Tempering Temperance? A Contingency Approach to Social Movements' Entry Deterrence in Scottish Whisky Distilling, 1823 - 1921

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ABSTRACT

What makes social movements successfully deter entry in contested industries? We develop a contingency framework explaining how their success depends on the internal fit between movements' private and public politics strategies with the tactics of mass and elite mobilization. We also highlight the importance of how these tactics fit with external conditions like the cognitive legitimacy of the industry and industry countermobilization. When movements rely on a private politics strategy to condemn an industry in the eyes of the public, social movement mass will be decisive. Alternatively, when movements use a public politics strategy to push for regulatory intervention, the mobilization of elites is crucial. We develop our understanding of external contingency factors by exploring how cognitive legitimacy residuals from local ancestral populations affect both mass-driven private politics and elite-driven public politics, and how national-level industry countermobilization efforts affect elite-driven public politics strategies. We test these ideas in a historical study of the Scottish whisky distilling industry during the rise of temperance movements (1823-1921). We contribute to the social movements literature by showing how movements' entry deterrence in contested industries depends on the internal fit between their strategies and mobilization tactics, as well as on their engagement with external contingencies.

INTRODUCTION

Social movements target what they see as morally tainted practices and organizations, ultimately affecting the development of selected industries (Ingram, Yue, & Rao, 2010; Yue, Rao & Ingram, 2011; Hiatt, Grandy, & Lee, 2015). Through attempts at incumbent delegitimization by making their audiences adopt negative frames about their products or conduct (Chong & Druckman, 2007; Poletta & Ho, 2006), social movements frequently manage to restrict incumbents' behavior and interfere with their ability to reach coveted outcomes (Hiatt, Sine, & Tolbert, 2009; King & Pearce, 2010). For example, movement protests have been found to affect store openings (Ingram et al., 2010; Yue et al., 2011), the stock price (King & Soule, 2007), and communication (Hiatt et al., 2015) of contested firms. Furthermore, by making their audiences adopt positive frames about organizational alternatives and by drawing resources away from contested incumbents, social movements can make entrepreneurial entry more attractive in nascent alternative industries they support. Social movement-fueled entrepreneurship in nascent sectors competing with contested incumbent industries has been observed in settings as diverse as wind energy, 'green' buildings, and grass-fed meat (Carlos, Sine, Lee, & Haveman, 2018; Georgallis & Lee, 2015; Pacheco, York, & Hargrave, 2014).

Yet, contested incumbent industries can also become hotbeds of entrepreneurship themselves, however, when incumbents learn how to evade or rebut societal contestation (Hiatt & Carlos, 2019; Roulet, 2020). The U.S. medical cannabis industry, for example, has long struggled with the issue that the cannabis trade is federally illegal, such that entrepreneurs in the industry cannot even open checking accounts or deduct business expenses from their tax bills. Once the industry managed to repaint its contested public image in tones stressing pain management and patients' rights (Lashley & Pollock, 2019), however, conditions favoring entrepreneurial entry

improved. Likewise, Italian grappa makers long found it hard to find an attractive market for their products, because consumers and societal actors saw the beverage as a "coarse spirit" that was only consumed and often abused by marginalized groups in society like peasants and mountain dwellers. But when an ambitious industry incumbent managed to establish the subcategory of "premium grappa," albeit after multiple failed attempts, the prospects for incumbent entrepreneurship in this industry improved too (Delmestri & Greenwood, 2016). Irrespective of what we have learned about alternative and incumbent entrepreneurship in contested societal sectors in recent years, however, we still know surprisingly little about how opposing social movements can leverage internal and external contingencies to durably curtail entrepreneurship and impose limits on the growth of contested industries. We therefore ask: how does social movement opposition affect entrepreneurial entry in contested industries?

To address this question, we consider the different contingencies influencing social movements' deterrence of entry into contested industries. We start with the internal fit between social movements' contestation strategies and the primary tactics they employ. Previous literature has differentiated between public and private politics strategies (Reid & Toffel, 2009). Some movements seek to leverage the political apparatus, and push for restrictive regulation of contested industries using a *public politics* strategy (Georgallis, Dowell, & Durand, 2019). Social movements then "bring […] the conflict into institutional channels" (Pichardo, 1995: 23). Other movements employ a strategy of *private politics*, which does not rely on seeking legal intervention, but on getting the public to "internalize" the movement's concerns (Lenox & Easley, 2009: 45; Weber, Heinze, & DeSoucey, 2008), and to convince them to withdraw support from the industry (Piazza & Jourdan, 2018; Diestre & Santaló, 2019). Tactically, research has shown that social movements' ability to affect industries depends on their membership base (Johnson, 2008), but

there are key differences in the constituencies social movements mobilize (Yue, Wang & Yang 2019; McLeod & Hertog, 1992). We conjecture that mass support helps movements engaging in private politics to sway the public into adopting a frame they seek to impose upon a targeted industry (Sine & Lee, 2009). Mass support for an opposing social movement increases the social cost of entering a contested industry, since entrepreneurs face higher disapproval when acting in contradiction to a majority opinion (Clemente & Roulet, 2015). Contrastingly, the strength of public politics movements likely depends on them mobilizing members of the political elite, who can help them inscribe their agenda into regulation (Moore, 1979; Jenkins & Eckert, 1986), thus creating a hostile regulatory environment for prospective entrants.

In addition, external contingencies at the local and national level play a crucial role in shaping social movements' ability to influence markets (York & Lenox, 2014). Scrutinizing such contingencies can help further our understanding of how mass-driven private politics and elite-driven public politics deter entrepreneurial entry. A first external contingency is the degree to which aspiring members of the contested industry can draw upon pre-existing stocks of cognitive legitimacy at the local level (Baum & Shipilov, 2006; Lander & Heugens, 2017). To say that an industry enjoys cognitive legitimacy is to say that it has reached a certain level of inevitability, in that "there is little question in the minds of actors" that it "serves as the natural way" of addressing societal needs or expectations (Hannan and Carroll 1992: 34). Specifically, new may capitalize on the cognitive legitimacy left behind by *ancestral populations*—comparable organizations occupying a similar geographic locale in earlier times (Dowell & David, 2011). Cognitive legitimacy may make it harder for social movements to get their negative framing adopted by the public (Tolbert, David & Sine, 2011). A second external contingency involves the national-level efforts of industries to undertake *countermobilization* initiatives (de Bakker, Den Hond, King, &

Weber, 2013; Kraemer, Whiteman, & Banerjee, 2013). While prior studies have shown that industry countermobilization can further the interests of targeted firms by counteracting the disruptive effects of social movements' public politics strategies (Marquis & Lounsbury, 2007; Waldron, Navis, & Fisher, 2013), we argue that such efforts also indirectly encourage new entrepreneurial entry by making the regulatory environment appear less hostile in the eyes of prospective entrants.

We empirically explore how these contingencies shaped the effects social movements had upon entry in the historical context of the Scottish whisky distilling industry between 1823 and 1921. We were able to explore two distinct social movement strategies this far back in time because the two most influential Scottish temperance organizations historically used divergent strategies and chose different tactics. We test how social movement mass and elite mobilization affect entry, and how the local- and national-level contingencies of ancestral populations and industry counter-mobilization moderate these effects. Because the social movements in our case target a historically well-established industry, we were able to collect population and covariate data collected from the founding of the first legal distillery in Scotland in 1680 onwards. This feature of our dataset allows us to examine how the local presence of ancestral populations impedes social movements' negative effects upon entry in a contested industry (Dowell & David, 2011; Greve & Rao, 2012).

Prior studies have introduced a variety of social movement tactics (Hiatt et al., 2015), demonstrated how social movements can affect resource availability (Pacheco et al., 2014), and depend on elite patronage (Jenkins & Eckert, 1986). We build on these studies to see how these different elements combine and interact to explain social movements' ability to deter entry in contested industries. Our paper contributes to the social movement literature by furthering our understanding of how contestation affects entrepreneurial entry in established, incumbent-

dominated industries. Our study is among the first to explain under what conditions social movements can curb entrepreneurial opportunities in such settings. Our contingency approach identifies the fit between two internal contingencies: whether social movements engage in private or public politics strategies (Reid & Toffel, 2009) and whether they tactically rely on elite or mass support (McLeod & Hertog, 1992). We also further unpack how these internal mechanisms fit with the key external contingencies of local-level cognitive legitimacy imbued by ancestral populations and national-level industry counter-mobilization.

THEORETICAL FRAMEWORK AND HYPOTHESES IN CONTEXT

Social movements are known to affect entrepreneurship (Meek, Pacheco & York, 2010; Tolbert et al., 2011; Vedula, Doblinger, Pacheco, York, Bacq, Russo, & Dean, 2021) and to adapt their positioning to new industries (Pacheco et al., 2014; York & Hargrave, 2014). They influence the emergence of new and alternative industries because they "facilitate access to information and guide attention", and "confer legitimacy, induce demand, and participate in the establishment of industry infrastructure" (Georgallis & Lee, 2015: 1-2). Social movements can also make markets more attractive by providing impetus to entrepreneurial ventures using a different core technology (Georgallis & Lee, 2020; Rao, 2008; Tolbert et al. 2011). In contrast, social movements can also precipitate the decline of industries judged to be at odds with their values (King & Pearce, 2010). For example, social movements have been shown, in targeted industries, to delegitimize incumbent firms (ibid), harming their stock price (King & Soule, 2007) and communications (Hiatt, Grandy, & Lee, 2015), curtailing their expansion (Ingram et al., 2010), and ultimately provoking their failure (Hiatt, Sine, & Tolbert, 2009). Prior research on social movement contestation has mostly focused on the delegitimizing of incumbent firms (King & Pearce, 2010; Yue et al., 2011).

Yet, contested incumbent industries can also become a breeding ground for entrepreneurs (Lashley & Pollock, 2019), especially when they are munificent and fast growing (Lane, 2000). When entry is socially constrained, the influx of new firms and new stakeholder groups might make those markets potentially attractive to diverse organizations (Hiatt & Carlos, 2019; Roulet, 2020). However, we know very little about how and what type of effects social movements have on such attractiveness, and more generally on entry. A greater focus on these issues has the potential to offer a deeper understanding of how initially contested industries such as pornography (Lane, 2000), medical marihuana (Lashley & Pollock, 2019), and low-status spirits (Delmestri & Greenwood, 2016) may attract entrepreneurs despite facing hostile social conditions and opposing social movements. Inversely, addressing this question can also help understand what makes social movements successful at limiting the growth of contested industries. We address this gap by focusing on how social movements can create an environment that deters entrepreneurial entry in established, yet contested, industries.

The Contestation of the Whisky Distilling Industry in Scotland

The earliest local populations of whisky distilleries in Scotland can be traced to the sixteenth century, when modifications to the distilling process resulted in a more palatable product, as well as increased efficiency in the production process. From this point onwards whisky became the national beverage in Scotland (Hume & Moss, 2000), and began to be produced on a larger scale. Whisky distilling soon became the primary source of income for many farmers, related industries, and towns. Considered a birthright among Scottish landowners and farmers, whisky distilling originally was a small-scale affair, organized around the croft or farmyard, aimed at servicing the local market, and adding value to the outputs of farms and crofts, which were often just sufficient to provide sustenance (Townsend, 2004). This long social history of whisky distilling and its

economic function in many households and in Scottish society at large made that it acquired a certain measure of inevitability or taken-for-grantedness, thus imbuing distilleries with cognitive legitimacy (Baum & Shipilov, 2006; Shepherd & Zacharakis, 2003).

The scale of production throughout the seventeenth century remained small, with most stills averaging between 20 and 50 gallons (Hume & Moss, 2000). This started to change with the founding of the first large-scale distillery in 1680, called Ferintosh, which is by convention seen as the start of modern whisky distilling. Whisky distilling now no longer was a crofter's side business, but became a core activity, deliberately established to make profit from the distilling of spirits. Over the next century, many existing distilleries remained illegal, especially in the Highlands of Scotland, as they did not have production licenses. Many distilleries failed years before the important Excise act of 1823 came to pass, through which the government sought to increase its hold on the industry to secure excise revenues (Hume & Moss, 2000). Even disbanded distilleries continued to bestow cognitive legitimacy upon the industry, however, as they remained as fixture in the collective memories of many locales. Alfred Barnard, a journalist who visited all then-active legal distilleries in 1885, described the collective memories present in many communities. For example, in his description of the Rosebank Distillery founded in 1894 in Falkirk, Stirlingshire (p. 323) he notes: *"The works have been connected in some way with distilling for nearly a century, for, in the year 1798, the statistical records inform us that a Distillery was carried on by the Messrs. Stark Brothers at that date"*.

The year 1823 is a critical turning point in our narrative and analyses. With the passing of the Excise Act, many illegal distilleries turned legal, and many new distilleries were founded, spurring the growth of whisky distilling. Although the Excise Act did much to destroy the illicit trade, it also increased the fear in Scottish society of alcohol abuse and related crime, which

became known as the 'Curse of Scotland.' As the Edinburgh contributor to the Statistical Account of Scotland of 1834 (Sinclair, 1834), noted: *"There is room for improvement with not a few on the score of intemperance, which is the crying evil among the Scottish population."* This was a historical turn for whisky distilling, and social movements began to challenge the industry.

Internal Contingencies: Fit between Social Movement Strategies and Tactics

Social movements garner attention to issues of interest to trigger change (Johnson, 2008), but they may attract support from different groups of constituents to serve their purposes (Martin, 2008). One of the main distinctions identified in the literature concerning social movement strategies entails the difference between a *public* and a *private* politics approach (Reid & Toffel, 2009; Hiatt et al., 2015). A public politics approach relies on actively influencing legislative bodies to impose regulatory control over contested organizations (Tarrow, 1998; Reid & Toffel, 2009). Tactically, social movements using this approach have to mobilize constituents who have the power to shape the regulatory context (Georgallis et al., 2019). Because of its legislative powers, the state is often an important lever for social movements using a public politics strategy (Walker, Martin, & McCarthy, 2008). Movements pressurize the state and regulatory authorities to either restrict the rights and privileges of incumbents or to make entrepreneurial entry less attractive (Tarrow, 1998). Animal protection movements, for example, attempt to convince politicians and members of parliament to defend their cause, and push for regulation, in exchange for their votes (Garner, 2016).

Conversely, social movements using a private politics strategy tactically rely on mass mobilization, which involves drawing the attention of broader audiences to an issue (Hiatt et al., 2015). Prior research on private politics has focused on boycotts, protests, and rallies (Ingram et al., 2010) as instruments to "inspire changes" in practices (Reid & Toffel, 2009: 1157). This

strategy relies on informational competition (Baron, 2003), or a struggle through which social movements aim to make the public adopt a specific frame for an issue (Chong & Druckman, 2007; Poletta & Ho, 2006). A private politics approach thus has the objective of getting the public to internalize the social movements' perspective (Lenox & Easley, 2009). To the extent that this perspective is normative (Reid & Toffel, 2009), it is likely to have implications for how the public approaches an industry or a product (Hiatt et al., 2009; Vedula et al., 2021). Movements using a private politics strategy can either privilege general contestation of an industry (Hiatt et al., 2015) or more specifically build upon moral arguments (e.g., Reid & Toffel, 2009). PETA campaigns against fast-food chains, for example, were focused on diffusing a negative frame around animal cruelty to drive customers away (Waldron, Navis, Aronson, York, & Pacheco, 2019).

A Private Politics Approach to the Contestation of Scottish Whisky Distilling

Private and public politics strategies require different membership bases to make entry into a contested industry less attractive (cf. Wang & Piazza, 2016; Wang, Piazza, & Soule, 2018). We theorize that mobilizing the masses will be more beneficial to movements engaging in private politics, while elite mobilization is more useful to movements employing a public politics strategy.

Social movements need a sizeable membership base to generate visibility for their claims (Bitektine & Haack, 2015), which is the ultimate driver of the sway they hold over markets and industries (Sine & Lee, 2009). It matters especially when social movements are targeting the general perception of an industry, when mass mobilization is necessary to shift the public opinion against a practice (Clemente & Roulet, 2015). Movements with larger membership base are better able to draw attention to a social problem because of the perceived support for their cause (Johnson, 2008). Greater social movement mass thus makes entrepreneurial entry less attractive by raising costs for anybody who decides to oppose them (Zald & Berger, 1978). A broader base

of enlisted constituents increases the saliency of the negative framing propagated by the social movement, which can drive potential entrepreneurs away from the contested market by undermining the structures and siphoning off the resources needed for successful entry (Meek et al., 2010; Pacheco et al., 2014). Market entry would then also be at odds with apparently dominant "beliefs, norms and assumptions", which constitute the framing advocated by the social movement (Reid & Toffel, 2009: 1159). Greater movement mass also implies having to challenge a larger group of opponents and being put in a minority (McLeod & Hertog, 1992). A broad membership base, or *social movement mass*, is thus seen as an important resource for social movements employing private politics to delegitimize an organizational form (Sine & Lee, 2009). To aspiring entrepreneurs, the cost of social disapproval will increase with the mass of the opposing social movement.

In our context, although social reformers preaching against drinking had already emerged in the mid-18th century, anti-drink views only became widely held around the 1820s. Initial temperance activity was not very successful, but by the late 1830s the fortunes of the temperance movement changed due to rapid industrialization and the negative effect of lower-class workers' drinking habits on productivity. Temperance societies sprung up throughout Scotland, and their widespread membership made them influential societal actors. To improve their own efficacy, many of the existing temperance and total abstinence societies, among which the Western and Eastern Scottish Temperance Society, joined together to form the Scottish Temperance League (STL) in 1845 (Couling, 1862).

The STL used a private politics approach to shift norms and beliefs around alcohol consumption using "platform, pulpit, and press". The STL relied on mobilizing mass support (Zald & Berger, 1978), engaging in an informational competition to make their negative framing of

whisky dominant among the Scottish populace (Baron, 2003) The STL's perspective was also promoted by the Church of Scotland and in religious communities. In terms of press, the STL mainly relied on articles and print publications (Hume & Moss, 2000). Education involved temperance lessons delivered from platforms and through the press. In 1898 alone, for instance, the STL organized 2300 lectures and sold an estimated 16,000 temperance volumes and 430,000 tracts (Blocker, Fahey, & Tyrrell, 2003). The STL is thus an example of a social movement using a private politics strategy and relying on mass mobilization tactics to advocate a moral frame (Reid & Toffel, 2009): they argued for the benefits of temperance both on behalf of individuals' spiritual salvation and of the benefits accruing to society (Paton, 1976). Their argumentation included the living conditions and social environment that precipitated the situation, and how abstinence would remedy these societal woes. Additionally, the STL sought to negatively frame all those who were involved in the whisky trade (King & Pearce, 2010; Bartley & Child, 2014) as well as whisky as a product:

> *"Whisky-drinking is, without doubt, the bane of home and social life in Scotland at the present day. Our cities, towns, villages, and even hamlets, all suffer severely from the delusive drug, while rich and poor alike encourage and sustain its consumption, […]. As a natural consequence, there is continually flowing from our Scottish Whisky-drinking system, an appalling harvest of wasted human lives, entailing upon thousands of the population severe poverty, wretchedness, disease, and premature death"* (Cameron, 1898, as quoted in *The League Journal,* Scottish Temperance League, 1898).

Normative restraint by the broader public, not legislation, was supposed to manufacture the "*armour within*" (Logan, 1983: 67), and drive people away from whisky as a product and as a trade. In sum, the ability of a social movement like the STL employing a private politics strategy

to negatively affect entrepreneurial entry in a contested field depended on its tactical use of mass mobilization.[1] See Hypothesis 1:

Hypothesis 1: The greater the mass of a social movement engaging in a private politics strategy, the stronger its negative effect on entrepreneurial entry.

A Public Politics Approach to the Contestation of Scottish Whisky Distilling

Under certain circumstances, the backing of *social elites*, defined as "a small social group that occupies the command posts of key societal institutions" (Yue, 2015: 1961), can be critical to social movement contestation (Jenkins & Perrow, 1977). When social movements choose a public politics strategy, they need to obtain access to individuals who can help translate their claims into the policy arena (Pichardo, 1995). Politicians tend to endorse social movements' claims when they deem them to be morally right or when doing so positively influences their chances of reelection (Burstein & Linton, 2002). Elected officials can directly shape the institutional conditions favoring a movement's claims (Moore, 1979; Jenkins & Eckert, 1986), not only by passing relevant legislation (Johnson, 2008), but also by enforcing regulations that were previously passed against the targeted industry. We therefore expect the tactic of *elite mobilization* to be crucial to social movements using a public politics strategy. In relation to entrepreneurial entry, the enlisting of elite members by a social movement signals future contestation in the legislative arena and possibly the passing of more stringent regulations in the future, which weakens the attractiveness of a contested industry to potential entrants.

A public politics strategy was also used to contest the Scottish whisky distilling industry. A small minority of STL temperance leaders had a different perspective on how to combat the

[1] We also acknowledge the existence of a potential link between mass and elite mobilization: in this case, religious elites might influence members of the public to join the STL, thus broadening its membership base. We explore this possibility empirically, and unpack it in our findings section.

trade as evidenced in the Abstainers Journal (Scottish Temperance League, 1855: 117): *"it was with deep regret, mingled with surprise, that we read a few days ago, the report of a speech delivered at Alloa by a most intimate friend of our own, in which sentiments were advanced at variance with what we believe to be correct. […] The agents of the Scottish Temperance League have for years been going about delivering lectures and circulating tracts, and has any one fire of any distillery been put out? No. It is vain to [..] argue against the use of alcoholic stimulants. [The League] can effect little unless it receives an impulse from enlightened legislation."* Because of this dispute over strategy, a group of members favoring public over private politics formed the Scottish Permissive Bill & Temperance Association (SPBTA) in 1858 (Winskill, 1892).

The objective of the SPBTA was to push for a legal ban on all alcoholic beverages, thus limiting the attractiveness of entrepreneurial entry into the industry, and possibly banning it altogether, by modifying the legal framework surrounding the field (Georgallis et al., 2019). SPBTA members believed that a climate of self-interest and normative apathy would bring about social disaster (Logan, 1983) and needed to be addressed through coercive legislative action rather than through moral suasion. In fact, they believed that "*things which were morally wrong could never be politically correct*" (Logan, 1983: 280).

The SPBTA sought to "*aid, to the extent of our ability, the local magistrates [local political arena] and the imperial parliament [national political arena] in suppressing the licensing system, and establishing the criminal character of the manufacture and sale of intoxicating liquors. And we do hereby sympathise with all, in every place, who labour by legal enactment to put an end to them"* (Robertson, 1850, as quoted in Winskill, 1892: 35). They built their case carefully by integrating physiological, psychological, and pathological research findings into their arguments, which their elite members used to influence political decision-making. Relying on the persuasive

power of scientific arguments, they framed drink as a toxic or narcotic substance with addictive properties, which required clear regulation for the sake of society. The SPBTA furthermore sought to hold the industry accountable for generating societal inequalities, advocating that the accumulation of wealth in the hands of a select few large industrialists was another societal threat requiring regulation. According to the SPBTA, the licensing system favored highly placed members of society, especially landlords and distillery business owners, to the detriment of everyone else in Scotland. They framed the licensing system as a form of social control, allowing the rich to suppress the poor and deprive them of self-determination (Logan, 1983).

The SPBTA thus relied on a public politics strategy in that it attempted to propagate its cause using regulatory means (Reid & Toffel, 2009; Georgallis et al., 2019). Elected officials form an elite that can "influence institutionalized channels" (Yue, 2015: 1691) to enact a more or less favorable social, regulatory, and economic environment facing aspiring entrepreneurs. Tactically, the SPBTA's ability to deter entrepreneurial entry thus depended on the inclusion of members of the political elite in their ranks (Moore, 1979; Picardo, 1995). Greater control over regulatory and enforcement bodies through the mobilization of elites at both the local (e.g., Councilors, Provosts, and Judiciaries of the Peace) and national (Members of Parliament) levels signals future contestation in the legislative arena and suggests the possibly of passing more stringent regulation in the future, thereby reducing the attractiveness of a contested industry to potential entrants.[2] See Hypothesis 2:

Hypothesis 2: The greater the degree of political elite mobilization by a social movement engaging in a public politics strategy, the stronger its negative effect on entrepreneurial entry.

[2] We acknowledge the existence of a potential link between masses' support for a social movement's cause and political elite mobilization, since support of the masses is critical to politicians' (re)election (Burstein & Linton, 2002). We approach this possibility empirically and explore it in our findings section.

External Contingencies and Entrepreneurial Entry Deterrence

While we expect social movements using either a private politics or a public politics strategy to curb entrepreneurial entry into contested fields, provided that they rely on fitting mobilization tactics, their impact might be reduced by external contingencies. Socio-cultural determinants in general (Reid & Toffel, 2009), and local- and national-level environmental conditions in particular, might impact social movements' ability to affect entrepreneurial entry (York & Lenox, 2014). We theorize the role of two such contingencies: ancestral populations imbuing an industry with cognitive legitimacy, and incumbent countermobilization endowing it with sociopolitical legitimacy (Aldrich & Fiol, 1994).

Ancestral Populations, Cognitive Legitimacy, and Entry Deterrence: The cognitive legitimacy of organizational forms is usually linked to the density of an organizational population (Baum & Shipilov, 2006; Lander & Heugens, 2017). In their infancy, emerging industries have low density and are not yet considered legitimate. Over time, however, as the number of representatives of the new industry increases and population density is on the ascent, it begins to obtain the quality of inevitability or taken-for-grantedness amongst local and directly exposed audiences (Meyer & Rowan, 1977; Carroll & Hannan, 2000). While some organizational populations build up their own cognitive legitimacy, others inherit it from locally preexisting populations. As evidenced by Greve and Rao (2012), newly founded organizations can 'inherit' such taken-for-grantedness from their predecessors, even decades after the latter have exited the scene. Local communities often possess collective memories of predecessor organizations, such that new populations "are often built upon the ashes of prior populations" (Dowell & David, 2011: 826).

Ancestral populations are linked to successor organizations through several forms of collective memories (Greve & Rao, 2012). First, there can be a direct link between different organizational generations when individuals leave one organization to start a new organization later. Alternatively, industry involvement can be passed down in a family over generations. One example is John Johnston, who was the owner of Lagavulin distillery in 1816, and whose son founded Laphroaig. A second path emerges when a community's history is so much intertwined with an organizational form that it has created "collective theories, stories and material artifacts" (Greve & Rao, 2012: 641) that jointly forge a local culture. For example, as Barnard (1883: 278) notes on the folklore surrounding Ballechin Distillery, Ballinluig, Perthshire: *"The burns, or small streams, which rise in the peat mosses and bog of Ballechin moor, under the shade of the Fergan range of hills, fall into the Tay, and are associated at every secluded bend and shady corner with the smuggling bothy, where illicit distillation was carried out on extensively in olden times. (…) The career of [a local smuggler] is a record of unbroken triumph; his last distillation was sold in Leith, and was conveyed thither in a canopied cart, containing a caretaker muffled up as a patient (with an infectious disease), who managed thus to escape the prying curiosity of the exciseman, and succeeded in disposing of the Whisky at a high price."* Third, organizations may reuse material or symbolic parts of earlier organizations that once occupied the same locale (Barnett, 1997), which may act as resource endowments (Kroezen & Heugens, 2019). Distilleries such as Cambusbarron, Highland Park, or Rieclachan all have roots reaching back to previously demised distilleries that once stood on the same premises. Collectively held memories of these earlier distilleries instantaneously provide subsequent distilleries with cognitive legitimacy (Ruef, 2000), as the organizational form has locally never lost its taken-for-granted character.

While mass-driven private politics and elite-driven public politics raise the perceived cost of entry for new entrepreneurs, it is unclear whether collective memories and the associated cognitive legitimacy can make it easier or harder for both strategies to gain traction in locales with abundant ancestral populations. On the one hand, if those collective memories mostly bring back the negative labelling an industry carried in the past, they might also have a negative effect upon its contemporaneous evaluation (Aranda, Conti, & Wezel, 2020). Concretely, collective memories might be filled with negative experiences in that ancestral organizational presence might be associated with social woes like public drunkenness and domestic violence. The values that have historically defined contested industries can then become resources to be drawn upon by stakeholders seeking to challenge the industry's legitimacy (Galvin, Ventresca, & Hudson, 2004). Social movements can then tap into these memories to mobilize local counterforces supporting the negative framing they seek to put forward. Under certain circumstances, ancestral populations might therefore well reinforce the attenuating impact of social movements using mass-driven private politics or elite-driven public politics strategies upon entrepreneurial entry.

On the other hand, however, memories of earlier populations might also act as a shield protecting industry incumbents from social movements' contestation efforts. While the STL's private political strategy was to upset the economics of whisky production by uprooting distilleries from their embeddedness in long-established traditions and widely shared beliefs, this strategy might have been less effective in locales where whisky distilling was a well-established industry and a common source of economic opportunity (Logan, 1983). Second, social movement contestation touched the very fabric of communities on the users' side: consumption of whisky was a widely accepted practice and a deeply ingrained social habit. In fact, heavy drinking was an accepted way of life: *"there was a Bacchanalian stamp about everyday life and conversation"*

(Strang, quoted in King, 1979: 4). This well-anchored perception of whisky as part of daily social life was diametrically opposed to the frame advocated by the STL. In this sense, the STL's private political strategy might have been slowed down by the cognitive legitimacy local ancestral populations imbued in descendant organizational populations (Suchman, 1995; Bitektine & Haack, 2015; Hoefer & Green, 2016), thus strengthening their association with deeply ingrained values, beliefs, and the Scottish way of life more broadly.

Similarly, we would also expect ancestral populations to shield the industry from social movements using a public politics strategy. The SPBTA first sought to pass more stringent regulation and subsequently attempted to enforce it by mobilizing members of the political elite. We would expect aspiring entrepreneurs to anticipate the consequences of such regulatory attempts and perhaps avoid subsequent entry. We hypothesize that the presence of ancestral populations would make this threat appear less pressing: the cognitive acceptance in a local community of whisky distilling would make it less likely that the local populace would support politicians seeking to restrict this customary practice. Subsequently, politicians would be unlikely to push for legislation if this would result in the local population withdrawing its support in subsequent elections on account of the attack on well-anchored social practices. Aspiring entrepreneurs would thus be less likely to fear a deterioration of the political climate in locales where distilling was deeply ingrained in local traditions and customs. We opt for this second perspective in our theorization, and formulate the following Hypothesis 3:

> *Hypothesis 3: In counties with a large ancestral population, the negative effects of social movement contestation through both through local elite-driven public politics and mass-driven private politics on entrepreneurial entry will be weaker.*

Incumbent Countermobilization and Entry Deterrence: National-level incumbent countermobilization seeks to undercut social movement efforts in the political sphere through lobbying efforts (Meyer & Staggenborg, 1996). Countermobilization provides aspiring entrepreneurs with greater assurance that more favorable regulatory frameworks as well as direct political support might be available in the future (Tolbert et al., 2011). Incumbents can also fight opposing elites by enlisting elite support for their own cause. They can often count on norms of class solidarity and work through inside channels because their owners are already members of the capitalist class who operate in similar social circles as the nation's political elite (Useem, 1980, 1982; Mizruchi, 1989). We argue that countermobilization is especially useful for countering social movements relying on an elite-driven public politics strategy.

Much of the history of the contestation of the whisky trade played out in the national legislative arena. The initial response of the trade to social movement pressures was slow and originated locally (Cooke, 2015). Two of the earliest examples of regional countermobilization involved the Glasgow & District Licensed Trade Defence Association, founded in 1863, and the Dundee Wine, Spirit, and Beer Trade Protection Association, founded in 1864. The former represented "*the licensed trade, which included publicans, brewers, distillers and those in licensed trades generally*" (University of Glasgow subject description). Locally oriented, these associations did not have much influence on Parliament, the arena where the SPBTA "*exercised much of their influence*" (Cooke, 2015: 136). In 1879, these local associations joined forces under the umbrella of the Scottish Licensed Trade Defence Association (SLTDA). Its members paid capitation grants, which were used to finance coordinated action and representation at the national level, thereby trying to offer a counterbalance against the SPBTA's national public political actions.

The SLTDA was not the only vehicle distillers used to protect themselves. Across Scotland, various Scottish Whisky Associations (SWASS) sprang up. In 1865 in the Lowlands, the Scotch Distillers' Association was formed by the six largest patent still (or grain) distillers. In 1874, the malt distillers likewise formed representative bodies. Distillers "north of the Grampians" formed the North of Scotland Malt Distillers' Association, while those in the West, South, Campbeltown, and Islay also formed their own associations in that same year (Hume & Moss, 2000; Weir, 1975). The main reason for banding together, as noted in the minute books of the trade associations, was that *"they could press for reform of the excise laws"* (Weir, 1975:2). Excise duties and the public political activities of the SPBTA were considered to be the two main threats to the trade and the distillers' prosperity. Regarding the SPBTA, Lord Roseberry said in the House of Lords in 1908 (as quoted in Weir, 1975: 35): *"the temperance party (...) are engaged in a strife to the death (...) with the trade"*. As noted by Weir (2004: 147): *"Doubts about the effectiveness of the trade's existing representative bodies led to the formation of the centralized, homogenous body in London, the seat of the Government, which will be capable of adequately voicing the opinions and defending the interest of all Scotch and Irish whisky distillers."*

The whisky associations relied on their strong ties with the upper levels of the Conservative party to block the efforts of the SPBTA. In 1885, they waged a successful campaign and stopped a proposed duty increase. Similarly, when the Chancellor of the Exchequer Lloyd George suggested significant increases in duties in 1909, a joint deputation of malt and grain distillers presented a petition in which it read (Weir, 1975: 37): *"The duty on spirits is already heavy compared to that on other alcoholic liquors and falls unduly upon Scotland. The whisky industry is apart from agriculture and fishing the only industry of any importance in your petitioners' district and the prosperity of the North of Scotland depends largely upon it. The distilleries provide*

a valuable outlet for home grown barley as they use more than half of the whole barley crop grown in Scotland when it is suitable for distilling." While the SPBTA was founded to serve the interests of its incumbent members (Waldron et al., 2019), the signal that they would protect the interests of the industry clearly carried over to aspiring entrants. See Hypothesis 4:

> *Hypothesis 4: In counties with stronger incumbent countermobilization, the negative effect of social movement contestation through national-level elite-driven public politics on entrepreneurial entry will be weaker.*

DATA AND METHODS

Sample

We modeled the annual number of foundings of whisky distilleries in all Scottish counties between 1823 and 1921. This time window is bracketed by two important events. In 1823 the Excise Act was passed, making it easier for entrepreneurs to enter the field legally. In 1922, the STL and the SPBTA amalgamated to form the Scottish Temperance & No License Union, thus blurring the tactical boundaries that previously separated both social movements (Wang et al., 2018). We examined our hypotheses at the county level, thus drawing the geographical boundaries of the analysis in such a way as to allow for the possibility of competition among similar types of organizations (Carroll & Wade, 1991; Hannan & Carroll, 1992). While the window of our primary analysis commences in 1823, we comprehensively measured the rise of ancestral populations from 1680 onwards. In the early years, but continuing well into our observation window, much of the distilling was done for local markets, and whisky was drunk straight from the still (Townsend, 2004). Especially the illicit distilleries transported locally: *"whisky barrels were lashed to the*

backs of horses and ponies and carried in the dead of night to towns and villages, with sacks of barley or malt carried back to ensure the production of the next batch" (Townsend, 2004: 22).

For information about distillery foundings and failures, we primarily draw on Hume and Moss (2000), who documented founding and failure dates for all known distilleries. This data is complemented by other whisky industry records, such as those compiled by Udo (2006), Smith (2002), and Townsend (2004), who likewise provide a historical catalogue of Scotland's legal and illegal whisky distilleries. We hand-collected the data for our independent and control variables by coding archival accounts, mostly yearbooks, census reports, and ledgers, from the Glasgow University Archives and from the National Archives of Scotland, housed in Edinburgh. For data on temperance movements, we drew on the membership records contained in the following annual sources: The Scottish Temperance League Register and Abstainers' Almanac (1857–1921) and The Scottish Permissive Bill & Temperance Association (1859-1921). We captured aggregated county-level SPBTA membership from the association's formation in 1858 onwards. While the STL was founded in 1845, we were able to start tracking STL membership at the county level from 1856 onwards, as membership lists were not available for earlier time periods.

Variables

Dependent variable: Whisky distillery foundings: This variable captures entrepreneurial entry by aggregating all new distilleries founded each year in a given county.

Independent variables: to capture the mass mobilizing potential behind the STL's private politics strategy (Hypothesis 1), we measure the size of the movement's membership base (Schneiberg, King, & Smith, 2008; Durand & Georgallis, 2018). *STL member proportion* is measured annually by taking the total membership of the STL in each county. To account for

differences in population size across Scottish counties, we divide this figure by the number of inhabitants in a county. The variable was lagged by one year[3].

To measure the elite member enlistment potential fueling the SPBTA's public politics strategy (Hypothesis 2), we searched through the professions listed in the membership records following each member's name. Since the public politics strategy of the SPBTA played out in both the local and national political arenas, we created two elite membership variables. First, at the local level the SPBTA sought to bring in elite members who occupied a position on municipal and administrative councils as well as those *"in authority in enforcing the observance of the licensing laws"* (The Scottish Permissive Bill & Temperance Association, 47th annual report: 1). This referred to Provosts, Council Members, Bailies, Sheriffs, Constables, and Justices of the Peace. We thus made a count variable at the county level capturing the *SPBTA local elite members.* Second, we counted the number of *SPBTA MP members*, to capture the SPBTA's ability to attract support at the level of national politics by recruiting Members of Parliament into its ranks.

To test for the impact of cognitive legitimacy on the ability of social movements using either mass-driven private politics or elite-driven public politics to deter entry (Hypothesis 3), we vetted local *Ancestral populations* (Dowell & David, 2011). This variable is a count of all distilleries founded between 1680 and 1823, which failed before the relaxation of the constraints to obtain distilling licenses came to pass. Larger ancestral populations are expected to locally endow whisky distilling with a higher level of cognitive legitimacy (Suchman, 1995).

To assess the impact of industry countermobilization on the ability of social movements using elites-driven public politics to deter entry (Hypothesis 4), we created two measures. First, we captured *SLTDA membership* by county, measured as a count of the number of local

[3] Results remain identical when lagged by two years.

organizations that were a member of the SLTDA. This organization came into existence in 1879 and represented the interests of the alcohol producing and distributing industries more broadly, as it included publicans, brewers, distillers, and those in the licensed trade, such as grocers. Second, to capture whisky industry-specific countermobilization, we created a count variable tracking the number of *SWASS* (Scotch Whisky Associations) active in each county. Over time, various Scotch Whisky Associations were established, mostly regionally but acting nationally. The Scotch Distillers' Association was founded in 1865. In 1874, we saw the founding of the North of Scotland Malt Distillers' Association, the West and South of Scotland Malt Distillers' Association, the East of Scotland Malt Association, and the Associations on Islay and Campbeltown. The final association was the Scotch Whisky Association, founded in 1917.

Control variables: We control for the (non-hypothesized) impact of social movement mass upon the public politics strategy deployed by the SPBTA and of elite mobilization on the private politics strategy used by the STL. *SPBTA member proportion* is measured by taking the total membership of the SPBTA in each country. We again divided county-level SPBTA membership by the number of inhabitants. To measure elite membership of the STL, we used the variable *STL reverend members*, capturing Church of Scotland reverends joining the STL, as the rhetoric of the STL was not only delivered through platform and press but also from the pulpit (Logan, 1983).

We included numerous control variables capable of influencing entrepreneurial entry. First, to control for the unobserved effects of time and locale, we included both time-period and region dummies. Since one of our predictors is a county-level constant (ancestral populations), we cannot estimate fixed-effects models. Hence, we included five era dummies, 1823-1840 (reference category), 1841-1860, 1861-1880, 1881-1900, and 1901-1921. Our region dummies are based on

the five classic whisky regions: *Lowland*, *Highland*, *Speyside*, *Campbeltown*, and *Islay*. We assigned each county a value of 1 if it belonged to one (or more) whisky regions.

Second, we controlled for industry-specific and societal effects. The log-transformed number of *County inhabitants* is used as a proxy to capture the size of the local market. *Total whisky production* captures the sum of product retained for domestic consumption, product exported overseas, and product held in warehouses. *Whisky retained for consumption* captures the amount of product on the domestic market each year. *Δ Whisky retained for consumption* captures the difference in the same variable with the previous year, thus measuring growth or decline of the local market. To capture barriers to entry, we included a count variable of the number of significant *Technological advancements* made in the whisky industry, which made entry more capital intensive. A dummy variable indicating whether the year was an *Economic depression year* was added to capture broader economic cycles and the availability of capital. We also controlled for *Industry age*, measured as the number of years elapsed since the start of the industry in 1680, to capture non-density-related population dynamics. We included the number of distillery mortalities in the previous year in a county, denoted as *Local distillery failure*. This variable controls for the 'resource release' hypothesis, which holds that new foundings becomes easier when resources previously held by recently disbanded organizations, such as skilled employees, market share, and production facilities, become available to other market participants (Brown, Lambert, & Florax, 2013; Storey & Jones, 1987). We also included a dummy variable for the years spanning *World War I.* In terms of politically inspired controls, we first included *Duty per gallon* levied. A high tax rate makes entry more daunting because it reduces expected profit margins. We also created two variables that captured the extent to which parliament was supportive or antagonistic to the whisky industry, by controlling for the valence of the regulatory framework. We counted the

number of positive acts passed in favor of whisky distilling, as well as the number of negative acts undercutting the practice. These variables are labelled *#of positive acts* and *#of negative acts*.

Third, we controlled for various facets of population density. Of the distilleries founded before 1823, some distilleries locally formed a *Residual population*, in that they continued post-1823. Residual populations likely have two opposing effects on new distillery foundings (Lander & Heugens, 2017). Their presence ensures cognitive legitimacy, which supports founding. Residual organizations are also established players with a strong claim on market resources, however, which inhibits foundings through competition. We also included a *Time-varying residual population density* variable and its squared term to assess whether these legitimizing and competitive effects persisted or tapered off over time. We also controlled for legitimization through *De antiquo density*, the number of distilleries founded after 1823 in a county each year, and for competition through this variable's squared term. De antiquo populations represent "the revival of a form that had once been a part of the organizational landscape" (Dobrev, 2001: 421).

Analysis

Given that our dependent variable, whisky distillery foundings in a county per year, represents a count which has values of zero or higher, we considered both the Poisson and negative binomial distributions for our main analyses. Given the over-dispersion of the data (Cameron & Trivedi, 2013; Hausman, Hall, & Griliches, 1984), the negative binomial model is the preferred choice. We account for unobserved county-specific factors using the clustering procedure in Stata (e.g., Dowell & David, 2011). The negative binomial model introduces an individual unobserved disturbance term that models the over-dispersion in the data by allowing the conditional variance and conditional mean to vary (Hardin & Hilbe, 2007). We first obtained the residuals to check for

the assumptions underlying the negative binomial model, and then ensured that there is not enough evidence to reject its basic assumptions[4] (cf. Cameron & Trivedi, 2013).

As two of our variables have missing data (STL member proportion and STL reverend members), we used multivariate imputation values (Stata command: *mi impute nbreg*). Multiple imputation is becoming more common in management research (Wasserman, 2017). It retains a level of uncertainty around the imputed values, which sets the approach apart from more traditional imputation methods. Instead of filling in a single value, the distribution of the observed data is used to estimate multiple values, which are used iteratively in the main analysis. The coefficients yielded by these iterative analyses are then combined and reported. For our main analysis we used 10 rounds of imputations to estimate the missing values, yet we also ran robustness checks with M_{20}, M_{30}, M_{40} and M_{50} and the findings are identical. To test our interaction Hypotheses 3 and 4, we used a simulation technique proposed by Zelner (2009) for negative binomial regressions. As the negative binomial is a nonlinear model, "the magnitude of the estimated effect of an independent variable in one of these models depends on the values of all the independent variables in the model, so too does the confidence interval in this estimated effect" (Zelner, 2009: 1339; Greene, 2003: 675). Interpretation of the interaction term can therefore not be based on its standard error, as this provides no direct information about statistical significance (Ai & Norton, 2003). To interpret interaction terms in nonlinear models, one should therefore not only look at the confidence interval of the interaction parameter, but also at the confidence intervals of the constitutive variables at different levels of observation. The simulations allow for a graphical inspection of interaction effects in nonlinear models by showing the 95% confidence intervals[5].

[4] To check for the robustness of our Type II negative binomial model, we likewise ran Type I negative binomial and Poisson regressions, the results of which are identical to the ones reported here.

[5] This simulation approach does not work on datasets compiled with multiple imputation. We therefore calculated the average imputed values across the 10 imputations in our main model and used these to run the simulations. We also

RESULTS

Table 1 reports descriptive statistics and correlations. Table 2 reports multiple imputation-based negative binomial regression results. Model 1 shows the results for time periods and whisky regions. In model 2 we add industry and societal-level control variables. In model 3, we add density and population-related variables. In model 4, we add industry countermobilization variables. In model 5 we add the internal contingencies, social movement local mass and elite mobilization, to test Hypotheses 1 and 2. In model 6, we test Hypothesis 3 by adding the local-level interactions between mass and elite mobilization and ancestral populations. In model 7, we test Hypothesis 4 by including the interaction of national-level elite mobilization and industry countermobilization. Both models 6 and 7 thus report the effects of external contingencies. Model 8 is the full model.

[Insert Tables 1 and 2 about here]

Model 1 shows significant era and region-specific effects on founding rates, but after adding the independent and control variables, all but one of the regional variables become insignificant. Model 2 shows that county inhabitants, a proxy for market size, initially has a positive effect on whisky distillery foundings, yet this effect disappears as our models become denser. Technological advancements, vetting barriers to entry, reduce founding rates. Economic depression year, industry age, total whisky production, whisky retained for consumption and Δ whisky retained for consumption do not affect organizational foundings. Recent mortality, capturing the resource release mechanism, does not influence organizational foundings. World War 1 has a strong negative effect, as does duty per gallon. Interestingly, neither the count of positive nor negative legislative acts have an impact on organizational founding[6].

had to reduce the vector of controls to allow the analysis to converge. The results for this abbreviated model are comparable to those of the main analysis for our key predictor variables.

[6] This remains the case when this variable is lagged for one or two years.

De antiquo density has the expected legitimizing effect and increases organizational foundings (Carroll & Hannan, 1989; Hannan & Carroll, 1992). The squared term signals heightened competition, which indeed reduces foundings (Hannan & Carroll, 1992; Lander & Heugens, 2017). Residual population density has a legitimizing effect in models 3 and 4, yet only the competition effect remains significant in the full model. The time-invariant residual population, which captures the number of ancestral distilleries that were still alive in 1823, has a strong negative effect on county-level foundings. Aspiring entrepreneurs apparently avoided entry in counties with staunch competition. We find a strong significant positive effect for ancestral populations, suggesting that these represented a source of cognitive legitimacy for new entrants[7]. Of the incumbent countermobilization variables, only the SLTDA has a significant effect, suggesting that the mobilization of a broad counter-coalition instills some confidence in aspiring entrepreneurs that the legislative framework fostering entry will not deteriorate.

Model 5 reports the main effects of mass and elite mobilization, as captured by Hypotheses 1 and 2. We find statistically significant support for Hypothesis 1: in counties with a greater ratio of STL members, committed to the ideals of abstinence and sobriety, organizational founding rates were lower. We also contrasted the hypothesized mechanism of social movement mass with the non-hypothesized mechanism of elite mobilization by a social movement using a private politics strategy, as captured by STL reverend members, but enlisting (religious) elites had no significant downward effect on organizational founding rates. This finding lends further support for the contingency-theoretical reasoning behind Hypothesis 1.

[7] In an additional analysis, which can be obtained from the authors, we also tested for the effect of the *total ancestral population in 1823*, comprising the sum of both failed and remaining distilleries at the start of our observation window, upon entrepreneurial entry. We found a positive significant effect for this variable, suggesting that the legitimizing effect dominates the competitive effect for this operationalization.

Hypothesis 2 stated that elite support for a social movement using public politics would have a downward effect on organizational foundings. We find no support for this conjecture in the direct effects model, neither at the local level (SPBTA local elite members) nor at the national level (SPBTA MP members). We again contrasted these findings with the non-hypothesized mechanism of mass mobilization by a social movement using a public politics strategy, as captured by SPBTA membership proportion. Enlisting the masses had no significant downward effect on organizational foundings, thus ruling out a counter-hypothesized effect.

Hypothesis 3 stipulated an interaction effect, stating that the impact of social movements' private and public politics strategies would be weaker in counties with larger ancestral populations. We surprisingly found a significant counter-hypothesized effect for movements using a private politics strategy, thus rejecting Hypothesis 3. In counties with strong collective memories of the industry, social movements using a mass-driven private politics strategy seemingly find it easier to deter entrepreneurial entry. Simulation-based Figures 1 and 2 (Zelner, 2009) help interpret the results of negative binomial models by reporting predicted probabilities associated with discrete changes in independent variables. Figure 1 shows the difference in the estimated values of the founding rate when ancestral populations are one standard deviation below and above the mean at different levels of STL mass membership. When larger ancestral populations are present in areas where STL mass membership is limited, there is a significant and positive effect on founding rates. This effect quickly becomes insignificant and even turns negative and significant at higher levels of STL mass membership. Figure 2 plots these two variables on the reverses axes, such that the difference in estimated founding rates is shown for when STL mass membership is one standard deviation above and below mean membership levels over the full range of ancestral population size. We observe the same trend as in Figure 1. At high levels of STL membership, there is no

significant effect on founding rates when the size of ancestral populations is limited. Yet when the size of the ancestral population increases, the negative effect of STL mass membership on founding rates becomes stronger. In such contexts, memories of social woes seem to be a force capable of deterring entrepreneurial entry. We return to these findings in the discussion section.

[Insert Figures 1 and 2 about here]

We similarly found a significant counter-hypothesized effect for movements engaging in a public politics strategy hinging on the enlistment of the local political elite, again rejecting Hypothesis 3. The results in model 6 show a significant negative effect, suggesting that social movements engaged in public politics are, on average, better able to deter entry in locales with a strong ancestral population presence. This effect is rendered interpretable and contextualized in Figures 3 and 4, which were again produced using Zelner's (2009) simulation method. Figure 3 shows the difference in estimates of the predicted probability of founding when ancestral populations are one standard deviation below and above the mean for increasing levels of SPBTA local elite membership. There is a sizeable negative effect of SPBTA local elite membership when this value exceeds the enlistment of 130 local elites in the presence of large ancestral populations. Figure 4 shows results for when SPBTA local elite membership is one standard deviation above and below the mean for different values of ancestral populations. In the presence of small ancestral populations, we find a positive effect on founding rates when local elites support social movements using a public politics strategy. However, when the size of the ancestral population increases, the effect of SPBTA local elite membership first becomes non-significant and then becomes negative and significant, thus deterring entry. We conjecture that in such locales, organized political resistance against the industry has deep roots too, which creates a hostile legislative environment capable of deterring entrepreneurial entry.

[Insert Figures 3 and 4 about here]

We tested Hypothesis 4, which predicted that incumbent countermobilization would give impetus to entrepreneurial entry by stymieing the efforts of social movements using a public politics strategy, using two measures of countermobilization. When looking at the whisky trade's formation of whisky associations (SWASS), we find a positive and significant interaction effect with SPBTA MP members. Furthermore, the inclusion of this interaction effect also makes that the main effect of SPBTA MP membership becomes negative and significant. This finding is consistent with the narrative we introduced for Hypothesis 2: in the absence of industry countermobilization, elite mobilization by social movements using a public politics strategy decreases organizational foundings. In contrast, when testing for the effects of countermobilization through the SLTDA, which defended the interests of the wider wine, ale, and spirits trade, of which whisky distilling was only a part (SLTDA), we find no interaction effect with the SPBTA MP members. Figures 5 and 6 help to further interpret these results. Figure 5 shows the difference in estimates of probability of founding, contrasting the condition in which there is no countermobilization versus one in which there is one whisky association present over the range of MP elite members. The figure shows that the largest effect of countermobilization on founding occurs when there are between zero and three MPs, after which it begins to drop, although it remains positive and significant. From six MPs onwards, the effect begins to rise again. In Figure 6 we show the difference in estimated probability of founding when the number of SPBTA MP elite members takes on the value of one standard deviation below and above the mean over increasing numbers of local SWASS. The Figure shows that when more MPs joint the SPBTA, more industry countermobilization results in higher predicted levels of industry entry. Our findings

thus support Hypothesis 4 and are congruent with the narrative we developed for Hypothesis 2, but only for countermobilization through whisky trade-specific associations (SWASS).

[Insert Figures 5 and 6 about here]

Supplementary Analyses

To assess whether elite membership of a social movement helps enlist the masses, we used autoregressive integrated moving average (ARIMA) modelling. As the pulpit was a platform to spread the message of abstinence, reverends could persuade their congregations to join the temperance effort. The ARIMA results indeed show a positive and significant effect (0.762***) of elite membership on later year mass membership[8]. As an author in the Temperance League Journal of 1862 notes: "*When we consider the powerful influence exerted by every minister, not only upon his congregation, but, directly and indirectly, upon the surrounding community, each minister who joins the army of the League will seem, as indeed he represents, a host*." We also suggested that there could be a link between mass and elite membership, in that the masses decide which individuals will reach (political) elite status. ARIMA results showed that SPBTA mass membership indeed had a positive and significant effect on SPBTA local elite membership (0.273***), suggesting that mass enlistment has a mobilizing effect on local (political) elite members who are searching for a mandate or reelection. It is therefore worth considering the indirect role the masses play in fostering the ability of social movements using a public politics strategy to deter entry.

[8] Results of all ARIMA models are available from the authors.

DISCUSSION

To explain how social movements deter entry in a contested industry, we have offered new theory concerning the fit between different contestation strategies, the type of constituencies mobilized, and local- and national-level external contingencies in the form of ancestral populations and industry countermobilization. We tested our theory in the context of Scottish whisky distilling between 1823 and 1921, a period in which this organizational field faced severe contestation by multiple social movements separated by strong tactical boundaries (Wang et al., 2018).

In terms of internal contingencies, we argued that social movements using a private politics strategy aimed at getting the public to adopt the frame they propagate (Baron, 2003; Georgallis & Lee, 2015; Pacheco et al., 2014) benefit from tactically enlisting a critical mass of supporters, as it gives their claims visibility (Johnson, 2008) and raises the social costs of entering the industry (Clemente & Roulet, 2015; Zald & Berger, 1978). Our findings support these conjectures. We also theorized that social movements using a public politics strategy cannot do without the support of enlisted political elites (Barkan, 1984), who can carry movements' claims forward into the policy arena (Pichardo, 1995) and ultimately make entry less attractive through regulation and enforcement. Our findings show that there is no significant main effect of elite-driven public politics on foundings, which suggests that entrepreneurs are not universally deterred by the anticipation of more stringent regulation.

We also theorized about how two external contingencies might limit the ability of social movements using mass-driven private politics and elite-driven public politics strategies to deter entry: the presence of ancestral populations and countermobilization efforts by incumbent organizations. Ancestral populations potentially provide the industry with an endowment of cognitive legitimacy, which we expected to invite entry by attenuating the impact of social

movements using a private politics strategy. Interestingly, we found a significant counter-hypothesized effect. In interpreting this result, we conjectured that in contested industries (Aranda et al., 2020) social movements using a private politics strategy can capitalize on the collective memories of social woes left behind by ancestral populations to reinforce their framing. We also found that when members of the religious elite were enlisted by social movements using a private politics strategy, this helped to curb entry in counties with sizeable ancestral populations, thus highlighting the link between mass and elite support (Matthes, 2012). Because organized political resistance against whisky distilling also has deep roots in locales with sizable ancestral populations, the cognitive legitimacy endowments that such populations bring to potential new entrants are likely to be quelled by systemic attacks on their sociopolitical legitimacy. Political elites thus serve as a more credible signal of incoming regulations in counties where the industry is historically well-established. We also tested whether industry countermobilization could render social movements using an elite-driven public politics strategy less effective. We especially found support for this idea in the national-level political arena, where whisky industry-specific countermobilization indeed diminished the entry deterrence capacity of social movements that had succeeded in enlisting members of the national-level political elite.

Social Movements' Ability to Deter Entry

Our work makes several contributions to the growing literature on the influence of social movements on entrepreneurship (Tolbert et al., 2011; Vedula et al. 2021). Social movements often encourage entrepreneurial entry when it aligns with their objectives (Georgallis et al., 2019; Meek et al, 2010), thus triggering the emergence of new industries (Pacheco et al., 2014). They can also undermine the position of incumbents in a contested industries and create opportunities for challenger organizations operating a different core technology or selling an alternative product

(Hiatt et al., 2009; Ingram et al. 2010; Yue et al., 2020). In contrast to this rich body of work, few studies have looked at how social movement contestation strategies affect entrepreneurial entry in established but contested industries. Our study shows that the entrepreneurial vigor of an industry can also be affected through social movement contestation. This novel focus is salient for social movement research because it adds an important new domain in which to explain the effectiveness of social movements' contestation efforts (cf. Sine & David, 2010). Inversely, it unveils how contested industries may continue to grow despite social movements' efforts.

We also contribute to the growing literature on social movement strategies (Martin, 2008; Hiatt et al., 2015; McDonnell, Odziemkowska, & Pontikes, 2021) by looking at the fit between internal and external contingencies and to their ability to deter entry. First, we looked at the fit between social movement contestation strategies and the tactical mobilization of constituencies. We build on the dichotomy between public and private politics (Reid & Toffel, 2009) to explore the concurrent contestation efforts of two social movements separated by strong tactical boundaries (Wang et al., 2018). Additionally, we theorize and test how those two strategies require the support of different constituencies to be effective (McLeod & Hertog, 1992; Yue, 2015). Our study thus revives an important discussion in the social movement literature by stressing the difference between elite and mass support (Barkan, 1984; Zald & Berger, 1979). The two movements we scrutinized capitalized on their institutional context in different ways. One movement leveraged a private politics approach to promote a negative frame concerning the industry (Baron, 2003; McDonnell, King, & Soule, 2015). Mass support made this negative framing more salient and increased the social costs facing entrepreneurs contemplating entry into the targeted industry. The other movement sought the instrumental support of politicians in the

public policy arena (Lee & Sine, 2007) to deter entry by signaling the possibility of more stringent regulation becoming enacted in the future.

The social movement literature has historically privileged social movement mass as the most important proxy for the influence of social movements (Johnson, 2008; Sine & Lee, 2009; Durand & Georgallis, 2018). Our study certainly corroborates that the membership base of a social movement matters, but mostly so for social movements using a private politics approach (Baron, 2003). Concretely, social movement mass appears to play an important role in pushing for individuals' conformity with a movement's moral claims, since the morality of a community is very often determined by the voice of its majority (Clemente & Roulet, 2015). Recent work, however, has drawn attention to the crucial role elites can play in raising the attention of communities to a social problem (Yue, 2015). Elites can provide direct "patronage" to a cause (Jenkins & Eckert, 1986) by bringing it into the public policy agenda. We also found that elite members enlisted into private politics movements seem to play a role in mobilizing supporting masses: in our context, religious ministers appeared instrumental in terms of engendering greater mass support for social movements using a private politics strategy, thus likely accelerating the adoption of their negative framing of the whisky industry. Additional time series analyses revealed that mass support for social movements using a public politics strategy also made it more attractive for members of the political elite to join those movements, likely in search of a larger mandate for their political decisions or reelection. We thus show how elite and mass support are intertwined in determining social movements' ability to win the "informational competition" targeting an industry (Baron, 2003: 31).

Ancestral Populations and Incumbent Countermobilization as External Contingencies

We highlight two salient external contingencies which can affect social movements' contestation potential: ancestral populations and incumbent countermobilization. First, by theorizing and modeling ancestral population effects, our work shows that such populations can have unforeseen consequences for industry contestation. Dowel and David (2011) found that in non-contested industries ancestral populations grant legitimacy to new entrants. In our findings, the main effect of this variable is consistently positive and significant across all regression models. Such results suggest that ancestral populations indeed represent a reservoir of cognitive legitimacy that aspiring entrepreneurs can directly benefit from, by association (Shymko et al., 2022). Yet, contrary to what we hypothesized, the interaction term of ancestral populations with mass-driven private politics is negative and significant. Ancestral populations thus cannot fully shield potential entrants from the negative effects of social movements' efforts to spread a negative framing around an industry. While this result requires further scrutiny, it appears that large ancestral populations can also stand for a long history of the local populations' negative experiences with the practice of whisky distilling and all its associated social woes.

Stressing the importance of an industry's level of cognitive legitimacy in the wake of contestation furthers existing work on the growth of stigmatized industries (Lashley & Pollock, 2020). We show how products can have cognitive legitimacy for some audiences while being morally repugnant to others (Dalpiaz & Cavotta, 2019), and that negative and positive social evaluations can co-exist on different continua (Roulet, 2020). Lashley and Pollock (2020), in their study of medical cannabis, found that incumbent actors were able shift the moral positioning of their industry to legitimize it. In our case, countermobilization efforts play a similar role, in that industry insiders banded together to defend their industry's sociopolitical legitimacy in the national

legislative arena (de Bakker et al., 2013; Waldron et al., 2013; Waldron et al., 2019). In this sense, our study fleshes out the idea that industries and social movements co-evolve (Pacheco et al., 2014) and offers a systemic perspective on the emergence and survival of industries (Vedula & Kim, 2019; Roulet & Bothello, 2021). Further unpacking such complexity, we found that counties with strong ancestral populations were the only ones in which elite-driven public politics were effective. Only where the industry was well-anchored did the signal that more stringent regulations were potentially forthcoming and that local elites were ready to step in and enforce them deter entry. Elite support therefore seems especially crucial in locales where the industry's position might be weakened by memories of grief and social woes.

Second, by bringing countermobilization into the picture (de Bakker et al., 2013; Waldron et al., 2013; Wang & Piazza, 2016), we stress the importance of an industry's responses to social movements' activities (Meyer & Staggenborg, 1996), rather than depicting contestation as a one-way process. Social movements and their targets tend to react to each other's' strategies (McDonnell & King, 2013), and studying the dualities inherent in this process matters to understanding the consequences of contestation in organizational fields (Hiatt et al., 2009). By empirically looking at both social movements and the countermobilization processes they trigger, we offer a comprehensive picture of those two-way dynamics. In our case, the trade's response was in the national legislative arena, where it attempted to block national-level legislation that went against the industry's material interests. That these countermobilization efforts were effective is evidenced by the fact that they not only defended the interests of incumbents, but also spurred on entrepreneurial entry.

Limitations and Future Research

Our research also presents some limitations that might open future research avenues. We only tested for two sets of key constituents (masses and elites), and two social movement strategies (private versus public politics). Future research could provide a finer-grained understanding of social movement contestation strategies and of the constituents supporting them. Such studies could potentially theorize about the fit between new combinations of internal and external contingencies. In addition, given the historical nature of our data, we could not capture the changing ways in which social movements adapted their framing over a long period of time, and we do not have the ability to zoom in on the use of specific tactics such as the petition, the boycott, or the townhall meeting. In the same way industries build legitimacy by mimicking broader societal discourses (Galvin et al., 2005), social movements probably adapt their repertoire of contestation tactics to make their position more convincing to key audiences (Pacheco & Dean, 2015). Finally, another limitation is the way we empirically capture the influence of countermobilization in the dynamics of contestation (Rohlinger, 2002). For example, because of the limitations of our historical data, we could not systematically capture the details of the active lobbying efforts which the countermobilization attempts of the industry must have entailed. In our context, there was no data on countermobilization efforts that specifically addressed private politics efforts in response to negative framing efforts (Baron, 2003). With more detailed data on countermobilization efforts, we might find ways to enrich our understanding of how mass-driven private politics and elite-driven public politics jointly deter entry. In general, future work on movement-countermobilization dynamics could benefit from a finer-grained historical approach to understand how these processes unfold over a prolonged period.

CONCLUSION

This study has demonstrated how different social movements' contestation strategies may vary in their ability to deterring entry into contested industries, as they rely on the support of different enlisted constituencies. We offer novel insights for the literature on social movements, further unpacking their effect on entrepreneurship (Tolbert et al., 2011) as a function of the fit between their strategy and mobilization tactics, and identifying two salient boundary conditions. Uniquely, we do so over an exceptionally long period of time. We believe that our findings offer exciting opportunities for future work to better understand how social movements' can effectively contest industries, limit their attractiveness to entrepreneurs, and under which conditions.

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Table 1: Means, Standard Deviations, and Correlations

Variable	Mean	St.dev	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Whisky distillery foundings	0.13	0.77	1																
2. Lowland	0.50	0.50	-.07	1															
3. Speyside	0.11	0.31	.04	-.35	1														
4. Campbeltown & Islay	0.04	0.19	.11	-.19	-.07	1													
5. Highland	0.36	0.48	.05	-.74	-.26	.26	1												
6. 1823 - 1840	0.17	0.38	.26	-.01	-.00	.00	.00	1											
7. 1841 - 1860	0.20	0.40	-.05	.00	-.00	.00	.00	-.23	1										
8. 1861 - 1880	0.20	0.40	-.07	.00	-.00	.00	.00	-.23	-.26	1									
9. 1881 - 1900	0.20	0.40	-.03	.00	-.00	.00	.00	-.23	-.26	-.26	1								
10 1901 - 1921	0.20	0.40	-.09	.00	.00	.00	.00	-.24	-.26	-.26	-.26	1							
11. County inhabitants (log)	4.86	0.42	.05	.27	-.34	.02	-.15	-.09	-.04	.01	.04	.08	1						
12. Total whisky production	1.60^{e7}	7.23^{e6}	-.15	.00	-.00	-.00	-.00	-.49	-.42	-.12	.33	.67	.10	1					
13. Whisky retained for consumption	5.93^{e6}	1.10^{e6}	-.13	-.00	-.00	.00	-.00	-.28	.14	-.14	.22	.05	.03	.44	1				
14. Δ Whisky retained for consumption	609.68	6.20^{e5}	.20	.00	-.00	-.00	-.00	.17	-.03	.06	-.02	-.17	-.03	-.09	.28	1			
15. Technological advancements	4.24	1.35	-.33	.00	.00	-.00	.00	-.88	-.04	.28	.28	.29	.11	.61	.34	-.23	1		
16. Economic depression year	0.23	0.42	-.06	.00	-.00	.00	.00	.00	-.04	-.28	.02	.30	.01	.22	.27	-.03	.06	1	
17. Industry age	183.50	28.30	-.20	.00	.00	.00	.00	-.66	-.39	-.04	.32	.71	.12	.88	.20	-.20	.76	.13	1
18. Local distillery failure	0.14	0.64	.48	-.06	-.02	.08	.07	.29	.01	-.09	-.11	-.08	.08	-.18	-.08	.10	-.30	-.02	-.23
19. World War I	0.05	0.22	-.04	.00	-.00	-.00	.00	-.11	-.12	-.12	-.12	.44	.04	.35	-.07	-.12	.13	-.13	.36
20. Duty per gallon	0.47	0.44	-.12	.00	.00	.00	.00	-.35	-.26	.03	.03	.52	.08	.34	-.34	-.26	.43	.09	.63
21. # of positive acts	3.88	2.60	-.19	.01	-.00	.00	-.00	-.68	-.50	.30	.41	.43	.11	.78	.18	-.12	.80	.01	.89
22. # of negative acts	1.65	1.55	-.14	.00	-.00	.00	.00	-.49	-.43	.11	.11	.65	.10	.65	-.15	-.25	.59	-.06	.85
23. Residual population	6.04	7.44	.14	-.14	-.14	.34	.26	.00	-.00	.00	-.00	.00	.33	.00	-.00	-.00	.00	.00	.00
24. Ancestral populations	6.25	7.61	.13	-.29	-.16	.32	.45	-.00	-.00	-.00	-.00	-.00	.29	.00	.00	.00	.00	.00	.00
25. De antiquo density	3.55	5.98	.26	-.32	.22	.74	.21	.08	-.02	-.08	-.02	.05	.18	.03	.03	.02	-.06	.03	-.01
26. De antiquo density^2	48.39	153.97	.21	-.27	.12	.85	.22	.06	-.02	-.07	-.01	.04	.06	.02	.02	.01	-.04	.02	.00
27. Time varying residual population density	2.26	3.21	.39	-.12	-.08	.42	.17	.33	.06	-.10	-.12	-.15	.20	-.27	-.12	.09	-.37	-.03	-.32
28. Time varying residual population density^2	15.41	61.69	.42	-.08	-.07	.26	.11	.29	-.00	-.08	-.09	-.10	.09	-.20	-.13	.08	-.32	-.03	-.24
29. SPBTA member proportion(1000)	1.09	1.35	-.10	.05	-.01	-.04	-.02	-.37	-.41	-.08	.41	.42	-.05	.65	.18	-.08	.45	.12	.68
30. STL member proportion (1000)	1.84	1.69	-.15	.31	-.11	.06	-.22	-.50	-.29	.24	.37	.14	-.06	.47	.15	-.07	.57	-.02	.54
31. SPBTA MP members	0.21	0.76	-.04	.09	-.08	-.03	-.04	-.13	-.14	-.08	.15	.19	.38	.26	.08	-.04	.16	.07	.26
32. SPBTA local politician elite members	7.15	15.68	-.06	.16	-.09	-.04	-.14	-.21	-.23	-.16	.19	.39	.54	.45	.12	-.07	.26	.11	.47
33. STL reverend members	10.73	20.65	-.07	.20	-.12	-.02	-.14	-.24	-.18	-.04	.16	.28	.60	.37	.08	-.07	.28	.05	.40
34. SLTDA membership	0.78	2.24	-.04	.14	-.08	.01	-.12	-.16	-.18	-.18	-.05	.55	.40	.48	.09	-.07	.20	.17	.45
35. SWASS	0.43	0.54	-.09	-.07	.04	.01	.04	-.36	-.40	-.13	.35	.51	.14	.63	.06	-.20	.44	.15	.74

Table 1: Means, Standard Deviations, and Correlations (continued)

Variable	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
18. Local distillery failure	1																	
19. World War I	-.03	1																
20. Duty per gallon	-.12	.22	1															
21. # of positive acts	-.25	.19	.51	1														
22. # of negative acts	-.18	.62	.76	.75	1													
23. Residual population	.24	.00	.00	-.00	-.00	1												
24. Ancestral populations	.21	-.00	.00	.00	-.00	.83	1											
25. De antiquo density	.27	.01	-.01	-.05	-.02	.49	.42	1										
26. De antiquo density^2	.22	.02	.00	-.03	-.01	.37	.32	.94	1									
27. Time varying residual population density	.47	-.08	-.19	-.33	-.27	.64	.52	.54	.48	1								
28. Time varying residual population density^2	.46	-.05	-.14	-.25	-.19	.46	.36	.36	.33	.87	1							
29. SPBTA member proportion (1000)	-.15	.17	.34	.64	-.51	-.03	-.03	-.04	-.02	-.23	-.15	1						
30. STL member proportion (1000)	-.18	.03	.27	.66	.42	-.01	-.12	-.12	-.04	-.23	-.16	.58	1					
31. SPBTA MP members	-.04	.07	.13	.22	.19	.05	.02	.02	-.02	-.01	-.04	.23	.16	1				
32. SPBTA local politician elite members	-.06	.18	.24	.37	.36	.11	.06	.01	-.03	-.07	-.08	.30	.17	.64	1			
33. STL reverend members	-.06	.13	.24	.36	.33	.15	.06	.01	-.04	-.07	-.08	.18	.23	.61	.88	1		
34. SLTDA	-.04	.22	.28	.28	.36	.08	.05	.04	.02	-.08	-.06	.17	.07	.33	.75	.68	1	
35. SWASS	-.14	.25	.61	.65	.66	.07	.08	.06	.04	-.20	-.14	.50	.34	.23	.41	.37	.36	1

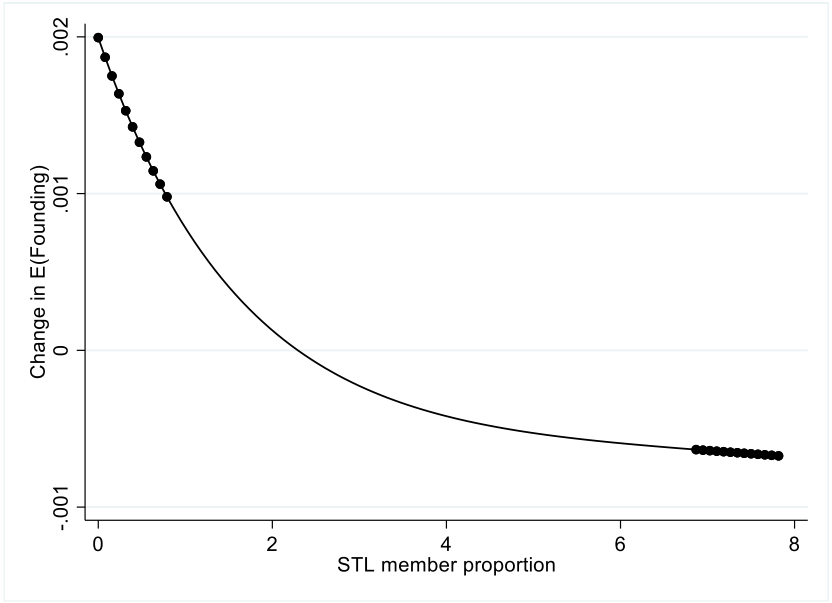
Table 2: Negative Binomial Regression Results on County-level Distillery Foundings

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
1841 – 1860	-2.532***	-0.295	-0.481	-0.422	-0.343	-0.375	-0.348	-0.376
	(0.235)	(0.374)	(0.416)	(0.431)	(0.411)	(0.412)	(0.409)	(0.407)
1861 – 1880	-3.596***	-0.232	-0.169	-0.260	-0.001	-0.069	0.021	-0.062
	(0.403)	(1.167)	(1.320)	(1.395)	(1.525)	(1.361)	(1.513)	(1.353)
1881 – 1900	-2.080***	-0.415	-0.640	-1.034	-0.420	-0.473	-0.334	-0.428
	(0.302)	(1.181)	(1.302)	(1.470)	(1.812)	(1.560)	(1.823)	(1.561)
1901 – 1921	-5.279***	-3.953†	-3.961	-4.401†	-3.895	-3.879	-3.808	-3.808
	(0.597)	(2.327)	(2.423)	(2.512)	(2.781)	(2.441)	(2.799)	(2.459)
Speyside	1.638***	2.569***	0.218	0.123	-0.011	-0.121	0.010	-0.099
	(0.507)	(0.272)	(0.498)	(0.505)	(0.410)	(0.406)	(0.415)	(0.411)
Campbeltown & Islay	1.473***	1.443***	-0.375	-0.419	-0.148	-0.063	-0.126	-0.038
	(0.358)	(0.187)	(0.371)	(0.382)	(0.388)	(0.445)	(0.381)	(0.437)
Highland	0.722†	0.986***	-0.220	-0.259	-0.339†	-0.367*	-0.337†	-0.360*
	(0.426)	(0.247)	(0.199)	(0.197)	(0.174)	(0.165)	(0.175)	(0.166)
County inhabitants (log)		2.085***	0.283	0.125	0.090	0.007	0.165	0.082
		(0.326)	(0.388)	(0.411)	(0.359)	(0.313)	(0.384)	(0.336)
Total whisky production		0.000	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Whisky retained for consumption		0.000	-0.000	-0.000	-0.000	0.000	-0.000	0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Δ Whisky retained for consumption		0.000	0.000	0.000	0.000	0.000	0.000	0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Technological advancements		-1.002***	-0.607**	-0.540*	-0.556**	-0.592***	-0.571**	-0.604***
		(0.273)	(0.236)	(0.216)	(0.198)	(0.184)	(0.196)	(0.182)
Economic depression year		-0.053	0.150	0.145	0.151	0.191	0.144	0.184
		(0.268)	(0.312)	(0.304)	(0.316)	(0.310)	(0.318)	(0.332)
Industry age		0.052	0.072	0.063	0.050	0.057	0.051	0.057
		(0.052)	(0.048)	(0.046)	(0.044)	(0.039)	(0.044)	(0.038)
Local distillery failure		0.272***	0.007	0.005	0.019	0.016	0.021	0.018
		(0.078)	(0.045)	(0.045)	(0.041)	(0.041)	(0.041)	(0.041)
World War I		-8.867***	-10.554***	-10.453***	-9.623***	-9.617***	-26.250***	-26.542***
		(1.364)	(1.364)	(1.438)	(1.634)	(1.799)	(4.941)	(4.750)
Duty per gallon		-2.198	-10.14***	-9.934***	-9.772***	-10.547***	-9.815***	-10.558***
		(3.158)	(2.104)	(2.232)	(2.412)	(2.382)	(2.408)	(2.365)
# of positive acts		0.147	0.302	0.302	0.549	0.551	0.541	0.545
		(0.304)	(0.317)	(0.329)	(0.382)	(0.390)	(0.382)	(0.391)
# of negative acts		-0.943	-0.373	-0.328	-0.482	-0.454	-0.452	-0.433
		(0.594)	(0.541)	(0.577)	(0.636)	(0.634)	(0.630)	(0.630)
Residual population			-0.095**	-0.104**	-0.074**	-0.078**	-0.072*	-0.075**
			(0.037)	(0.039)	(0.037)	(0.028)	(0.037)	(0.027)
De antiquo density			0.338***	0.350***	0.339***	0.350***	0.333***	0.345***
			(0.086)	(0.088)	(0.079)	(0.078)	(0.080)	(0.079)
De antiquo density^2			-0.007**	-0.008**	-0.007**	-0.008**	-0.007**	-0.007**
			(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Time varying Residual population			0.134†	0.149†	0.117	0.117	0.112	0.111
			(0.081)	(0.082)	(0.081)	(0.079)	(0.080)	(0.079)
Time varying Residual population^2			-0.004**	-0.004**	-0.004*	-0.004*	-0.004*	-0.004*
			(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Ancestral populations			0.074***	0.078***	0.070***	0.073***	0.069***	0.071***
			(0.019)	(0.019)	(0.020)	(0.018)	(0.020)	(0.018)
SLTDA membership				0.104*	0.134	0.107	0.111	0.083
				(0.053)	(0.099)	(0.088)	(0.104)	(0.095)
SWASS				0.913	0.705	0.761	0.598	0.685
				(0.568)	(0.630)	(0.644)	(0.650)	(0.648)
SPBTA member proportion (1000)					-0.054	-0.376	-0.044	-0.355
					(0.180)	(0.237)	(0.191)	(0.250)
STL reverend members					-0.008	-0.047*	-0.013	-0.051*
					(0.016)	(0.021)	(0.017)	(0.022)
STL member proportion (1000) (H1)					-0.364*	-0.052	-0.348*	-0.043
					(0.156)	(0.164)	(0.152)	(0.161)
SPBTA local elite members (H2)					0.007	0.064*	0.003	0.061*
					(0.024)	(0.026)	(0.026)	(0.026)
SPBTA MP members (H2)					-0.011	-0.037	-5.645***	-6.014***
					(0.176)	(0.144)	(1.770)	(1.765)
STL member proportion x Ancestral populations (H3)						-0.031***		-0.031***
						(0.009)		(0.009)
STL reverend members x Ancestral populations						0.006***		0.006***

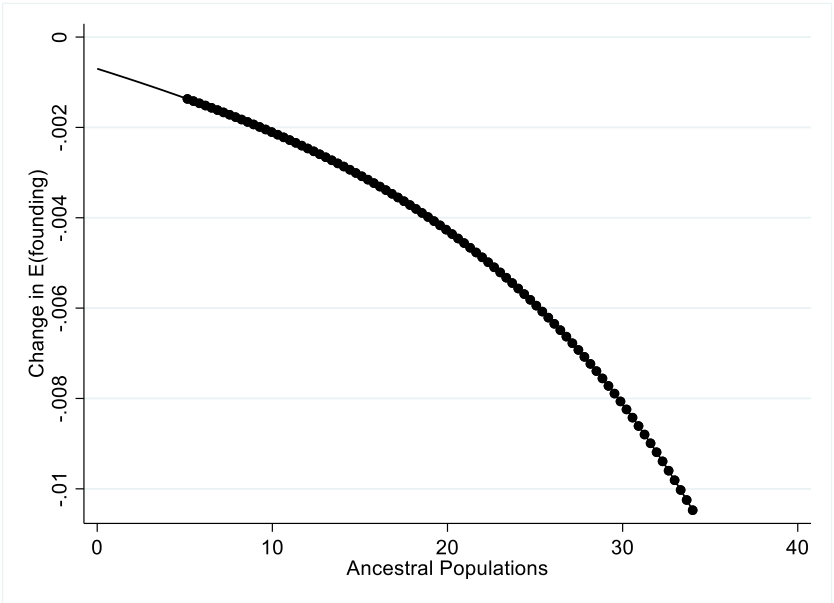
						(0.002)		(0.002)
SPBTA member proportion x Ancestral populations						0.032		0.032
						(0.026)		(0.026)
SPBTA local politician members x Ancestral populations (H3)						-0.009*		-0.009*
						(0.004)		(0.004)
SPBTA MP members x SWASS (H4)							5.635***	5.939***
							(1.716)	(1.696)
SPBTA MP members x SLTDA (H4)							0.024	0.023
							(0.019)	(0.019)
Constant	-1.146***	-18.866	-12.386	-10.237	-8.303	-8.863	-8.865	-9.305
	(0.2999)	(6.938)	(5.514)	(5.034)	(5.017)	(4.587)	(5.027)	(4.608)
/lnalpha	1.605	0.013	-1.389	-1.431	-1.614	-1.705	-1.627	-1.708
	(0.257)	(0.283)	(0.423)	(0.459)	(0.508)	(0.540)	(0.509)	(0.539)
Observations	2744	2744	2744	2744	2744	2744	2744	2744

† $p < 0.10$ * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figures 1 and 2. Graphic representation of the interaction effect of STL members proportion and Ancestral populations



a

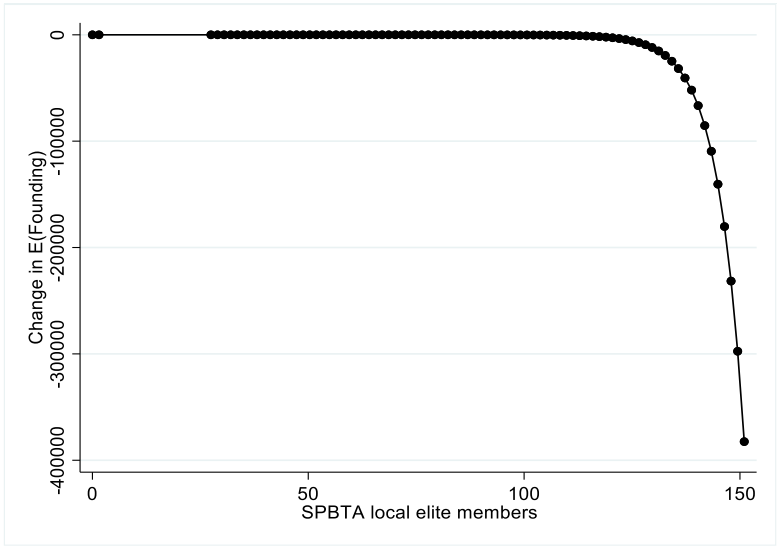


b

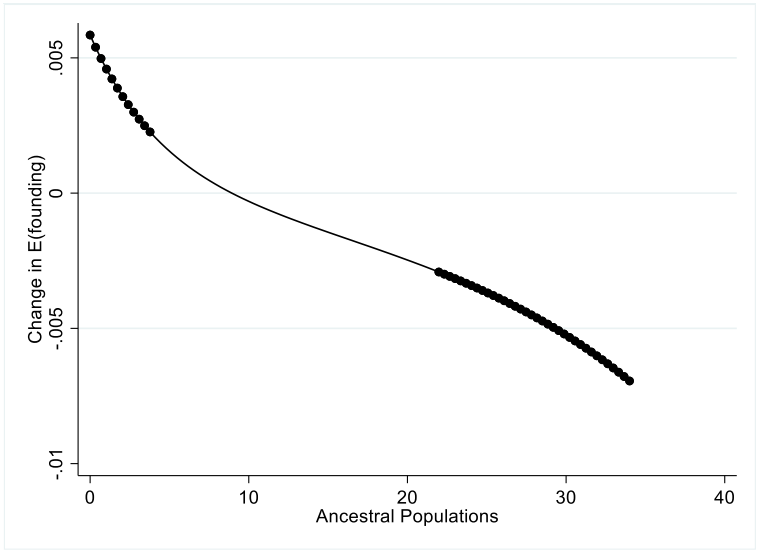
Notes: (a) represents the interaction effect between STL member proportion and Ancestral populations. It represents the difference in predicted probability of founding between Ancestral populations 1 SD below the mean and 1 SD above the mean.
(b) represents the interaction effect between STL member proportion and Ancestral populations. It represents the difference in predicted probability of founding between STL mass membership 1 SD below the mean and 1 SD above the mean.

Figures 3 and 4. Graphic representation of the interaction effect of SPBTA local elite members and Ancestral populations

a



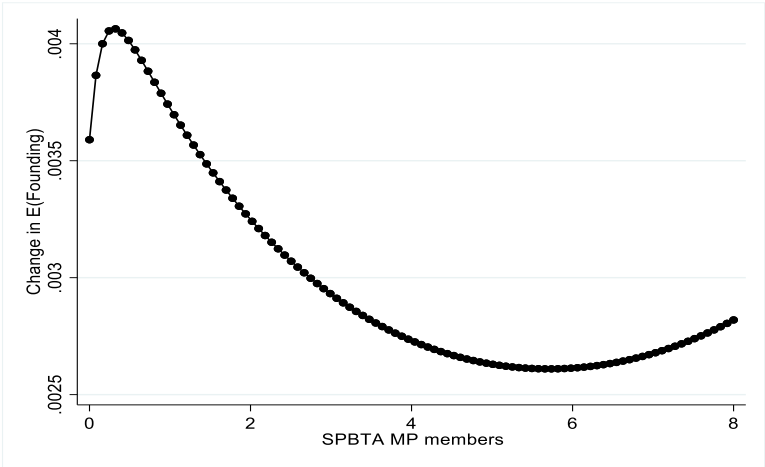
b



Notes: (a) represents the interaction effect between SPBTA local elite members and Ancestral populations. It represents the difference in predicted probability of founding between Ancestral populations 1 SD below the mean and 1 SD above the mean.
(b) represents the interaction effect between SPBTA local elite members and Ancestral populations. It represents the difference in predicted probability of founding between SPBTA local elite membership 1 SD below the mean and 1 SD above the mean.

Figures 5 and 6. Graphic representation of the interaction effect of SPBTA MP members and SWASS

a



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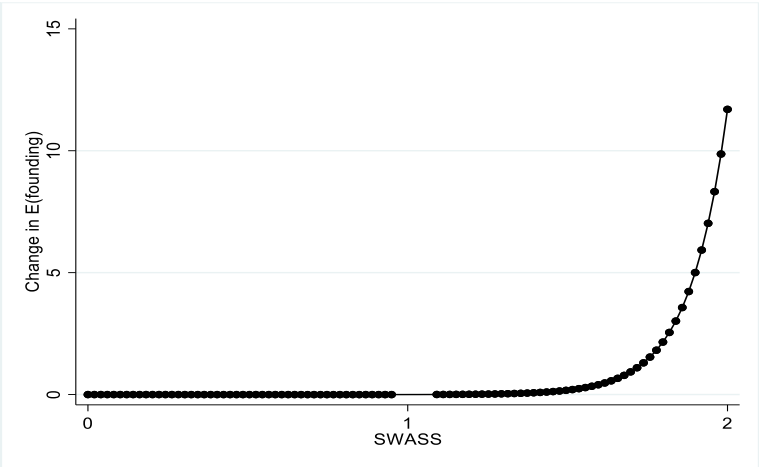

Notes: (a) represents the interaction effect between SPBTA MP members and SWASS. It represents the difference in predicted probability of founding when SWASS takes the value of 0 and 1.
(b) represents the interaction effect between SPBTA MP members and SWASS. It represents the difference in predicted probability of founding between SPBTA MP members 1 SD below the mean and 1 SD above the mean.