Making a Free Market:

Professionals and Populists in the Transformation of U.S. Medicine, 1787-1860

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Abstract

At the start of the nineteenth century, physicians in the United States enjoyed unquestioned authority in the domain of medicine. But less than fifty years later that authority had given way a raucous free market for medical care. To explain the causes and consequences of this striking case of professional collapse, we draw on insights from political sociology. We argue that to maintain its advantage, a dominant profession must defend its cultural authority against rivals and secure institutional support from the state. A dominant profession can lose professional power if challenger occupations mobilize to undermine its cultural authority, or if populist political coalitions mobilize anti-professional sentiments to gain elected office. Our empirical analysis, which covers all states admitted to the Union by 1860, reveals that dynamics of contention, both inside the system of professions and in the wider political arena, can take apart the foundations of professional power.

Keywords: professions, economic change, social movements, political parties, power, historical sociology

JEL Classification: Z13, L84, N31

1. Introduction

We live in uneasy times for the professional class. Technological change, market retrenchment, a loss of public trust, and intrusions by the state all seem to imperil the foundations of professional power. In this article, we aim to shed light on professional decline by analyzing an early case, the collapse of the medical profession in the United States in the nineteenth century. At the beginning of the nineteenth century, U.S. physicians enjoyed unquestioned authority backed by state regulation of medicine. But in the ensuing decades, Americans opened up medicine to anyone who professed expertise in the healing arts, even as European nations imposed training standards for doctors and penalties for unlicensed medical practice (McClelland, 1991; Newman, 1957; Rothstein, 1972; Starr, 1982; Steffen, 1987). New groups of healers, marginal in Europe, flourished in the United States, including Thomsonians, homeopaths, eclectics, physio-medicalists, and hydropaths (Haller, 1994, 2000, 2005; Weiss and Kemble, 1983; Whooley, 2013). "Thus," in the trenchant assessment of one historian of medicine, "did Jacksonian Democrats proclaim their inalienable rights to life, liberty, and quackery" (Shryock, 1947: 262).

To maintain exclusive control over their work, professions must secure cooperation from diverse audiences, including clients, employers, government regulators, and related occupations (Abbott, 1988: 134-142). It follows that the same audiences can breach this compact and challenge a profession's claim of jurisdiction. Studies of professional decline have shown how clients and employers may act as counterweights to limit the economic and social rewards of professionalism (Krause, 1996; Scott et al., 2001; Starr, 1982). In the case of nineteenth-century medicine, Abbott (2005) suggest that opposition to professional licensing was a "hinge" that linked state officials and upstart medical occupations, benefitting both groups (Abbott 2005). Less clear, however, is how heterogeneous audiences can create such hinges in the first place.

To explain why challenges to professional power succeed or fail, we apply insights from political sociology. By investigating how political dynamics can buttress or undermine professional power, we contribute to a growing literature that reframes professions as fields of contestation (e.g., Berman, 2006; Dezalay and Garth, 2002; Liu and Emirbayer, 2016; Medvetz, 2012). We argue that challenger groups from within both the system of professions and the political arena must mobilize their supporters to challenge the cultural authority and institutional protections of a dominant profession. Together professional and political challenges can reinforce each other, transforming professional monopolies into free markets.

Within the system of professions, rival occupations can call into question the cultural authority of the dominant profession, and with it the legitimacy of its monopoly power. Such struggles are a central fact of professional life (Abbott, 1988). In challenging a dominant profession, rival occupations face a collective action problem akin to those faced by insurgent social movements. Like social movements, rival occupations must mobilize their supporters to overcome the resource advantages of more powerful incumbents (Gamson, 1975; Tarrow, 1998; Fligstein and McAdam, 2012). Nineteenth-century medical groups were precocious organizers: they rallied their far-flung membership through periodicals and established educational institutions to bolster their own cultural authority and undermine that of their rivals.

Within the political arena, other movements may arise to curtail the power of dominant professions. Such movements are more likely to succeed when they are part of larger coalitions capable of exerting pressure on officials and electing sympathetic candidates (Bourdieu, 1991: 171-202; Fligstein and McAdam, 2012: 14-17). Populist parties are an important example of such coalitions.[1] Populist parties stand against the entrenched, privileged establishment in the name of

[1]The term meaning of "populism" is contested. We do not enter debates about what kinds of political beliefs should be labelled populist (e.g., Ingelhart and Norris, 2016; Mudde and Kaltwasser, 2017; Müller, 2016).

the common people (although "the people" is often narrowly defined). The elective affinity between populists and opponents of professional power has been especially apparent in the United States, where populist politicians have long expressed skepticism towards all types of exclusive privilege, including professional power (Burrage, 2006; Larson, 1977: 113-135; Starr, 1982: 40-59).

To substantiate these claims, we gathered data on key determinants of professional power of the incumbent and challenger medical groups, as well as the activities of populist parties, from 1787, the year of the Constitutional Convention, to 1860, the year before the outbreak of the Civil War. While previous studies have focused on either a single state, typically New York (Abbott, 2005; Whooley, 2013), or broad national trends (Larson, 1977; Shryock, 1947; Starr, 1982), we leverage the delegation of professional regulation to the state level to analyze changes in professional power across every state admitted to the union before 1860, plus the District of Columbia.

2. The Politics of Professions

We begin by considering the nature of professional power. Put simply, professional power is the ability of a profession to secure clients against rival occupations. Here, we consider two key determinants of such power: cultural authority and institutional protection.[2]

Cultural authority refers to beliefs held by clients and members of rival occupations that a dominant profession has a unique competence in its area of work. A profession's claim of jurisdiction is based on the system of abstract knowledge possessed by its members (Abbott, 1988: 52-7, 98-102; Freidson, 1986; Larson, 1977: 40-52). Dominant professions use their knowledge to

Instead, we follow Laclau (2005) and employ a minimal definition of populism based on the formal structure of populist rhetoric rather than its ideological content.

[2] The distinction between these two phenomena is common in the literature on professions, although there is little agreement on terminology: scholars contrast autonomous and heteronomous means of securing professional authority (Larson, 1977: 67-79), cultural authority and social authority (Starr, 1982: 13-17), the cultural dominance of a profession and the social structure of its settlement with state authorities (Abbott, 1988: 143-211), and intellectual and institutional capital (Bourdieu, 1988: 38-62).

define the appropriate diagnostic categories, rules of inference, and methods of practice in an area of work (Abbott, 1988: 40-58). Clients and rivals defer to their superior judgment because they accept the value of that knowledge. To maintain cultural authority, a profession must both transmit its knowledge to new generations and adapt it to changing circumstances. Professional colleges serve both needs by educating new members and supporting academic research.

Institutional protection refers to symbolic and coercive resources that the state or other powerful actors create to defend the privileges of a dominant profession. Institutional protection derives from regulations that establish conditions for the sale of professional services (Freidson, 1986: 63-88; Larson 1977: 24-25; Timmermans, 2008). Such regulations empower a profession when they prevent rival occupations from competing with it. Professional licensing regulation offers a clear example. Licensing laws establish examinations based on a body of professional knowledge, such as bar exams for lawyers or board exams for doctors, and set penalties for those who practice without a license. Through licensing laws that valorize the dominant profession's knowledge base, states restrict other groups from access to the market for professional services.

Although cultural authority and institutional protection support professional monopolies, they may also provoke opposition by the disadvantaged. We now consider two sources of opposition to professional power, one from among the professions and one from the political arena.

2.1 Challenger Occupations

The most significant opposition to the cultural authority of a profession comes from other occupations. Just as a dominant profession uses knowledge to claim cultural authority, rival occupations can develop alternative systems of knowledge to establish their own cultural authority and challenge that of the dominant profession. Whether challenger occupations can install themselves within the jurisdiction of the dominant profession, or supplant the dominant profession completely, depends in large part on their ability to establish their own professional colleges to

bolster their cultural authority. In this respect, challengers may follow a similar path to power as the very profession they seek to dislodge (Berman, 2006; Larson, 1977).

Challenger occupations must surmount many of the same obstacles as insurgent social movements. Like social movements, they face a powerful opponent in the dominant profession, one which has the support of government authorities, greater organizational strength, and few, if any, reasons to offer concessions to challengers (Gamson, 1975: 14-18; Fligstein and McAdam, 2012; Tarrow, 1998). Under such circumstances, social movement theories predict that challengers will mobilize their supporters to build movement strength (Gamson, 1975: 66-70; Tarrow, 1998; Fligstein and McAdam, 2012). Thus we predict:

> **Hypothesis 1**: The more successful the mobilization efforts of a challenger occupation, the greater its cultural authority.

The cultural authority of challenger occupations has important consequences for the institutional protections of a dominant profession. The mere existence of mobilized and organized challengers calls into question the legitimacy of the dominant profession. Moreover, as challengers press their own claims of cultural authority, commitments by state authorities to defend the dominant profession's privileges may falter. Although state recognition has been viewed as the capstone of the professionalization process (e.g., Wilensky, 1964: 145), there is no reason to believe that states cannot later remove it. And challengers need not displace the dominant profession entirely. Instead, it may be sufficient to allow challengers to compete with the dominant profession on a level playing field. Thus we predict:

> **Hypothesis 2**: The greater a challenger occupation's cultural authority, the more likely a dominant profession is to lose institutional protection.

2.2 Populist Coalitions

Institutional protection hangs on the action of state officials. To obtain protection against rival occupations, professions must assemble political coalitions willing to grant them exclusive

advantages (Bourdieu, 1991: 171-202; Fligstein and McAdam, 2012: 14-17). But other political groups can construct coalitions to block or nullify dominant professions' institutional protections. Indeed, opposition to professional privileges is as old as the professions themselves: periods of revolutionary democratization inspired calls for the abolition of professionals' privileges in eighteenth-century France and nineteenth-century America (Burrage, 2006; Larson, 1977).

Because the privileges afforded to professionals can be powerful symbols of exclusion and entrenched status, populist political parties frequently target them (Burrage, 2006; Larson, 1977: 113-135; Starr, 1982: 40-59). Professional privileges typically benefit a tiny elite with connections to the political establishment, and thus anti-professional sentiments fit well within the broader efforts of populist parties to stand against entrench elites in the name of the people. The more electoral support populist parties, the more power they can exert over legislatures to abrogate a dominant profession's privileges. Therefore we predict:

> **Hypothesis 3**: The greater the support for populist political candidates, the more likely a dominant profession is to lose institutional protection.

Social-movement theory further suggests that the loss of institutional protection will augment challenger groups' cultural authority. The elimination of institutional protection is a clear example of what social-movement theorists call a political opportunity, a change in the political environment that creates incentives for undertaking collective action (Meyer and Minkoff, 2004: 1459; Tarrow, 1998: 85). The loss of institutional protection ends the dominant profession's recourse to the machinery of government. Its absence means that challengers and clients have less reason to defer to the dominant profession's cultural authority, and sends a powerful signal of demand for alternatives to the dominant profession's expertise. We therefore predict:

> **Hypothesis 4**: Following an established profession's loss of institutional protection, challenger occupational groups' cultural authority will increase.

2.3 Summary

Figure 1 illustrates our argument. It shows that opposition to a dominant profession can develop along two paths. First, mobilization by challenger occupations in opposition to the dominant profession will increase challengers' cultural authority (hypothesis 1), which will in turn increase the likelihood that the dominant profession will lose institutional protection (hypothesis 2). Second, greater populist political support will also increase likelihood that the dominant profession will lose institutional protection (hypothesis 3), which in turn will enhance challengers' cultural authority (hypothesis 4). Over time, the loss of institutional protection and challenger cultural authority reinforce one another, transforming the dominant profession's exclusive jurisdiction into a competitive free market.

[Figure 1 about here]

3. The Evolution of U.S. Medicine, 1787-1860

To put our argument in historical perspective, this section chronicles the development of rival medical groups from the Constitutional Convention to the Civil War, as well as their key sources of professional power, medical colleges and state licensing regulation, and their weapons of mobilization, medical magazines. We conclude by discussing trends in electoral politics that intersected with the medical profession.

Throughout the nineteenth century, U.S. medicine was riven by conflict between warring groups of medical practitioners. Scholars refer to these groups as medical sects because, like religious sects, each group held its own distinct, exclusive set of beliefs (Rothstein, 1972: 21-24; Starr, 1982: 95; Whooley, 2013: 1, 46). Struggles among medical sects were nothing less "epistemic contests" (Whooley, 2013) over what constituted valid medical knowledge, how that knowledge was to be applied in treatment, and who was qualified to do so.

3.1 Incumbent Medical Sects

At the end of the eighteenth century, professional power in medicine was the exclusive privilege of a narrow elite of *regular physicians* (Kett, 1968: 102; Rothstein, 1972: 64-72; Starr, 1982: 37-40).[3] Starr (1982: 40) estimates that at the time of the Revolution, no more than 200 men in the colonies held medical degrees, almost all of whom dwelt in Boston, New York City, and Philadelphia. Typically the university-educated sons of affluent families, they possessed cultural authority as men of learning, and political authorities placed them in charge of quarantine inspections and the prosecution of "quack" healers. But for another 3,500 regular physicians, the title "doctor" was a mere courtesy (Starr, 1982: 40). Nearly all lacked a college education, having instead learned their craft through apprenticeship. What little cultural authority they had came from association with elite physicians.

Divisions within the regular profession deepened in the early nineteenth century. For good reason: Prior to the development of the germ theory of disease in the late nineteenth century, regular medicine was largely ineffective in the fact of infections and epidemics, and surgery remained extremely risky. Elite physicians often clung dogmatically to so-called "heroic therapies" like bloodletting and doses of calomel (a compound of the poisonous metal mercury), which produced an immediate – but sometimes fatal – response in patients (Rothstein, 1972: 125-128). Others, particularly those trained in new statistical methods at Parisian clinics, embraced a "medical nihilism" that favored doing nothing more than gently aiding the body's own healing powers with bedrest and a proper diet (Warner, 1998: 283-290). Still others chose to trust primarily in their own judgement and experience (Warner, 1998: 228-245).

Despite their disagreements, strong demand for the healing arts meant that regular physicians continued to multiply throughout the first half of the century. By the eve of the Civil

[3] These practitioners called themselves regular physicians to contrast themselves to their "irregular" rivals.

War, their ranks had swollen to over 55,000, the highest number of doctors per capita of any country in the world at the time (Millard., 1887; U.S. Census, 2006).[4]

Two additional sects of medical practitioners, *dentists* and *pharmacists*, derived their cultural authority from association with regular physicians (Bremner, 1954; Kremers et al., 1963). They saw themselves as inheritors of the same British medical tradition embodied by the elite regular physicians. Their leading members earned degrees in regular medical colleges, and when they set up their own colleges in the 1830s and 1840s, they hired regular physicians to teach classes. It is illustrative that when dentist William T. G. Morton (1819-1868) made the first public demonstration of surgical anesthesia in 1846, he did so before an audience of regular medical faculty, not his fellow dentists (Howe, 2007: 473-474).

3.2 Challenger Medical Sects

The ineffectiveness of the treatments offered by regular physicians created opportunities for other, oppositional medical sects. The earliest were the *Thomsonians,* followers of Samuel Thomson, a self-taught healer, who devised a new system of medicine at the start of the nineteenth century (Haller, 1994, 1997). To Thomson, regular physicians' knowledge was needless mystification and their medicines were dangerous poisons. An ardent believer in the curative powers of nature, Thomson's patented system relied on treatments derived from native plants, such as *lobelia inflata* (Indian tobacco) and red-pepper tonics. His system attracted many disciples, and Thomson commissioned agents to sell his books and found "Friendly Botanical Societies" across the nation.

Thomson's strict prohibitions against deviations from his original principles led to schisms. The most important factions were the *eclectic* or *reformed* followers of Wooster Beach, and the *physio-*

[4] The 1860 Census did not distinguish between regular physicians and members of other sects. We estimated the proportion regular physicians to be approximately 88 percent, based on an 1873 census of the medical profession (Haller, 1994: 164-5).

medical followers of Alva Curtis. The eclectics, true to their name, sought to take the best from every college of medicine (Haller, 1994). Beach rejected Thomson's skepticism towards formal schooling, and in 1826 he opened the first eclectic college, the New York Reformed Medical College. The leader of physio-medicine, Alva Curtis, had been one of Thomson's lieutenants, but he broke with Thomson in 1836 because he wished to systematize botanical medicine into a sophisticated philosophy of harmonies between the vital forces of botanical drugs and patients' bodies (Haller, 1997).

Other medical sects arrived from Europe in the 1820s and won converts of their own, sometimes among regular physicians. Each had its own theories of disease and characteristic treatments. Of these, *homeopathy* was by far the most successful. Founded by Samuel Hahnemann, a German physician disillusioned with regular medicine, homeopathy was based on the maxim *simila similibus curantur,* meaning a disease can be cured by drugs that produce similar effects on a healthy body. Homeopaths rejected the therapies of the regular or "allopathic" physicians in favor of small, highly diluted doses of their own medicines.[5] Although their prescriptions were often little more than pure water, homeopaths demonstrated through careful observation and statistical analysis that their mild drugs led to fewer deaths than the bloodletting and doses of mercury favored by regular physicians (Haller, 2005; Whooley 2013). A student of Hahnemann's, Hans Birch Gram, opened the first homeopathic practice in America in 1825. Others soon followed.

Hydropathy or the *water cure* was imported from Britain by way of Germany. Hydropaths proposed that water, the natural sustainer of life, possessed powerful curative properties (Weiss and Kemble, 1963). The most popular form of water cure was the system of Vincent Priessnitz, an Austrian peasant farmer and autodidact, which involved drinking 20 to 30 glasses of water per day,

[5] Homeopaths called regular physicians allopaths because regulars sought to cure disease with the opposite (ἄλλο or *allos* means "other" in Greek), while homeopaths sought to cure disease with the similar (ὅμοιο or *hómoios* means "like" in Greek).

cold water baths, copious exercise, and the application of wet-sheet packs: the patient was wrapped in a sheet dipped in cold water and four blankets, more covers were added until the patient perspired freely, and then the patient was plunged into a cold bath. Using Priessnitz's system, Joel Shew opened the first water cure in the United States in 1843.

These five sects competed for patients with several smaller ones: phrenologists, Mesmerists, Grahamites, electropaths, and iatroleptic doctors. By the middle of the nineteenth century, challenger medical sects constituted a flourishing medical counterculture that had earned patients' trust and rivaled the regular profession in legitimacy.

3.3 Sources of Cultural Authority: Medical Colleges

The first American medical colleges were King's College of Medicine in New York (founded 1767, later Columbia University College of Physicians and Surgeons), the Medical School of the College of Philadelphia (1765, later University of Pennsylvania School of Medicine), and Harvard Medical School (1782). All three taught regular medicine, modelled on the medical college at the University of Edinburgh, then the most important in Britain (Bonner, 1995: 42-43; Jarcho, 1975). As in Edinburgh, the American colleges were organized within universities, with instruction through lectures and demonstrations. Students were expected to gain practical experience elsewhere, either at hospitals or through apprenticeships. The American colleges differed from Edinburgh, however, in that they did not have exclusive rights to issue medical degrees. This difference would prove to be consequential.

Early in the nineteenth century, a new kind of medical college appeared. Proprietary medical schools were for-profit enterprises that offered medical degrees (Jarcho, 1975; Kett, 1968: 65; Rothstein, 1972: 94-96). Many were little more than diploma mills, although some offered the same curriculum as their nonprofit counterparts (Bonner, 1995: 176-179; Jarcho, 1975; Starr, 1982: 40-44). Because elite regular physicians had no power to suppress new medical schools, the founding of

proprietary schools was limited only by their ability to attract students, teachers, and investors. Indeed, disputes among regular physicians contributed to the proliferation of medical schools, as quarrels between faculty members often led the losers to found rival schools. Even Harvard Medical School was converted into a proprietary institution in 1810, and remained so until reorganized by Charles Eliot in the 1870s (Larson, 1977: 161; Starr, 1982: 114-115). Pharmacists and dentists emulated regular physicians by founding schools, starting in 1825 for pharmacy (Kremers et al., 1963) and 1842 for dentistry (Bremner, 1954). Schools for challenger medical sects also proliferated in the first half nineteenth century: eclectics starting in 1826 (Haller, 1994), physio-medicalists in 1838 (Haller, 1997), and homeopaths in 1835 (Haller, 2005).

Wider access to medical education across all sects opened up medicine to new entrants. The number of American medical colleges exploded after 1800, as Figure 2 shows. By 1860, over 50 incumbent-sect medical colleges held classes in more than two-thirds of all states. The number of eclectic colleges reached its pre-Civil War peak in 1856 at eight, while colleges for homeopaths, physio-medicalists, and hydropaths were still gaining strength in 1860, with six, three, and one, respectively. At the national level, incumbent-sect medical schools outnumbered those challenger-sect colleges by nearly four to one, but in Southern and Western states where regular physicians were scarce, botanical and homeopathic colleges were nearly as common as regular colleges. Even on the frontier, by 1860 as many as two-thirds of all medical practitioners could boast of a medical degree (Lawrence, 2003: 165).

[Figure 2 about here]

3.4 Sources of Institutional Protection: State Licensing Laws

The main form of institutional protection for medical professionals in this era was state licensing laws.[6] In the colonial era, New York and New Jersey invested government officials with the power to issue medical licenses and appoint medical boards to examine physician candidates (Kett, 1968; Rothstein, 1972). After the Revolution, these powers passed to state medical societies. In New York, licensing examinations were left informally to a circle of physicians associated with King's College of Medicine until the Medical Society of the State of New York was chartered in 1794 (Walsh, 1907). And when the Medical Society of New Jersey was chartered in 1776, licensing examinations were one of its official duties (Wickes, 1879). Although they nominally represented all physicians in their state, both were exclusive organizations for elite regular physicians: the New York society in its early years had no members from outside Manhattan, and a small circle of New Brunswick physicians dominated the New Jersey society.

Over the next three decades, more and more states granted licensing authority to regular medical societies. Figure 3 charts the number of states with medical licensing laws between 1790 and 1860. The number rose from two in 1790 to four in 1801, then shot up to 12 in 1820 and peaked at 16 in 1825, when about two-thirds of states had licensing laws. Medical licensing laws gave regular physicians official imprimatur and set legal penalties for unlicensed practice. In most cases, laws permitted only licensed physicians to sue for fees in a court of law, and some states set monetary penalties for practicing medicine without a license, ranging from $5 to $25. (If these fines were levied in 1825, they would equal $118 to $588 in 2016 dollars.) Although such penalties were modest and difficult to enforce, they nevertheless sharpened the distinction between state-sanctioned regular physicians and their rivals.

[6] Other forms, such as laws limiting competition between professionals and *numerus clausus* restrictions on professional school enrollments, did not develop until the late nineteenth century.

[Figure 3 about here]

These early victories for regular physicians would prove to be short-lived. Between 1830 and 1850, state licensing laws were repealed almost as quickly as they had been passed. A warning came in 1827, when Illinois failed to recruit enough members of the local medical community to staff its licensing board (Rothstein, 1972). Three years later, the Indiana board folded for lack of examiners (Rothstein, 1972). In more populous Eastern states, licensing boards were met not with professional indifference, but with public hostility. Here is a typical assessment from 1833:

> *Medicine,* like every useful science, should be thrown open to the observation and study of all…. We should at once explode the whole machinery of mystification and concealment—wigs, gold canes, and the gibberish of prescriptions—which serves but as a cloak to ignorance and legalized murder! (Quoted in Starr, 1982: 56.)

State officials answered complaints against regular physicians by nullifying their licensing privileges or carving out exemptions for other sects. In Georgia, Mississippi, and Ohio, legislators disbanded their state medical societies completely. Although medical societies still existed in most states as private associations, by 1860 they retained licensing power only in New Jersey, North Carolina, and the District of Columbia. On the eve of the Civil War, regular physicians had lost almost all power to impose standards on what had become a raucous free market for medical care.

3.5 Professional Mobilization: Magazines

Like social reform groups during this era, all medical sects, incumbent and challenger, relied on magazines as mobilizing devices (*c.f.* Haveman, 2015: 205-212; Tarrow, 1998: 43-53). Magazines were inexpensive to produce and distribute through the mail, and they circulated more widely than newspapers. Moreover, unlike books or pamphlets, the serial nature of magazines permitted reciprocal relationships among editors, writers, and readers. Editors of medical magazines solicited from readers reports about advances in therapy and news of the profession. Magazines were the most practical way for a medical sect's widely scattered members to connect with each other.

Medical sects frequently carried out their quarrels in print, filling the pages of medical magazines with blistering attacks on other sects (Cassedy, 1983; Whooley, 2013). As one historian notes, the tone of medical journalism "alternated from condescension to sarcasm, from enthusiastic advocacy to bitter invective, all with the aim of discomfiting or defeating medical foes" (Cassedy, 1983: 144). Regular physicians dismissed challenger sects as ignorant and deceitful quacks, pretenders, and charlatans (Whooley, 2013: 73-108). "We hold that it is both difficult and useless to reason with the enthusiastic and credulous believers in any novel system," wrote one regular physician in 1846. "[Such a man] is better fitted for a lunatic hospital than the practice of the healing art (Quoted in Rothstein 1972: 165). In turn challenger medical sects condemned regular physicians for their dangerous treatments. As an example, Figure 4 reproduces an illustration from an 1832 issue of the *Thomsonian Botanical Watchman*, a magazine published under Samuel Thomson's direct supervision. It contrasts the regular physician on the left with the Thomsonian doctor on the right. The regular physician, distinguished by his medical doctorate, membership in a scientific society ("FRS" for Fellow of the Royal Society), and heavy club of calomel (a typical heroic treatment), stands on the steps of inconsistency and drives his patient back into the slough of disease via bloodletting and blows from his club. The voice of reason, center, declares the regular physician "scientific with a vengeance," but directs his attention to the Thomsonian doctor, who lifts his patient up the steps of common sense.

[Figure 4 about here]

Numerous medicals sects published magazines, including ones that did not found medical colleges. The Massachusetts Medical Society (for regular physicians) published the first American medical magazine, the *Medical Papers*, in 1790. As Figure 5 shows, as late as 1820 there were fewer than ten medical magazines in print. All were affiliated with regular medicine. But by 1850, there were over 50 medical magazines, an increase driven primarily by challenger medical sects. The

earliest of these spread the gospel of Thomsonian medicine, followed by magazines for eclectics and physio-medicalists (Haller, 1994, 1997). The first magazine for homeopathy appeared in 1835; by 1860, nearly a dozen in print (Haller, 2005). In the 1840s, journals of hydropathy appeared alongside those devoted to mesmerism, and phrenology (Weiss and Kemble, 1963). From 1830 to 1860, the number of magazines published by challenger sects rivaled or exceeded the number published by incumbent medical sects.

[Figure 5 about here]

3.6 Political Mobilization: Populism

In the nineteenth century, national parties were the primary vehicle for political participation in the United States (Benson, 1961; McCormick, 1966). They commanded high rates of voter participation and intense loyalty, often rooted in regional, ethnic, and religious identities. Presidential campaigns inspired especially intense passions. Far from being the staid affairs of today, presidential campaigns during this period were spectacles that "enabled voters throughout the nation to experience the thrill of participating in what amounted to a great democratic festival" (McCormick, 1966: 350).

The earliest national parties, the Federalists and the Democratic-Republicans, were coalitions of notables with only weak connections to state and local political operations (Benson, 1961; McCormick, 1966). Between 1787 and 1824, the political environment changed dramatically, driven by improvements in communication and transportation, the gradual widening of white male suffrage, a shift to choosing presidential electors by popular vote, and the emergence of professional political operatives (Benson, 1961; Engermann and Sokoloff, 2005; McCormick, 1966). By the 1824 presidential election, Andrew Jackson, a political outsider, was able to win the largest share of votes in a four-candidate race, although he was denied the presidency when the decision was sent to the

House of Representatives. Four years later, Jackson swept into office with a decisive victory over the incumbent, John Quincy Adams.

Jackson's newly founded Democratic Party took an increasingly populist stance during his first term. Although neither Jackson nor his allies had previously displayed populist commitments, they were quick to harness popular discontent with political elites (Wilentz, 2005). Jackson made his crusade against the Bank of the United States the dominant issue of the 1828 election, framing his opposition as a struggle against a dangerous monopoly that held exclusive privileges at the expense of "the people." With Jackson preparing to step down from the presidency in 1840 and the country still reeling from the Panic of 1837, the Democratic Party worked these themes into its national platform, declaring that "every citizen and every section of the country has a right to demand and insist upon an equality of rights and privileges" (Democratic Party National Convention, 1840). The 1848 Democratic platform went even further, adding that "a high and sacred duty is devolved" upon the Democratic Party "to resist all monopolies and exclusive legislation for the benefit of the few at the expense of the many" (Democratic Party National Convention, 1848). Minor parties like the Working Men, the Anti-Masons, and the Free Soilers took up the same call (Benson, 1961: 21-46). Democratic and third-party presidential candidates continued to fan the flames of populism until 1852, when both Democrats and their Whig rivals split along regional lines over the issue of slavery.

In this era of national parties, professional licensing became a matter of political contention. Jacksonian politicians denounced the professions as "licensed monopolies" that held exclusive privileges over matters better left to the common sense of ordinary men (Benson, 1961; Wilentz, 2005). The issue of professional licensing resonated with their base of rural whites, German Lutheran and Irish Catholic immigrants, and religious sects outside the Protestant mainstream (Benson, 1961). Rural whites had little access to medical care besides botanical doctors and German immigrants trusted homeopathic co-ethnics, while hydropaths moved in the same circles as free-

thinkers and spiritualists. In contrast, the Whigs were tied to industrialists and the Protestant establishment, and poorly placed to capitalize on the anti-monopoly spirit. Although the Whigs embraced some aspects of populism, they demurred on the issue of professional licensing.

4. Research Design

4.1 Data Sources and Measures

To analyze relationships among these historical trends, we collected data from 1787, the year of the Constitutional Convention, to 1860, the year before the Civil War broke out. Our data cover all 33 states admitted to the Union by 1860, plus the District of Columbia.

Cultural authority: medical colleges. We gathered data on medical colleges from several sources. The American Medical Association's *Medical Colleges of the United States and of Foreign Countries* (1918) covered regular colleges, but it excluded many challenger colleges, as well as pharmacy and dental colleges. For these, we turned to histories of other medical sects. For eclectic, physio-medical, and homeopathic colleges, we relied on Haller (1994; 1997: 31-61; 2005: Appendix B). For hydropathic colleges, we used Weiss and Kemble (1967: 33-37). For colleges of dentistry and pharmacy, we used surveys by Bremner (1954) and Kremers et al. (1963), respectively. We found no evidence that any other medical sect ever attempted to establish its own colleges in this period.

Seven medical sects founded at least one college before the Civil War: eclectics, physio-medicalists, homeopaths, hydropaths, regular physicians, dentists, and pharmacists. For every state[7] and every year, we counted *the number of medical colleges* affiliated with each sect. Colleges for each challenger sect captured challenger cultural authority, while colleges for incumbent medical sects controlled for incumbent cultural authority. In the analysis of each challenger sect's cultural authority, we controlled for colleges affiliated with other challenger sects.

[7] For the sake of simplicity in exposition, we use the word "state" to refer to all the jurisdictions we study, including the District of Columbia.

Institutional protection: medical regulation. Our main source on state medical licensing laws was Appendices I and II of Rothstein's (1972) study, which provided detailed information on medical licensing statutes and boards. We validated these data with Kett's (1968) less compendious but more granular history of medical licensing law in five states. We coded each state-year observation into one of three categories: *unregulated* if licensing laws had not yet been passed or were "dead letter" law, *regulated* if licensing laws were in place and enforced, and *deregulated* if the state had suspended either the licensing powers of societies or the privileges of licensed practitioners.

Deregulation of the medical profession followed several paths. In some states, courts, governors, or legislatures overturned medical licensing laws *in toto*. In others, they chipped away at licensing authorities' regulatory power by eliminating licensed physicians' privileges or by granting exemptions to other medical practitioners. For cases of gradual deregulation, we coded deregulation conservatively as starting from the first date licensing laws lost their power to restrain regular physicians' rivals. In still other states, licensing laws remained on the books but licensing boards were either not appointed or refused their responsibilities. We coded these states as lapsing back into the unregulated category because state authorities did not take decisive action against the regular medical profession.

Challenger mobilization: medical magazines. Data on medical magazines came from a dataset of all magazines published in America up to the Civil War assembled from nine primary and 100 secondary sources (Haveman, 2015). The data exclude newspapers, pamphlets, almanacs, and occasional tracts. Using histories of magazines and medicine, we were able to identify the affiliation of 402 of the 408 medical magazines published in this period (99%). We dropped all unaffiliated medical magazines from the analysis, as well as 13 magazines affiliated with sects that had no clear stance vis-à-vis regular physicians, such as dietary movements and physical culture advocates. To

measure mobilization, we calculated the *percentage of medical magazines* published by each challenger sect in every state and year. We controlled for total magazines published by all medical sects.

A total of 106 magazines were published by the four main challenger sects (eclectic medicine, physio-medicine, homeopathy, and hydropathy), and 207 by the three main incumbent sects (regular medicine, dentistry, and pharmacy). Another 57 magazines were published by orthodox Thomsonians and 14 by small challenger sects: mesmerism (six magazines), phrenology (three), naturopathy (three), electropathy (one), and iatroleptic medicine (one). The remaining four magazines were about the deaf and dumb, psychiatry, psychology, and veterinary medicine. We classified these four as incumbent-sect magazines.

Populist politics: presidential elections. We measured *populism* with the percentage of votes cast in the most recent presidential election for a populist candidate. In states where the legislature selected Electoral College delegates, we used the percentage of votes cast by the legislature for populist candidates.[8] Based on historical surveys of politics (Benson, 1961; McCormick, 1966; Wilentz, 2005), we classified the following presidential candidates as populists: Andrew Jackson (candidate in 1824, 1828, and 1832), William Wirt (1832), Martin Van Buren (1836, 1840, and 1848), James K. Polk (1844), Lewis Cass (1848), Franklin Pierce (1852), and John Hale (1852). This list include all Democratic Party nominees under what political scientists have come to call the Second Party System (1828-1852), plus Jackson's unsuccessful first run for the presidency in 1826, and the nominees of the Free Soil and Anti-Masonic Parties. We gathered data from the *Historical Statistics of the United States* (U.S. Census Bureau, 2006) and Leip (2016). In the years preceding the rise of populism in American national politics (1824) and after that movement's decline (after 1852), this variable equaled zero.

[8] In South Carolina, the state legislature selected electoral representatives but did not record their vote. Instead, they placed all their support behind the winning candidate. Here, we coded the variable one if the legislature selected a populist candidate and zero otherwise.

Control variables. To discount alternative explanations, the statistical analyses controlled for other determinants of professional power. To capture the expanding market for medical services, we used *gross national product* (in constant 1860 dollars), *state population* (in millions), the percentage of the population in each state living in *urban areas* (those with more than 2,500 inhabitants), and *state land area* (in square miles). To capture scientific progress, we used annual counts of *non-medical colleges* (at the state level) and *patents* (national-level). Data on state population, state area, gross national product, and patents came from the *Historical Statistics of the United States* (U.S. Census Bureau, 2006). Data colleges came from Marshall (1995). Data on urbanization came from Purvis (1995), Moffat (1992, 1996), and the second author's internet searches.

4.2 Methods of Analysis

We analyzed two dependent variables: the number of colleges affiliated with each challenger sect (cultural authority), and whether or not each state eliminated licensing laws that protected regular physicians (institutional protection).

Challenger medical colleges. In this analysis, the data took the form of sect-state-year observations. Each state entered the analysis the first year of statehood, and each sect the first year the first practitioner appeared in the country. Table 1 includes descriptive statistics for each sect. Pooling data on the four sects yielded 3,337 sect-state-year observations.

[Table 1 about here]

This analysis included parameters for magazines affiliated with the focal challenger sect (hypothesis 1), regulation (hypothesis 4), and populism, plus controls for colleges and magazines affiliated with incumbent and other challenger sects, and other determinants of professional power. We included lagged dependent variables because the number of colleges operating in one year is highly correlated with the number of colleges operating in the previous year. For regulation, the reference category is unregulated. We lagged all independent variables one year to reduce

endogeneity, decreasing the number of observations from 3,337 to 3,201. (We introduce additional endogeneity corrections below.)

Since the number of colleges for each group and state and year is overdispersed, we estimated negative binomial regressions (Long, 1997). To control for unobserved period-specific characteristics, we estimated parameters for a baseline polynomial function using natural cubic splines (Beck, Katz, and Tucker, 1998). These results were essentially the same as results for models that included year fixed effects, but estimating the cubic spline parameters was much more computationally tractable. To control for unobserved time-invariant characteristics of states and medical sects, we included fixed effects for region (New England, Mid-Atlantic, South, West), and sect (eclectic, homeopathic, hydropathic, physio-medical).[9] The results should therefore be interpreted in terms of population means.

Medical deregulation. For this analysis, the data took the form of state-year observations, starting with the first year the state was at risk of deregulation, i.e., the first year after state regulation was in place. The dependent variable was set to zero when the focal state regulated medicine and one after its medical licensing law had been abolished or nullified. Each state remained in the analysis until it eliminated medical regulation or 1860, whichever came first. In states where deregulation never occurred we treated the data as right-censored in 1860, and in states where licensing boards abandoned their responsibilities, we treated the data as right-censored the year the board lapsed. We analyzed 456 state-year observations: 444 observations of regulation and 12 of deregulation.

The analysis included parameters for populism (hypothesis 3), challenger-sect colleges (all sects aggregated) (hypothesis 2), and challenger sect magazine share (all sects aggregated), plus

[9] There is insufficient variation to estimate fixed effects for state or sect-state since the number of schools in any state affiliated with each of these challenger sects is typically one or zero.

controls for colleges and magazines affiliated with incumbent sects and other determinants of professional power. We lagged independent variables to reduce endogeneity, reducing the number of observations only from 456 to 452 because we observe all but four states before regulation.

Because deregulation occurred only once per state, we used event history methods, specifically proportional hazard models (Cox, 1972). To control for unobserved period-level factors, we defined the baseline hazard function according to the year of observation. We could not include national-level controls in the analysis because they would be overdetermined. With only one event per state, we cannot control for the unobserved time-invariant qualities of each state, so we included region fixed effects.

Endogeneity. The use of lagged independent variables did not fully eliminate endogeneity. Because deregulation predicts colleges and colleges predict deregulation, both variables may depend on prior levels of the other. A similar problem occurs with magazines because magazines support colleges and colleges support magazines.

In models of challenger colleges, endogeneity largely took the form of selection into levels of x (regulations, magazines) based on previous levels of y (challenger colleges). Adding a lagged dependent variable can reduce bias due to endogenous treatment selection (Vaisey and Miles, 2017). But obtaining consistent and unbiased estimates depends on proper specification of the dynamic response function, so we compared several model specifications to see if they offered improvements over models with the lagged dependent variable (Beck and Katz, 2011).

The relationship between magazines and medical colleges raised additional concerns. For magazines, there may be endogeneity due to *both* treatment selection and the unobserved qualities of medical sects. Therefore, we used the instrumental variable technique, which addresses both sources of endogeneity (Greene, 2003: 378-401). To yield consistent and unbiased parameter estimates for an endogenous variable, an instrumental variable must (1) be correlated with the

endogenous variable, (2) act on the dependent variable only through the endogenous variable, and (3) be uncorrelated with the error term. Miles of postal roads in a state meet these criteria. First, the post office was the main distribution channel for magazines in this era. Miles of postal roads is a statistically significant predictor of magazine market share, net of a raft of controls. Second, the postal system benefitted challenger medical sects only through magazines: miles of postal roads had no effect on the number of medical colleges. Third, challenger medical sects were minor users of the postal system and did not influence postal expansion. Instead, postal expansion was driven by state population, landmass, and urbanization; these also influenced college founding, but we included these as controls in models of medical colleges.

In models of medical deregulation, endogenity takes the form of selection into the hazard set. We cannot deal with this through sample-selection models because we cannot make the necessary assumptions about the error term. We can, however, assess it by examining how the number of challenger sect colleges and levels of populism predict the chances of regulation, i.e., entering into the hazard set in the first place.

5. Results

5.1 Medical Colleges

Table 2 reports negative binomial regressions of the number of medical colleges affiliated with the focal challenger sect. We predicted positive effects for challenger mobilization (hypothesis 1) and medical deregulation (hypothesis 4). To test these predictions, Model 1 includes the percentage of magazines affiliated with the focal sect and the medical licensing regulation variable. Mobilization through magazines is strongly associated with the number of challenger colleges, consistent with hypothesis 1. A 10 percent increase in magazine share for the focal sect increases the expected number of challenger colleges in the following year by 22 percent (exp[1.969/10]=1.22). After medical licensing regulations are eliminated, challenger sects operated

3.75 times as many colleges as before deregulation (exp[0.664]/exp[–0.658]=3.75), and twice as many colleges as states where regulation never existed (exp[0.664]]=1.94), consistent with hypothesis 4.

[Table 2 about here]

The coefficients on regulation may reflect variation in the broader political environment. To assess this alternative explanation, Model 2 adds state-level support for populist candidates. This variable has a modest and non-significant effect: a 10 percent increase in the populist vote share increased the expected number of challenger colleges by 3 percent (exp[0.286/10]=1.029). This suggests that medical licensing laws—and not the political environment—dissuaded challenger sects from founding colleges or made state governments less likely to grant to those colleges charters.

Model 3 adds controls for the activities of other medical sects, including regular physicians. Incumbent-sect colleges have a positive effect on challenger-sect colleges, perhaps because incumbent-sect colleges are proxies for economic and technological factors that promote the founding of all medical colleges. To probe this possibility, model 4 introduces controls for economic and technological development. The coefficient for incumbent-sect colleges becomes negative and significant, supporting this interpretation.

Three other results are of interest in model 4. First, the coefficient for regulation declines dramatically, suggesting that economic development may explain increases in medical regulation. Second, the two coefficients for other medical colleges are negative and statistically significant. The cultural authority of one sect diminished if other sects were stronger, indicating that medical sects competed with each another. Finally, medical magazines published by any sect had no significant effects. It appears that the dominance of a given sect explains its cultural authority, not the overall level of mobilization activity.

5.2 Medical Deregulation

Table 3 reports the event history analysis of medical deregulation. Above, we predicted positive effects of challenger cultural authority (hypothesis 3) and support for populist candidates (hypothesis 2). Model 1 tests both predictions. The effect of challenger-sect medical colleges is large – every additional college increased the likelihood of abrogating medical regulations by a factor of ten (exp[2.345]=10.4) – but only marginally significant (p= 0.07). This result provides only weak support for hypothesis 2. We find stronger support for hypothesis 3. Every additional 10 percent support for populist candidates increased the hazard of deregulation by 38 percent (exp[3.234/10]). A state where populist candidates enjoyed two-thirds support was over seven times more likely to eliminate licensing regulations the following year than a state where populists had no support at all (exp[3.234×.0.67]/exp[3.234×0]=7.73).

[Table 3 about here]

We assessed the robustness of these results by adding controls. Model 2 adds the percentage of magazines published by all challenger sects. The coefficient is small and non-significant, suggesting that this mobilizing device played no direct role in medical deregulation. Model 3 adds the number of incumbent-sect colleges, as well as the total number of magazines published. These do no substantively change the results. The coefficient on the challenger-sect colleges increased in magnitude, however. Model 4 adds controls for economic and technological development. None played a significant role in the deregulation process, but coefficients on challenger-sect colleges and support for populist candidates both become larger and more significant, suggesting that differences between states may partly masked those relationships. These results support both hypotheses 2 and 3.

5.3 Endogeneity Concerns

To test the specification of the dynamic response function in the analysis of challenger colleges, we followed Beck and Katz (2011) and compared the lagged dependent variable (LDV) model to an autoregressive distributed lag (ADL) model and an ADL model with a second lag on the dependent variable (ADLLDV2).[10] Table 4 reports negative binomial regressions with parameters for LDV, ADL, and ADLLDV2 response functions. Model 1 (LDV) replicates model 4 in Table 2, but drops the two national-level parameters because they create estimation problems as we add additional lagged variables. Model 2 (ADL) introduces additional t-2 lag parameters for the focal independent variables. (The independent variables were already lagged once; using unlagged and t-1 variables did not change the results.) Exception for the magazine variable, Wald tests do not support the inclusion of additional lags. Thus, there is no evidence that the effects of changes in the levels of regulation or populism propagated over time, except through their first-order influence on the dependent variable. To test for higher order autocorrelation, model 3 adds an additional t-2 lag parameter for the dependent variable (ADLLDV2). These results are consistent with the LDV specification, with the exception of the magazine variable.

[Table 4 about here]

As noted above, the magazine variable raises additional endogeneity concerns. To deal with these, we estimated Poisson instrumental variable regressions (also known as exponential conditional mean models with endogenous regressors) using a generalized method of moments estimator (Wooldridge, 2010). Model 4 in Table 4 (GMM) replicates model 4 in Table 2, but drops the lagged dependent variable (which complicates the estimation of an instrumental variable) and the two national-level parameters (which introduce estimation problems similar to those encountered with

[10] Beck and Katz (2011) suggest using both Lagrange multiplier and Wald tests for model specification. Because these are nonlinear models, we cannot use Lagrange multiplier test for serial correlation of the errors, but Wald tests remain valid.

the extended lag specifications). The results are largely unchanged. Model 5 (GMM-IV) uses the instrumental variable (postal roads) to reduce endogeneity in the magazine share variable. Again, the results remain largely unchanged. In fact, the coefficient for magazines is larger than in the non-instrumented model. It is not straightforward to estimate Hausman test statistics on these models, but Hausman tests on equivalent GLM models indicate that the IV model is an improvement over the non-IV model.

It was not possible to estimate proportional hazard models predicting the adoption of medical regulation because there was little overlap between either challenger-sect colleges or populist candidates and incidents of regulation. As Figure 3 makes clear, all but one episode of regulation occurred before 1826, the year of the first populist presidential candidate, Andrew Jackson, and the first challenger-sect medical college, Wooster Beach's New York Reformed Medical College. Efforts to regulate medicine failed until 1859. This temporal separation supports the idea that treatment endogeneity should bias coefficients on challenger-sect colleges and populist political support downwards: the absence of a strong medical challenger or populist party may have been necessary condition for undertaking the regulation of medicine.

6. Conclusions

We conclude by summarizing our empirical findings and placing them in relation to the sociology of professions. The first finding concerns the role of power within the system of professions. We showed that mobilization by rival occupations can challenge the cultural authority of a dominant profession when that mobilization contributes to organizational strength of rival occupations. Such challenges may be possible when and where rival occupations assert their own cultural authority with knowledge bases independent of those of dominant professions. In the case of nineteenth-century medicine, the ineffectiveness of regular physicians' treatments made any such challenge a grave threat. After the Civil War, homeopaths and eclectics lobbied for their own

licensing boards and institutional protection in parallel with the regular profession (Rothstein, 1972). But dentists and pharmacists chose to cooperate with the regular profession, in effect becoming subordinate to regulars. Further research is necessary to determine the conditions under which rival occupations choose to cooperate or to struggle against the dominant profession.

The second finding concerns the effects of electoral politics on the professions. We saw that in additional to power dynamics within the system of professions, external political conditions also determined the fate of the dominant profession. Populist political campaigns bundled the issue of professional licensing together with a host of other anti-monopoly sentiments (Larson, 1977: 113-135; Starr, 1982: 40-59). Where populists received more votes, governments were more likely to overturn or nullify institutional protections granted to the dominant profession. The populist coalition did not prove to be long-lived: it faded away after just 30 years. But while the populist coalition existed, it exercised a tremendous influence on the course of U.S. politics. Today, in light of the current populist resurgence in Europe and the United States, populist anti-professionalism can no longer be regarded as a mere historical oddity (Ingelhart and Norris, 2016; Mudde and Kaltwasser, 2017; Müller, 2016). Future research should attend to the effects of populist coalitions – and the political environment more broadly – on the balance of power within the system of professions.

Finally, although moments of linkage between professions and politics may be rare, their effects can be transformative. The elimination of regulations and the appearance of organized competitors to regular medicine were necessary conditions for the creation of an open market for medical care. Each factor developed out of independent causal sequences: populism had no direct effect on the cultural authority of challenger medical sects, nor did challenger medical sect mobilization appear to influence the course of deregulation. But as challenger medical sects and debates over medical regulation developed in tandem, we found evidence that their effects

reinforced one another, producing a sustained national campaign that transformed the landscape of medical care. Under such circumstances, it seems that the power of professions can be fragile indeed.

REFERENCES

Abbott, Andrew. 1988. *The System of Professions: An Essay on the Division of Expert Labor*. Chicago: University of Chicago Press.

Abbott, Andrew. 2005. Linked ecologies: states and universities as environments for professions. *Sociological Theory*, 23: 245-274.

American Medical Association. 1918. *Medical Colleges of the United States and of Foreign Countries*. Washington, DC: American Medical Association.

Beck, Nathaniel, Jonathan Katz, and Richard Tucker. 1998. Taking time seriously: time-series-cross-section analysis with a binary dependent variable. *American Journal of Political Science*, 42: 1260-1288.

Beck, Nathaniel, and Katz, Jonathan. 2011. Modeling dynamics in time-series-cross-section political economy data. *Annual Review of Political Science*, 14: 331-352.

Benson, Lee. 1961. *The Concept of Jacksonian Democracy: New York as a Test Case*. Princeton: Princeton University Press.

Berman, Elizabeth Popp. 2006. Before the professional project: success and failure at creating an organizational representative for English doctors. *Theory & Society*, 35: 157-191.

Bonner, Thomas. 1995. *Becoming a Physician: Medical Education in Britain, France, Germany, and the United States, 1750-1945*. New York: Oxford University Press.

Bourdieu, Pierre. 1988. *Homo Academicus*. Stanford: Stanford University Press.

Bourdieu, Pierre. 1991. *Language and Symbolic Power*. Cambridge: Cambridge University Press.

Bremner, Maurice David Kaufman. 1954. *The Story of Dentistry, Rev. 3rd Ed.* New York: Dental Items of Interest Publishing Company.

Burrage, Michael. 2006. *Revolution and the Making of the Contemporary Legal Profession: England, France, and the United States*. Oxford: Oxford University Press.

Cassedy, James. 1983. The flourishing and character of early American medical journalism. *Journal of the History of Medicine and Allied Sciences,* 38: 135-150.

Cox, David. 1972. Regression models and life tables. *Journal of the Royal Statistical Society, Series B*, 34: 187-220.

Democratic National Convention. 1840. 1840 Democratic Party Platform. (http://www.presidency.ucsb.edu/ws/?pid=29572)

Democratic National Convention. 1848. 1848 Democratic Party Platform. (http://www.presidency.ucsb.edu/ws/?pid=29574)

Dezalay, Yves, and Bryant Garth. 2002. *The Internationalization of Palace Wars: Lawyers, Economists, and the Contest to Transform Latin American States*. Chicago: University of Chicago Press.

Engermann Stanley, and Kenneth Sokoloff. 2005. The evolution of suffrage institutions in the New World. *The Journal of Economic History,* 65: 891-921.

Fligstein, Neil, and Doug McAdam. 2012. *A Theory of Fields*. New York: Oxford University Press.

Freidson, Eliot. 1986. *Professional Powers: A Study in the Institutionalization of Formal Knowledge*. Chicago: University of Chicago Press.

Gamson, William. 1975. *The Strategy of Social Protest*. Homewood IL: Dorsey Press.

Greene, William H. 2003. *Econometric Analysis*. New York: Prentice-Hall.

Haller, John. 1994. *Medical Protestants: The Eclectics in American Medicine, 1925-1939*. Carbondale, IL: Southern Illinois University Press.

Haller, John. 1997. *Kindly Medicine: Physio-Medicalism in America, 1836-1911*. Kent, OH: Kent State University Press.

Haller, John. 2005. *The History of American Homeopathy: The Academic Years, 1820-1835*. Birmingham, NY: Haworth Press.

Haveman, Heather. 2015. *Magazines and the Making of America: Modernization, Community, and Print Culture, 1741-1860*. Princeton, NJ: Princeton University Press.

Howe, David Walker. 2007. *What Hath God Wrought: The Transformation of America, 1815-1848*. Oxford: Oxford University Press.

Ingelhart, Ronald, and Pippa Norris. 2016. Trump, Brexit, and the rise of populism: economic have-nots and cultural backlash. *HKS Working Paper No. RWP16-026*. (https://ssrn.com/abstract=2818659)

Jarcho, Saul. 1975. The legacy of British medicine to American medicine, 1800-1850. *Proceedings of the Royal Society of Medicine,* 68: 737-744.

Kett, Joseph. 1968. *The Formation of the American Medical Profession*. New Haven: Yale University Press.

Krause, Elliott. 1996. *Death of the Guilds: Professions, States, and the Advance of Capitalism, 1930 to the Present*. New Haven: Yale University Press.

Kremers, E., G. Urdang, and G. Sonnedecker. 1963. *History of Pharmacy, 3rd Edition*. Philadelphia, PA: J.B. Lippincott

Laclau, Ernesto. 2005. *On Populist Reason*. London and New York: Verso.

Larson, Magali Sarfatti. 1977. *The Rise of Professionalism: A Sociological Analysis*. Berkeley, CA: University of California Press.

Lawrence, Susan. 2003. Iowa physicians: legitimacy, institutions, and the practice of medicine, part 1: establishing a professional identity, 1833-1886. *The Annals of Iowa,* 62: 151-200.

Leip, David. 2012. *Atlas of U.S. Presidential Elections*. Available online at: http://uselectionatlas.org/.

Liu, Sida, and Mustafa Emirbayer. 2016. Field and ecology. *Sociological Theory* 34: 62-79.

Long, J. Scott. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage.

Marshall, Gloria. 1995. The survival of colleges in America: A census of four-year colleges in the United States, 1636-1973. Unpublished PhD dissertation, Stanford School of Education.

McClelland, Charles. 1991. *The German Experience of Professionalization: Modern Learned Professions and Their Organization from the Early Nineteenth Century to the Hitler Era.* New York: Cambridge University Press.

McCormick, Richard. 1966. *The Second American Party System: Party Formation in the Jacksonian Era.* Chapel Hill: University of North Carolina Press.

Millard, Perry. 1887. The propriety and necessity of state regulation of medical practice. *Journal of the American Medical Association*, IX: 492.

Medvetz, Thomas. 2012. *Think Tanks in America*. Chicago: University of Chicago Press.

Meyer, David, and Debra Minkoff. 2004. Conceptualizing political opportunity. *Social Forces*, 82: 1457-1492.

Moffat, Riley. 1992. *Population History of Eastern US Cities and Towns, 1790–1870.* Metuchen, NJ: Scarecrow.

Moffat, Riley. 1996. *Population History of Western US Cities and Towns, 1850–1990.* Lanham, MD: Scarecrow.

Mudde, Cas, and Cristóbal Rovira Kaltwasser. 2017. *Populism: A Very Short Introduction.* Oxford: Oxford University Press.

Müller, Jan-Werner. 2016. *What is Populism?* Philadelphia: University of Pennsylvania Press.

Newman, Charles. 1957. *The Evolution of Medical Education in the Nineteenth Century*. London: Oxford University Press.

Purvis, Thomas. 1995. Population of American urban centers, 1760–1800 (table). In *Revolutionary America 1763 to 1800*, 253. New York: Facts on File.

Rothstein, William. 1972. *American Physicians in the Nineteenth Century: From Sects to Science*. Baltimore: Johns Hopkins University Press.

Scott, W. Richard, Martin Ruef, Peter Mendel, and Carol Caronna. 2001. *Institutional Change and Healthcare Organizations: From Professional Dominance to Managed Care*. Chicago: University of Chicago Press.

Shryock, Richard. 1947. *The Development of Modern Medicine: An Interpretation of the Social and Scientific Factors Involved*. New York: A.A. Knopf.

Starr, Paul. 1982. *The Social Transformation of American Medicine*. New York: Basic Books.

Steffen, Monika. 1987. The medical profession and the state in France. *Journal of Public Policy*, 7: 189-208.

Tarrow, Sidney. 1998. *Power in Movement: Social Movements and Contentious Politics*. Cambridge: Cambridge University Press.

Timmermans, Stefan. 2008. Professions and their work: Do market shelters protect professional interests? *Work and Occupations*, 35: 164-188.

U.S. Census Bureau. 2006. Historical Statistics of the United States. Washington, DC: U.S. Census Bureau.

Vaisey, Stephen, and Miles, Andrew. 2017. What you can—and can't—do with three-wave panel data. *Sociological Methods & Research,* 46: 44-67.

Walsh, James. 1907. *History of the Medical Society of the State of New York*. New York: Medical Society of the State of New York.

Warner, John. 1998. *Against the Spirit of System: The French Impulse in Nineteenth-Century American Medicine*. Princeton: Princeton University Press.

Weiss, Harry, and Howard Kemble. 1967. *The Great American Water-Cure Craze: A History of Hydropathy in the United States*. Trenton: Past Times Press.

Whooley, Owen. 2013. *Knowledge in the Time of Cholera: The Struggle over American Medicine in the Nineteenth Century*. Chicago: University of Chicago Press.

Wickes, Stephen. 1879. *History of Medicine in New Jersey and of its Medical Men, from the Settlement of the Province to A. D. 1800*. Newark: Martin R. Dennis.

Wilensky, Harold. 1964. The professionalization of everyone? *American Journal of Sociology*, 70: 137-158.

Wilentz, Sean. 2005. *The Rise of American Democracy: Jefferson to Lincoln*. New York: Norton.

Wooldridge, Jeffrey. 2010. *Econometric Analysis of Cross Section and Panel Data, Second Edition*. Cambridge, MA: The MIT Press.

Table 1: Descriptive Statistics

State-level variables	Min	Max	Mean	Std. dev.	N
Medical colleges					
No. of eclectic colleges	0	3	0.126	0.410	1,000
No. of homeopathic colleges	0	1	0.054	0.227	1,025
No. of hydropathic colleges	0	1	0.018	0.132	562
No. of physio-medical colleges	0	2	0.097	0.305	750
No. of all incumbent colleges	0	8	0.910	1.281	1,711
No. of all challenger colleges	0	5	0.155	0.571	1,711
Medical magazines					
Eclectic magazines (%)	0	1	0.031	0.120	1,000
Homeopathic magazines (%)	0	1	0.027	0.116	1,025
Hydropathic magazines (%)	0	1	0.012	0.080	562
Physio-medical magazines (%)	0	1	0.021	0.092	750
No. of all incumbent magazines	0	16	0.697	1.682	1,711
No. of all challenger magazines	0	11	0.330	1.092	1,711
Other variables					
Populism (%)	0	1	0.255	0.297	1,711
Regulation	0	1	0.259		1,711
Deregulation	0	1	0.155		1,711
State population (millions)	0.012	3.900	0.547	0.539	1,711
State area (100,000 miles^2)	0.001	2.624	0.345	0.328	1,711
State urban population (%)	0.005	0.936	0.149	0.170	1,491
No. of colleges (non-medical)	0	21	3.124	3.221	1,711
Years of statehood	0	73	30.780	20.507	1,711
National-level variables	**Min**	**Max**	**Mean**	**Std. dev.**	**N**
GNP ($1,000s)	0.153	3.972	1.120	1.161	74
Patents (1,000s)	0	4.588	0.575	0.912	74

Table 2: Negative Binomial Models of Challenger Medical Colleges

Model	1	2	3	4
No. of colleges	2.616***	2.606***	2.135***	1.095+
	(0.243)	(0.246)	(0.347)	(0.653)
Medicine regulated	-0.658*	-0.633*	-0.705*	-0.258
	(0.306)	(0.305)	(0.337)	(0.324)
Medicine deregulated	0.664***	0.661***	0.366**	0.354*
	(0.119)	(0.119)	(0.137)	(0.150)
Magazines (%)	1.969***	1.987***	2.204***	2.380***
	(0.314)	(0.315)	(0.316)	(0.316)
Populism (%)		0.286	0.145	0.578
		(0.306)	(0.322)	(0.783)
No. of colleges (incumbent)			0.182**	-0.168*
			(0.068)	(0.071)
No. of colleges (other challengers)			0.140	-0.347*
			(0.103)	(0.134)
No. of magazines (incumbent)			-0.009	-0.058
			(0.049)	(0.039)
No. of magazines (all challengers)			0.056	0.024
			(0.059)	(0.050)
State population (millions)				1.264***
				(0.247)
State area (100,000 miles^2)				1.649**
				(0.572)
State urban population (%)				0.625
				(0.574)
No. of colleges (non-medical)				0.082*
				(0.037)
Years of statehood				0.070**
				(0.022)
GNP ($1,000s)				0.266
				(0.630)
No. of patents (1,000s)				-0.084
				(0.463)
Overdispersion	-0.921***	-0.935***	-1.284**	-4.057
	(0.252)	(0.250)	(0.392)	(14.587)
Constant	-1.701	-3.600	-12.620	-7.121
	(8.292)	(8.898)	(10.509)	(21.537)
Cubic spline parameters?	Yes	Yes	Yes	Yes
Regional and group fixed effects?	Yes	Yes	Yes	Yes
N observations	3,201	3,201	3,201	2,965
Log-pseudolikelihood	-475.41	-475.19	-465.00	-436.04

Notes: Robust standard errors are in parentheses below point estimates. + indicates $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$, two-tailed tests.

Table 3: Proportional Hazard Models of Medical Licensing Deregulation

Model	**1**	**2**	**3**	**4**
No. of colleges (challenger)	2.345+	2.115	2.917+	5.021*
	(1.277)	(1.316)	(1.499)	(2.326)
Populism (%)	3.234**	3.253**	3.351**	4.458**
	(1.248)	(1.190)	(1.238)	(1.623)
Challenger magazines (%)		0.991	1.600	-0.271
		(0.943)	(1.004)	(1.561)
No. of colleges (incumbent)			0.332	0.988
			(0.332)	(0.815)
No. of medical magazines			-0.311	-0.059
			(0.377)	(0.540)
State population (millions)				-0.351
				(3.023)
State area (100,000 miles^2)				-8.488
				(5.868)
State urban population (%)				-1.806
				(3.279)
No. of colleges (non-medical)				-0.230
				(0.517)
Years of statehood				-0.049
				(0.039)
Regional strata?	Yes	Yes	Yes	Yes
N observations	452	452	452	405
Log-pseudolikelihood	-19.168	-18.740	-17.994	-13.377

Notes: Robust standard errors are in parentheses below point estimates. + indicates $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$, two-tailed tests.

Table 4: Additional Models of Challenger Medical Colleges

Model	**1**	**2**	**3**	**4**	**5**
Model type	**LDV**	**ADL**	**ADLLDV2**	**GMM**	**GMM-IV**
No. of colleges	1.099*	1.074***	1.220***		
	(0.536)	(0.155)	(0.218)		
Medicine regulated	-0.280	-0.967*	-0.971*	-0.067	-0.424
	(0.323)	(0.386)	(0.386)	(0.337)	(0.626)
Medicine deregulated	0.329*	0.096	0.084	0.664***	0.688***
	(0.148)	(0.557)	(0.555)	(0.144)	(0.180)
Magazines (%)	2.382***	1.786***	1.695***	3.004***	4.737**
	(0.308)	(0.429)	(0.436)	(0.302)	(1.441)
Populism (%)	0.796	0.820	0.906+	1.050***	1.284***
	(0.525)	(0.506)	(0.525)	(0.276)	(0.385)
No. of colleges, t-2			-0.207		
			(0.213)		
Medicine regulated, t-2		0.639	0.654		
		(0.450)	(0.450)		
Medicine deregulated, t-2		0.164	0.206		
		(0.552)	(0.551)		
Magazines, t-2 (%)		0.966*	1.111*		
		(0.446)	(0.450)		
Populism, t-2 (%)		0.035	-0.055		
		(0.567)	(0.572)		
No. of colleges (incumbent)	-0.148*	-0.148*	-0.147*	-0.238***	-0.292**
	(0.072)	(0.071)	(0.070)	(0.068)	(0.092)
No. of colleges (other challengers)	-0.312*	-0.318**	-0.340**	-0.910***	-0.934***
	(0.126)	(0.113)	(0.113)	(0.093)	(0.120)
No. of magazines (incumbent)	-0.069+	-0.069*	-0.069*	-0.076*	-0.047
	(0.035)	(0.033)	(0.032)	(0.032)	(0.044)
No. of magazines (all challengers)	0.034	0.040	0.033	0.053	0.038
	(0.049)	(0.047)	(0.047)	(0.040)	(0.046)
State population (millions)	1.237***	1.265***	1.290***	1.810***	1.818***
	(0.228)	(0.202)	(0.208)	(0.198)	(0.231)
State area (100,000 miles^2)	1.603**	1.504**	1.486**	1.654**	1.117
	(0.556)	(0.502)	(0.504)	(0.603)	(1.101)
State urban population (%)	0.599	0.743	0.811	1.875**	2.477*
	(0.551)	(0.518)	(0.519)	(0.608)	(1.185)
No. of colleges (non-medical)	0.073*	0.075*	0.083**	0.225***	0.242***
	(0.036)	(0.033)	(0.032)	(0.030)	(0.040)
Years of statehood	0.069**	0.066***	0.065***	0.075***	0.070***
	(0.021)	(0.018)	(0.018)	(0.017)	(0.019)

Overdispersion	-5.185	-13.971+	-13.392+		
	(35.905)	(8.366)	(6.870)		
Constant	-7.766	-7.603	-8.087	4.075	7.481
	(10.636)	(11.558)	(11.576)	(10.462)	(11.864)
Instrumental variable?	None	None	None	None	Postal roads
Cubic spline parameters?	Yes	Yes	Yes	Yes	Yes
Regional and group fixed effects?	Yes	Yes	Yes	Yes	Yes
N observations	2,965	2,846	2,846	2,965	2,965
Log-pseudolikelihood	-436.018	-427.522	-426.969		

Notes: Robust standard errors are in parentheses below point estimates. + indicates $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$, two-tailed tests.

Figure 1: Summary of the Argument

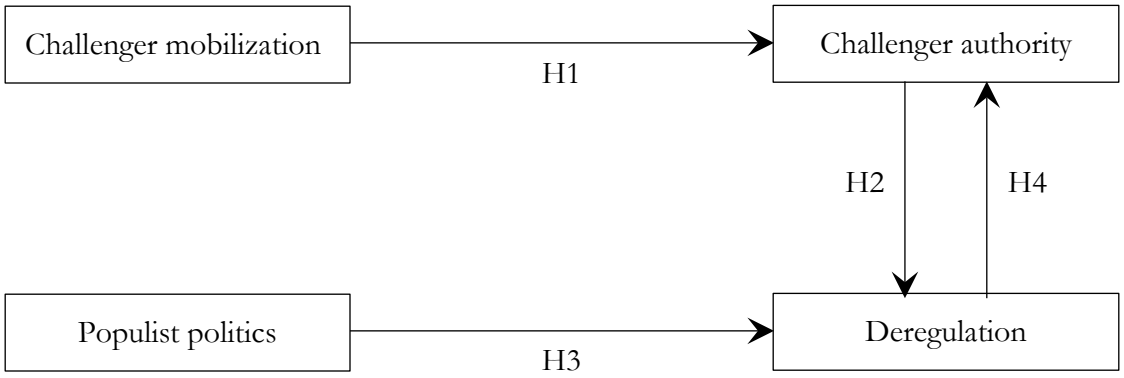

Figure 2: The Number of Medical Colleges by Sect, 1790-1860

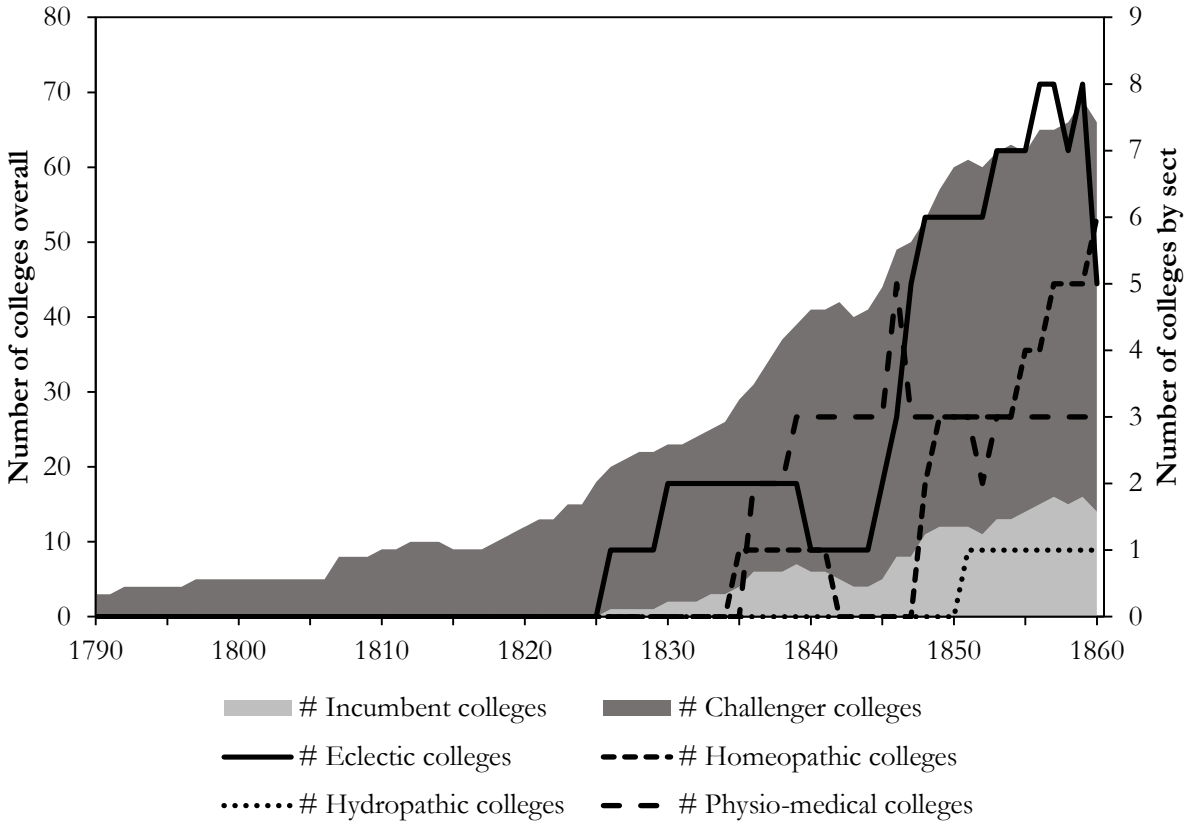

Figure 3: The Number of States Regulating Medicine, 1790-1860

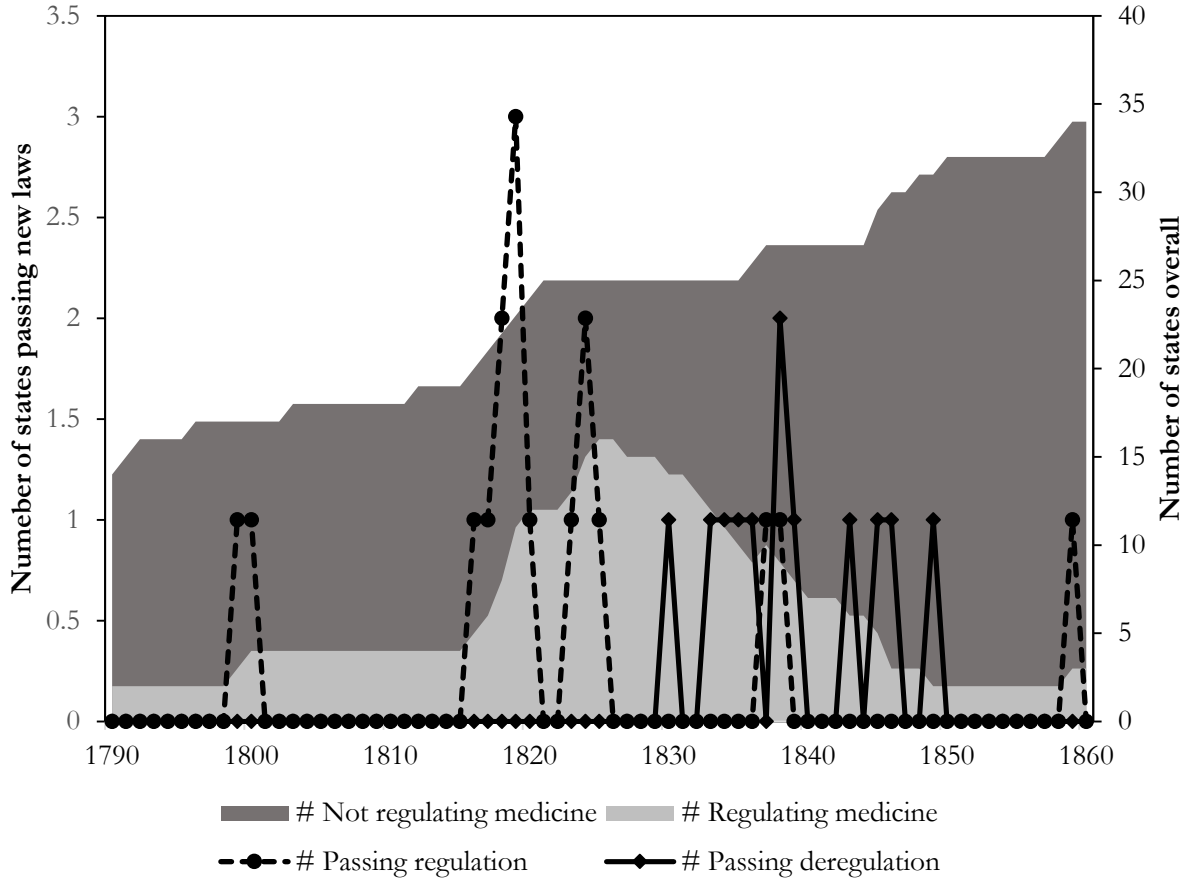

Figure 4: The Difference between the Regular and Thomsonian Systems of Medicine

Source: *The Thomsonian Botanic Watchman* (1832: 8)

Figure 5: The Number of Medical Magazines by Sect, 1790-1860