FROM SURGERIES TO STARTUPS: THE IMPACT OF CULTURAL HOLES ON ENTREPRENEURSHIP IN THE MEDICAL PROFESSION

W. Chad Carlos and Shon R. Hiatt

ABSTRACT

This paper examines how cultural holes that exist at the intersection of institutional fields influence the exploitation of entrepreneurial opportunities. Through an exploration of physician-founded ambulatory surgery centers in the United States, we examine how the presence of cultural holes presented doctors with alternative beliefs, values, and practices to overcome the cultural constraints around entrepreneurship within the medical profession. In doing so, this study extends cultural entrepreneurship research by bringing cultural holes to the forefront, empirically showing how they facilitate entrepreneurial action and proposing other contexts where cultural holes may affect entrepreneurial actions and outcomes.

Keywords: Cultural holes; institutional theory; entrepreneurship; health care; culture; professions

INTRODUCTION

Research on entrepreneurship has largely focused on how entrepreneurs discover and exploit entrepreneurial opportunities (Shane & Venkataraman, 2000), with contemporary studies emphasizing the ways in which such opportunities can be endogenously created (Hiatt, Sine, & Tolbert, 2009; Sine & Lee, 2009). Recently,

Advances in Cultural Entrepreneurship
Research in the Sociology of Organizations, Volume 80, 137–156

ISSN: 0733-558X/doi:10.1108/S0733-558X20220000080009

cultural entrepreneurship scholars have argued that entrepreneurial opportunities involve more than individual-level decisions and be "understood as part of a field of action" that involves the intersections of culture, discourse, and identity that provide the tools that enable and constrain entrepreneurial action (Lounsbury & Glynn, 2019, p. 57).

We address this call by examining how the intersection of multiple institutional fields provides doctors with alternative beliefs, values, and practices that allow them to deviate from cultural pressures opposed to entrepreneurship within the medical profession. Taking an institutional view, we define culture as the "beliefs, norms, and behaviors that reflect particular areas of life" such as within institutional fields that permeate professions, organizations, and geographic regions (Giorgi, Lockwood, & Glynn, 2015, p. 28). We consider how alternative cultural forces that physicians experience in regional, organizational, and professional institutional fields create cultural holes that promote the discovery and exploitation of entrepreneurial opportunities. Empirically, we explore these issues through an analysis of ambulatory surgery centers (ASCs) established in the United States from 1990 to 2008. ASCs are health care facilities, where surgeries are performed on an outpatient basis. These facilities are independent from hospitals and are typically owned and operated by physician entrepreneurs. Despite the economic incentives for physicians to start their own surgery centers, professional norms within the medical profession during this period strongly discouraged the act of physicians engaging in these kinds of entrepreneurial activities that go beyond simply owning a private practice.

In the following sections, we outline the context of this study and explain how technological advances created opportunities for physicians to establish their own surgery centers and briefly trace the source of professional norms in medicine opposed to this type of physician entrepreneurship. We then theorize how cultural holes at the intersection of institutional fields can diminish the constraining cultural influence of the medicine profession and propose a series of hypotheses that predict the conditions under which physicians will be more likely to engage in entrepreneurial activity by exploiting what may be viewed as a profitable, yet culturally deviant (within the medical profession) opportunity (Crodieu & Monin, 2010).

RESEARCH CONTEXT: AMBULATORY SURGERY CENTERS

New Opportunities Created by Technological Advances

For most of the twentieth century, nearly all surgical procedures were confined to the hospital setting and carried out on an inpatient basis (requiring overnight stay). However, following World War II, a series of technical advances in anesthesia and surgical procedures made it possible for minimally invasive surgeries to be performed on an outpatient basis (no overnight stay). Outpatient procedures represented a radical departure from inpatient surgeries, by reducing the operating time per surgery and by making it possible for patients to recover in the comfort of their own home, thus eliminating costly overnight hospital stays.

A few major hospitals in the United States, such as the UCLA Center for the Health Sciences and the George Washington University Hospital were the first to implement outpatient surgery techniques and by the end of the 1960s, several other hospitals across the country had adopted these practices. For the most part, outpatient surgical programs were a success and many members of the medical community such as UCLA doctors, David Cohen and John Dillon were among those who celebrated them for their convenience and efficiency. Comparing the total cost of several procedures, Cohen and Dillon reported patient savings of 30–45 percent for outpatient procedures and estimated that during the two years of their study (1963–1964) the efficiency gains achieved by utilizing outpatient techniques saved approximately 1,000 hospital days (Cohen & Dillon, 1966). In addition to these economic benefits, Cohen and Dillon (1966, p. 100) concluded that the practice of outpatient surgery "is entirely safe, indeed safer than many inpatient practices" and that it has "provided more effective use of hospital beds and has increased the hospital's public service."

As increasing hospital adoption of outpatient surgery provided validation for this new practice, physicians began to realize opportunities to create their own surgery centers independent of hospitals. For physicians, creating a surgery center represented a lucrative financial opportunity by allowing them to capture profits not only from the surgeries they perform, but also from the facility usage fees that would otherwise go to the hospital. Furthermore, surgery centers provide added convenience by enabling physicians to have more control over scheduling, enhancing efficiency, and increasing the volume of daily surgeries.

However, despite these financial incentives very few physicians established ASCs in the early years. By 1975, there were only between 20 and 55 ASCs across the nation (Marks, Greenlick, Hurtado, Johnson, & Henderson, 1980; O'Donovan, 1976). Growth remained slow during the 1970s, but two key events paved the way for more rapid growth in the 1980s. Most notably, the Omnibus Reconciliation Act of 1980, which mandated Medicare to begin reimbursement of procedures performed in ASCs. Around the same time, in 1981, the American College of Surgeons (ACS) issued a statement formally endorsing the concept of ambulatory surgery (Henderson, 1991). Yet, as Fig. 1 illustrates, physician establishment of ASCs was still limited through the 1980s and by 1990 just over 1,000 ASCs were in operation in the United States. Over the next 18 years, however, the industry blossomed and by 2008 the total number of surgery centers in the United States exceeded 5,000. It is interesting to note, however, that significant variation remained in terms of *where* doctors were more active in founding surgery centers. Fig. 2 shows the geographic distribution of ASCs in the United States and reveals surprising patterns. For example, by 2008 only 91 ASCs were in operation in New York, compared with 106 in Missouri – a state with less than one-third of the population of New York.

What accounts for this variation? Beyond state regulatory policies and economic conditions, we propose that the influence of culture is likely to shape the likelihood that doctors will identify and exploit such opportunities. As we explain in the next section, although technological advances created an appealing financial opportunity for doctors to found ASCs, strong cultural forces within the

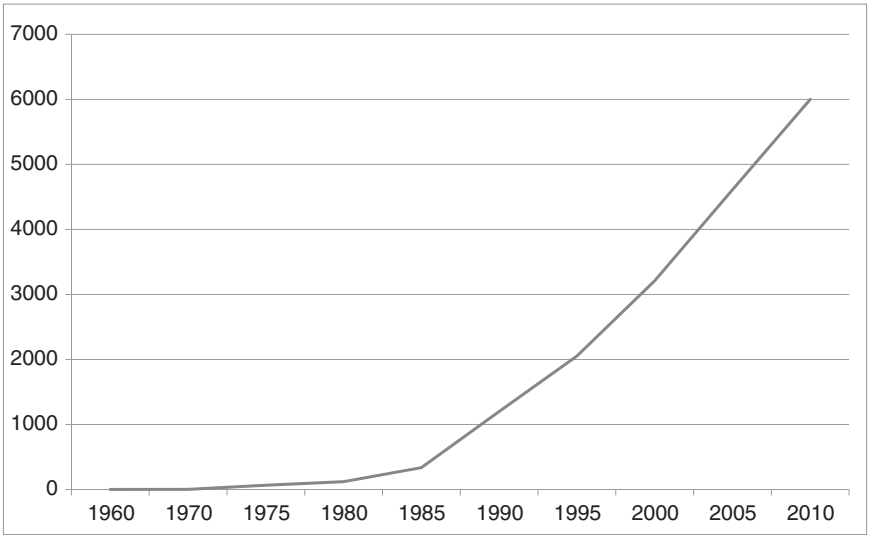

Fig. 1. Number of ASCs in Operation in the United States from 1970 to 2008.

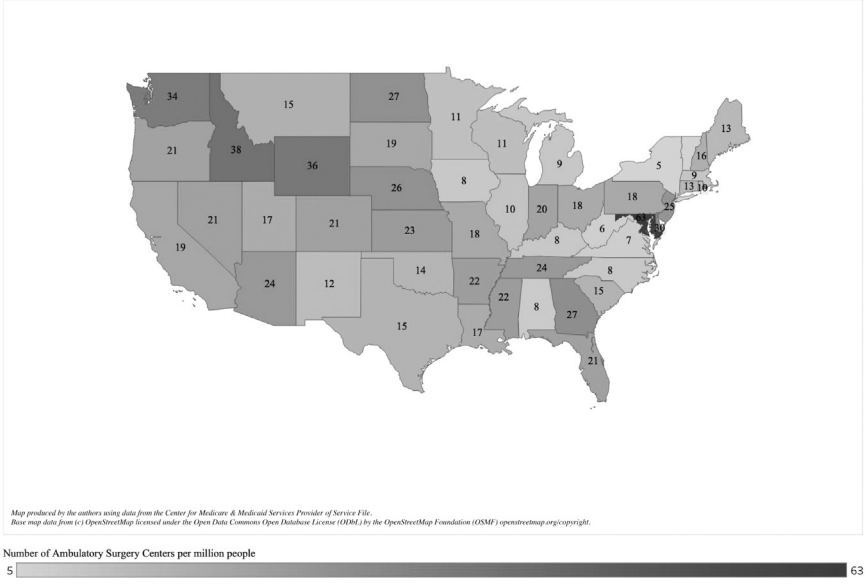

Fig. 2. Geographic Distribution of ASCs in the United States as of 2008.

medical profession discouraged it. Because of these cultural constraints, we propose that much of the variation observed in this context can be explained by the presence of cultural holes that provide space for discovery and experimentation of alternative values, practices, and frameworks associated with entrepreneurship. In the next section, we provide a brief overview of the medical profession

and the strong culture within the profession that characterized entrepreneurship as an inappropriate activity.

Entrepreneurship and the Culture of the Medical Profession

The profession of medicine provides a dynamic setting to explore cultural holes that exist at the intersection of the medical profession and other spheres of cultural influence (DiBenigno & Kellogg, 2014; Dunn & Jones, 2010). Throughout much of early American history, doctors could be thought of as highly entrepreneurial. In fact, during the nineteenth century doctors commonly developed and marketed their own tonics, potions, and cures leading some historians to argue that during this time, no other group of actors "embraced the ways of the market as actively as did popularisers, alternative healers, and quacks" (Starr, 1982). In order to elevate the standing of their profession and establish themselves as legitimate practitioners of medicine, doctors engaged in collective action through mobilizing under the banner of the American Medical Association (AMA). Since its founding in 1847, the AMA has been the primary professional association for doctors. Part of its early mission was to mobilize resources and engage in efforts to professionalize the practice of medicine.

These efforts included downplaying the types of entrepreneurial activity that had been pervasive throughout the 1800s and emphasizing the values of patient care based on scientifically sound methods. Central to these professionalization efforts, the AMA worked to establish higher educational requirements, professional licensure, ethical guidelines, and standards for practice (Starr, 1982). Through this work, the professionalization of medicine led to a stronger emphasis on separating profit from patient care, and certain business practices were explicitly condemned. Early on, the AMA code of ethics introduced language unequivocally denouncing business practices such as advertising, saying that it is "derogatory to the dignity of the profession … to resort to public advertisements" (American Medical Association, 1847, p. 98) and that physicians "should not solicit patients" (American Medical Association, 1957, p. 2). During this time, the AMA promoted a culture opposed to profiting from business activities other than the direct care of patients. In fact, from the 1950s until the 1980s, the AMA code ethics stated that "a physician should limit the source of his professional income to medical services *actually rendered by him*, or under his supervision, to his patients" (American Medical Association, 1957, p. 3, emphasis added). While this pronouncement allowed for physicians to continue operating as self-employed practitioners, it established strong cultural norms opposed to other entrepreneurial endeavors such as owning health care facilities (like ASCs) where they could generate passive income from services performed by other physicians.

This language drew the attention of the Federal Trade Commission (FTC) that viewed such professional restrictions as contrary to the free-market principles outlined in the Sherman Antitrust Act. As a result of pressure from the FTC and two major Supreme Court cases (*American Medical Association* v. *Federal Trade Commission*, 1982; *Goldfarb* v. *Virginia State Bar*, 1975), the AMA was forced to remove any language from its code of ethics that could be construed as restraining free trade. Despite the removal of formal language denouncing

entrepreneurial behavior, the anti-entrepreneurship culture remained embedded in the profession. The persistence of this culture is evidenced by statements by prominent members of the medical community, such as Dr Arnold Relman, who served for 11 years as the editor of the prestigious *New England Journal of Medicine*. During and after his tenure as editor, Relman was an outspoken critic of physician entrepreneurship, publishing numerous articles, books, and opinion pieces on the subject. Giving voice to the anti-entrepreneurship culture within the medical profession, Dr Relman (1986, p. 209) proclaimed:

> As a physician, we believe the medical profession's first responsibility is to serve as a trusted agent and adviser for patients. Physicians should be adequately compensated for their time and effort, but not as businessmen. Unfortunately, too many physicians nowadays are succumbing to the lure of easy profits, and are becoming entrepreneurs.

One recent medical school graduate we interviewed described how upon entering medical school he had intended to become an entrepreneur, but after going through the socialization process of his medical training, he felt that entrepreneurship was no longer an option. Describing these cultural pressures, he said:

> I think … there is very much an unspoken negative connotation if one is pursuing non-clinical interests. Patient care is constantly emphasized. Anything that compromises this is heavily frowned upon. Anything. I mean it's almost impossible to get time off to go to a loved one's funeral. If not taking care of patients, we are expected to be writing book chapters on surgical diseases or publishing papers related to basic science or clinical medicine.

As these examples illustrate, despite the removal of formal restrictions against entrepreneurship, cultural forces within the field of medicine persisted in discouraging doctors from engaging in entrepreneurship. Thus, our baseline expectation is that absent cultural alternatives, professional norms opposing entrepreneurial action during this period will deter doctors from exploiting opportunities to start their own ASC.

THEORY AND HYPOTHESES

Cultural Holes and Entrepreneurship at the Intersection of Institutional Fields

Institutional theorists have stressed the importance of cultural forces in shaping organizational and individual behavior (Scott, 2008). From this perspective, cultural elements provide a shared understanding that constitutes social reality (Srivastava, Goldberg, Manian, & Potts, 2018) and establish taken-for-granted assumptions about how things should be done, setting forth templates and scripts for actions.[1] In this way, culture provides a toolkit that shapes how entrepreneurs evaluate opportunities (Rindova, Dalpiaz, & Ravasi, 2011). At the same time, culture – particularly in mature fields – can also stifle entrepreneurial activity by restricting actors' ability to see new possibilities and keeping them from exploiting opportunities that may be perceived is inconsistent with cultural prescriptions. In professional fields where culture restricts both the discovery and exploitation of opportunities (Battilana, 2011), the availability of narratives, identities, and values from overlapping fields may provide alternative cultural elements that enable entrepreneurial action.

Cultural entrepreneurship scholars refer to the space at the intersection of two different institutional fields as "cultural holes" or areas where identities, discourse, and culture from different fields can mix and blend (Lounsbury & Glynn, 2019). Cultural holes create spaces where entrepreneurs can discover alternative activities and knowledge domains and are free to experiment with alternative identities and practices via cultural bridging and bricolage (Baker & Nelson, 2005). For cultural holes to exist, alternative cultural forces from adjacent fields must be strong enough to make such differences salient. Thus, the size of structural holes – or the space that fosters uninhibited discovery and experimentation – is dependent on the salience of cultural alternatives at the intersection of institutional fields in which actors reside. In the following section, we test this theoretical argument by examining how cultural holes at the intersection of the medical profession and overlapping institutional fields in this context operate to reduce the constraining effect on the medicine professional on physician entrepreneurship.

Regional Culture

We propose that cultural holes that foster entrepreneurial opportunities can exist at the interstice of the professional culture and geographic region. Early scholars of organizations such as Weber (1958) pointed to cultural factors within geographic regions by describing a "spirit of Capitalism" that drives economic behavior. Using a similar phrase, Kirzner (1984, p. 56) discussed the "entrepreneurial spirit" as a measure of the positive prevailing local attitudes and cultural elements favorable toward entrepreneurship. Although organizational theorists have argued that regional differences in culture can influence economic behavior, recent work emphasizes that these factors have often been overlooked (Marquis & Lounsbury, 2007; Tilleman, Russo, & Nelson, 2021). Extending these theories, we propose that regions with a stronger culture of entrepreneurship will provide a social context conducive to entrepreneurship even across dissimilar industries, fields, and forms of organizations. Prior entrepreneurial endeavors provide templates or blueprints for subsequent entrepreneurs to follow, and entrepreneurs acquire tacit knowledge, social ties, and self-confidence from existing organizations (Sorenson & Audia, 2000). This knowledge can even be carried from one industry context to another (Barley & Kunda, 2004). Successful entrepreneurs often repeat the process themselves and instill their employees with entrepreneurial know-how (Burton, Sorensen, & Beckman, 2002) and confidence which increases their abilities to identify and exploit opportunities. Through this process, the act of entrepreneurship becomes taken-for-granted as a socially acceptable career path, and the act of entrepreneurship itself may even be viewed as an institution (Saxenian, 1996; Tolbert, David, & Sine, 2011).

Like other professionals, doctors do not live within a professional silo, and they are influenced by cultural elements from multiple social spheres. In this regard, we expect that the culture associated with the geographic region in which a doctor resides can create a cultural hole that impacts their decision to engage in entrepreneurship. In geographic regions with a strong culture of entrepreneurship, the

cultural hole between the regional and professional cultures can provide a space where doctors can discover and experiment with a set of alternative values, practices, and frameworks conducive for founding an ASC. For example, one doctor interviewed by the first author mentioned that even though his medical peers were skeptical of his intentions to start a new business, he was encouraged by his interactions with individuals *outside* of the profession where he picked up tacit knowledge about components of entrepreneurship that were consistently part of the ongoing conversation. He indicated that this knowledge and cultural support for entrepreneurship encouraged him to continue to pursue new business endeavors, despite the contradictory forces in his profession. Accordingly, we argue that in regions characterized by a stronger culture of entrepreneurship, it creates a larger cultural hole that enhances the propensity for doctors to engage in entrepreneurial behavior.

H1. ASC founding rates will be higher for physicians located in regions with a stronger culture of entrepreneurship.

Culture of For-profit Health Care

Cultural holes that foster entrepreneurial opportunities can also exist at the interstice between professional fields and organizational fields. Although early on hospitals were primarily affiliated with religious organizations and took the form of non-profit entities centered on providing a community good, since the 1980s a migration of profit-centered, efficiency-based organizations have entered the field, carrying with them the culture of managerial efficiency (Clark, Huckman, & Staats, 2013; Scott, Ruef, Mendel, & Caronna, 2000). For-profit hospitals have been found to be more oriented toward maximizing profits by entering more profitable markets (Noether, 1988) charging higher rates (Watt et al., 1986) and focusing on more profitable services (Pattison & Katz, 1983) than their non-profit counterparts. In their in-depth study of institutional changes in the health care field in the Bay Area, Scott et al. (2000) found that the increase of a managerial cultural in the field of health care had a significant influence on various dimensions of hospital performance. Notably, they discovered that after 1980, business and managerial accreditations became a stronger predictor of hospital survival than medical accreditations.

The corporate hospital model emphasizes efficiency and profit that are often at odds with the community care espoused by non-profit hospitals. As the corporate run hospitals enter a region, they promote cultural change by instilling their profit-oriented values and practices. Hospitals are particularly influential in the medical field because they are one of the primary sources of training, employing, and socializing physicians (Clark, Kuppuswamy, & Staats, 2018). In this function, they not only propel new values regarding health care (i.e., efficiency), but they also provide alternative knowledge, practices, and routines.

The advent of managed care has been shown to fundamentally change the role of physicians (D'Aunno, Succi, & Alexander, 2000). One study reported that 94 percent of physicians indicated that managed care significantly altered the skills

required to be a physician and of these respondents, 89 percent said that the most essential new skills needed for their career success were those related to business and administration (Bucci, 1999). Physicians at for-profit hospitals have also been found to be less likely to express concerns about issues related to conflict of interest (Musacchio, Zuckerman, Jensen, & Freshnock, 1986). This is particularly relevant to the act of starting an ASC, because one of the major criticisms of ASCs is that they violate ethics of conflict of interest by enabling physicians to refer patients to a center in which they have a direct financial interest.

The ways in which for-profit entities can create a culture of managerial health care is illustrated by Gawande's (2009) investigation of health care in McAllen, TX. Noting the proliferation of for-profit entities in this community, Gawande (2009) writes:

> About fifteen years ago, it seems, something began to change in McAllen. A few leaders of local institutions took profit growth to be a legitimate ethic in the practice of medicine …. So here, along the banks of the Rio Grande, in the Square Dance Capital of the World, a medical community came to treat patients the way subprime-mortgage lenders treated home buyers: as profit centers.

We argue that the intersection of the organizational field of for-profit health care and the medical professional field creates a cultural hole that exposes doctors to alternative cultural elements that portray entrepreneurship in a more favorable light. A stronger culture of for-profit care is also likely to provide doctors with business skills by creating a space where doctors gain experience with managing the business side of patient care. Venturing into the cultural hole between the for-profit organizational culture and the culture of medicine will ultimately lead physicians to pursue entrepreneurial opportunities.

H2. ASC founding rates will be higher in areas characterized by a stronger culture of for-profit health care.

Culture of Surgical Specialization

The presence of cultural holes may also arise from strategic efforts of actors within a field to promote cultural alternatives. Although the AMA has served as the dominant organization transmitting and representing the professional norms of physicians within the field of medicine, it is not the only one. Professions are not homogeneous communities, and as Scott et al. (2000) note, since 1940, the physician specialty population in the United States has gone from below 20 percent to over 80 percent. The rise in physician specialization has led to the proliferation of different specialty medical associations resulting in field fragmentation and conflict over jurisdictional authority and standardized practices. As new professional associations emerge, their mission is to advance the cultures and practices of their respective members even if it means creating turf wars over the authority to define appropriate methods of health care.

For example, from its inception, the American College of Surgeons (ACS), a specialty professional association for surgeons, has drawn the ire of the AMA. The cultural belief of the ACS is that ambulatory surgery centers provided patients

with greater access to high quality care in a more efficient and cost-effective manner than hospitals where traditionally surgeries were performed. Moreover, going against the norms of the AMA, the ACS formally endorsed the practice of freestanding ambulatory surgery in 1981, signaling that such practices were safe and appropriate. They also increased awareness and validated the efficacy of new practices by sponsoring and publishing research and disseminating information to the public by engaging in cultural framing processes to recast these new practices as congruent with the broader culture of medicine (Giorgi et al., 2015; Kellogg, 2011).

The ACS's frames emphasized the benefits provided by ASCs in reducing health care costs, providing greater access to care, and providing greater convenience for patients. This framing is illustrated in a letter the ACS sent to Congress asking for favorable ASC reimbursement policies. In it, the ACS emphasized the benefits to taxpayers and patients provided by ASCs, saying

> not only have ASCs been shown to save Medicare more than $3 billion per year as an alternative setting to the hospital outpatient department, but they also provide a lower cost option for patients in need of surgical care. (Hoyt, 2011)[2]

By framing ASCs as consistent with the culture of the medicine profession, the ACS provided a narrative for surgeons to justify the act of establishing independent surgery centers and allowed for their culture to gain dominance over the traditional norms of medicine. We propose that the cultural hole at the intersection of the surgical specialty and the broader profession of medicine provides a space where physicians can access and experiment with alternative cultural elements that increase their likelihood of engaging in entrepreneurship.

H3. ASC founding rates will be higher in states with a greater presence of professional associations espousing an ambulatory surgery culture.

METHODS

Data

To test these hypotheses, we constructed a state level database of all ASCs established in the United States from 1990 to 2008. This period captures the major period of the initial industry growth as the number of ASCs ballooned from just over 1,252 in 1990 to 5,229 by 2008. Data on all ASCs founded during this period were obtained from the Center for Medicare & Medicaid Services (CMS) Provider of Service File. In order to be eligible for Medicare or Medicaid reimbursement, health care facilities must obtain certification from CMS. Reimbursements from Medicare and Medicaid account for almost 40 percent of all procedures performed at ASCs (MEDPAC, 2010).[3] In total, these data represent over 19 years of entrepreneurial activity for all ASCs established in the United States.

Although arguments could be made for using different geographical demarcations as the unit of analysis, we focus on entrepreneurial activity at the state level for several reasons. First, health care regulations are primarily adopted and enforced at the state level and analysis conducted at more local levels (i.e., MSA,

health services area, county, etc.) do not allow for consideration of variation in state regulatory policies. Second, professional associations are typically organized at the state level with individual state chapters cooperating to advance issues at the national level but operating as independent entities focused on issues relevant to members in the state. Finally, states represent one level on which to study regional cultures and prior studies have indicated that state cultures play an important role in shaping ideologies and behaviors (Erikson, McIver, & Wright, 1987).

Dependent Variable

To analyze the founding rates of ASCs, we use a count of the total number of ASCs founded in each state in each year. In this case, the founding event refers to the date in which an ASC first began to provide ambulatory surgery services to patients. This variable comes from the CMS Provider of Service File and includes all ASCs founded from 1990 to 2008.

Explanatory Variables

In order to analyze the impact of *regional-medicine cultural hole* on ASC foundings, we identified three key measures that tap into distinct dimensions of this construct: total number of new firms established (from all industries) in a state, the number of venture capital firms operating in a state, and the number of venture-backed companies in a state. The total number of new establishments captures the overall level of entrepreneurial activity in the state. The number of VC firms taps into the collective knowledge and infrastructure that has developed to support entrepreneurship and is a symbol of the degree to which entrepreneurship is institutionalized. We included the number of VC backed firms as an indicator of high-profile entrepreneurial events that garner more attention and may thus be more salient to actors in the field. It is important to note here that ASCs do not typically obtain VC financing, so these two variables related to venture capital do not measure resources directly associated with ASC foundings, but rather signals of the institutionalization of entrepreneurship more generally. Data on new business establishments were obtained from the US Small Business Administration and venture capital data came from the SDC VentureExpert database. After obtaining these three variables, we performed an exploratory factor analysis using the principal components method and applying varimax rotation techniques to maximize the sum of the variances of the squared loadings. The results indicated that all four variables loaded onto one factor with an eigenvalue of 3.18, well above the generally accepted threshold of 1.0 (Kaiser, 1960) required to retain the factor. This factor explained a cumulative variance of 79.36 percent. We included this factor in the models as a measure of the regional culture of entrepreneurship.

To measure the *medicine-organizational cultural hole*, we include a variable consisting of the *percentage of hospital beds operated by investor-owned hospitals*. Hospital beds are a common measure of the availability of medical care in a community and the proportion of investor-owned beds provides an indicator of the percent of health care services that are provided by for profit entities. These data were obtained from the American Hospital Association Guide to the Health Care Field. In order

to measure the *medicine-surgery cultural hole*, we obtained a count of the *number of professional surgical associations* in a state from the Encyclopedia of Medical Organizations and Agencies and the National Center for Charitable Statistics.

Control Variables

Several regulatory, economic, and social factors are likely to influence variation in ASC founding rates. From a regulatory standpoint, the primary mechanisms used to regulate the establishment of new health care facilities are certificate of need (*CON*) laws. CON laws require prospective ASC founders to submit a detailed application demonstrating that the facility is justified by an unmet demand for the proposed surgical services and state officials must grant approval before any new health care facilities can be established. We include a dummy variable (1=CON; 0= No CON) to account for states that have incorporated CON laws. Information on CON laws was obtained from the US Certificate of Need Sourcebook and the respective state departments of health.

ASC foundings may also be driven by various economic factors such as the supply of physicians at risk for starting a surgery center and the demand for surgical services in an area. To control for these possibilities, we include a measure of *at-risk physicians*, which consists of the total number of physicians in surgical specialties that are apt to practice in ASC settings. Notably, this variable excludes physicians that are unlikely to practice in a surgery center setting, such as general practitioners, family doctors, and pediatricians. The data used to construct this variable come from the AMA's annual publication of Physician Characteristics.

ASC foundings may also be driven by the demand for surgical procedures. We control for this in several ways. First, we account for the *percent of uninsured* individuals in each state. Health insurance coverage is an indicator of individuals' ability to access and pay for health care services. As such, higher rates of uninsured individuals may indicate a smaller market for surgical services. This data come from the Kaiser Family Foundation State Health Facts. To more precisely measure the demand for surgical services, we obtained data on the total number of *surgical procedures performed* in the prior year from the Dartmouth Atlas of Health Care (http://www.dartmouthatlas.org). This is the most direct measure of demand for the services provided by ASCs.

Related to the demand for surgical services, it is also important to control for competition and the supply of organizations to meet the surgical demands. Competition comes from both hospitals and other ASCs. Accordingly, we control for the number of *hospitals per capita* using data from the American Hospital Association Guide to the Health Care Field. To control for the influence of existing ASCs as sources of industry legitimation and competition, we include a measure of *ASC density*, calculated as the total number of ASCs operating in the state and a measure of the *squared ASC density*. Finally, we include a measure of the state business *tax rates* and *gross state product* to control for broader conditions influencing the climate for entrepreneurship. These data were obtained from the Tax Foundation. Tax Foundation and the U.S. Bureau of Economic Analysis.

Estimation and Model Specification

In order to test the hypotheses outlined above, we use event-count models because in each state and year multiple founding events can occur. The use of count models allows for testing these aggregated state founding events. Initial tests indicated that the data were over-dispersed or that the variance did not equal the mean and thus violated the assumptions of the traditional Poisson regression model. Therefore, we utilized negative binomial models, which are designed to handle over-dispersed data (Hilbe, 2007) to analyze the state–year panel data. To help control for the unobserved heterogeneity across states, we used fixed effects models in STATA. We also lagged all independent variables by one year, to account for the time delay between the decision to start a new ASC and when it becomes operational.

RESULTS

Table 1 presents the correlation matrix along with summary statistics for all variables in the analysis. Table 2 presents the results of the analysis using negative binomial models to predict the number of ASCs established in each state in each year. The first model is the baseline model with all control variables. Models 2–4 add each explanatory variable in the order of hypotheses and Model 5 presents the full model with all variables.

Across all models, it is apparent that state regulatory policy is significantly associated with ASC foundings. In fact, these analyses suggest that states that enact CON laws experience about 30 percent fewer ASC foundings. We also see that the number of surgeries performed in the prior year is significantly associated with higher rates of ASC foundings, indicating that an increase in demand for surgeries drives entrepreneurship in this context. As we would expect, increasing competition between both hospitals and other ASCs appears to dampen ASC founding rates.

Model 2 adds cultural hole of medicine-regional interstice. Here as well as in the full model, we find support for *H1* and see that higher ASC founding rates are associated with stronger regional cultures of entrepreneurship. The results also indicate that this relationship is quite meaningful. A one-standard deviation increase in the regional culture of entrepreneurship is associated with a 36.7 percent increase in the number of ASCs founded. Models 3 and 5 provide support for *H2*, indicating that an increasing proportion of investor-owned hospitals (managerial health care cultural force) is associated with higher ASC founding rates. Interpreting these results, we see that a one-standard deviation increase in the proportion of investor-owned hospital beds results in 20.9 percent increase in ASC foundings. Finally, Models 4 and 5 support the idea that in states with a greater presence of professional associations advocating for a surgery center cultural force, that ASC founding rates will be higher. This confirms our expectations outlined in *H3* and suggests that a one-standard deviation increase in the number of professional associations advocating on behalf of ASCs is associated with a 41.9 percent increase in the number of ASCs founded.

Table 1. Means, Standard Deviations, and Correlations for All Variables.

	Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1	ASC Foundings	5.24	7.489											
2	CON *(1 = yes; 0 = no)*	0.744	0.437	−0.165										
3	At risk physicians *(per 10,000 people)*	5.984	1.160	0.235	0.294									
4	Surgeries performed	97.333	10.790	0.173	−0.061	−0.115								
5	Hospitals *(per 10,000 people)*	0.418	0.266	−0.281	−0.316	−0.461	0.315							
6	ASC density*(/100)*	0.609	0.907	0.903	−0.169	0.234	0.158	−0.269						
7	Percent uninsured	0.143	0.082	0.138	−0.214	−0.181	−0.023	0.016	0.172					
8	Tax rate	0.095	0.011	0.059	0.055	0.387	−0.153	−0.286	0.057	−0.198				
9	Gross state product (*log*)	11.552	1.082	0.627	0.040	0.431	0.248	−0.520	0.637	−0.013	0.250			
10	Regional entrepreneurship culture	0.009	1.008	0.690	−0.167	0.347	0.020	−0.317	0.772	0.094	0.238	0.713		
11	Investor-owned hospitals *(percent of total beds)*	0.115	0.114	0.208	−0.132	−0.210	0.127	−0.061	0.217	0.449	−0.473	0.129	0.081	
12	Surgical societies *(/at risk physicians per 1,000 people)*	10.175	13.466	0.551	−0.155	0.321	0.104	−0.333	0.604	−0.003	0.745	0.745	0.782	0.025

Table 2. Negative Binomial Models of ASC Foundings (State Fixed-effects).

	Model 1	Model 2	Model 3	Model 4	Model 5
CON *(1 = yes; 0 = no)*	−0.476**	−0.446**	−0.434*	−0.457**	−0.348*
	(0.167)	(0.153)	(0.174)	(0.167)	(0.157)
At risk physicians *(per 10,000 people)*	−0.016	−0.042	0.032	0.057	−0.035
	(0.094)	(0.120)	(0.096)	(0.105)	(0.123)
Surgeries performed	0.037***	0.017**	0.038***	0.037***	0.017**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Hospitals *(per 10,000 people)*	−1.363***	−1.098*	−1.409***	−1.488***	−1.288*
	(0.380)	(0.479)	(0.381)	(0.392)	(0.511)
ASC density *(/100)*	0.050	−0.188	−0.001	0.073	−0.235+
	(0.115)	(0.136)	(0.115)	(0.114)	(0.128)
ASC density*(/100)* Squared	−0.019	−0.059**	−0.010	−0.040*	−0.063**
	(0.016)	(0.019)	(0.016)	(0.018)	(0.019)
Percent uninsured	−0.089	0.584	−0.054	−0.262	0.529
	(0.567)	(0.522)	(0.573)	(0.566)	(0.534)
Tax rate	−19.840**	−0.677	−16.874*	−20.166**	−1.488
	(6.455)	(7.560)	(6.614)	(6.457)	(7.377)
Gross state product (*log*)	0.109	1.141***	0.034	−0.076	1.022***
	(0.146)	(0.290)	(0.147)	(0.173)	(0.283)
H1: Regional entrepreneurship culture		0.427***			0.310***
		(0.084)			(0.092)
H2: Investor-owned hospitals *(percent of total hospital beds)*			2.034**		1.670*
			(0.701)		(0.756)
H3: Surgical associations *(/at risk physicians per 1000 people)*				0.021*	0.026**
				(0.010)	(0.010)
Constant	−0.020	−10.195***	0.021	1.616	−8.846***
	(1.760)	(2.715)	(1.745)	(1.954)	(2.557)
N	784	686	784	784	686
χ^2	110.604	216.642	119.072	115.650	239.402

Standard errors in parentheses; + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.000$.

DISCUSSION AND CONCLUSION

The results provide support for the three hypotheses predicting that cultural holes in the interstice between competing institutional fields play a profound role in shaping entrepreneurial opportunities and the founding of new ventures. Although the culture of medicine has long discouraged doctors from engaging in this type of entrepreneurial activity, qualitative and quantitative evidence of this study illustrates that cultural holes expose doctors to cultural artifacts, identities, practices, and discourse beyond that of their medical profession and that this space provides flexibility for the physicians to deviate from the culture of medicine and found ACS. Empirically, we explored three cultural holes at the intersection of the professional field and geographic region, the professional field and organizational field, and at the intersection of two countervailing professional fields. In so doing, we find that cultural entrepreneurship's theory of cultural holes as space for entrepreneurial opportunity creation holds at various institutional-field levels of analysis (Lounsbury & Glynn, 2019).

This study contributes to the entrepreneurship literature in a few ways. First, we move beyond the question of whether entrepreneurial opportunities are exogenously or endogenously created by policies and actors (Hiatt et al., 2009) to examine how opportunities can be shaped by varying cultural structures at the intersection of different institutional fields. Although organizational studies have used institutional fields to examine the exploitation of entrepreneurial opportunities, these have largely been conducted within a single field level such as a market category (Hiatt & Carlos, 2019), profession (David, Sine, & Haveman, 2013), or geography (Marquis & Lounsbury, 2007). Few studies have empirically examined how competing cultures from intersecting institutional fields affect how entrepreneurial activity is enacted (Tolbert & Hiatt, 2010). This has prompted calls for scholars to explore how cultures from different institutional contexts influence how and when actors evaluate and exploit entrepreneurial opportunities (Lounsbury, Gehman, & Glynn, 2019). We address this call by providing the first empirical analysis on how cultural holes – the space at the interstice of different institutional fields – affects entrepreneurship in the health care setting.

Second, we answer the calls from scholars to obtain a "better understanding" of "the relationship between culture and institutions" (Giorgi et al., 2015, p. 27). Although research has examined how cultural entrepreneurship actions such as framing can serve to alter audience understandings and legitimate new organizational forms (Hiatt & Park, 2021; Lounsbury & Glynn, 2001; Wry, Lounsbury, & Glynn 2011), other studies have noted that the impact of cultural framing may be limited to certain institutional realms (Rao & Giorgi, 2006). This is because culture is situated in and reflects an institutional order such as family, state, and community (Coles, Sine, Hiatt, & Rich, 2021; Thornton, Ocasio, & Lounsbury, 2012). Consequently, cultural framing is likely to conflict with other cultural forces. Our study examines this potential theoretical dilemma by empirically showing how institutional change can occur when cultural forces vary across multiple social spheres.

Third, by bringing cultural holes to the forefront in the professions, this research highlights an alternative mechanism by which change occurs when a professional field is dominated by a strong cultural force (Battilana & Casciaro, 2013; Kellogg, 2009, 2011). Although a few recent studies have directly considered the constraining role of professional norms on entrepreneurship, for the most part, prior work has been limited to a focus on cultural prescriptions *within* the profession, or organizational field. This paper adds to this literature by exploring the ways in which competing cultural forces both *within* and *outside* of the professional field influence entrepreneurial activity within the profession.

Future research may want to further explore the impact of culture in affecting not only entrepreneurs' perceptions but also how cultural holes impact their access to resources (Hiatt, Carlos, & Sine, 2018). For example, studies have shown that regulators play an influential role in impacting entrepreneurial innovation and entry into regulated markets and that regulated markets in general favor incumbent firms over entrepreneurs (Grandy & Hiatt, 2020; Hiatt & Park, 2013; Rawhouser, Cummings, & Hiatt, 2019). Would the intersection of a culture of regional entrepreneurship with a government culture of risk aversion free bureaucrats to approve a higher ratio of entrepreneurial products and services over that of incumbent businesses?

Moreover, we see promise in exploring how cultural holes may shape other cultural entrepreneurship actions and outcomes. For instance, social evaluation metrics such as ratings, rankings, and certifications are salient manifestations of underlying cultural elements (Carlos & Lewis, 2018; Lee, Hiatt, & Lounsbury, 2017; Lewis & Carlos, 2019), and are often used by entrepreneurs to legitimate their business model (Sine, David, & Mitsuhashi, 2007). However, research has generally treated such evaluation tools as being universally valued by all stakeholders and has overlooked how dissimilar cultural values held by diverse audiences may influence different reactions to these tools (Lewis & Carlos, 2021). Thus, an examination of how cultural holes impact both organizational decisions and audience response of social evaluation metrics may yield important insights into taken-for-granted assumptions about how firms react to evaluation metrics like ratings and rankings.

From a practical standpoint, the health care system in the United States faces significant challenges. Currently, health care costs in the United States exceed $3.6 trillion, or 17.7 percent of the country's GDP and are growing (Centers for Disease Control and Prevention, 2019). Despite this vast spending, the United States still falls behind many other countries in terms of key health barometers such as infant mortality and life expectancy. Although policy discussions often center around the debate between privatized versus socialized medicine, innovative solutions such as alternative forms of health care delivery can address health care access inequalities by providing efficient and lower-cost alternatives to traditional hospitals (Barro, Huckman, & Kessler, 2006). Accordingly, our findings suggest that it may be important for policy makers to consider regulations that affect barriers to entry for physician entrepreneurs. Finally, given that professionals, such as physicians and scientists, occupy a special position in society with access to expertise knowledge and resources that enable them to develop and implement innovations, the study of professionals as entrepreneurs is a critical area with both theoretical and practical significance.

NOTES

1. Similar conceptions of culture have been proposed by scholars, who have suggested that culture is the "software of the mind" which provides patterns of thinking, feeling, and acting (Hofstede, 1991, p. 4), or a "tool kit" that provides skills from which actors can develop "strategies of action" (Swidler, 1986).

2. Medicare is a federal government program that reimburses health care costs for those 65 and older. Medicaid is a federal government program that reimburses health care costs for those in poverty.

3. Because nearly half of the procedures performed at surgery centers are paid for by CMS, it is unfeasible to operate an ASC without being certified by CMS. As an added measure to assess the completeness of the CMS data, we compared these data with available data from a sample of state government agencies responsible for licensing health care facilities. We also interviewed ASC operators and used a snowball sampling approach to ask if they knew of any ASCs that were not CMS certified. Through these procedures, we did not find any evidence that the CMS files did not contain the complete population of ASCs. The only discrepancies noted involved centers that specialized exclusively in elective plastic surgeries that would not qualify for reimbursement by Medicare or Medicaid.

REFERENCES

American Medical Association. (1847). AMA code of ethics. Retrieved from http://www.ama-assn.org/resources/doc/ethics/1847code.pdf

American Medical Association. (1957). AMA principles of medical ethics. Retrieved from http://www.amaassn.org/resources/doc/ethics/1957_principles.pdf

American Medical Association v. *Federal Trade Commission*. 1982 455 U.S. 676 U.S.S. Court.

Baker, T., & Nelson, R. E. (2005). Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative Science Quarterly*, *50*(3), 329–366.

Barley, S. R., & Kunda, G. (2004). *Gurus, hired guns, and warm bodies: Itinerant experts in a knowledge economy*. Princeton, NJ: Princeton University Press.

Barro, J. R., Huckman, R. S., & Kessler, D. P. (2006). The effects of cardiac specialty hospitals on the cost and quality of medical care. *Journal of Health Economics*, *25*(4), 702–721.

Battilana, J. (2011). The enabling role of social position in diverging from the institutional status quo: Evidence from the UK National Health Service. *Organization Science*, *22*(4), 817–834.

Battilana, J., & Casciaro, T. (2013). Overcoming resistance to organizational change: Strong ties and affective cooptation. *Management Science*, *59*(4), 819–836.

Bucci, R. (1999). Has managed care changed the skills required for physicians to practice medicine?. *Managed Care Quarterly*, *7*, 20–24.

Burton, M. D., Sorensen, J. B., & Beckman, C. M. (2002). Coming from good stock: Career histories and new venture formation. In M. Lounsbury (Ed.), *Social structure and organizations revisited* (Vol. 19, pp. 229–262). Bingley: Emerald Group Publishing Limited.

Carlos, W. C., & Lewis, B. W. (2018). Strategic silence: Withholding certification status as a hypocrisy avoidance tactic. *Administrative Science Quarterly*, *63*(1), 130–169.

Centers for Disease Control and Prevention. (2019). Health expenditures. Retrieved from https://www.cdc.gov/nchs/fastats/health-expenditures.htm

Clark, J. R., Huckman, R. S., & Staats, B. R. (2013). Learning from customers: Individual and organizational effects in outsourced radiological services. *Organization Science*, *24*(5), 1539–1557.

Clark, J. R., Kuppuswamy, V., & Staats, B. R. (2018). Goal relatedness and learning: Evidence from hospitals. *Organization Science*, *29*(1), 100–117.

Cohen, D., & Dillon, J. (1966). Anesthesia for outpatient surgery. *Journal of the American Medical Association*, *196*, 98–100.

Coles, R., Sine, W., Hiatt, S. R., & Rich, L. (2021). *Refugees at the door: Institutional logics and new venture performance in a disrupted emerging market*. Working Paper, University of Connecticut.

Crodieu, G., & Monin, P. (2010). Why effective entrepreneurial innovations sometimes fail to diffuse: Identity-based interpretations of appropriateness in the Saint-Emillion, Languedoc, Piedmont, and Golan Heights wine regions. In W. D. Sine & R. David (Eds.), *Research in the sociology of work* (Vol. 21, pp. 287–328).

D'Aunno, T., Succi, M., & Alexander, J. A. (2000). The role of institutional and market forces in divergent organizational change. *Administrative Science Quarterly*, *45*(4), 679–703.

David, R., Sine, W., & Haveman, H. (2013). Seizing opportunity in emerging fields: How institutional entrepreneurs legitimated the professional form of management consulting. *Organization Science*, *24*(2), 356–377.

DiBenigno, J., & Kellogg, K. C. (2014). Beyond occupational differences: The importance of cross-cutting demographics and dyadic toolkits for collaboration in a US hospital. *Administrative Science Quarterly*, *59*(3), 375–408.

Dunn, M. B., & Jones, C. (2010). Institutional logics and institutional pluralism: The contestation of care and science logics in medical education, 1967–2005. *Administrative Science Quarterly*, *55*(1), 114–149.

Erikson, R. S., McIver, J. P., & Wright, G. C. (1987). State political culture and public opinion. *The American Political Science Review*, *81*, 797–813.

Gawande, A. (2009). The cost conundrum. *The New Yorker*, June 1.

Giorgi, S., Lockwood, C., & Glynn, M. A. (2015). The many faces of culture: Making sense of 30 years of research on culture in organization studies. *Academy of Management Annals*, *9*(1), 1–54.

Goldfarb v. *Virginia State Bar*. 1975 421 U.S. 773. U.S.S. Court.

Grandy, J. B., & Hiatt, S. R. (2020). State agency discretion and entrepreneurship in regulated markets. *Administrative Science Quarterly*, *65*(4), 1092–1131.

Henderson, J. (1991). Ambulatory surgery: Past, present and future. In B. Wetchler (Ed.), *Anesthesia for ambulatory surgery* (pp. 574–592). Philadelphia, PA: J.B. Lippincott.

Hiatt, S. R., & Carlos, W. C. (2019). From farms to fuel tanks: Stakeholder framing contests and entrepreneurship in the emergent U.S. biodiesel market. *Strategic Management Journal*, *40*(6), 865–893.

Hiatt, S. R., Carlos, W. C., & Sine, W. D. (2018). Manu Militari: The institutional contingencies of stakeholder relationships on entrepreneurial performance. *Organization Science*, *29*(4), 633–652.

Hiatt, S. R., & Park, S. (2013). Lords of the harvest: Third-party influence and regulatory approval of genetically modified organisms. *Academy of Management Journal*, *56*(4), 923–944.

Hiatt, S. R., & Park, S. (2021). Shared fate and entrepreneurial collective action in the U.S. wood pellet market. *Organization Science*, forthcoming.

Hiatt, S. R., Sine, W. D., & Tolbert, P. S. (2009). From Pabst to Pepsi: The deinstitutionalization of social practices and the creation of entrepreneurial opportunities. *Administrative Science Quarterly*, *54*, 635–667.

Hilbe, J. M. (2007). *Negative binomial regression* (2nd ed.). New York, NY: Cambridge University Press.

Hofstede, G. (1991). *Organizations and cultures: Software of the mind*. New York, NY: McGraw-Hill Education.

Hoyt, D. B. (2011). Letter to Pete Sessions and John Larson of the U.S. House of Representatives, July 22.

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement*, *20*, 141–151.

Kellogg, K. C. (2009). Operating room: Relational spaces and microinstitutional change in surgery. *American Journal of Sociology*, *115*, 657–711.

Kellogg, K. C. (2011). Hot lights and cold steel: Cultural and political toolkits for practice change in surgery. *Organization Science*, *22*(2), 482–502.

Kirzner, I. M. (1984). The entrepreneurial process. In C. A. Kent (Ed.), *The environment for entrepreneurship* (pp. 41–58). Lexington, MA: Lexington Books.

Lee, B. H., Hiatt, S. R. & Lounsbury, M. (2017). Market mediators and the trade-offs of legitimacy-seeking behaviors in a nascent category. *Organization Science*, *28*(3), 447–470.

Lewis, B. W., & Carlos, W. C. (2021, August 19). Ratings and reactivity: How competing logics shape organizational responses to being rated. Retrieved from https://ssrn.com/abstract=3908180

Lewis, B. W., & Carlos, W. C. (2019). The risk of being ranked: Investor response to marginal inclusion on the 100 best corporate citizens list. *Strategic Management Journal*, https://doi.org/10.1002/smj.3083

Lounsbury, M., & Glynn, M. A. (2001). Cultural entrepreneurship: Stories, legitimacy, and the acquisition of resources. *Strategic Management Journal*, *22*(6–7), 545–564.

Lounsbury, M., Gehman, J., & Glynn, M. A. (2019). Beyond homo entrepreneurus: Judgment and the theory of cultural entrepreneurship. *Journal of Management Studies*, *56*(6), 1214–1236.

Lounsbury, M., & Glynn, M. A. (2019). *Cultural entrepreneurship: A new agenda for the study of entrepreneurial processes and possibilities*. Cambridge University Press.

Marks, S. D., Greenlick, M. R., Hurtado, A. V., Johnson, J. D., & Henderson, J. (1980). Ambulatory surgery in an HMO: A study of costs, quality of care and satisfaction. *Medical Care*, *18*, 127–146.

Marquis, C., & Lounsbury, M. (2007). Vive la résistance: Competing logics and the consolidation of U.S. community banking. *Academy of Management Journal*, *50*, 799–820.

MEDPAC. (2010). *Report to the Congress: Medicare payment policy. Section 2c*. Washington, DC: Ambulatory Surgery Centers.

Musacchio, R. A., Zuckerman, S., Jensen, L., & Freshnock, L. (1986). Hospital ownership and the practice of medicine: Evidence from the physician's perspective. In B. H. Gray (Ed.), *For-profit enterprise in health care* (pp. 385–401). Washington, DC: National Academy Press.

Noether, M. (1988). Competition among hospitals. *Journal of Health Economics*, *7*, 259–284.

O'Donovan, T. R. (1976). *Ambulatory surgical centers: Development and management*. Germantown, MD: Aspen Systems Corp.

Pattison, R. V., & Katz, H. M. (1983). Investor-owned and not-for-profit hospitals: A comparison based on California data. *New England Journal of Medicine*, *309*, 347–353.

Rao, H., & Giorgi, S. (2006). Code breaking: How entrepreneurs exploit cultural logics to generate institutional change. *Research in Organizational Behavior*, *27*, 269–304.

Rawhouser, H., Cummings, M., & Hiatt, S. R. (2019). Does a common mechanism engender common results? Sustainable development tradeoffs in the global carbon offset market. *Academy of Management Discoveries*, *5*(4), 514–529.

Relman, A. S. (1986). An exchange on for-profit health care. In B. H. Gray (Ed.), *For-profit enterprise in health care* (pp. 209–223). Washington, DC: National Academy Press.

Rindova, V., Dalpiaz, E., & Ravasi, D. (2011). A cultural quest: A study of organizational use of new cultural resources in strategy formation. *Organization Science*, *22*(2), 413–431.

Saxenian, A. (1996). *Regional Advantage: Culture and Competition in Silicon Valley and Route 128.* Harvard University Press.

Scott, W. R. (2008). *Institutions and Organizations: Ideas and Interests*. Thousand Oaks, CA: Sage Publications, Inc.

Scott, W. R., Ruef, M., Mendel, P., & Caronna, C. (2000). *Institutional change and organizations: Transformation of a healthcare field*. Chicago, IL: University of Chicago Press.

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, *25*(1), 217–226.

Sine, W. D., David, R., & Mitsuhashi, H. (2007). From plan to plant: Effects of certification on operational start-up in the emergent independent power sector. *Organization Science*, *18*(4), 578–594.

Sine, W. D., & Lee, B. H. (2009). Tilting at windmills: The environmental movement and the emergence of the U.S. wind energy sector. *Administrative Science Quarterly*, *54*, 123–155.

Sorenson, O., & Audia, P. G. (2000). The social structure of entrepreneurial activity: Geographic concentration of footwear production in the United States, 1940–1989. *American Journal of Sociology*, *106*, 424–461.

Starr, P. (1982). *The social transformation of American Medicine*. New York, NY: Basic Books.

Srivastava, S., Goldberg, A., Manian, V., & Potts, C. (2018). Enculturation trajectories: Language, cultural adaptation, and individual outcomes in organizations. *Management Science*, *64*(3), 1348–1364.

Swidler, A. (1986). Culture in action: Symbols and strategies. *American Sociological Review*, *51*, 273–286.

Thornton, P., Ocasio, W., Lounsbury, M. (2012). *The institutional logics perspective: A new approach to culture, structure and process*. Oxford: Oxford University Press.

Tilleman, S. G., M. V. Russo, & Nelson, A. J. (2021). Institutional logics and technology development: Evidence from the wind and solar energy industries. *Organization Science*, *31*(3), 649–670.

Tolbert, P. S., David, R. J., & Sine, W. D. (2011). Studying choice and change: The intersection of institutional theory and entrepreneurship research. *Organization Science*, *22*, 1332–1344.

Tolbert, P. S., & Hiatt, 2010. The shape of things to come: Institutions, entrepreneurs, and the case of hedge funds. *Research in the Sociology of Work*, *21*, 157–182.

Watt, J. M., Derzon, R. A., Renn, S. C., Schramm, C. J., Hahn, J. S., & Pillari, G. (1986). The comparative economic performance of investor-owned chain and not-for-profit hospitals. *New England Journal of Medicine*, *314*, 89–96.

Weber, M. (1958). *The protestant ethic and the spirit of capitalism* (T. Parsons, Trans.). New York, NY: Charles Scribner's Sons.

Wry, T., Lounsbury, M., & M.A. Glynn, M. A. (2011). Legitimating nascent collective identities: Coordinating cultural entrepreneurship. *Organization Science*, *22*(2), 449–463.