysis is a more general technique than multiple regression because it does not require that one specify a dependent variable to fit a model. Nevertheless, the log-linear models we describe below can be interpreted within a logistic regression framework as equivalent to regressions of the log-odds of a magazine appearing in the second time period rather than the first on a set of independent variables (main effects and interactions).

The key difference between log-linear analysis and regression is the procedure for model selection. Log-linear analysis starts with a fully specified (''saturated'') model, one that contains all possible combinations of main effects and interactions, and subtracts parameters (interactions between two or more variables) step by step, while logistic regression starts with a model containing main effects only and adds interaction parameters. The goal in log-linear analysis is to determine the simplest model, the one containing the simplest set of parameters, that fits the data well. Log-linear analysis therefore involves comparing a hierarchically nested set of models with the saturated model. The models are hierarchically nested because those containing complex interactions among a set of variables must necessarily contain all simpler interactions among those variables; for instance, a model containing a three-way interaction must contain all of the two-way interactions among the three variables, plus the main effects of all variables and the grand mean.

For our log-linear analysis, the unit of analysis was the magazine. We cross-classified magazines according to five dichotomous variables: the presence or absence of a founder in the professions, the presence or absence of a founder in the publishing trades (including printing), the presence or absence of a founder with a college education, whether or not the magazine was published in one of the three biggest cities, and whether or not the magazine was published in the eighteenth or mid-nineteenth century. We simplified the occupation and location variables to generate a cross-classification table with reasonably large cell counts; including more fine-grained occupational categories or a more complex coding for location would have resulted in a prohibitively large numbers of cells with low observed counts because very few writers founded magazines in the eighteenth century and very few printers did so in the mid-nineteenth-century sample. As is customary in log-linear analysis, we coded all variables -1 when the focal attribute was absent and $+1$ when the focal attribute was present. Doing so yields effect estimates that are relative to category means (rather than to baseline categories, as in regression), which simplifies interpretation in models with large numbers of interactions.

Because of the large number of parameters in even a simple model, the notation used in log-linear analysis differs from that used in regression analysis. Letters denote the variables in the cross-tabulation, and a set of letters enclosed in parentheses denotes each model. For instance, C might stand for college education, L for location in a large city, and T for time period. Then {CLT} would denote a model containing the grand mean for the table, three

main effects (C, L, T), three two-way interactions (C × L, C × T, and L × T), and one three-way interaction (C × L × T). A simpler model, nested within the first and denoted as {CT}{LT}, would contain the grand mean, three main effects (C, L, and T), and two two-way interactions (C × T and L × T).

Most log-linear analyses make no distinction between independent and dependent variables. But we want to explain temporal variation in the frequency of magazines using founders' occupations, education level, and location. Therefore we used Goodman's (1972) modification of multiple regression for the analysis of categorical data, which treats one categorical variable as the outcome to be predicted, similar to logistic regression. Specifically, we modeled the difference between the second period and the first in the log-odds of newly founded magazines having founders in a given combination of social positions. Thus we treated time period (T) as the variable to be predicted, and the four social positions—professional occupation (P), publishing trades occupation (B), college education (C), and location in one of the three biggest cities (L)—as the predictor variables. To control for time-invariant relationships between predictor variables, all models included the four-way interaction P × B × C × L and all the effects it hierarchically implies. Our discussion of the results focuses on interactions with time period.

We used a stepwise procedure (Goodman, 1970) to select the model with the fewest parameters that that did not differ significantly from the observed pattern. We compared the observed frequencies in a five-way data table, created by cross-classifying the four dichotomous predictor variables and the dichotomous outcome variable, with the estimated expected frequencies under the selected model. To assess model fit to the data, we used three statistics, the likelihood-ratio χ^2, the Pearson's χ^2, and the Akaike information criterion (AIC). We also used the estimated parameters obtained from the saturated model as a guide to selecting which parameters should be included in the selected unsaturated model (Goodman, 1970).

RESULTS

Bivariate Analysis

Tables 3a, 3b, and 3c present our analysis of trends in occupation, education, and location. We used contingency tables to assess whether there are significant differences between the eighteenth and mid-nineteenth century. Table 3a analyzes occupation (it shows a separate contingency table for each occupation), table 3b education, and table 3b location. For occupation and education, the unit of analysis is the individual founder; for location, it is the magazine. For each contingency table, we report the χ^2 statistic and the statistical significance level for the difference between the two time periods. We begin by describing eighteenth-century magazine founders and then compare them with their mid-nineteenth-century successors.

The eighteenth century. Most of the earliest American magazines were produced by members of the learned elite or people with experience in related industries. As shown in table 2, we identified 165 men who launched 143 magazines between 1741 and 1860; we were able to ascertain primary occupations for 162 of them. Table 3a shows that over two-thirds of eighteenth-

Table 3a. Changes over Time in Magazine Founders' Occupations*

Occupation	18th century (N = 162)	19th century (N = 103)	χ^2
Publishing trades	109 (67.3%)	21 (20.3%)	55.4•••
Not publishing trades	53 (32.7%)	82 (79.6%)	
Printer	81 (50.0%)	4 (3.9%)	61.5•••
Not printer (includes other publishing trades)	81 (50.0%)	99 (96.1%)	
Other publishing trades	28 (17.3%)	17 (16.5%)	0.03
Other occupation (includes printer)	134 (82.7%)	86 (83.5%)	
Writer	6 (3.7%)	15 (14.6%)	10.2••
Not writer	156 (96.3%)	88 (85.4%)	
Professional	30 (18.5%)	46 (44.7%)	21.0•••
Not professional	132 (81.5%)	57 (55.3%)	
Minister	14 (8.6%)	24 (23.3%)	11.0••
Not minister (includes lawyer and doctor)	148 (91.4%)	79 (76.7%)	
Lawyer	12 (7.4%)	4 (3.9%)	1.4
Not lawyer (includes minister and doctor)	150 (92.6%)	99 (96.1%)	
Doctor	4 (2.5%)	18 (17.5%)	18.6•••
Not doctor (includes minister and lawyer)	158 (97.5%)	85 (82.5%)	
Other	17 (10.5%)	21 (20.3%)	5.0•
Not other (printing trade, writer, or professional)	155 (89.5%)	82 (79.7%)	

•$p < .05$; ••$p < .01$; •••$p < .001$; d.f. = 1.

* For tables that contain cells with fewer than five observations, *p*-values are based on the Fisher's exact test instead of the χ^2 test. This table analyzes 162 magazine founders in the eighteenth century and 103 in the nineteenth century. The nineteenth-century sample omits one magazine founder, William August Munsell, who was eight years old when he started his magazine. Each founder's occupation is assessed before he or she founded his or her first magazine. We analyzed each occupation independently by comparing the number of founders in the focal occupation with the number of founders in all other occupations.

Table 3b. Change over Time in Magazine Founders' Education*

Education	18th century	19th century	χ^2
College education	22 (13.6%)	17 (16.3%)	0.39
No college education	103 (86.4%)	87 (83.7%)	

* This table analyzes 162 founders in the eighteenth century and 104 in the nineteenth century. For the χ^2 test, d.f. = 1.

Table 3c. Change over Time in Magazine Locations*

Location	18th century	19th century	χ^2
Philadelphia, Boston, or New York	82 (55.8%)	53 (36.1%)	
Other urban area	27 (18.4%)	65 (44.2%)	23.1•••
Rural area	38 (25.9%)	29 (19.7%)	

•••$p < .001$; d.f. = 2.

* This table analyzes all magazines for which location is known: 147 magazines in the eighteenth century and 147 in the mid-nineteenth century.

century magazine founders whose primary occupations we could determine were in publishing: 81 were printers, and 28 were members of other publishing trades. In addition to Benjamin Franklin and Andrew Bradford, these included Isaiah Thomas, one of the most respected businessmen of his time (Wroth, 1931).

Outside of the publishing trades, most other eighteenth-century magazine founders were writers (6) and professionals (30). Among the writers were Jefferson's protégé John B. Colvin and the patricians Samuel Harrison Smith, John Lathrop, Jr., and Philip Freneau. The 14 clergy included the prominent Boston minister, linguist, and historian Thomas Prince, and the first bishops of the Methodist Church in America, Thomas Coke and Francis Asbury. Of the 12 lawyers, two were also clergymen, two were also poets, one was also a printer, and one was also a novelist. The prevalence of lawyers is not surprising, given the many contributions they made to American letters (Ferguson, 1984). Finally, among the four physician-founders, three were of very high status: two were professors at Columbia's Medical School and one was a protégé of Yale President Timothy Dwight. When we take into consideration the number of professionals in the population at large (estimated at 0.26 percent of Americans in 1770), we find that magazine founders in the eighteenth century were 72 times more likely to be professionals than the typical American. This result was due largely to lawyers, who were 277 times more likely to found magazines than the typical American.

Table 3b shows that many eighteenth-century magazine founders were highly educated. Five graduated from Harvard and six from Yale; others graduated from Princeton, University of Pennsylvania, Oxford, Edinburgh, Halle, Middle Temple, and an unidentified Scottish college. In total, 14 percent had attended college. In contrast, only 0.027 percent of Americans attended college in 1800 (the first year for which data are available). This means magazine founders were over 500 times more likely to have attended college than the fraction of Americans attending college in 1800. In addition, several eighteenth-century magazine founders taught at colleges: two taught at Harvard, one at Yale, two at Columbia, and one at Vermont. Several others were renowned for their erudition. For example, the Reverend Samuel Williams, who launched an eclectic literary magazine, was commonly called ''the most learned man in Vermont,'' while John M'Culloch, who founded a religious monthly, compiled the first American history textbooks.

Table 3c shows that eighteenth-century magazine publishing was confined almost exclusively to the Northeast. The three biggest cities of this era—Philadelphia, Boston, and New York—were home to over half of all magazines, even though they contained only 3.0 percent of the population in 1770. Magazine founders were 18 times more likely to be in those cities than the typical American. Notwithstanding this geographic concentration, the rural Northeast was also home to almost one-quarter of eighteenth-century magazines. In contrast, only nine magazines were founded in the South; of these, four were launched in Charleston and two in Richmond, both major urban centers.

Together, tables 3a–3c show that eighteenth-century magazine founders were drawn from related industries and the privileged few. Two segments of the elite were predominant: printers and allied tradesmen (the landlords of the public sphere) and educated elites (patrician professionals and scholars). Moreover, most of these men lived in the three biggest cities.

Not surprisingly, given the small population of eighteenth-century America, many eighteenth-century magazine founders were closely connected to other members of the cultural, political, and economic elite. Among them were a nephew of Andrew Bradford (William Bradford, a printer, newspaper publisher, and founder of a prominent American coffee house) and a host of men who had close relationships with Benjamin Franklin: his friend James Parker, a prominent colonial-era printer; a nephew, Benjamin Mecom; his business partner Anthony Ambruster; his protégé Mathew Carey; and his former apprentice Enoch Story. The illustrious printer-cum-publisher, Isaiah Thomas, was followed into magazine publishing by a former partner (Elisha Waldo), a close friend (John Fellows), and six former apprentices. David Austin, a protégé of the great theologian Jonathan Edwards, launched two religious magazines, as did William Weyman, son of the prominent Episcopal minister Robert Weyman; Samuel Harrison Smith, the son of Revolutionary-era politician Jonathan Bayard Smith, founded a highly regarded literary review.

The mid-nineteenth century. The contrast between mid-nineteenth-century magazine entrepreneurs and their eighteenth-century predecessors was in some ways quite stark. As table 2 shows, these people were so ordinary that we were unable to find any background information on 21 of the 125 we could identify by name. The fraction of founders we could identify by name for whom we could find no biographical data increased eight-fold between the two time periods, which was a statistically significant difference ($\chi^2 = 21.0$, d.f. $= 1$, $p < .001$ according to Fisher's exact test). Although even the most thorough searches for data on founders' backgrounds are doomed to be incomplete, given the scattered records available, the contrast between the general notoriety and full archival coverage of eighteenth-century magazine founders and the greater obscurity and sparser archival coverage of their mid-nineteenth-century successors is striking.

As table 3a shows, magazine entrepreneurs' occupations became more heterogeneous from the eighteenth century to the mid-nineteenth century. Among those whose primary occupation we could pinpoint, the fraction of printers declined significantly, from 50 percent to 4 percent. This decline may stem from printers' shift from proprietors to employees; it also suggests the declining importance of controlling the means of production as those means became simpler to operate. In contrast, the fraction of magazine founders in other publishing trades remained constant at 17 percent, which demonstrates that the resources possessed by other industry insiders remained valuable. In addition, the fraction of magazine founders who produced content increased significantly, from 4 percent to 15 percent, which reflects the professionalization of authorship in America (Charvat, 1968). By the mid-nineteenth century, much literature was produced by people who earned a living from their writing, selling to book and magazine publishers, who in turn sought to earn profits by selling to mass audiences. Some of these professional writers attempted to remove the middlemen by launching their own magazines.

The fraction of magazine founders who were doctors and ministers, the two professions that were the most contested in the mid-nineteenth century, increased significantly, from 3 and 9 percent to 18 and 23 percent, respectively. The fraction of lawyers among magazine founders declined from 7 percent to 4 percent, although that difference was not statistically significant. Even after

taking into account the increasing prevalence of professionals in the American population (0.26 percent of the population in 1770, 0.42 percent in 1850), the representation of professionals among magazine founders rose. Mid-nineteenth-century magazine founders were 107 times more likely to be professionals than the typical American, compared with 72 times for eighteenth-century founders. These trends indicate that members of the increasingly contested medical and ministerial professions used magazines to support themselves financially, to defend their scientific or theological positions, and to build communities of like-minded associates and followers.

This conclusion is bolstered by the striking variety among doctors and ministers in the mid-nineteenth-century sample. Among doctors, there were college-educated allopaths as well as Thomsonians, eclectics, homeopaths, hydropaths, mesmerists, phrenologists, magnetists, Grahamites, vegetarians, and physical-culture advocates. A full 70 percent of these mid-nineteenth-century doctor-founders were affiliated with less-prestigious specialties or highly contested medical schools. Among minister-founders, there were Presbyterians, Congregationalists, Baptists, German Reformed, Methodists, Universalists, Moravians, Disciples of Christ, Seventh-Day Adventists, Lutherans, Jews, and spiritualists. Almost three-quarters of these were members of new upstart religious groups. In addition, a quarter of magazines founded by ministers were published in languages other than English, which indicates that they served low-status immigrant communities. This is more than double the fraction of all magazines founded in the 1840s and 1850s that were published in languages other than English (11 percent), which suggests that minister-founders were more than twice as likely as other magazine founders to cater to immigrant communities.

Evidence that magazine founders came from an increasingly broad array of social positions is partly reinforced by the analysis of education, as shown in Table 3b. College enrollments almost quadrupled between 1800 and 1860, but the fraction of college-educated founders remained almost constant. Therefore, although mid-nineteenth-century magazine founders were still highly educated—they were 161 times more likely than the typical American to have attended college—that was a big drop from 500 times more likely in the eighteenth century. This suggests that as the magazine industry developed, high socioeconomic status, cultural refinement, and social connections, although still quite valuable, became somewhat less important for launching magazines.

Table 3c shows that the fraction of magazines founded in the three largest cities declined substantially, from 56 percent in the eighteenth century to 36 percent in the mid-nineteenth century, even though these cities grew from having 3.0 percent of Americans in 1770 to 4.4 percent in 1850. Although magazine founders in the mid-nineteenth century were over eight times more likely to be in the three biggest cities than the typical American, this is a big drop from 18 times more likely in the eighteenth century. Due to rapid urbanization, smaller urban areas like Fort Wayne, Indiana, and Galveston, Texas, saw the greatest increase in magazine publishing, from 18 to 44 percent, while rural areas saw a slight decrease, from 26 to 20 percent. In the mid-nineteenth century, magazine founders were over five times more likely to be in small urban areas than the typical American. Taken together, the results on location indicate that even as large publishing firms appeared in Philadelphia, Boston, and New York, people in smaller urban areas that were often located far from these commercial centers were increasingly likely to found magazines.

Together, tables 3a–3c suggest that magazine entrepreneurship spread beyond powerful elites and industry insiders. This conclusion is bolstered by the fact that many mid-nineteenth-century magazine founders came from modest backgrounds and made their reputations and fortunes through their periodicals. For instance, Thomas Hamilton, an African-American whose father was a carpenter and who received little formal education, founded the *Anglo-African Magazine* (1859–1860), which made him a leading voice among anti-slavery advocates. Similarly, Timothy Shay Arthur, a miller's son who worked as a clerk for a wholesaler and an insurance company before he began to write fiction, published *Arthur's Home Gazette* (1850–1854) and several other eponymous periodicals that showcased his work, which made him ''the most published American fiction writer in the century'' and ''one of the most popular American authors of his time'' (*American National Biography*, 2000). It had become so easy to acquire the resources needed to launch a magazine that a child managed to do so: our mid-nineteenth-century sample included an eight-year-old boy, William August Munsell, who founded *The Bee* (1844–1845) in Albany, New York; he continued to publish it until he came down with whooping cough. The fact that, like this child, many mid-nineteenth-century magazine founders had little access to social, cultural, or economic resources is a turnaround from the situation in the eighteenth century, when pioneering magazine editors and publishers relied on their economic, social, and cultural resources as printers or professionals, or their wealth and reputations as learned men.

Yet, as the analysis of education shows, there were still many members of the elite among mid-nineteenth-century magazine founders. Theodore Dwight, Jr., son of Theodore Dwight Sr., nephew of both Aaron Burr and Yale President Timothy Dwight, Yale graduate, author of many popular books and a prominent journalist, launched his eponymous *Dwight's American Magazine & Penny Paper* (1845–1851) as a vehicle for his own writing. Ormsby Macknight Mitchel, West Point graduate, astronomer, professor at Cincinnati College, and member of the American Academy of Arts and Sciences and the literary Semicolon Society, published the *Sidereal Messenger* (1846–1848), the first scientific astronomy journal. Alexander Lyman Holley, metallurgical engineer and son of the Governor of Connecticut, partnered with Zerah Colburn, a mechanical prodigy who published a standard textbook on steam locomotive design at the age of 22, to launch *American Engineer* (1857).

Two trends are evident in comparing founders from the two time periods. First, between the eighteenth and mid-nineteenth centuries, magazine founders were drawn from increasingly broad swaths of American society: fewer people from inside publishing, more from the increasingly contested medical and ministerial professions, fewer with college educations, and more from outside the three biggest cities. Yet among mid-nineteenth-century magazine founders, the number of professionals and college-educated people were still far larger than their representation in the population at large, and far more magazine founders were in the three largest cities than the typical American. Moreover, the qualitative evidence indicates that many nineteenth-century magazine founders had strong ties to industry insiders and social elites. Thus although the preponderance of evidence suggests the development of the magazine industry from the eighteenth to the mid-nineteenth century widened rather than narrowed the range of social positions from which entrepreneurs were drawn, the evidence is somewhat ambiguous.

Table 4. Log-linear Models of the Effects of Professional and Publishing Trades Occupations, College Education, and Location on Time Period*

Model	Marginals fitted	Equivalent logistic regression interactions	Degrees of freedom	Likelihood-ratio χ^2	Pearson's χ^2	AIC
1	{PBT}{PCT}{PLT}	P × B, P × C, and P × L only	8	8.55	9.60	148.21
2	{PBT}{PCT}{BCT}	P × B, P × C, and B × C only	8	10.05	7.81	149.71
3	{PCT}{PLT}{BCT}{BLT}	All except P × B and C × L	7	12.81	12.74•	154.47
4	{PBT}{PLT}{BCT}{BLT}	All except P × C and C × L	7	14.13••	15.24••	155.79
5	{PBT}{PCT}{BCT}{BLT}	All except P × L and C × L	7	3.50	3.51	145.16
6	{PBT}{PCT}{PLT}{BLT}	All except B × C and C × L	7	6.94	6.25	148.60
7	{PBT}{PCT}{PLT}{BCT}	All except B × L and C × L	7	2.63	2.78	144.30
8	{PCT}{PLT}{BCT}{BLT}{CLT}	All except P × B	6	12.53•	12.30•	156.19
9	{PBT}{PLT}{BCT}{BLT}{CLT}	All except P × C	6	12.95••	13.13••	156.61
10	{PBT}{PCT}{BCT}{BLT}{CLT}	All except P × L	6	2.10	2.14	145.76
11	{PBT }{PCT}{PLT}{BLT}{CLT}	All except B × C	6	6.84	6.17	150.50
12	{PBT}{PCT}{PLT}{BCT}{CLT}	All except B × L	6	2.45	2.77	146.11
13	{PBT}{PCT}{PLT}{BCT}{BLT}	All except C × L	6	1.32	1.27	144.98
14	{PBT}{PCT}{PLT} {BCT}{BLT}{CLT}	All	5	1.06	1.07	146.72

•$p < .10$; •$p < .05$.

* P indicates the presence or absence of a professional on a founding team, B the presence or absence of a member of the publishing trades on a founding team, C the presence or absence of someone with a college education on a founding team, L whether or not a magazine was founded in one of the three biggest cities, and T the whether a magazine was founded between 1741 and 1800 or between 1841 and 1860. Each log-linear model also fits {PBCL}. Model 7 is the best-fitting unsaturated model.

This ambiguity is reinforced by analyzing trends in magazines launched by organizations. Seventeen of the 150 mid-nineteenth-century magazines we studied were affiliated with formal organizations: the New Jersey Historical Society, the Cherokee Georgia Baptist Convention, the Association of Working Women and Men, the faculty of the Reform Medical College of Macon Georgia, the Sons of Temperance, two teachers' associations, two literary societies, and eight groups of college students. This was a statistically significant increase from the eighteenth century, when four out of 148 magazines were launched by organizations ($\chi^2 = 10.8$, d.f. = 1, $p < .001$). This surge in the number of organizations founding magazines can be attributed to the growth of a modern ''society of organizations'' (Perrow, 1991). Nearly all of these organizations were populated by social elites, specifically, by the highly educated. Only three organizations that sponsored magazines—the labor union, the botanical medical college, and the frontier Baptist group—indicate access by nonelites to the resources needed to launch magazines.

Multivariate Analysis

Multivariate analysis of relationships between founders' social positions and time clarifies the ambiguity arising from the bivariate analysis. The unsaturated model that fits the data best includes the following sets of effects: {PBCL}{PBT}{PCT}{PLT}{BCT}. Thus this model includes four three-way interactions between the predictor variables and time (P × B × T, P × C × T, P × L × T, and B × C × T), plus the two-way interactions between the four predictor variables and time. Table 4 demonstrates why we selected this model. It

Table 5. Estimates of Main Effects and Interactions: The Saturated Model and the Best-fitting Unsaturated Model*

Parameter	Equivalent logistic regression parameter	(1) Saturated model	(2) Best-fitting unsaturated model
T	Constant	0.54	0.35
PT	Professional	−0.43	−0.27
BT	Publishing	−0.73	−0.56
CT	College education	0.30	0.09
LT	Location (in Philadelphia/Boston/New York City)	0.36	−0.16
PBT	Professional × Publishing	0.57	0.43
PCT	Professional × College	−0.73	−0.58
BCT	Publishing × College	−0.53	−0.38
PLT	Professional × Location	−0.66	−0.23
BLT	Publishing × Location	−0.36	
CLT	College × Location	0.46	
PBCT	Professional × Publishing × College	0.16	
PBLT	Professional × Publishing × Location	0.62	
PCLT	Professional × College × Location	−0.52	
BCLT	Publishing × College × Location	−0.48	
PBCLT	Professional × Publishing × College × Location	0.55	

* P indicates the presence or absence of a professional on a founding team, B the presence or absence of a member of the publishing trades on a founding team, C the presence or absence of someone with a college education on a founding team, L whether or not a magazine was founded in one of the three biggest cities, and T the whether a magazine was founded between 1741 and 1800 or between 1841 and 1860.

presents a series of log-linear models of increasing complexity. For each model, we list the parameters fitted, note the degrees of freedom, and assess model fit. Model 7 is the selected model. It fits the data very well: likelihood-ratio χ^2 = 2.63 (d.f. = 7, p = .917 compared with the saturated model), Pearson's χ^2 = 2.78 (d.f. = 7, p = .905 compared with the saturated model). This means that the saturated model does not fit the data any better than the selected model, even though the selected model is more parsimonious (it contains fewer parameters). We checked to see whether any more parsimonious model fit the data as well as model 7, but none did. For example, models 1 and 2 both exclude one of the interactions estimated in model 7 (B × C × T and P × L × T, respectively), but they do not fit the data as well as model 7. χ^2 tests comparing models 1 and 2 with model 7 confirm that the parameters omitted in models 1 and 2 make statistically significant contributions to model fit. We then checked to see whether any equally parsimonious model (any model containing the same number of parameters) fit the data better than model 7. Models 3 to 6 are equal in complexity to model 7, but none fit the data as well as model 7. Finally, we checked to see whether more complex models (models that contain more parameters) fit the data better than model 7. Models 8 through 14 are all more complex than model 7, but none offer a significant improvement in fit over model 7. And among models with d.f. = 7, model 7 has the lowest AIC, which further supports its selection.

Next, we used the estimated parameters obtained from the saturated model as a guide to which parameters should be included in the selected unsaturated model (Goodman, 1970). Model 1 in table 5 presents effect estimates from the

saturated model. It confirms our analysis of table 4. In the saturated model, BLT and CLT are the three-way interactions that are closest to zero, so a model that drops them, as does model 7 in table 4, is likely to fit the data well.

Model 2 in table 5 presents the estimated effects of all parameters pertaining to the odds of appearing in the second time period rather than the first time period in the selected model. Coefficients were estimated using means constraints: each effect was calculated at the sample means for all other variables. Thus, for example, the coefficient PT is the effect on the odds of a magazine's being published in the second period rather than the first due to having a printer founder vs. not having one. Both the professional and publishing-trades occupations (PT and BT) have negative effects on the odds of a magazine appearing in the mid-nineteenth century rather than the eighteenth century, but the effect for publishing trades is less than half the effect for professional occupations. Location in one of the three biggest cities (LT) has a small negative effect on these odds. The effect of founders' education (CT) is close to zero, indicating that magazines in the second period were no more likely to have college-educated founders than those in the first. This pattern of results differs from the bivariate analysis in two respects: that analysis showed that the likelihood of having a professional founder increased and the likelihood of having a college-educated founder declined.

Differences between the bivariate and multivariate results are due to interactions between the professional and publishing trades occupations, between both occupations and college education, and between the professional occupation and location. Having professional founders *and* founders in the publishing trades (PBT) increased the odds of a magazine appearing in the mid-nineteenth century rather than the eighteenth century. While the members of each occupation on their own became less likely to found magazines (the effects for PT and BT are negative), members of the two occupations became more likely to found magazines together (PBT is positive). This suggests that the resources attached to these two occupations became increasingly complementary. Next, having college-educated founders *and* professionals (PCT) decreased the odds of a magazine appearing in the mid-nineteenth century rather than the eighteenth century, as did having college-educated founders *and* founders in publishing (BCT). This indicates that although the prevalence of magazine founders with a college education did not change overall (based on the near-zero effect for CT), magazine founders in the professions and publishing trades became significantly less likely to have attended college over time.

Finally, location interacted with occupation: having a professional founder *and* being located in one of the three biggest cities (PLT) decreased the odds of a magazine being published in the mid-nineteenth century rather than the eighteenth century. In other words, having a professional founder and being located outside a major urban center increased the odds. Note that neither the publishing-trades occupation nor college education interacted with location, as BLT and CLT were not required for the selected model to fit the data well. Taken together, these results suggest that only those magazines with professionals among their founders became more geographically dispersed, while magazines with members of the publishing trades and college-educated men remained just as concentrated in the major urban centers in the mid-nineteenth century as they were in the eighteenth century.

DISCUSSION AND CONCLUSION

Our analysis shows that as the magazine industry evolved, people from increasingly broad swaths of American society were able to launch new magazines. This happened because magazines became legitimate cultural products, and industry-specific resources became widespread (Hannan and Freeman, 1989). This occurred even in the face of intense competition from mass-market magazines published in Philadelphia, Boston, and New York.

In the eighteenth century, when magazines were novel cultural products, finding skilled printers, obtaining original content, securing distribution, and attracting readers demanded heavy investments of economic, cultural, and social capital. Thus most early magazine founders were printers or other members of the publishing trades, men who had the experience and connections necessary to secure scarce and hard-to-manage production resources. As the landlords of the eighteenth-century American public sphere, these men were also cultural arbiters, so they were well positioned to acquire content, gain access to distribution channels, and attract audiences. Other elites were common among magazine entrepreneurs: patrician professionals and men of letters, who possessed the knowledge and cultivation necessary to provide content and attract a similarly elite audience and the economic resources needed to underwrite such risky ventures. Skeptics could be persuaded of the merits of these unusual new products by judging not the legitimacy of the products themselves but, rather, the stature of the men who created them (DiMaggio, 1982; Granovetter and McGuire, 1998).

By the mid-nineteenth century, the greater legitimacy accorded to magazines and the increased availability of industry-specific resources made it easier to launch and run magazines (Hannan and Freeman, 1989). Distribution through the mail was guaranteed by law, and postage rates for magazines were almost as low as for newspapers. Printing presses had become widespread, and printing had been transformed from a skilled craft done by business owners into routine factory work done by paid laborers. Professional writers were eager to contribute original material for pay, and copyright law was used by publishers to safeguard their investment in literary property. Moreover, accumulated experience with magazines had reduced challenges for founders (Aldrich and Fiol, 1994): subscribers, writers and illustrators, financial backers, and government officials all accepted magazines as valued cultural products. Because acquiring key resources was easier, barriers to entry were lower in the mid-nineteenth century.

But it was not easy for magazine entrepreneurs everywhere to acquire the resources their new ventures needed. By the mid-nineteenth century, the rise of large and powerful publishing houses in the three biggest cities—Philadelphia, Boston, and New York—meant that industry insiders (writers and members of the publishing trades) were more likely than doctors, clergy, or the members of other occupations to launch magazines in those locations. Magazine founders in these cities were also more likely to be college-educated than those located elsewhere. The rise of large publishing houses in these cities excluded some people from launching new magazines there, but such competitive exclusion seems to have been limited in its geographic reach: in the mid-nineteenth century, more magazines were founded outside these centers than by publishing-industry insiders within them. Professionals, especially

small-town doctors and ministers without college educations, were most likely to take advantage of these opportunities, as magazines with professionals among their founders became more likely to be located outside the major urban centers. This was especially true for magazines founded by clergy: in the mid-nineteenth century, magazines founded by clergy constituted 24 percent of the sample we analyzed, but only 5 percent of those were located in the major urban centers. The publishing activities of these two groups underwent ''antagonistic expansion'' (Starr, 2004: 26) as rival religious denominations and medical factions launched competing publications to criticize each other and tie their communities closer together (Hatch, 1989; Haller, 2000; Goldstein and Haveman, 2012). Because magazines became increasingly legitimate cultural goods, they became increasingly valuable platforms for these professional struggles. All of this suggests that the greater legitimacy afforded to magazine publishing by the mid-nineteenth century allowed founders with few social, cultural, or economic resources to launch magazines more easily than they could have in the eighteenth century—as long as they avoided the industry centers.

Entrepreneurship in the Post-bellum Magazine Industry

Our analysis ends in 1860, the year before the outbreak of the Civil War. While the American magazine industry was by then well established, it continued to evolve. But did the ease (or difficulty) of acquiring resources to launch new periodicals change after 1860? The short answer is no. Despite a merger wave after World War II, which produced large concerns like Time Inc. that publish many magazines, market concentration in the industry remained low (Tebbel and Zuckerman, 1991). Today, there are about 20,000 print magazines in circulation; between 1981 and 2007, the market share (in terms of advertising revenues) of the four largest titles averaged 17 percent, while the market share of the eight largest averaged 28 percent, and the Herfindahl index of concentration averaged 118 (Noam, 2009: 161).[4] To put this in perspective, an index of over 1,000 is the usual threshold for a concentrated market. These data on the contemporary magazine industry suggest that the trends we observed in the first 120 years of the industry's history continued over the next 150 years. Even as mergers and the rise of new media continue to transform the social and spatial contexts of magazine publishing, large New-York-based publishing concerns still dominate the national scene, while at the same time thousands of smaller publishing ventures thrive elsewhere.

Directions for Future Research

More work remains to be done to reconfirm and probe the claims we make here. For magazines in particular, we would like to know whether mid-nineteenth-century entrepreneurs founded their magazines for the same reasons

[4] Basing market share on circulation yields similar figures: 16 percent for the top four magazines, 22 percent for the top eight magazines, and 87 for the Herfindahl index (Noam, 2009: 161). Analyzing magazine-publishing firms instead of individual magazines reveals somewhat higher, but still quite modest, levels of market concentration: from 1984 to 2006, the market share of the four largest firms averaged 27 percent, that of the eight largest averaged 38 percent, and the Herfindahl index averaged 281 (Noam, 2009: 159).

and to serve the same kind of audiences as their eighteenth-century predecessors. An analysis of magazine genres or prospectuses could shed light on how founders' motivations for their publishing ventures evolved as the industry became legitimate and deep pools of industry-specific resources developed. Such an analysis might reveal, for example, the social stratification of legitimacy claims made by magazine founders, if elites founded different types of magazines than non-elites or justified their ventures with different language. Or it might reveal regional divergences in legitimacy claims, with founders in rural areas publishing different genres of magazines than those in urban areas.

For other industries, especially in more modern settings, research on entrepreneurship could explicitly take into consideration how opportunities and constraints on entrepreneurship co-evolve with industry structure and with trends in society at large. Over the last three decades, organizational theorists have seen a dramatic shift in basic research questions, from explaining cross-sectional variation in organizational structure and performance to emphasizing time and change. Such explanations must explicitly recognize the complex interactions among various factors that may occur over time. Yet despite the increasing appeal of historically sensitive analysis, only a handful of studies of new-venture creation reflect this shift (e.g., Dobbin and Dowd, 1997; Stuart and Ding, 2006; Johnson, 2007; Ruef and Reinecke, 2011).

Our study reveals one such complexity: two hypotheses derived from sociological theory—competitive exclusion from resource acquisition and increasing legitimacy and easier access to resources—were both partly confirmed and partly disconfirmed. The magazine industry became stratified into a core (in Philadelphia, Boston, and New York), where large incumbents could keep independent entrepreneurs at bay, and a periphery (in the burgeoning number of other urban areas), where incumbents were smaller and people in many different walks of life could acquire the resources to start magazines. As industries develop, they can become stratified along at least one dimension, if not several. These axes of differentiation and power may vary across industries—location for magazines and financial-service firms, product technology for personal-computer and mobile-phone manufacturers, or customer profile and price point for automobile manufacturers and wineries—but they are common enough to merit scrutiny by entrepreneurship scholars. Research on entrepreneurship must recognize that such differences may alter the entrepreneurial task in important ways and so set important scope conditions on any theory of entrepreneurship.

Acknowledgments

This research was funded by National Science Foundation Grants #SES-0727502 and #SES-9906963, and by a grant from the U.C. Berkeley Institute for Research on Labor and Employment. We thank Associate Editor Martin Ruef and three anonymous *ASQ* reviewers for helpful comments. We also thank Adam Goldstein, Victoria Johnson, Jen Schradie, Toby Stuart, and Steve Vaisey, as well as seminar participants at Boston University and Emory University. Please send all correspondence to the first author.

REFERENCES

Ahlstrom, S.
1972 A Religious History of the American People. New Haven, CT: Yale University Press.

Albaugh, G.
1994 History and Annotated Bibliography of American Religious Periodicals and Newspapers. Worcester, MA: American Antiquarian Society.

Aldrich, H., and M. Fiol
1994 ''Fools rush in? The institutional context of industry creation.'' Academy of Management Review, 19: 645–670.

Aldrich, H., and G. Wiedenmayer
1993 ''From traits to rates: An ecological perspective on organizational foundings.'' In J. Katz and R. Brockhaus, Sr. (eds.), Advances in Entrepreneurship, 1: 145–195. Greenwich, CT: JAI Press.

Backes-Gellner, U., and A. Werner
2007 ''Entrepreneurial signaling via education: A success factor in innovative start-ups.'' Small Business Economics, 29: 173–190.

Bender, T.
1988 New York Intellect: A History of Intellectual Life in New York City from 1750 to the Beginnings of Our Time. Baltimore, MD: Johns Hopkins University Press.

Bercovitch, S. (ed.)
1994 The Cambridge History of American Literature, vol. 1: 1590–1820. vol. 2: 1820-1865. Cambridge: Cambridge University Press.

Berry, W., and H. Poole
1966 Annals of Printing: A Chronological Encyclopedia from the Earliest Times to 1950. London: Blandford.

Bishop, Y., S. Fienberg, and P. Holland
1975 Discrete Multivariate Analysis. Cambridge, MA: MIT Press.

Blau, P.
1977 Inequality and Heterogeneity: A Primitive Theory of Social Structure. New York: Free Press.

Botein, S.
1981 ''Printers and the American Revolution.'' In B. Bailyn and J. Hench (eds.), The Press and the American Revolution: 125–225. Boston: Northeastern University Press.

Brigham, C.
1962 History and Bibliography of American Newspapers, 1690–1820, Including Additions and Corrections. Hamden, CT: Archon Books.

Bugbee, B.
1967 The Genesis of American Patent and Copyright Law. Washington, DC: Public Affairs Press.

Burke, C.
1973 ''The quiet influence: The American colleges and their students, 1800–1860.'' Unpublished dissertation, Washington University.

Burton, M. D., J. Sørensen, and C. Beckman
2002 ''Coming from good stock: Career histories and new venture formation.'' In M. Lounsbury and M. Ventresca (eds.), Research in the Sociology of Organizations, 19: 229–262. New York: Elsevier Science.

Carter, S., and R. Sutsch
2006 ''Travel times between New York City and other selected cities, 1800–1857.'' Historical Statistics of the United States, Earliest Times to the Present: Millennial Edition On Line, Table Df8–12. Washington and New York: U.S. Census Bureau and Cambridge University Press. Available at http://hsus.cambridge.org/HSUSWeb/HSUSEntryServlet, accessed May 2007.

Charvat, W.
1968 The Profession of Authorship in America, 1800–1870. Columbus, OH: Ohio State University Press.
Commons, J., D. Saposs, H. Sumner, E. Mittelman, H. Hoagland, J. Andrews, S. Perlman, D. Lescohier, E. Rauschenbush, and P. Taft
1918 History of Labour in the United States, vol. 1. New York: Macmillan.
Crane, D.
1965 ''Scientists at major and minor universities: A study of productivity and recognition.'' American Sociological Review, 30: 699–714.
Cremin, L.
1970a American Education: The Colonial Experience, 1607–1783. New York: Harper and Row.
Cremin, L.
1970b American Education: The National Experience, 1783–1876. New York: Harper and Row.
Dahl, M., and O. Sorenson
2010 ''The social attachment to place.'' Social Forces, 89: 633–658.
Dauber, K.
1990 The Idea of Authorship in America: Democratic Poetics from Franklin to Melville. Madison, WI: University of Wisconsin Press.
David, R., W. Sine, and H. Haveman
2012 ''Seizing opportunity in emerging fields: How entrepreneurs legitimated the professional form of management consulting.'' Organization Science (forthcoming).
Davis, J.
2004 ''An annual index of U.S. industrial production, 1790–1915.'' Quarterly Journal of Economics, 109: 1177–1215.
DiMaggio, P. J.
1982 ''Cultural entrepreneurship in nineteenth-century Boston: The creation of an organizational base for high culture in America.'' Media, Culture, and Society: 4: 33–50.
DiMaggio, P. J., and W. W. Powell
1983 ''The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields.'' American Sociological Review, 48: 147–160.
Dobbin, F., and T. Dowd
1997 ''How policy shapes competition: Early railroad foundings in Massachusetts.'' Administrative Science Quarterly, 42: 501–529.
Dobson, J.
1993 ''The spurious articles in Appleton's *Cyclopaedia of American Biography*.'' Biography, 16: 388–408.
Douglas, A.
1977 The Feminization of American Culture. New York: Knopf.
Etzkowitz, H.
1989 ''Entrepreneurial science in the academy: A case of the transformation of norms.'' Social Problems, 36: 14–29.
Everton, M.
2005 ''The would-be author and the real book-seller: Thomas Paine and eighteenth-century printing ethics.'' Early American Literature, 40: 79–110.
Ferguson, R.
1984 Law and Letters in American Culture. Cambridge, MA: Harvard University Press.
Fiss, P.
2011 ''Building better causal theories: A fuzzy-set approach to typologies in organizational research.'' Academy of Management Journal, 54: 393–420.

Fligstein, N.
2001 ''Social skill and the theory of fields.'' Sociological Theory, 19 (2): 105–125.
Freeman, J.
1986 ''Entrepreneurs as organizational products.'' In G. Libecap (ed.), Advances in the Study of Entrepreneurship, Innovation, and Economic Growth, 1: 33–52. Greenwich, CT: JAI Press.
Friedland, R., and D. Palmer
1984 ''Park Place and Main Street: Business and the urban power structure.'' Annual Review of Sociology, 10: 393–416.
Gawalt, G.
1979 The Promise of Power: The Emergence of the Legal Profession in Massachusetts, 1760–1840. Westport, CT: Greenwood Press.
Goldstein, A., and H. Haveman
2012 ''Press and pulpit: Denominational dynamics and the growth of religious magazines in antebellum America.'' Working paper, Department of Sociology, University of California, Berkeley.
Goodman, L.
1970 ''The multivariate analysis of qualitative data: Interactions among multiple classifications.'' Journal of the American Statistical Association, 65: 225–256.
Goodman, L.
1972 ''A modified multiple regression approach to the analysis of dichotomous variables.'' American Sociological Review, 37: 28–46.
Granovetter, M., and P. McGuire
1998 ''The making of an industry: Electricity in the United States.'' In M. Callon (ed.), The Law of Markets: 147–173. Oxford: Blackwell Publishers.
Haber, S.
1991 The Quest for Authority and Honor in the American Professions, 1750–1900. Chicago: University of Chicago Press.
Habermas, J.
1962 The Structural Transformation of the Public Sphere: An Introduction into a Category of Bourgeois Society. Transl. by T. Burger with the assistance of F. Lawrence. Cambridge, MA: MIT Press.
Haller, J.
2000 The People's Doctors: Samuel Thomson and the American Botanical Movement, 1790–1860. Carbondale, IL: Southern Illinois University Press.
Hannan, M., and J. Freeman
1989 Organizational Ecology. Cambridge, MA: Harvard University Press.
Hatch, N.
1989 The Democratization of American Christianity. New Haven, CT: Yale University Press.
Howe, D.
2009 What God Hath Wrought: The Transformation of America, 1815–1848. New York: Oxford University Press.
Hunter, D.
1952 Papermaking in Pioneer America. Philadelphia: University of Pennsylvania Press.
Isaac, L., and L. Griffin
1989 ''Ahistoricism in time-series analyses of historical process: Critique, redirection, and illustrations from U.S. labor history.'' American Sociological Review, 54: 873–890.
John, R.
1995 Spreading the News: The American Postal System from Franklin to Morse. Cambridge, MA: Harvard University Press.

Johnson, V.
2007 ''What is organizational imprinting? Cultural entrepreneurship in the founding of the Paris Opera.'' American Journal of Sociology, 113: 97–127.
Kaestle, C.
1983 Pillars of the Republic: Common Schools and American Society. New York: Hill and Wang.
Kielbowicz, R.
1989 News in the Mail: The Press, Post Office, and Public Information, 1700–1800s. New York: Greenwood Press.
King, M., and H. Haveman
2008 ''Antislavery in America: The press, the pulpit, and the rise of anti-slavery societies.'' Administrative Science Quarterly, 53: 492–528.
Knoke, D., and P. Burke
1980 Log-linear Models. Newbury Park, CA: Sage.
Kono, C., D. Palmer, R. Friedland, and M. Zafonte
1998 ''Lost in space: Understanding the geography of corporate interlocking directorates.'' American Journal of Sociology, 103: 863–911.
Krugman, P.
1991 ''Increasing returns and economic geography.'' Journal of Political Economy, 99: 483–499.
Larson, M.
1977 The Rise of Professionalism. Berkeley, CA: University of California Press.
Lazear, E.
1977 ''Academic achievement and job performance: Note.'' American Economic Review, 67: 252–254.
Lehmann-Haupt, H.
1941 Bookbinding in America. New York: R. R. Bowker & Co.
Lehmann-Haupt, H. (ed.)
1951 The Book in America: A History of the Making and Selling of Books in the United States. New York: R. R. Bowker & Co.
Marx, K.
1977 Capital, vol. 1. Transl. by B. Fowkes. New York: Vintage Books.
McClelland, P.
1997 Sowing Modernity: America's First Agricultural Revolution. Ithaca, NY: Cornell University Press.
McCusker, J., and R. Menard
1991 The Economy of British America, 1607–1789, 2d ed. Chapel Hill, NC: University of North Carolina Press.
McMurtry, D.
1936 A History of Printing in the United States. New York: R. R. Bowker & Co.
Merton, R.
1968 ''The Matthew effect in science.'' Science, 159: 56–63.
Moffat, R.
1992 Population History of Eastern U.S. Cities and Towns, 1790–1870. Metuchen, NJ: Scarecrow Press.
Moffat, R.
1996 Population History of Western U.S. Cities and Towns, 1850–1990. Lanham, MD: Scarecrow Press.
Moran, J.
1973 Printing Presses: History and Development from the Fifteenth Century to Modern Times. Berkeley, CA: University of California Press.
Mott, F.
1930 A History of American Magazines, vol. 1: 1741–1850. Cambridge, MA: Harvard University Press.

Mott, F.
1938 A History of American Magazines, vol. 2: 1850–1865. Cambridge, MA: Harvard University Press.
Noam, E.
2009 Media Ownership and Concentration in America. New York: Oxford University Press.
North, D.
1961 The Economic Growth of the United States, 1790–1860. Englewood Cliffs, NJ: Prentice-Hall.
Oswald, J.
1937 Printing in the Americas. New York: Gregg.
Perrow, C.
1991 ''A society of organizations.'' Theory and Society, 20: 725–762.
Pitcher, E.
2000 An Anatomy of Reprintings and Plagiarisms: Finding Keys to Editorial Practices and Magazine History, 1730–1820. Lewiston, NY: Edwin Mellen Press.
Purvis, T.
1995 ''Population of American urban centers, 1760–1800.'' Revolutionary America 1763 to 1800: 253. New York: Facts on File.
Ragin, C.
2000 Fuzzy-Set Social Science. Chicago: University of Chicago Press.
Ragin, C.
2008 Redesigning Social Inquiry: Fuzzy Sets and Beyond. Chicago: University of Chicago Press.
Rao, H.
1998 ''Caveat emptor: The construction of nonprofit consumer watchdog organizations.'' American Journal of Sociology, 103: 912–961.
Rich, W.
1924 The History of the United States Post Office to the Year 1829. Cambridge, MA: Harvard University Press.
Ruef, M., and D. Reinecke
2011 ''Does capitalism produce an entrepreneurial class?'' In A. Brief and B. M. Staw (eds.), Research in Organizational Behavior, 31: 225–252. New York: Elsevier Science.
Saxenian, A.
1994 Regional Advantage: Culture and Competition in Silicon Valley and Route 128. Cambridge, MA: Harvard University Press.
Schlesinger, A., Jr.
2000 ''Foreword.'' One Hundred and Fifty Years of Harper's Magazine. New York: Franklin Square Press.
Sewell, W., Jr.
1992 ''A theory of structure: Duality, agency, and transformation.'' American Journal of Sociology, 98: 1–29.
Shane, S., and R. Khurana
2003 ''Bringing individuals back in: The effects of career experience on new firm founding.'' Industrial and Corporate Change, 12: 519–543.
Silver, R.
1967 The American Printer, 1787–1825. Charlottesville, VA: University of Virginia Press.
Smith, A.
1970 The Wealth of Nations. Harmondsworth, UK: Penguin.
Smith, D.
1979 History of Papermaking in the United States (1690–1969). New York: Lockwood.

Sorenson, O., and P. Audia
2000 ''The social structure of entrepreneurial activity: Geographic concentration of footwear production in the United States, 1940–1989.'' American Journal of Sociology, 106: 424–462.
Spence, M.
1973 ''Job market signalling.'' Quarterly Journal of Economics, 87: 355–379.
Starr, P.
1982 The Social Transformation of American Medicine. New York: Basic Books.
Starr, P.
2004 The Creation of the Media: Political Origins of Modern Communications. New York: Basic Books.
Stinchcombe, A.
1965 ''Social structure and organizations.'' In J. G. March (ed.), Handbook of Organizations: 142–193. Chicago: Rand-McNally.
Stott, R.
1990 Workers in the Metropolis: Class, Ethnicity, and Youth in Antebellum New York City. Ithaca, NY: Cornell University Press.
Stuart, T., and W. Ding
2006 ''When do scientists become entrepreneurs? The social structural antecedents of commercial activity in the academic life sciences.'' American Journal of Sociology, 112: 97–144.
Tebbel, J., and M. Zuckerman
1991 The Magazine in America, 1741–1990. New York: Oxford University Press.
Thomas, I.
1874 The History of Printing in America, with a Bibliography of Printers and an Account of Newspapers, 2d ed. New York: Weathervane Books.
de Tocqueville, A.
2000 Democracy in America. (First published in 1848.) Chicago: University of Chicago Press. Transl. and ed. by H. Mansfield and D. Winthrop.
U.S. Census Bureau
1998 Population of the 100 Largest Cities and Other Urban Places in the United States: 1790 to 1990. Washington, DC: U.S. Census Bureau, Working Paper 27.
U.S. Census Bureau
2006 Historical Statistics of the United States, Earliest Times to the Present: Millennial Edition On Line. Washington and New York: U.S. Census Bureau and Cambridge University Press. Available at http://hsus.cambridge.org/HSUSWeb/HSUSEntryServlet, accessed June and December 2011.
Weeden, K.
2002 ''Why do some occupations pay more than others? Social closure and earnings inequality in the United States.'' American Journal of Sociology, 108: 55–101.
Weeks, L.
1916 A History of Papermaking in the United States: 1690–1916. New York: Lockwood Trade Journal Co.
Weis, F.
1950 The Colonial Clergy of Maryland, Delaware, & Georgia. Baltimore, MD: Genealogical Publishing Co.
Weis, F.
1976 The Colonial Clergy of Virginia, North Carolina, & South Carolina. Baltimore, MD: Genealogical Publishing Co.
Weis, F.
1977 The Colonial Clergy of New England. Baltimore, MD: Genealogical Publishing Co.

Weis, F.
1978 The Colonial Clergy of the Middle Colonies: New York, New Jersey, and Pennsylvania, 1628–1776. Baltimore, MD: Genealogical Publishing Co.
Wroth, L.
1931 The Colonial Printer. Charlottesville, VA: University Press of Virginia.
Wroth, L., and R. Silver
1951 ''Book production and distribution from the American Revolution to the war between the states.'' In H. Lehmann-Haupt (ed.), The Book in America: A History of the Making and Selling of Books in the United States: 63–136. New York: R. R. Bowker & Co.
Zboray, R.
1993 A Fictive People: Antebellum Economic Development and the American Reading Public. New York: Oxford University Press.

Authors' Biographies

Heather A. Haveman is Professor of Sociology and Business at the University of California, Berkeley, Department of Sociology, 410 Barrows Hall, Berkeley, CA 9472-1980 (e-mail: haveman@berkeley.edu). She studies how organizations, industries, and employees' careers evolve and is currently working on several papers tracing the evolution of the American magazine industry. She received a Ph.D. in organizational behavior and industrial relations from the University of California, Berkeley and an M.B.A. from the University of Toronto.

Jacob Habinek is a Ph.D. candidate in the Department of Sociology at the University of California, Berkeley, 410 Barrows Hall, Berkeley, CA 94720 (e-mail: habinek@berkeley.edu). In addition to entrepreneurship and industry evolution, his current research centers on the development of quantitative models for complex social processes, the dynamics of social networks, and the causes and consequences of stability and change across organizational fields. He is finishing a dissertation that examines the relationship between institutional change and organizational innovation in the life sciences. He holds an M.A in sociology from the University of Wisconsin, Madison. He expects to complete his Ph.D. in 2014.

Leo A. Goodman is the Class of 1938 Professor of Sociology at the University of California, Berkeley, 410 Barrows Hall, Berkeley, CA 94720 (e-mail: lgoodman@berkeley.edu). He is an elected member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the American Philosophical Society. He has studied a wide variety of statistical problems and developed many statistical methods that bring the same kind of rigor to the analysis of qualitative/categorical data that has been available in the analysis of quantitative data. He received an M.A. and Ph.D. in mathematics from Princeton University.