

Place *and* Space:

The Evolving Impact of Geography and Technological Advances on Organizational Founding

Heather A. Haveman

University of California, Berkeley
Sociology Department and Haas School of Business
410 Barrows Hall
Berkeley CA 94720-1980
haveman@berkeley.edu
510-642-3495

Christopher I. Rider

Emory University
Goizueta Business School
1300 Clinton Road
Atlanta, GA 30322
Chris_Rider@bus.emory.edu
404-727-4198

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Abstract

Much research demonstrates that, despite the prevalence of space-spanning technologies, geography strongly influences modern organizations. But scholarly accounts neglect the issue of how geographic influences evolve as transportation and communication technologies diminish spatial barriers to interaction. We propose that such technological advances attenuate the relevance of *space* by expanding the geographic scope of competition, but at the same time, they accentuate the relevance of *place* by enabling geographic distinctions among competing organizations. We find support for our arguments in a historical analysis of how the expansion of one communication technology, the U.S. postal system, affected foundings of one organizational form, magazine-publishing ventures. We find that as the postal system expanded, magazine founding rates became more sensitive to distant magazines and less sensitive to geographically proximate ones. But we also find that new magazines were increasingly differentiated by positions in space and identity claims to place: magazines founded in the industry core increasingly made universalistic (national) claims to place, while those founded in the periphery increasingly made localistic (municipal or state) claims to place. These findings reveal how technological advances influence the geography of entrepreneurial opportunities and competitive differentiation.

Useful (recently discovered) quotation: “The title of this magazine has been adopted as significant [*sic*] of our purposes and feelings. Disclaiming, as we do, all local prejudices, and acknowledging the United States as our country, we confess that we take a peculiarly lively interest in the prosperity and welfare of that section in which we were born and educated; and therefore we have prefixed the name *Virginia*, to the general terms which characterise the nature of our work.” (Introduction, *Virginia Evangelical and Literary Magazine*, p. 1)

Much research demonstrates the continuing relevance of geography in modern societies, despite tremendous technological advances in transportation and communication. Individuals and organizations remain situated in distinct places characterized by local cultures and legal codes, site-specific resource constraints, localized information flows, and the actions of others nearby (Fischer, 1992; Freeman and Audia, 2006; Marquis and Battilana, 2009). Both people and organizations cluster in space (Marshall, 1920; Porter, 1990; Krugman, 1991) and are more likely to interact and to form relationships the closer they are to each other (Festinger, Schacter, and Back, 1950; Hannan and Freeman, 1989). And when entrepreneurs start new organizations, they usually obtain resources from the communities in which they reside (Sorenson and Audia, 2000).

Yet research on the impact of geography is limited by its general focus on modern societies, where spatial barriers to travel and communication are low. High levels of technological development make it difficult to assess how or how much the impact of geography evolved with communication, information, and transportation technologies (for exceptions, see Fischer, 1992; Hammermesh and Oster, 2002; Marquis, 2003; Rosenblat and Mobius, 2004). Scarcity of knowledge about the past makes it difficult to predict how the role of geography will evolve as “new” new technologies develop. For instance, some commentators believe social media sites like Facebook and Twitter are fundamentally restructuring the geography of political and economic action (Shirky, 2011), while others observe no appreciable influences (Gladwell, 2010).

Conflicting arguments abound among academics as well as journalists. Some scholars have argued that advances in transportation and communication technologies have reconfigured space as time and so have reduced geographic influences on interaction (McLuhan, 1962; Kern, 1983; Giddens, 1990; Friedland and Boden, 1994). In particular, as spatial barriers to travel and communication have decreased, social, economic, and political interactions have expanded in physical space, creating a “global village” (McLuhan, 1962). Indeed, communication technologies, such as the postal system and the Internet, are often

created or improved with the aim of bringing distant individuals together (Johns, 1995; Hafner and Lyon, 1996). For instance, in the past three decades, the development of cheaper long-distance calling rates, fax machines, email, the file transfer protocol (FTP), the hypertext markup language (HTML), and web browsers have increased academics' collaboration with geographically distant colleagues (Hammermesh and Oster, 2002; Rosenblat and Mobius, 2004).

Other scholars have claimed that such expanded loci of interaction "dislocate" people and organizations from physical space and so disassociate physical space from social "place" (Meyrowitz, 1985). If so, technology-driven expansion of the geographic scope of interactions may heighten, rather than reduce, the impact of location by increasing demand for "authentic" local connections and identities (Giddens, 1990; Marquis and Lounsbury, 2007). Such demand often creates new market opportunities for products that appeal to notions of authenticity (Carroll and Swaminathan, 2000), which are often specific to place.

These arguments imply that lower spatial barriers to interaction simultaneously increase the geographic scope of interaction but also heighten geographic distinctions among people and organizations. Motivated by this insight, we investigate how geographic influences on organizational interactions evolve as communication technologies develop. Such technological developments often occur over long periods of time – decades rather than years or months. Accordingly, we study the development of one communication technology, the U.S. postal system, over 70 years (from 1790 to 1860), and its impact on foundings of one organizational form that depended on it, magazine publishers. Like other print media, magazines have been touted as modernizing forces that propelled a shift from particularistic local communities to universalistic (inter)national communities (Eisenstein, 1979; Thompson, 1985), so magazine publishing presents an excellent context for analyzing the push and pull of place and space. Early governmental efforts to build an extensive postal network not only resulted in rapid long-distance communication; they also promoted the development of an improved transportation infrastructure (Kielbowicz, 1989; John, 1995; Starr, 2004). Our study covers the 70-year period

when the postal system expanded exponentially and the magazine industry grew rapidly, spreading to all states in the Union and several territories (Haveman, 2004).

New ventures are especially sensitive to the spatial distribution of established organizations (Sorenson and Audia, 2000) and are imprinted by surrounding social structures at founding (Stinchcombe, 1965), so the effects of geography and technology are expected to manifest themselves most clearly at the time of founding. Therefore, although our arguments may apply to other organizational outcomes, including performance, growth, and survival, we focus here on foundings. Foundings are particularly important points in organizations' lives because decisions made at founding have cascading influences on organizational structures and behavior (*e.g.*, Stinchcombe, 1965; Baron, Hannan, and Burton, 2001).

We begin by identifying two related but distinct effects of developing communication technologies on founding rates. First, organizations in any particular location can more easily reach distant customers and suppliers. Therefore, organizations' resource spaces will expand physically and new ventures in the focal location will increasingly benefit from interactions with geographically distant customers and suppliers. Second, organizations in other locations can more easily reach customers and suppliers in the focal location; therefore, new ventures in the focal location will increasingly compete with geographically distant organizations. If spatial barriers to interaction decrease, founding rates in any location should become more sensitive to the presence of distant organizations and less sensitive to the presence of nearby organizations.

We then consider whether the development of communication technologies, and the consequent easier penetration of local communities by organizations from outside those communities, engenders a resurgence of localism and competitive differentiation of organizations into subgroups based on geographically specific identities. To the extent that organizations, their managers, and their customers are embedded in their local communities, external influences may be perceived as threats to locals' identities, cultures, and activities; such a reaction will heighten the salience of the distinction between locals and outsiders. If so,

local organizations will increasingly emphasize their connections to local places, thereby distinguishing their identities and outputs from those of non-local organizations, which will promote their broad-based appeal to people in many locations. Hence, new ventures that are oriented toward audiences in particular locations should increasingly be founded with localistic identities (*e.g.*, those that are tied to a particular city or state) while new ventures that are oriented toward audiences in multiple locations should increasingly be founded with universalistic identities (*e.g.*, those that encompass an entire nation or the globe). Moreover, new ventures' customer orientations will vary with their geographic locations: those founded in industry cores will be more likely to orient their offerings towards customers in many locations while those founded in peripheral locations will more often appeal to specific locales.

Our study informs research on entrepreneurship in two ways. First, we clarify how geographic influences on founding rates vary with the development of technologies that transcend space. We find that while the expansion of the postal network greatly dampened the mutualistic effect of local magazines on subsequent local foundings, it only slightly accentuated the competitive effect of non-local magazines. This suggests that magazines generally benefitted far more from reaching ever-more-distant customers and suppliers than they were hurt by magazines published in those distant locations reaching their local communities. These results also demonstrate persistent effects of ecological dynamics in residential and organizational communities, even as technologies that reduce spatial barriers to interaction develop.

Second, we find that the development of communication technologies affects the rates at which organizations with different identities are founded in different locations. As the postal system expanded, the identities of magazines founded in core regions became increasingly different from those founded in peripheral ones: magazines founded in the industry core increasingly espoused universalistic identities while those founded in the periphery increasingly claimed localistic identities. The expansion of the postal system had approximately the same

magnitude impact on magazines in the periphery and the core, so this competitive differentiation process appears to be symmetric.

Below, we built on research in sociology and economic geography to elaborate our theory. After detailing our data, measures, and methods, we present empirical results. We conclude by considering the implications of this study for the question of how geography influences industry evolution, especially in media industries in the era of the Internet – a 15-year-old space-spanning technology whose implications for geography remain unclear.

Geography and Interactions between Organizations

Geography encompasses place and space, both the physical and cultural features of a location and relationships between that location and others. We define “place” as *absolute location*: a site’s physical features, its human and organizational demography, its social networks, and its culture. And we define “space” as *relative location*: physical distances between individuals and organizations in some focal site and those in other sites, which determine how much the physical features, demography, networks, and culture of those other sites affect individuals and organizations in the focal site. Our analysis reflects both aspects of geography.

There are two opposing arguments about how developing communication systems alter the impact of place and space on organizations. On the one hand, technological advances may *attenuate* the impact of place by expanding the geographic scope of interactions. On the other hand, technological advances may instead *accentuate* the impact of place by making localities, and thus local cultures and identities, more salient. We discuss each argument in turn.

Expansion in space and erosion of place

There is a basic human tendency to develop stronger connections to people who are nearby than to people who are far away (Boden and Molotch, 1994), which engenders geographically localized cultures. Strong local connections develop because people who are in close proximity are more likely to interact and form relationships than people who are far apart

(Festinger, Schacter, and Back, 1950). Face-to-face interactions are highly salient, so they have strong influences on behavior. In addition, face-to-face interactions transmit richer information than other forms of interaction: not just words, but also tone of voice, facial expression, and body language, all of which add nuance to verbal information. People interpret richer information as being more reliable, so they view face-to-face accounts as more reasonable and trustworthy than accounts transmitted in other ways. In sum, because local interactions are more likely than non-local interactions to occur face to face, local interactions engender both stronger social control and greater trust.

Because people develop stronger connections to those who are in the same location than to those who are in more distant locations, they also develop attachments to places – emotional bonds that arise from their history of past interactions and their expectations of future interactions (Low and Irwin, 1992; Milligan, 1998). People draw on these place attachments to understand places as meaningful locations to live. People’s attachments to place strengthen their perceptions of security and well-being, and so nurture their identities. Place attachments and associated local cultures are enduring, the result of recurrent interactions among inhabitants, civic and commercial organizations, political-economic factors, and the natural and built environment (Molotch, Freudenberg, and Paulsen, 2000).

People’s attachments to place have important implications for organizations. Many of the material and cultural resources needed to start and sustain any organization – potential employees, raw materials, equipment, knowledge, and legitimacy – are rooted in place because people do not readily relocate for jobs and their information networks tend to be highly localized in space (Krugman, 1991; Sorenson and Audia, 2000; Dahl and Sorenson, 2010). Moreover, customers often economize on search costs by patronizing nearby organizations (Eaton and Lipsey, 1982; Stahl, 1982). A final consideration is that transporting equipment, raw materials, and other physical inputs is costly, even when space-spanning technologies are highly advanced. For all these reasons, competition is more intense among organizations that are closer in space (Hannan and Freeman, 1989). But mutually beneficial interactions – spillovers

of industry-specific tacit knowledge through flows of personnel, strength in numbers for local political mobilization, and sustained attention from customers – are also more intense among organizations that are close in space (Krugman, 1991; Hannan and Freeman, 1989; Saxenian, 1994; Audia and Rider, 2010). In addition, the legitimacy of any organization depends on other geographically proximate organizations: the more organizations there are in a location, the greater their acceptance in the eyes of local customers, resource providers, and regulatory authorities (Hannan and Freeman, 1989; McKendrick, Jaffee, Carroll, and Khessina, 2003). In sum, both competitive and mutualistic inter-organizational interactions are most intense among nearby organizations and grow less intense as the geographic distance among organizations increases.

Advances in the technologies that transcend geography lower spatial barriers to interaction, expand the geographic scope of human interactions, and thus erode the distinctiveness of place. These developments “dislocate” people from physical space by making it easier for them to interact with people who are not “with” them – that is, not co-located (Meyrowitz, 1985). As a result, people become less sensitive to their particular physical locality and more attuned to larger geographic areas. In other words, people are transformed from locals (those whose attention is turned inward, to their own local community) to cosmopolitans (those whose attention embraces not just their local community but also the outside world). To paraphrase Merton (1968:447), locals live in their local community while cosmopolitans merely reside in their local community and live in the larger society. This basic difference in attachment and orientation to place makes cosmopolitan individuals more welcoming of non-local organizations, especially those that claim universal appeal for their products. For instance, locals read local newspapers while cosmopolitans read non-local (big-city) newspapers (Merton, 1968). In general, as people in any location become more willing to buy products from non-local organizations, non-local organizations will come to compete more intensely with local organizations.

The development of communication systems not only increases opportunities for organizations to serve customers outside their own location and compete with organizations located elsewhere, it also increases organizations' access to resources outside their own location and their opportunities to interact in mutually beneficial ways with distant organizations. Put simply, advances in communication technologies distribute organizational interactions – both competitive and mutualistic – over larger geographic areas. Expanding the geographic scope of interaction reduces the intensity of interactions among the organizations located in any particular area, which should result in weaker effects of nearby organizations on founding rates. The flip side of this dynamic is that organizations increasingly interact with organizations that are located far away. In turn, increased non-local interaction results in stronger effects of distant organizations on founding rates. Therefore, we predict:

Hypothesis 1: As spatial barriers to interaction decrease, the influence of organizations in the focal location on foundings in that location will decrease.

Hypothesis 2: As spatial barriers to interaction decrease, the influence of organizations in other locations on foundings in the focal location will increase.

Note that improvements in communication technologies do not completely eradicate spatial barriers to interaction, as costs in terms of time and money persist. Interactions with non-local organizations may still diminish with distance from a focal location; however, distance should be less consequential the more space-spanning technologies develop.

Backlash: the resurgence of place

Advances in communication technologies may allow individuals and organizations to interact more frequently and more easily over long distances, and may make their orientations less local and more cosmopolitan or universalistic. But individuals' and organizations' interactions, and therefore their orientations, are still constrained by location, as localities retain distinctive identities for individuals and organizations alike. Local distinctiveness persists because social interactions are affected by the natural and built environment, which changes very slowly, and by the demography of established civic and commercial organizations (Molotch

et al., 2000). Distinctive patterns of social interactions are channelled through the resulting local culture, and shaped by local legal codes and localized information flows (Freeman and Audia, 2006; Marquis and Battilana, 2009).

Easy mobility across space may actually make place even *more* important, by making more salient the contrasts between local (particularistic) and non-local (universalistic or foreign) cultures, and by amplifying individuals' and organizations' attachments to their local communities (Giddens, 1990). This may spur a backlash in the form of increasing demand for "authentic" local connections and identities (Giddens, 1990; Marquis and Lounsbury, 2007) on the part of both entrepreneurs and their customers. Such demand creates entrepreneurial opportunities for new products that appeal to notions of authenticity by virtue of their attachments to the history and culture of a specific place (Carroll and Swaminathan, 2000; Carroll and Wheaton, 2009).

Organizations' identities are linked to the identity of the places in which they are located to the extent that organizations and their members interact with others nearby (Saxenian, 1994; Storper, 1995; McKendrick *et al.*, 2003; Romanelli and Khessina, 2005). Organizations can credibly emphasize local identities only if they are embedded in a locality. Managers and owners of locally headquartered organizations are more deeply embedded in their locality than managers and owners of remotely headquartered organizations (Stern and Aldrich, 1980; Friedland and Palmer, 1984). This suggests that local organizations can more credibly claim local identities than can non-local organizations, and that local organizations can more easily obtain resources from local actors who identify with their locality (Audia and Rider, 2010).

Not all locations are alike. Instead, we often distinguish locations on the basis of organizational density, because most industries are characterized by geographic clustering: large numbers of organizations in a few core locations and smaller numbers of organizations in other, more peripheral, locations. This distinction is important because organizations located in their industry's core regions benefit from agglomeration economies (Krugman, 1991; Saxenian,

1994). As a result, organizations located in core regions have access to deeper pools of human and financial resources than organizations located in peripheral regions; they also have access to superior information about their industry, including information about competitors in peripheral regions (Friedland and Palmer, 1984; Kono, Palmer, Friedland and Zafonte, 1998). In addition, industry analysts, news media, customers, and suppliers pay more attention to organizations in core regions than to those peripheral regions, because focusing on core regions reduces the costs of gathering information about the industry; therefore, organizations in core regions are more visible than those in peripheral regions. Because of these differences in competitive strength, market power, and visibility, we expect that identity-based interactions between local and non-local organizations play out differently in core regions than in peripheral regions.

Peripheral regions: the rise of local distinctiveness. In peripheral regions, the penetration of local communities by non-local organizations may spur a backlash in the form of heightened localism – demand for locally authentic products that locally focused entrepreneurs rush to fill. A localistic backlash should favor local organizations, including new ventures, over non-local intruders, by allowing local organizations to emphasize their authentic attachments to their local communities. Local organizations can easily support claims to authentic place attachment because their founders are embedded in their local communities – founders' networks within their local community provide access to information about resource availability and tacit knowledge of how best to organize (Sorenson and Audia, 2000). Moreover, as communication technologies develop, local organizations, especially new ventures, may be spurred to emphasize their attachments to their local communities to avoid competition from non-local intruders, especially powerful and highly visible competitors from their industry's geographic core. In sum, for local organizations, accentuating their connection to place – signalling localistic roots and identities – effectively differentiates them from non-local intruders. Therefore we predict:

Hypothesis 3: As spatial barriers to interaction decrease, new organizations in peripheral regions will increasingly emphasize localistic identities.

Core regions: claiming universalism. Any backlash against universalism may affect not just the organizations located in peripheral regions, but also those located in core regions. By projecting identities that transcend localism, and so effectively differentiating their products from those of localistic rivals in peripheral regions, organizations in the core may appeal to customers in the periphery – especially those with a more cosmopolitan orientation.¹ Moreover, since they are in the “center” of their industry, entrepreneurs in core regions may be more cosmopolitan in their orientations, and thus more likely to seek customers outside their local communities. Accordingly, we predict that when entrepreneurs in core regions launch new ventures that seek to penetrate markets far from their sites of production, they will competitively differentiate their products from those produced by organizations located in peripheral regions; in particular, organizations in the core will emphasize their products’ universalistic (national or global) appeal to people in many places. This effect will strengthen as space-spanning technologies improve because such developments both trigger the rise of localistic identity claims by organizations in the periphery and increase the number of customers with cosmopolitan orientations. Thus we propose:

Hypothesis 4: As spatial barriers to interaction decrease, new organizations in core regions will increasingly emphasize universalistic identities.

Note that the overall effect of the development of communication systems, and thus the decline in spatial barriers to interaction, is competitive differentiation. New organizations in peripheral regions increasingly adopt more localistic (*e.g.*, municipal or state) identities and those in core regions increasingly adopt more universalistic (*e.g.*, national or global) identities.

¹ Because the idea of cosmopolitan individuals (those whose orientations extend beyond their local community to the outside world) is well known in sociological analyses of communities (Merton, 1968) and organizational members (Gouldner, 1957, 1958), we use it when we discuss potential entrepreneurs and their customers. But this term is inherently value-laden: cosmopolitans have more influence than locals. So we adopt the value-neutral term universalistic when we talk about organizations because we do not wish to give the impression that organizations with universalistic identities always out-perform those with localistic identities.

In this way, as organizations become closer in space, the places where they operate become more central elements of their product offerings.

Note also that choosing between localistic and universalistic identities is just one way organizations can competitively differentiate themselves. Organizations can also choose between being large, low-cost mass producers and small differentiated producers (Porter, 1985; Baum and Haveman, 1997), or between being generalists and specialists (Carroll, 1985; Carroll and Swaminathan, 2000). We focused on the localistic/universalistic distinction because it is most germane to the process of expanding interactions in space. Moreover, among antebellum magazines, there was little association between generalist and specialist product lines, on the one hand, and the adoption of universalistic or localistic identities, on the other.

Research Design

Research site: the antebellum American magazine industry

We test these hypotheses by analyzing foundings of all U.S. magazines published between 1790 and 1860 – a total of 4,989 founding events. The magazine industry is an excellent site for testing theories about geography because magazines' geographic footprints vary greatly: while many circulate broadly, others serve readers in single communities. We focus on the antebellum period because this is when the magazine industry's key distribution system, the post office, was expanding rapidly. Our analysis begins in 1790 because that is the first year in which data on many state-level variables are available. Because only 49 magazines were founded before 1790, our analysis covers over 99% of the population of antebellum American magazines. Our analysis concludes in 1860 because that is the year before the outbreak of the Civil War, that great sundering of community.

The evolution of the magazine industry. The first magazines were founded in 1741 by rival Philadelphia printers and newspaper publishers Andrew Bradford and Benjamin Franklin. In the wake of Bradford's and Franklin's pioneering ventures, the magazine industry in America grew very slowly. Only 23 magazines were founded before the end of the Revolutionary War in

1783. After peace was restored, magazines gained a firmer footing in American society. The founding rate for magazines began to exceed the failure rate, and the number of magazines in print rose substantially, from 12 in 1790 to 80 in 1810 and 208 in 1825. The quarter-century after 1825 – a period labeled “the first golden age of magazines” by industry historians (Mott, 1930; Tebbel and Zuckerman, 1991) – saw 2,679 magazine foundings and over 700 magazines in print by 1850. This golden age was sustained by a general literary boom, rapid diffusion of the new practice of paying authors for their contributions, and expanding use of copyright law to defend publishers’ exclusive rights to their magazines’ contents (Charvat, 1968; Haveman, 2004). Magazine foundings continued to accelerate through the last decade before the Civil War, during which 1,401 magazines were launched. By 1860, almost 1,000 magazines were in print.

Magazines covered the young nation. Figure 1 shows the industry’s geographic spread, based on the date when the first magazine appeared in each state. To permit longitudinal comparisons, we use modern state boundaries. States shaded darker grey first saw magazines published before 1794, when magazines were first admitted to the mails; states shaded lighter grey first saw magazines published between 1794 and 1825; states with diagonal lines first saw magazines published between 1826 and 1850, during the first golden age of magazines; states with cross-hatches first saw magazines published in the decade before the outbreak of the Civil War; and states left blank saw no magazines published before the Civil War. Magazines were originally concentrated in the Northeast. During the three decades after the Post Office began to admit magazines to the mails, magazine publishing spread throughout the South and expanded along with the Western frontier. During the first golden age of magazines, which ran from 1826 to 1850, the magazine industry expanded westward to the Pacific and the Northwest. In the 1850s, magazines appeared in every state in the Union plus several sparsely settled Territories.

[Insert Figure 1 about here]

Notwithstanding its geographic spread, the antebellum magazine industry had three core clusters, in Pennsylvania, Massachusetts, and New York. This should not be surprising, as Philadelphia, Boston, and New York City were the largest cities in antebellum America, and the main centers of American commerce and industry. In 1790, over 80 percent of U.S. magazines were located in one of these three states, but that share declined over time, to 62 percent by 1825 and 51 percent by 1860, as Figure 2 shows.

[Insert Figure 2 about here]

The development of the postal system. In the mid eighteenth century, when the first American magazines were published, the postal network was rudimentary, slow, and expensive; moreover, access to the mails was not guaranteed. Consequently, the earliest magazines' circulations were local because they were sold primarily at their printers' shops or at shops in nearby towns. In 1794, Congress established the Post Office as a permanent arm of the state, giving magazine publishers access to an increasingly extensive, reliable, and inexpensive distribution channel. As Figure 2 shows, the postal system grew rapidly after 1790, from 75 post offices and 1,875 miles of post roads in 1790 to 5,677 post offices and 94,052 miles of roads in 1825, and to 28,498 post offices and 240,594 miles of roads in 1860 (Kielbowicz, 1989; John, 1995). Improvements in the speed and reliability of transportation kept pace with growth of the postal system, shifting from horseback over unpaved pathways to horse-drawn carriages over paved and increasingly well-maintained roads, and relying increasingly on steamboats, canals, and railroads. By the mid nineteenth century, the post office was an extensive, fast, economical, and reliable distribution network. Historians of magazines (Mott, 1930, 1938a; Tebbel and Zuckerman, 1991) and of the post office (Kielbowicz, 1989; John, 1995) agree that the expansion of the postal system greatly benefitted magazines. As one historian explained, "Each new mail route ... enlarged opportunities for publishers or groups in faraway cities to project their messages onto new audiences" (Kielbowicz, 1989:5).

Data sources and measures

We gathered data on magazines from nine primary and 88 secondary sources. The American Periodical Series Online, which contains digital images of over 1,100 magazines, is our main primary source. We also searched the American Antiquarian Society's online catalogue, viewed hundreds of magazine microfilms in the Cornell, Columbia, and New York Public Libraries, and searched three online archives: the *Archive of Americana*, *America's Historical Newspapers*, and *The Nineteenth Century in Print*. Finally, we conducted Internet searches to locate additional sources. Because many magazines left no physical trace and many others left only a partial record, secondary sources were critical. Beginning with two industry histories (Mott, 1930, 1938a, 1938b; Tebbel and Zuckerman, 1991), we conducted a snowball search for secondary sources, and found 42 book-length sources, 26 check-lists and catalogues, and 10 articles.² The resulting dataset includes virtually all magazines published during the antebellum era, according to estimates by Mott (1930, 1938a, 1938b), whose three-volume history of the magazine industry remains a standard reference.

Measuring location. Previous research on geography and organizational interactions defined location at several levels of analysis: city or town, county, multi-county labor-market area, state, multi-state region, or nation (see Marquis and Battilana [2009] for a review). We defined location at the state level for two reasons. First, it was extremely difficult to find complete, serially and cross-sectionally reliable state-level data on this time period; it would be virtually impossible to piece together complete and reliable data on smaller geographic units. Second, previous research demonstrates strong inter-organizational influences at the state level and weaker influences at the city level (Carroll and Wade, 1991; Swaminathan and Wiedenmayer, 1991), indicating that many organizations interact across larger geographic regions than municipalities. That is certainly true for magazines before the Civil War. Many magazines, even at the beginning of our observation period, circulated beyond a single city or

² To conserve space, we do not provide a complete list of primary and secondary sources here. The first author is happy to do so upon request.

town. For instance, the *Medical Repository* (founded 1797) had subscribers in New England, New York, the Middle States, and down the Atlantic coast to Georgia, as well as in Martinique, London, and Nova Scotia, while the *Ladies' Magazine* (founded 1792) had subscribers in New England, the Middle States, and the Southern Atlantic coast. Among magazines founded between 1790 and 1820, when the postal network was not very extensive, over half were sold in multiple states, one-seventh were sold throughout their state, and just one-third were sold only in one city or town. Virtually all magazines' geographic reach expanded greatly as the postal system developed (Kielbowicz, 1989; John, 1995).

In the antebellum era, new states were carved out of existing ones (Vermont from New Hampshire in 1791, Maine from Massachusetts in 1820), created from territories as they were populated by whites (*e.g.*, Tennessee in 1796, Ohio in 1803), entered the Union when the American government purchased land from colonial powers (Louisiana in 1803, Florida in 1819), or created when new territories were ceded by treaty (Texas in 1845, California in 1848). To allow consistent comparisons over time, we imposed modern state boundaries. That means, for instance, that magazines published before 1820 in the parts of Massachusetts that became Maine were coded as being published in Maine. The start of each state's time series depended on two events: the state must have entered the Union as a state and it must have experienced at least one magazine founding. We also excluded all state-year observations from the year 1815 because the U.S. Postmaster General barred magazines from the mail for large portions of the year. Our dataset contains 1,580 state-year observations on 33 states, but our use of lagged explanatory variables and the exclusion of observations from the year 1815 reduce our sample to 1,529 state-years.

We distinguished between *core and peripheral locations* in the magazine industry. Although most magazines published in the core states were located in Philadelphia, Boston, or New York City, we could not always identify the specific municipality where each magazine was founded, or where it operated over its history. Moreover, as explained above, many of the earliest magazines circulated beyond their site of production. Therefore, we treat

Pennsylvania, Massachusetts, and New York as the industry core and all other states as the periphery.

Measuring the dependent variables: magazine foundings and identities. Measurement of the first dependent variable is simple: we counted *the number of magazines founded in each state each year*. Our analysis excluded a tiny fraction of magazines – 1.2 percent of all magazine foundings (58 of 4,989) – for which we could not identify the state of publication.

Measuring the second dependent variable is more complex. Our focus was on the degree to which newly founded magazines' names emphasized localistic, universalistic, or other identities. We used names to indicate magazines' identities because many kinds of organizations signal their connection to place through their names (Fombrun, 1996; Tadelis, 1999; Glynn and Abzug, 2002; Barnett, Feng, and Luo, 2010). For example, the name of the First National Bank of Omaha indicates service to the Greater Omaha area, while Bank of America signifies its intention to serve the entire nation. Similarly, *USA Today* signals its nationwide delivery and readership, while the *San Francisco Chronicle* indicates its focus on that city. These toponyms are important because they anchor people's feelings and thoughts on geographic locations. The more local organizations identify themselves with local toponyms, the more they signal their connection to their particular location, and they more they can appeal to audiences drawn by local place attachments. Conversely, the more non-local organizations identify themselves with non-local toponyms, the more they signal their disconnection from any single location and the more they make universal appeals to audiences in many different locations, especially cosmopolitans.

We coded magazines whose titles included the name of a municipality, county, sub-state region (*e.g.*, Western New York), state, or multi-state region (*e.g.*, New England, the Mississippi Valley, the South) as adopting a *localistic identity*. We also coded titles that included state nicknames (*e.g.*, "Granite" for New Hampshire, "Old Dominion" for Virginia, "Palmetto" for South Carolina) as localistic identities. We coded magazines whose titles included nation- or continent-wide terms (*e.g.*, American, National, Federal, or North American)

as adopting a *universalistic identity*. (As detailed below, we also experimented with a more restrictive definition of localistic identity – only municipality, county, sub-state region, or state – and a more inclusive definition of universalistic identity – not just nation and continent, but also multi-state region.)

Measuring the independent variables. We measured interactions between magazines within a focal state with the natural logarithm of the *number of magazines published in each state* each year; to obtain reasonable results in state-year observations with zero foundings, we added one to all counts prior to log-transformation.³ To account for the influences of nearby magazines in other states, we constructed a *distance-scaled count of magazines outside the focal state* each year. Scaling by distance takes into account persistent costs of interacting over long distances, in terms of time and money (postage), which means that interactions between local and non-local magazines diminish with non-local magazines' distance from the focal location. To compute this variable, we first identified the latitude and longitude of each state's magazine center – the municipality where the most magazines were published during our period of study (*e.g.*, Philadelphia for Pennsylvania, Cincinnati for Ohio, Charleston for South Carolina). Using spherical geometry (see Sorenson and Audia [2000]), we then computed the distance in miles between each state's magazine center. Then, for each state i in each year t , we computed the distance-scaled count of out-of-state magazines as follows:

$$\text{Number of Magazines Outside State, Distance Scaled}_{it} = \sum_{j \neq i} \frac{M_{jt}}{D_{ij}},$$

where M_{jt} is the number of magazines in any state j (other than the focal state i) in year t and D_{ij} is the distance in miles between the magazine centers of the focal state i and the other state j .

We summed this distance-scaled count over all states other than the focal state. States located

³ In results not shown here, we experimented with an alternative specification, the combination of linear and quadratic terms for the number of magazines. We found the expected inverted-U-shaped effect, but the peak of this effect was above the 98th percentile of state-year observations, indicating that for the vast majority of states in the vast majority of years, the effect increased at a decreasing rate. This pattern of results convinced us that using the natural logarithm was appropriate.

near other states that published many magazines scored highest on this variable. For example, Delaware and New Jersey scored higher on this variable than Georgia or Indiana because the former are closer to the magazine centers (Pennsylvania, Massachusetts, and New York) than are the latter.⁴

We measured the scale of the postal system with annual counts of U.S. post offices. We obtained data on the number of post offices across the nation from Miles (1855) and Daniel (1941). We tested hypothesis 1 by interacting the number of magazines in the focal state with the number of U.S. post offices. Similarly, we tested hypothesis 2 by interacting the distance-scaled counts of magazines outside the focal state with the number of U.S. post offices.

We tested hypotheses 3 and 4, which predict different identity choices for magazines founded in core and peripheral regions, by splitting the data into the core (Pennsylvania, Massachusetts, and New York) and the periphery (all other states). We then analyzed the identities of newly founded magazines in the core separately from those founded in the periphery. We tested these hypotheses by interacting the localistic and universalistic identity indicator variables with the number of post offices in the U.S.

Control variables. In models of founding rates, we controlled for other factors that reflected variation (both across locations and over time) in locations' natural attractiveness to magazine entrepreneurs. The first such factor was state population, measured in millions of people. We obtained decennial data on state-level population from the census (U.S. Bureau of the Census, 2001) and interpolated linearly to create annual data points. State populations increased continuously, so linear interpolation approximate the missing data points reasonably well. We also counted the miles of post roads in the focal state, using data from *Annual Reports of the Post Master General to the House of Representatives* (various years). Reports were not available for all years; we interpolated linearly between observed data points to generate one data point for each state each year. The miles of post roads in each state

⁴ Scaling out-of-state magazine counts by distance does not produce a highly skewed variable, so it was unnecessary to log-transform this variable, as we did with the in-state variable.

increased continually, so this interpolation quite accurately approximated the missing data points. We scaled miles of post roads by state area, in square miles. We controlled for the postage rate (in cents) charged for magazines, which declined over time, based on histories of the post office (Kielbowicz, 1989; John, 1995). The postage rate for magazines fell from 300 pence in 1790 to 2 cents by 1852. We used a commodity price index created by McCusker (2001) to correct for inflation and express the rate in constant (1860) dollars.

We also controlled for each state's literacy rate, to account for magazine demand. Reliable data on literacy rates are not available before 1840 (Soltow and Stevens, 1981), so we proxied literacy rates by measuring the growth of two educational institutions: colleges and Sunday schools. We obtained annual state-level counts of college foundings from Marshall (1995) and computed cumulative state-level counts of college foundings and colleges in operation. We developed state-level counts of Sunday schools from statistics that Boylan (1988) extracted from the American Sunday School Union censuses of 1832 and 1875.⁵ These variables were highly correlated, so to reduce multicollinearity, we combined them by conducting a principle-components factor analysis. We used an orthogonal varimax rotation and obtained a two-factor solution; we used the predicted values of first (largest) factor, which we labelled *state literacy*.

⁵ We developed this count in three stages. First, we created a start date for each state's time series. If the historical record (Boylan, 1988; Zboray, 1993) indicated the precise year the first Sunday school was founded in a state, we used that year as a starting point. For states where no precise starting year was recorded, we estimated the starting year on the basis of white settlement patterns. This is reasonable because Sunday schools preceded churches in up to two-thirds of northern frontier settlements (Boylan 1988:34). Second, we extrapolated backward from data for 1832 to each state's start date using an exponential growth function because the growth of Sunday schools accelerated during the 1820s and early 1830s, with the national count almost doubling from 2,321 in 1826 to 4,258 in 1832. Third, we interpolated from 1832 to 1875. By the mid 1830s, Sunday schools had become an institutionalized part of American religious life (Boylan, 1988; Zboray, 1993). Because literacy rates increased in pace with population density (Soltow and Stevens, 1981), we based our interpolation on the rate of state population growth.

Model specification and estimation

Founding counts. Our first dependent variable is a discrete event that we track over time, so we used event-count methods to analyze it. Because this dependent variable exhibits significant overdispersion, we estimated negative-binomial models instead of Poisson models. We lagged all explanatory variables by one year to assure temporal priority and increase our confidence that we captured the correct direction of causal processes. To control for the impact of unobserved and/or unmeasurable state-specific, time-invariant factors (*e.g.*, topology), we estimated conditional fixed-effects models that group observations by state. Furthermore, to avoid confounding the main effects of our key independent variable (the number of post offices) with other factors that increased similarly over time, we included decade fixed effects. Basically, this approach enables us to identify how the magazine founding rate varied within each decade as the postal system expanded and how the effects of expansion varied with (a) the (logged) number of magazines published in each state and (b) the distance-scaled number of magazines published in other states.

Founding identities. We estimated conditional logit models of the identities chosen by newly founded magazines. New magazines face identity choices that are mutually exclusive: each magazine must choose a localistic *or* a universalistic *or* a non-geographic identity. The conditional logit specification enables us to account for this aspect of identity choice (McFadden, 1973; Hoffman and Duncan, 1988). For each of the 4,989 magazines founded between 1790 and 1860, we created three observations, one for each of the three possible identity choices: localistic, universalistic, or other. We grouped observations by magazine so that all magazine-level variables were held constant within each group, which is equivalent to including magazine fixed effects. We focused on interactions between indicators for the localistic and universalistic identities (the reference category is the “other,” non-geographic identity) and the number of post offices in the nation. This allowed us to assess how the expansion of the postal system influenced the likelihood that a newly founded magazine

adopted a particular identity, conditional on all other magazine-specific, state-specific, and year-specific variables.

Results

Founding rates

Table 1 reports descriptive statistics for all variables included in the founding-rate analysis while Table 2 presents the results of the founding-rate analysis. Model 1 of Table 2 includes only control variables; subsequent models add explanatory variables to test our hypotheses. As expected, founding rates increased with the development of state post roads and with the passage of time, as indicated by the decade fixed effects. While founding rates increased with the number of magazines published in the focal state, the proximity of magazines published outside the focal state decreased founding rates. These effects are generally consistent across models.

[Insert Tables 1 and 2 about here]

Consistent with hypothesis 1, Model 2 demonstrates that the positive overall effect of in-state magazines on the magazine focal rate decreased as the postal system expanded: there is a significant positive main effect of the number of in-state magazines and a significant negative interaction between the number of in-state magazines and the number of U.S. post offices. Consistent with hypothesis 2, Model 3 shows that the negative overall effect of magazines in nearby states on founding rates increased as the postal system expanded: there is a negative (but no longer significant) main effect of the distance-scaled number of out-of-state magazines and a significant negative interaction between that variable and the number of U.S. post offices. This indicates that the competitive effect of nearby magazines beyond the focal state's boundaries increased with postal system expansion.

Model 4 of Table 2 includes both interaction terms together and provides robust support for our hypotheses by demonstrating consistent coefficient magnitudes and statistical significance on the interaction terms. Taken together, these results strongly support

hypotheses 1 and 2. The expansion of the U.S. postal system reduced the mutualistic influence of in-state magazines and increased the competitive influence of nearby out-of-state magazines on founding rates. In short, the geographic scope of influence expanded with the postal system.

To assess the magnitude of these effects, we computed the multiplier of the baseline founding rate as a function of the logged number of in-state magazines and the distance-scaled number of out-of-state magazines (both variables at their means), for three different levels of U.S. postal system development: the mean number of U.S. post offices, the mean plus one standard deviation, and the mean minus one standard deviation. These effects are depicted in Figure 3a (for in-state magazines) and Figure 3b (for out-of-state magazines). In Figure 3a, at the mean (logged) number of in-state magazines (1.74) and the mean level of post offices (10,068), the multiplier of the base rate is approximately 1.45. A one-standard-deviation increase in the number of post offices (to 18,169) decreases the multiplier to 1.05 (a decrease of almost 30 percent), while a one-standard-deviation decrease in the number of post offices (to 1,968) increases the multiplier to 2.02 (an increase of almost 40 percent). In Figure 3b, at the mean level of the distance-weighted number of out-of-state magazines (1.57) and the mean number of post offices, the multiplier of the base rate is 0.73. A one-standard-deviation increase in the number of post offices decreases the multiplier to 0.65 (a decrease of 10 percent), while a one-standard-deviation decrease increases the multiplier to 0.81 (an increase of 12 percent). Thus, while the expansion of the post office substantially attenuated the beneficial effect of local magazines on subsequent local findings, it only slightly accentuated the competitive effect of non-local magazines. This suggests that magazines in any focal location gained far more from being able to reach readers in ever-more-distant locations than they lost from other magazines published in ever-more-distant locations being reaching readers in their own location.

[Figures 3a and 3b about here]

Geographic identities of newly founded magazines

Figures 4a and 4b show that foundings of both localistic and universalistic magazines increased over time, both in the core (Pennsylvania, Massachusetts, and New York – shown in Figure 4a) and in the periphery (all other states – shown in Figure 4b). But, as our theory suggests, these figures also reveal that as time passed and the U.S. postal service expanded, localistic magazines became ever more likely to be founded in the periphery than the core. Conversely, universalistic magazines became ever more likely to be founded in the core than the periphery.

[Insert Figures 4a and 4b about here]

Table 3 presents conditional logit models that document our tests of hypotheses 3 and 4. Here, we examine how the likelihood of a magazine being founded with a localistic or universalistic identity changed as the postal system expanded, conditional on the magazine being founded in the first place. Because it groups observations by magazine, the analysis holds all magazine-level, state-level, and annual variables fixed. This approach isolates the effect of U.S. postal system expansion on the likelihood of choosing a localistic, universalistic, or other identity at time of founding.

[Insert Table 3 about here]

Hypothesis 3 pertains only to magazines founded in peripheral states while hypothesis 4 pertains only to magazines founded in core states. Accordingly, we test hypothesis 3 by estimating Models 5 and 6 on only those magazines that were founded in peripheral states, and we test hypothesis 4 by estimating Models 7 and 8 on only those magazines that were founded in core states. Models 5 and 7 include the main effects for the two geographic identity variables, while Models 6 and 8 add interactions between postal system scale and these identity indicator variables. Model 5 shows that magazines were least likely to be founded with a universalistic identity in peripheral states and most likely to be founded with an “other” identity (the omitted baseline category). Model 6 supports hypothesis 3: the interaction

between the scale of the postal system and the indicator variable for localistic magazine identity is positive and statistically significant. As the postal system expanded, magazines in peripheral states became significantly more likely to adopt localistic identities than other (non-geographic) identities, as indicated by their titles' references to local place names. Note, also, that as the postal system expanded, magazines in peripheral states became somewhat less likely to adopt universalistic identities than non-geographic identities, although this effect is not statistically significant.

Model 7 shows that, as in the peripheral states, magazines in the core were least likely to be founded with a universalistic identity and most likely to be founded with an "other" identity (the omitted baseline category). But the difference between the probability of a universalistic or localistic identity choice is smaller in the core states than in the peripheral states, as evidenced by the difference between the coefficients on the localistic and universalistic indicator variables. Model 8 supports hypothesis 4: the interaction between postal system scale and universalistic magazine identity is positive and statistically significant. As the postal system expanded, magazines in core states became more likely to adopt universalistic identities, as indicated by their titles' references to national or continental place names, than other (non-geographic) identities. Note also that as the postal system expanded, magazines in core states also became somewhat less likely to adopt localistic identities than non-geographic identities, although this effect is not statistically significant.

Table 4 summarizes the effects of postal system expansion on the likelihood of a newly founded magazine in the periphery adopting a localistic identity, based on estimates in Model 6 of Table 3, and the likelihood of a newly founded magazine in the core adopting a universalistic identity, based on estimates in Model 8 of Table 3. These calculations assume an increase in the number of post offices of 1,000 from the mean. This represents a 10 percent increase, which is fairly small – just one-eighth of the standard deviation for this variable. A 10 percent expansion of the postal system would make newly founded magazines in the periphery 2.2 percent more likely to be founded with localistic identities. The same magnitude postal

expansion would raise the likelihood of newly founded magazines in the core adopting universalistic identities by 2.0 percent. These calculations reveal the essentially symmetric nature of this competitive differentiation process: any expansion of the postal system has approximately the same magnitude impact on magazines in the periphery adopting localistic identities as it does on magazines in the core adopting universalistic identities. This suggests that competitive differentiation is, indeed, due to magazines in the core and in the periphery observing each others' behavior – similar to the social construction of competition posited for industries where firms differentiate themselves from rivals in terms of price or quality by attending to each other's behavior (White, 1981; 2002). In this analysis, however, the basis of differentiation is geographic identity claims, rather than price or quality.

[Insert Table 4 about here]

Robustness checks

Our results rest on several analytical assumptions, so we now assess the sensitivity of our results to each of these assumptions. First, in the founding-rate analysis, we combined observations on the magazine industry's core with observations on peripheral regions. We tested the sensitivity of our results to this aggregation by estimating separate founding-count models for the core and the periphery (as in the identity choice analyses summarized in Table 3). These results, shown in Models 9 through 12 in Table 5, indicate that hypotheses 1 and 2 are supported in both the core and the periphery. In both sub-samples of states, postal system expansion reduced the mutualistic influence of in-state magazines and increased the competitive influence of magazines in nearby states on the magazine founding rate. We therefore conclude that support for hypotheses 1 and 2 is drawn from the U.S. magazine industry's core *and* its periphery.

[Table 5 about here]

Second, in the analysis of identity choice, we assumed that localistic identities could focus on a municipality, county, state, or multi-state region, while universalistic identities

encompassed the entire nation or even the entire continent. But that may be an overly broad definition of localistic and an overly narrow definition of universalistic. Of particular concern is the classification of magazines with titles indicating a multi-state regional identity (*e.g.*, New England, the Mississippi Valley, the South). Such magazines might be better classified as having universalistic identities instead of localistic identities. We checked the robustness of our results to this more restrictive definition of localistic identity (encompassing only a municipality, county, or state) and this more inclusive definition of universalistic identity (encompassing the continent, the nation, or a multi-state region). In analyses not reported here to conserve space, we obtained results consistent with those shown in Table 3: the expansion of the U.S. postal system increased the rate at which magazines were founded with universalistic foundations in the industry's core and increased the rate at which magazines were founded with localistic identities in the industry's periphery.

Discussion and Conclusion

In this study, we sought to understand how reduced spatial barriers to interaction that arise from the long-term development of communication technologies, alter geographic influences on organizations. We focused on the foundations and identities of new ventures and contrasted two lines of argument. The first holds that advances in space-spanning technologies reduce the influence of geography by bringing distant actors closer to each other and thereby eroding the distinctiveness of place. This implies that as communication technologies develop, new ventures will be even more strongly affected by distant organizations and ever less affected by nearby organizations. The second line of argument is that advances in space-spanning technologies can engender a backlash in the form of increasing demand for "authentic" local connections and identities – a resurgence of place. This implies that new ventures' identities will reflect attempts to differentiate their offerings from competitors. Specifically, ventures founded in core geographic regions will increasingly emphasize

universalistic identities while ventures founded in peripheral regions will increasingly emphasize localistic identities.

We tested these predictions by analyzing one early space-spanning technology, the U.S. postal system from 1790 to 1860, and foundings of one organizational form that depended on this technology, magazine-publishing ventures. We found that, as the postal system developed, the mutualistic influences of local organizations (the logged number of magazines published in the focal state) decreased while the competitive influences of non-local organizations (the number of magazines published outside the focal state, scaled by their distance from the focal state) increased. This set of findings supports the first line of argument: reduced spatial barriers to interaction subject organizations to greater influences of distant organizations and lesser influences of nearby organizations.

We also found that, over time, magazines founded in core regions (Pennsylvania, Massachusetts, and New York) became increasingly likely to adopt universalistic identities (*i.e.*, names containing national or continental references) while magazines founded in peripheral regions (all other states) became increasingly likely to adopt localistic identities (*i.e.*, names containing municipal, county, state, or regional references). This set of findings supports the second line of argument: as spatial barriers to interaction decrease, organizational attachments to places become more salient bases for differentiating offerings.

The fact that we found support for both lines of argument – place and space matter less, *and* place matters more – indicates that these arguments are not competing, but rather are complementary. The development of the postal network *did* allow magazines to reach ever-more-distant readers, but expanding influence *itself* made location more salient to magazine publishers and their readers.

The ideas underpinning our hypotheses pertain to many organizational behaviors, including economic performance, growth, and survival. Future research could extend our analysis to these outcomes. Future research could also investigate other strategic decisions that could lead to competitive differentiation between organizations in an industry's core

geographic region and those in its periphery, such as diversification (generalist vs. specialist) or vertical integration. In addition, future research could assess strategic alliances; for magazines, this might involve sponsoring organizations; for other kinds of organizations, this might involve formal connections to organizations in the core vs. the periphery.

Future research could also build on our findings by examining other, more recent, advances in technology. Perhaps the most obvious extension is to investigate how the newest distance-spanning technology, the Internet, has reshaped the relationship between geography and organizations, especially for news media. The answer to this question is not at all clear. Although the Internet offers news media a larger, effectively global, range of influence, there has also been a surge in localistic Internet media sites that have often replaced localistic print media. For instance, after declining advertising and subscription revenues forced the *Seattle Post-Intelligencer* to shift to online delivery only, its readership increased, even though its editorial staff shrunk by 75% (Kafka, 2009). In the Northern California, the Bay Citizen website (www.baycitizen.org) was launched in 2010 to compete with the local paper, the *San Francisco Chronicle*, and provide “fact-based, independent reporting” on “news/culture/ community” in the San Francisco Bay Area. This organization has been so successful that, in an effort to woo Northern California readers, the *New York Times* added two sections of Bay Area news to print copies delivered to Northern California subscribers; these sections, which appear Fridays and Sundays, are written by Bay Citizen staff. A final piece of evidence about the impact of the Internet on place attachment is that the widespread adoption of mobile phone apps like Foursquare demonstrate that people still want others to know where they are, physically.

Our findings also offer valuable insights for studies of other kinds of organizations in community context (see Freeman and Audia [2006] for a review), especially studies of entrepreneurship. Building on the notion of entrepreneurs as organizational products (Freeman, 1986), prior research demonstrates that because existing organizations provide entrepreneurs with access to resources required to start a new organization, the spatial distribution of existing organizations strongly determines which places are most likely to

support new organizations (Sorenson and Audia, 2000; Audia, Freeman, and Reynolds, 2006). Recent research extends the analytical lens beyond the residential community (*i.e.*, place) to examine how places are differentiated within and across industries that span vast amounts of space (Romanelli and Khessina, 2005; Audia and Kurkoski, 2011). Consistent with prior work, we find that magazines are likely to be founded in communities already populated with many magazines. But as spatial barriers to interaction decrease, magazines become founded with identities that are increasingly differentiated by claims to places that vary in terms of the geographic space they occupy. These findings emphasize the importance of considering both place *and* space as geographic influences on interorganizational and intercommunity dynamics.

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Figure 1: The Spread of Magazines Across America, 1741-1860

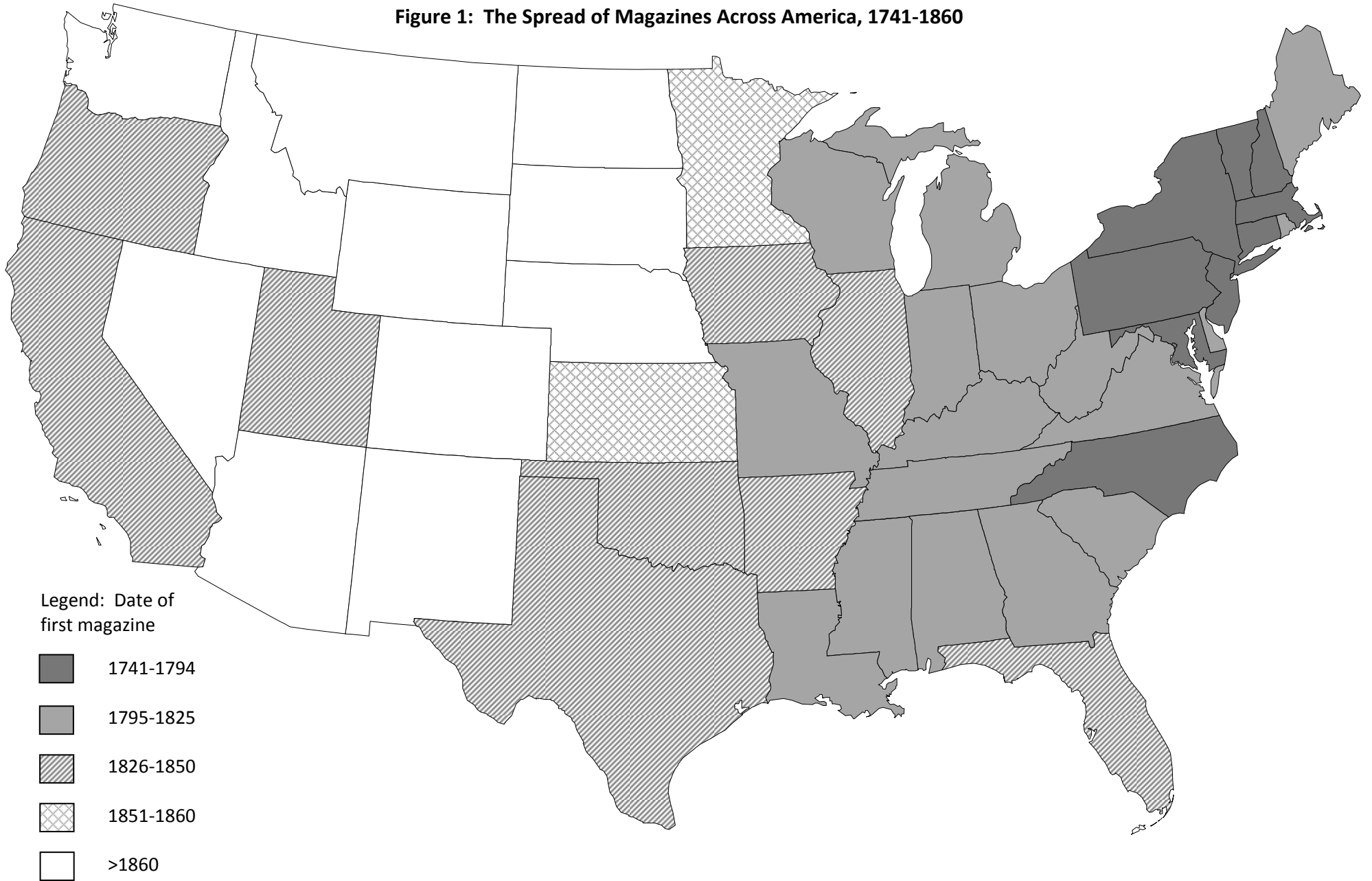
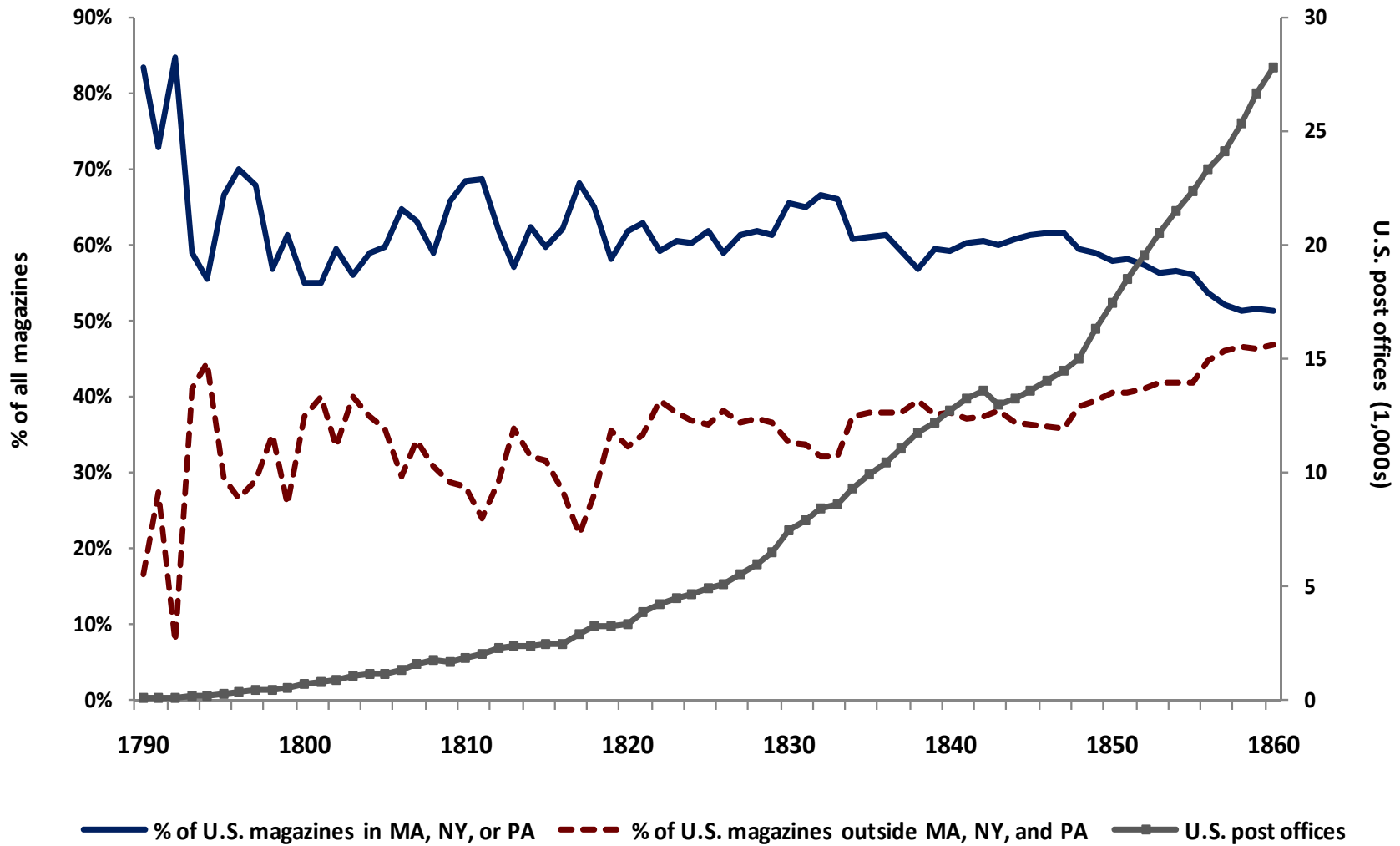


Figure 2: Number of Magazines Published in Core vs. Peripheral States, and # US Post Offices



Note: This figure does not plot the tiny percentage of magazines for which we could not determine state of publication.

Figure 3a. The effect of in-state magazines on founding rates.

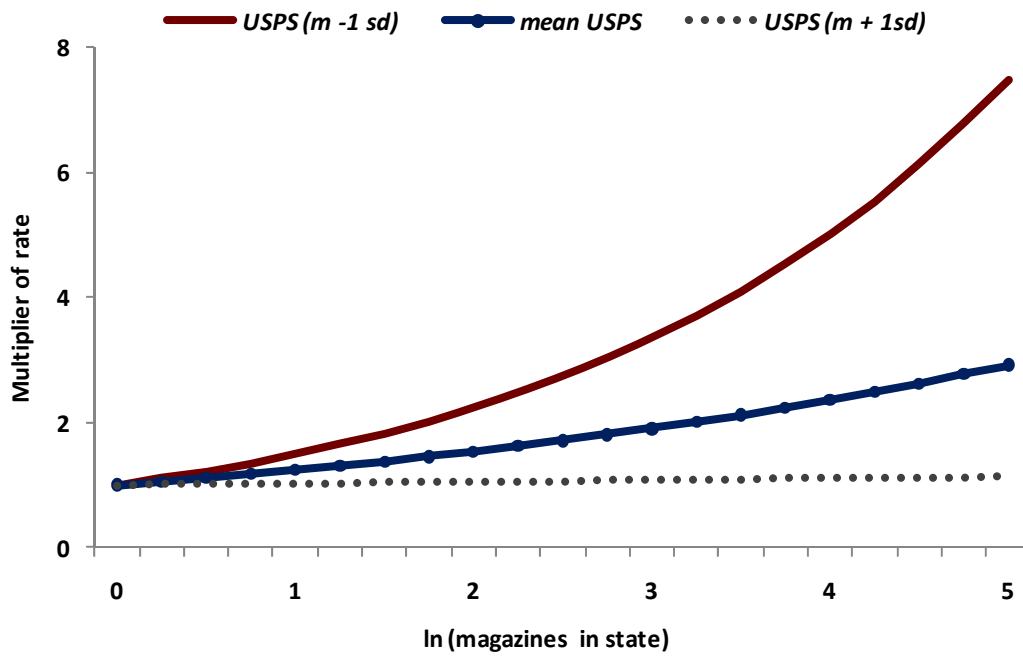


Figure 3b. The effect of out-of-state magazines on the founding rate.

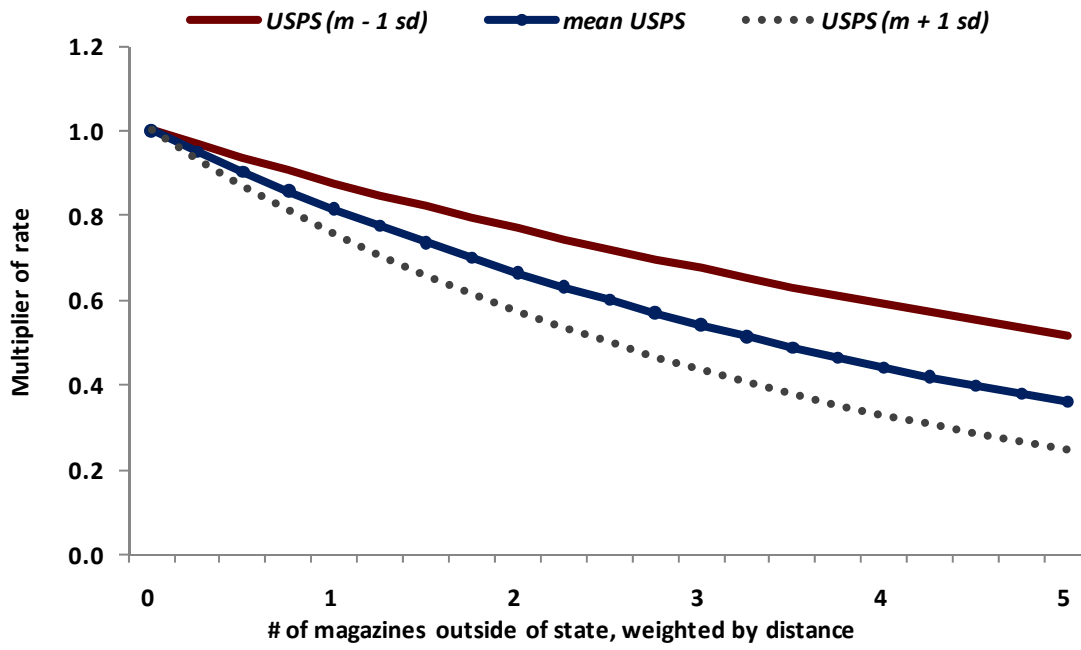


Figure 4a: Magazine Foundings in Core States (PA, MA, NY) by Identity and Decade

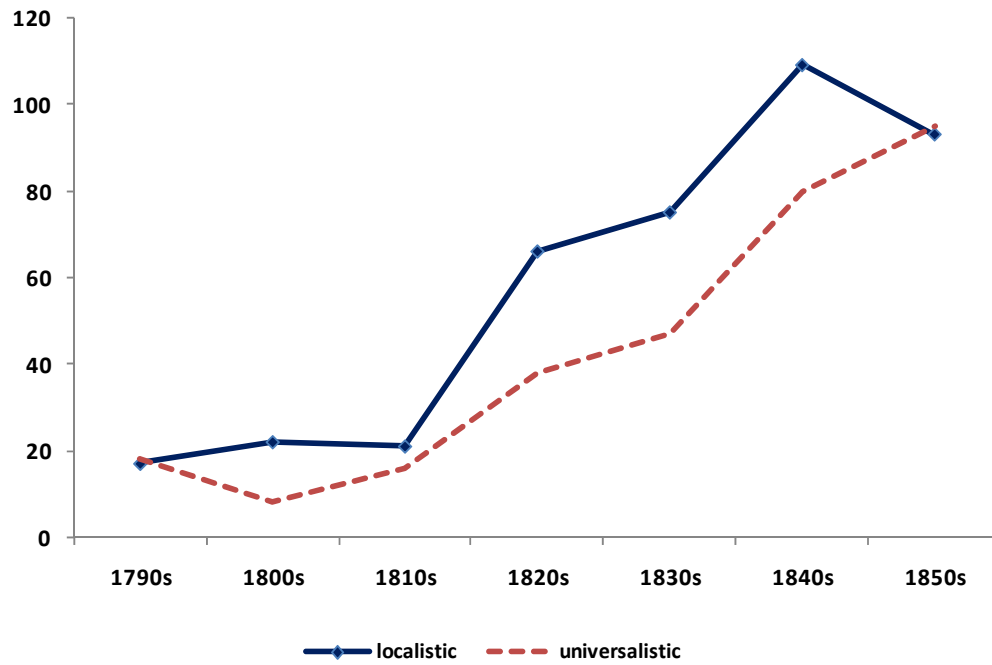


Figure 4b: Magazine Foundings in Peripheral States (not PA, MA, NY) by Identity and Decade

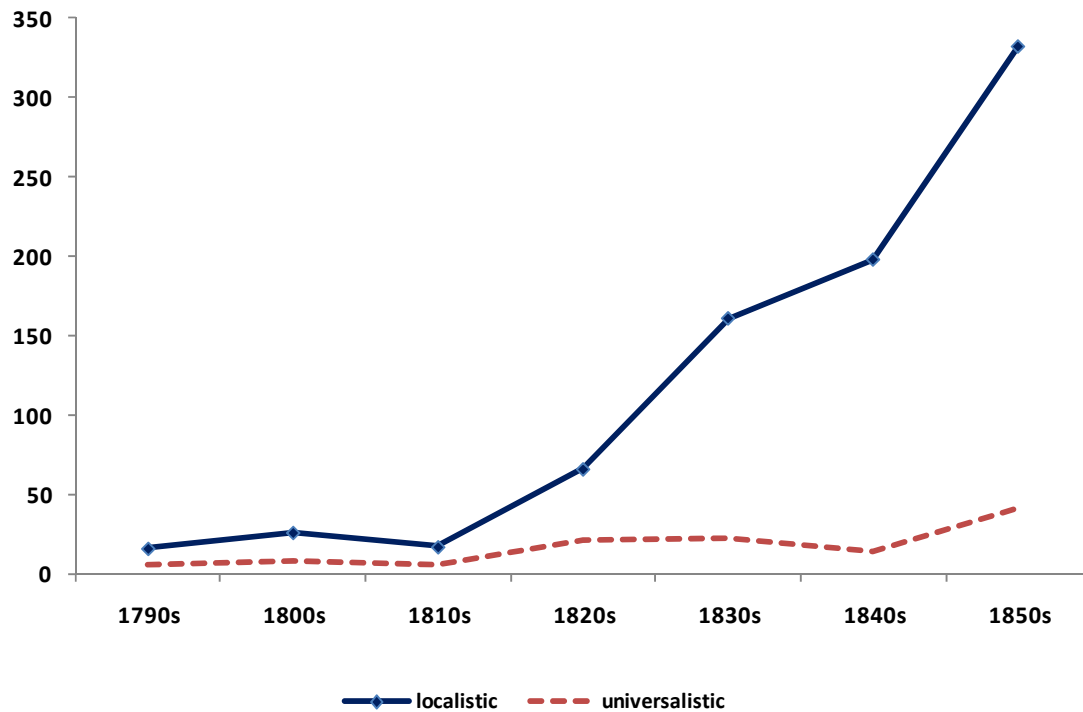


Table 1

Descriptive statistics for variables in founding rate analyses.

		Mean	St. Dev.	1	2	3	4	5	6	7	8
1	All findings	3.31	6.12	1.00							
2	State population (millions)	0.58	0.54	0.78	1.00						
3	Roads per square mile	0.16	0.11	0.38	0.28	1.00					
4	State literacy factor	-0.13	0.83	0.66	0.88	0.39	1.00				
5	Magazine postage rate	13.2	41.5	-0.07	-0.10	-0.17	-0.13	1.00			
6	Number of U.S. post offices (1000s)	10.2	8.11	0.21	0.36	0.40	0.58	-0.23	1.00		
7	ln (number of magazines in state)	1.75	1.31	0.72	0.75	0.54	0.73	-0.17	0.45	1.00	
8	Magazines outside state, distance-weighted	1.58	1.69	0.15	0.16	0.67	0.31	-0.15	0.60	0.29	1.00

Note: This table is based on 1,529 state-year observations from 1790 to 1860.

Table 2

Conditional fixed effects negative binomial regressions of magazine founding counts by state-year.				
	(1)	(2)	(3)	(4)
State findings in prior year	0.002 (0.004)	0.004 (0.003)	0.001 (0.004)	0.004 (0.003)
State population (millions)	0.115 (0.102)	0.717 ** (0.123)	0.235 * (0.106)	0.771 ** (0.125)
Roads per square mile	2.21 ** (0.450)	1.71 ** (0.453)	1.97 ** (0.458)	1.58 ** (0.459)
State literacy factor	-0.042 (0.059)	-0.104 † (0.059)	-0.076 (0.060)	-0.129 * (0.060)
Magazine postage rate	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)
Number of U.S. post offices (1000s)	0.012 (0.010)	0.093 ** (0.014)	0.044 ** (0.013)	0.112 ** (0.015)
In (number of magazines in state)	0.375 ** (0.059)	0.503 ** (0.061)	0.301 ** (0.062)	0.448 ** (0.064)
Magazines outside state, distance-weighted	-0.269 ** (0.041)	-0.299 ** (0.039)	-0.002 (0.079)	-0.113 (0.078)
In-state magazines * U.S. post offices		-0.024 ** (0.003)		-0.023 ** (0.003)
Out-of-state magazines * U.S. post offices			-0.014 ** (0.003)	-0.009 ** (0.003)
1790 to 1799	-0.953 ** (0.281)	-0.512 † (0.277)	-0.558 † (0.295)	-0.254 (0.292)
1800 to 1809	-0.796 ** (0.244)	-0.500 * (0.238)	-0.447 † (0.257)	-0.267 (0.251)
1810 to 1819	-0.753 ** (0.223)	-0.570 ** (0.216)	-0.458 * (0.233)	-0.368 (0.227)
1820 to 1829	-0.250 (0.175)	-0.173 (0.168)	-0.082 (0.177)	-0.056 (0.172)
1830 to 1839	-0.168 (0.126)	-0.168 (0.121)	-0.131 (0.124)	-0.138 (0.121)
1840 to 1849	0.074 (0.087)	0.031 (0.084)	0.036 (0.087)	0.008 (0.084)
Constant	1.77 ** (0.402)	1.09 * (0.428)	1.45 * (0.431)	0.877 † (0.450)
N (state-years)	1,529	1,529	1,529	1,529
N (states)	31	31	31	31
Log likelihood	-2,316.1	-2,279.5	-2,308.2	-2,275.6
Wald χ^2 (df)	1,159.1 (14)	1,244.8 (15)	1,199.8 (15)	1,267.0 (16)

All models include state fixed effects and all covariates are lagged one year.

** $\rho < 0.01$; * $\rho < 0.05$; † $p < 0.10$; two-tailed tests.

Table 3

Conditional logit models of magazine identity choice.				
	(5)	(6)	(7)	(8)
Localistic identity	-0.543 ** (0.044)	-0.853 ** (0.095)	-1.63 ** (0.055)	-1.51 ** (0.105)
Universalistic identity	-2.55 ** (0.100)	-2.25 ** (0.213)	-1.93 ** (0.063)	-2.18 ** (0.130)
Localistic * U.S. post offices (1,000s)		0.021 ** (0.006)		-0.009 (0.007)
Universalistic * U.S. post offices (1,000s)		-0.022 (0.015)		0.019 * (0.009)
Scope of analysis	Periphery	Periphery	Core	Core
N (observations)	6,930	6,930	8,064	8,064
N (magazines)	2,310	2,310	2,688	2,688
N (states)	31	31	3	3
Log pseudolikelihood	-1,878.0	-1,868.6	-1,992.7	-1,988.9
Wald χ^2 (df)	719.9 (2)	724.8 (4)	1,586.6 (2)	1,583.5 (4)

Robust standard errors in parentheses; observations grouped by magazine.
**** p < 0.01; * p < 0.05; † p < 0.10; two-tailed tests.**

Table 4

The increase in the probability of identity choice associated with a 1,000-unit increase in the number of post offices.

	<i>Localistic Identity</i>	<i>Universalistic Identity</i>
<i>Periphery</i>	2.2%**	n.s.
<i>Core</i>	n.s.	2.0%*

** p < 0.01; * p < 0.05; n.s. = not significant.

Table 5: Robustness checks on all foundings in core versus periphery states.

Conditional fixed effects negative binomial regressions of magazine founding counts by state-year.				
	(9)	(10)	(11)	(12)
Same type foundings in prior state-year	0.007 † (0.004)	0.009 * (0.004)	-0.009 (0.012)	0.000 (0.012)
State population (millions)	0.380 † (0.197)	0.755 ** (0.239)	1.32 ** (0.251)	1.35 ** (0.255)
Roads per square mile	2.40 ** (0.582)	3.04 ** (0.578)	1.72 * (0.839)	0.780 (0.901)
State literacy factor	-0.174 (0.127)	-0.169 (0.137)	-0.312 ** (0.091)	-0.092 (0.103)
Magazine postage rate	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.002)	-0.001 (0.002)
Number of U.S. post offices (1000s)	-0.008 (0.015)	0.250 ** (0.064)	0.021 (0.014)	0.110 ** (0.021)
ln (number of magazines in state)	0.344 * (0.149)	0.378 * (0.167)	0.218 ** (0.073)	0.440 ** (0.088)
Magazines outside state, distance-weighted	-0.138 (0.088)	-0.168 (0.140)	-0.280 ** (0.052)	-0.087 (0.106)
In-state magazines * U.S. post offices		-0.043 ** (0.013)		-0.029 ** (0.005)
Out-of-state magazines * U.S. post offices		-0.012 † (0.007)		-0.009 † (0.004)
1790 to 1799	-0.452 (0.405)	0.274 (0.420)	-1.37 ** (0.379)	-0.509 (0.412)
1800 to 1809	-0.387 (0.347)	0.100 (0.351)	-1.06 ** (0.320)	-0.376 (0.345)
1810 to 1819	-0.337 (0.311)	-0.115 (0.309)	-1.06 ** (0.294)	-0.481 (0.314)
1820 to 1829	0.015 (0.241)	-0.036 (0.233)	-0.363 (0.229)	-0.028 (0.235)
1830 to 1839	-0.089 (0.184)	-0.357 † (0.184)	-0.103 (0.165)	-0.016 (0.163)
1840 to 1849	0.126 (0.114)	-0.042 (0.115)	0.022 (0.118)	-0.007 (0.117)
Constant	2.92 * (1.36)	12.5 (811.2)	1.18 ** (0.451)	0.430 (0.492)
Dependent variable (foundings)	All	All	All	All
Sub-sample	Core	Core	Periphery	Periphery
N (state-years)	204	204	1,325	1,325
N (states)	3	3	28	28
Log likelihood	-517.8	-508.6	-1,762.8	-1,745.7
Wald χ^2 (df)	805.4 (14)	885.7 (16)	577.2 (14)	586.1 (16)

All models include state fixed effects and all covariates are lagged one year.

** $p < 0.01$; * $p < 0.05$; † $p < 0.10$; two-tailed tests.