Networks of Nation-Building: Evidence from the Fennoman Movement*

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Abstract

After Finland's transition from Swedish to Russian rule in 1809, a segment of the remaining Swedish-speaking elite spearheaded the Fennoman movement to promote the Finnish language and identity. Using newly compiled biographical data and historical student registers, we construct elite networks to study the anatomy of this elite-led national awakening. We document four findings. (i) The most central elite families were more likely to adopt nationalist behavior, consistent with efforts to preserve influence under the new order. (ii) Nationalist adoption diffused through network links, propagating from more- to less-central actors, and increased with proximity to the leading Fennoman, J. V. Snellman. Using the timing of Finnish Literature Society membership, we establish that having a directly connected contact (an adjacent node) who had previously joined increased an individual's probability of joining by 1 percentage point. (iii) At the local level, a difference-in-differences design shows that municipalities with more Fennoman elites, as well as greater initial elite centrality and proximity to J. V. Snellman, experienced a sharper shift toward Finnish-language given names among Swedish speakers in the mid-1800s. The more exposed municipalities also had higher nationalist party vote shares and nationalist newspaper subscriptions and more pronounced finnicization of names. (iv) Elite-led national unity later translated into stronger demand for institutional change, as municipalities with stronger Fennoman presence exhibited more strikes in the early 1900s leading up to democratization and Finnish independence. These findings show how a national awakening can spread through elite networks to the broader population, and that influential elites' choices about nation-building can have lasting consequences for national cohesion and institutional development.

Keywords: elites, national identity, nation-building, networks, Russian Empire
JEL: D72, N43, P00, Z13

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1 Introduction

In the nineteenth century, many countries, especially in Europe, experienced national awakenings led by organized national movements focused on creating a unified nation. While national awakenings and the processes of nation-building have long been central topics in sociology, history, and political science (Weber 1976; Gellner 1983; Anderson 1983; Smith 1991), they have only recently received more substantial scholarly attention from economists (e.g., Bazzi et al. 2019; Alesina, Giuliano, and Reich 2021; Depetris-Chauvin, Durante, and Campante 2020; Assouad 2021; Rohner and Zhuravskaya 2024; Blanc and Kubo 2024; Carlitz et al. 2024). Despite the emerging interest, studies empirically documenting the spread and influence of national movements remain scant. Are they top-down or bottom-up processes? How does the national idea diffuse? What are the consequences of increased popular national sentiment, particularly for subsequent political development?

This paper explores these questions in the context of Finnish national awakening. Following the Finnish War between Sweden and the Russian Empire (1808–1809), Finnish territories became an autonomous part of the Russian Empire while the Finnish elite remained largely Swedish-speaking, a remnant of the old regime. Over the 1800s, Finland experienced a notable national awakening led by a faction of Swedish-speaking elites, known as Fennomans, many of whom could not speak Finnish. This episode of national awakening is encapsulated by a quote from J. V. Snellman, the leader of the Fennoman movement: "Swedes we are not, Russians we do not want to become, so let us be Finns."[1] The Fennoman movement sought to elevate the Finnish language and culture, largely associated with peasants, to the status of a national language and identity.

A plausible motivation for the elites' role in spearheading and embracing the Finnish national awakening was their desire to build a domestic coalition in response to shifting power dynamics after the end of Swedish rule.[2] The position of Swedish-era elites became comparatively weak under Russian rule: they lacked control of the military, and while still politically influential, the old nobles were not major landowners—an unusual feature compared to many other European aristocracies (Alapuro 1988; Snellman 2016). As Alapuro (2018, p. 85) puts it:

[1]The quote is often attributed to Adolf Ivar Arwidsson, another leading Fennoman, but it was most likely first stated by J. V. Snellman; see, for instance, Snellman (1861).

[2]This argument builds on the Finnish narrative in Alapuro (1988) and on the framework of Giuliano, Reich, and Riboni (2022), who argue that elite incentives to preserve their influence can motivate the pursuit of nation-building as a strategy to strengthen their position.

> "The upper classes in Finland, with their Swedish culture, found exceptionally strong incentives to adopt or accept the language and culture of the large majority of the people, both because of the country's political dependence on a great autocratic state, Russia, and because of their own need, as state bureaucrats, to establish a sense of obligation to the Finnish polity. As a consequence, a rather unified national culture grew up."

The Finnish national awakening took shape slowly over the nineteenth century. Finland's cultural development up to 1809 largely followed patterns elsewhere in the Swedish realm (Klinge 1980, p. 12). As Hroch (1985, p. 63) observes, "Right up to the 1860s we fail to find any particularly conspicuous evidence of national consciousness among the [Finnish] rural population." A broader Finnish national awakening emerged when the influential group of Swedish-speaking Fennomans began to promote a common national identity, for example, by founding the Finnish Literature Society (1831), which sponsored Finnish-language newspapers and books, and by popularizing cultural symbols such as the national epic Kalevala (1849). The Fennomans also aggressively pressed to expand Finnish-language schooling to spread literacy and national consciousness in the late nineteenth century (Hroch 1985; Alapuro 1988). With the accession of the more liberal Tsar Alexander II in 1855, Fennoman efforts accelerated in the 1860s; by the late 1870s the movement had "a mass character" (Hroch 1985, p. 63).

To deepen our understanding of the episode and especially the elite influence of Finnish national awakening, we compile a new comprehensive dataset covering 17,016 nineteenth-century Finnish elites from biographical data and student registers of the University of Helsinki.[3] We use extensive biographical mentions and family relationships detailed in these data to compile a network of historical elites. Furthermore, we measure elite participation in the national awakening using newly collected individual-level records of membership in the Finnish Literature Society (FLS), including join dates. We complement this measure with family-level indicators of Fennoman activity documented by the historian Eino Jutikkala (Jutikkala 1989), and with evidence on the finnicization of surnames from the student registers.

Our empirical examination of the episode proceeds in four steps. First, we document that after the shift to Russian rule, it was the more central and influential Swedish-speaking elites, who had the most to lose in terms of status, that were the most interested in nation-building. Family influence, measured by network centrality, is strongly associated with our national awakening measures among the elite families. This approach builds on well-established

[3]The University of Helsinki was the only institution of higher education in Finland at the time, and the student registers extensively record students' relatives who were not themselves students.

literature that demonstrates a strong link between network centrality, elite status, and the distribution of power (Puga and Trefler 2014; Cruz, Labonne, and Querubin 2017; Naidu, Robinson, and Young 2021). The family-level relationship between initial network centrality and later Finnish Literature Society membership is documented in Panel A of Figure 1.

Second, we use the structure of elite networks and the timing of entry into the Finnish Literature Society to trace how the nationalist behavior spread within the elite. We uncover a clear core-to-periphery pattern: most-central elites joined first, and adoption then diffused along their ties to more peripheral actors. Following work on leader importance (Dippel and Heblich 2021; Bai, Jia, and Yang 2023), we further show that network proximity to the leading Fennoman, J. V. Snellman, was strongly associated with membership in the Society.

In line with prior network diffusion and peer influence literature (e.g., Banerjee et al. 2013; Bursztyn et al. 2014; Conley and Udry 2010; Bailey et al. 2024), we establish that nationalist behavior propagated through network links. In the individual-level elite network, the probability of joining the Finnish Literature Society increased by 1.1 percentage points when an adjacent node had previously joined. This pattern, shown in Panel B of Figure 1, is consistent with social diffusion operating along elite ties.

Third, we document the diffusion of national sentiment from elites to the broader population. We follow established literature that uses naming practices as a proxy for national awakening and identity choice (Bazzi et al. 2019; Assouad 2021; Fouka 2020; Chiovelli et al. 2023). Drawing on names from newly digitized population-tax registers (*henkikirjat*), we employ a difference-in-differences design. We show that municipalities with greater elite Fennoman exposure, measured by the number of Finnish Literature Society members, recorded a higher share of Finnish names among Swedish speakers in cohorts born from the 1860s onward. The timing of the divergence coincides with the broader Finnish national awakening documented in the historical literature and the accession of Tsar Alexander II, whose more liberal policies helped accelerate the Fennoman movement (Hroch 1985, p. 63). There are no differential pre-trends in naming conventions between comparison municipalites before the 1860s, when there was little sense of Finnish national identity, which gives us confidence in our difference-in-differences estimates.

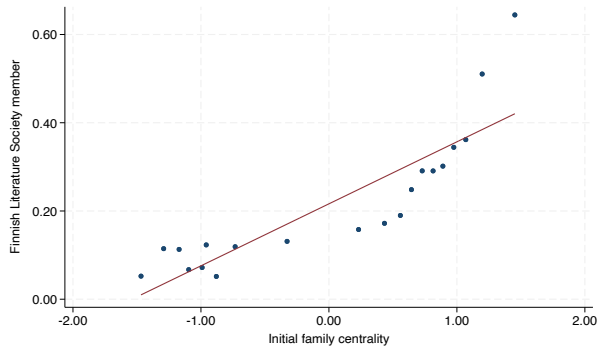
Using newly digitized, municipality-level measures of the subsequent spread of national identity among non-elite and Finnish-speaking populations, we demonstrate that locations with a stronger nineteenth-century presence of Fennoman elites exhibited higher vote shares for Fennoman parties, greater finnicization of non-elite surnames, and more subscriptions to the Finnish-speaking Fennoman newspaper *Uusi Suometar* in the late 1800s and early 1900s. Panel C of Figure 1 shows a positive local-level association between the number of nineteenth-century elite Fennomans and the subsequent Fennoman-party vote share.

Fourth, we present evidence that the newly founded national identity, cultivated by elite Fennomans, spurred opposition to both the Russian regime and domestic elite privileges. Although the early Fennoman program was not inherently democratic (indeed, it was rather paternalistic; see Alapuro 1988, p. 110), it fostered national unity that plausibly translated into pressure for institutional change. Following established work, we use strike incidence as a proxy for local demand for reform—the observed "threat of revolution" (Acemoglu and Robinson 2000; Aidt and Franck 2015). Protest activity rose markedly in early-twentieth-century Finland and was higher in localities linked to elite nation-builders; Panel D of Figure 1 documents a positive local-level association between early elite Fennoman presence and subsequent strikes. These mobilizations were followed by major reforms: Russification was curtailed; in 1906 the Finnish Diet dissolved itself and Finland adopted universal and equal suffrage with a unicameral parliament; the first parliamentary elections followed in 1907; and Finland declared independence of Russia in 1917.

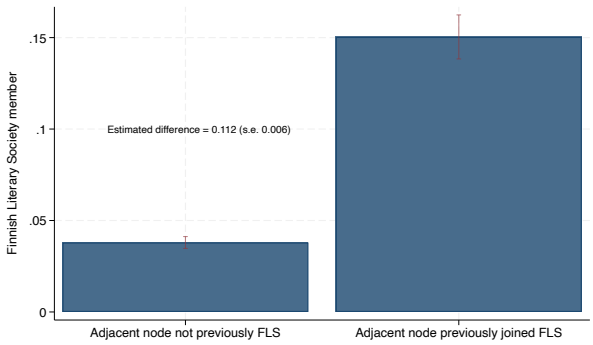
The local-level associations between elite presence and later nation-building outcomes are robust to a battery of controls; we further present local-level estimates based on elite networks. Following Bai, Jia, and Yang (2023), we relate municipal outcomes directly to (i) proximity to the leading Fennoman, J. V. Snellman, and (ii) historical elite centrality, which serve as two predictors of early elite Fennoman presence. In a difference-in-differences framework, municipalities closer to Snellman or with higher historical centrality exhibited larger post-1860s shifts in Finnish naming, as well as stronger local-level associations with Fennoman party vote shares, *Uusi Suometar* subscriptions, finnicization of non-elite names, and protest activity, with coefficients that are positive and precisely estimated. We also use the local-level network-based measures of proximity to J. V. Snellman and historical elite centrality to instrument for the number of nineteenth-century local elite Fennomans. The instrumental-variable estimation yields consistent estimates of local-level effects.

We argue that one key mechanism behind the rise of a common national awakening was the expansion of Finnish-language schooling—a core objective of elite Fennomans. We show that municipalities with more elite Fennomans had higher early enrollment in Finnish-language schools than those with less exposure to elite nationalism. This finding builds on recent work showing that education can serve as a tool of nation-building (Cantoni et al. 2017; Bandiera et al. 2018; Alesina, Giuliano, and Reich 2021) and provides evidence that elite-led cultural initiatives were associated with the expansion of vernacular education. We also find suggestive evidence that elite Fennomans' portrayal of Fennoman ideas in the press served as a channel for the diffusion of the national awakening.

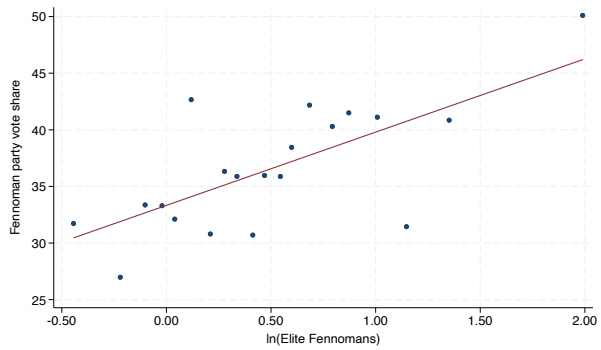
This paper contributes to several literatures. Most directly, it speaks to foundational theories of nationalism that stress structural forces such as industrialization, print



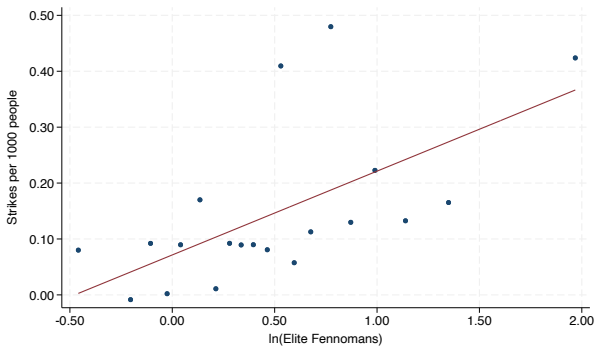
(A.) Initial family centrality and Finnish Literary Society membership 1831-1893



(B.) Propagation of Finnish Literary Society membership across the elite network



(C.) Elite Fennomans and local Fennoman parties' support 1910-1916



(D.) Elite Fennomans and local strikes 1903-1906

Figure 1. Summary of the main results.

Notes: Panel A illustrates the family-level relationship between elite initial family centrality (measured using elite born before 1809) and later Fennoman activity measured as Finnish Literary Society membership. Panel B illustrates the average individual-level Finnish Literary Society membership status by whether an adjacent node in the network had previously joined the society. Panels C and D illustrate the relationship between local presence of early elite Fennomans 1831-1893 and Fennoman parties' support 1910-1916 and the number of strikes per capita in 1903-1906, respectively. We show binned means and linear fits. All specifications include controls for municipality characteristics (according to home municipality in Panels A and B): the logarithm of population and population density 1865, the logarithm of Swedish speaking population 1880, the logarithm of elites born before 1809, the logarithm of taxpayers and taxes paid, longitude and latitude, region indicators, suitability for rye and barley, and slope.

capitalism, and linguistic standardization in the formation of national consciousness (Gellner 1983; Anderson 1983). Using newly assembled biographical and network data, we show that national identity can also be the outcome of a purposeful, elite-led project rather than solely a byproduct of broad structural change. In doing so, we add to the emerging economics literature on the formation of national identity (Bazzi et al. 2019; Alesina, Giuliano, and Reich 2021; Dehdari and Gehring 2022; Depetris-Chauvin, Durante, and Campante 2020; Giuliano, Reich, and Riboni 2022; Rohner and Zhuravskaya 2024). Our

paper is most closely related to Assouad (2021) on the Turkish national awakening. We complement this work by studying another episode of elite-driven nation-building, tracing out the diffusion using individual-level biographical data on elite networks, and linking the nation-building exposure to subsequent local demand for institutional change.

Our analysis contributes to the political economy of identity formation (Akerlof and Kranton 2000; Fouka 2020; Jia and Persson 2020; Atkin, Colson-Sihra, and Shayo 2021). We show that Swedish-speaking elites selectively adopted Finnish identity markers, plausibly in response to declining status and shifting institutional constraints. Our setting, in which a linguistic minority spearheaded a successful nation-building effort, also connects to work on ethnolinguistic fractionalization (e.g., Alesina et al. 2003; Alesina, Michalopoulos, and Papaioannou 2016).

Our study links the literature on elites and institutional change to nation-building. A large body of work shows that elites may support reforms to preserve influence when faced with political or economic threats (Acemoglu and Robinson 2006; Lizzeri and Persico 2004). In Finland, institutional change gradually emerged when powerful elites' incentives aligned with nation-building: although the Fennoman program was not inherently democratic, it expanded inclusion (for example via schooling), forged national cohesion, and heightened demand for reform, helping to catalyze subsequent institutional change (see, e.g., Acemoglu and Robinson 2000; Puga and Trefler 2014; Dercon 2022).

Finally, we contribute to the historical literature on Finland's national awakening, where elite-led cultural nationalism has long been recognized as central to the development of Finnish identity (Klinge 1980). We complement Alapuro (1988), who, like us, focuses on the elites' incentives for nation-building as an important component of the episode. We contribute to this research by providing the first systematic, empirical analysis of the episode. Our findings also offer an explanation for the strong early Finnish national unity and why late-1800s Russification efforts ultimately failed in Finland (in contrast to their relative success in the present-day Baltic countries). The Finnish experience shows many similarities with other contexts, and our findings contribute to understanding the connection between nation-building and institutional change in nineteenth- and early twentieth-century Europe.[4]

The remainder of the paper is organized as follows. Section 2 provides historical background on 19th-century Finland the origins of the Fennoman movement. Section 3 introduces the datasets used in the study. Section 4 examines the empirical impact of elite status on becoming a nation-builder at the elite level, and documents the propagation of the national idea along the elite network. Section 5 analyzes the local-level effects of elite

[4]For other historical cases of nation-building, see, for example, Raun (2001) for Estonia, Zürcher (2004) for Turkey, Deák (1990) for Hungary, Plakans (2011) for Latvia and Lithuania, and Porter (2000) for Poland.

Fennomans on national sentiment and demands for democracy. Section 6 then examines mechanisms underlying these two sets of results. Section 7 concludes. A stylized model illustrating the historical narrative we have in mind, robustness checks, and other additional material are relegated to the Online Appendix.

2 Historical Context

This section provides the historical context essential for understanding Finland's national awakening in the nineteenth century. We discuss key institutional changes, shifts in elite incentives, and policies during Finland's autonomy under Russian rule. This lays the foundation for our subsequent empirical investigation of elite-driven nation-building efforts and their implications.

2.1 Finland's Transition to Russian Rule and Elites' National Awakening

In 1809, after nearly 600 years of Swedish rule, Finland became an autonomous Grand Duchy within the Russian Empire when Sweden ceded the territory following the Finnish War. This transfer was not inevitable but rather an "almost accidental byproduct of the grand politics of the time" (Klinge 1980, 13). The Russian Empire sought to create a buffer zone to protect St. Petersburg (Klinge 1980, p. 11), and while Russian troops were present in Finland, they primarily served as security forces for the imperial capital rather than for governing Finland (Klinge 1980, p. 11; Klinge 1975, p. 16).

After the transition to Russian rule, Finland largely retained its Swedish-era institutions and governing elite. The Russian Tsar ruled as Grand Duke, but Finland maintained its Swedish legal system, Lutheran religion, and significant self-governance (Jussila, Hentilä, and Nevakivi 2000). The Finnish Senate and, later, the Diet of Finland remained key institutions where the Finnish elite exercised political influence within the Russian system (Kirby 2006).[5] This arrangement was largely a matter of practicality: Russia needed the forces elsewhere that would have been required for the administrative subjugation and Russification of Finland (Klinge 1980, p. 11).

(Swedish-speaking) elites in Finland Early in the nineteenth century, Finland's ruling class was drawn chiefly from the Swedish-speaking nobility, who filled most posts in the officer

[5]The Diet retained the Swedish-era four-estate system, comprising nobility, clergy, burghers, and peasants (Snellman 2016, p. 126).

corps, the higher clergy, and the civil service.[6] The leading bourgeois families, professionals, and landowners were likewise mostly Swedish-speaking, reflecting Swedish's long-standing status as the language of the elite in an otherwise largely Finnish-speaking country. Or, as Alapuro 2018, 84 puts it: "Although ultimate control was exercised in St. Petersburg, domination within the country, political, economic, and cultural, was in the hands not of the Russians but of the Swedish-speaking upper class." Despite their predominance in the elite, Swedish speakers accounted for only about 15% of the Finnish population in 1809 (Coleman 2010).

The Fennoman movement Over the nineteenth century, the Swedish-speaking elite increasingly sought alignment with the Finnish-speaking majority, founding the Finnish Literature Society (1831) and launching the full-scale Fennoman movement in the 1840s. The Fennomans, led by philosopher and journalist Johan Vilhelm Snellman, sought to elevate Finnish as the language of administration, education, and public life (Honko 1980; Kirby 2006). The Fennoman project was almost entirely led by Swedish-speakers, as Hobsbawm (2014, p. 104) notes, "The Finnish Literature Society (founded 1831) was established by Swedes, its records were kept in Swedish, and all the writings of the chief ideologue of Finnish cultural nationalism, Snellman, appear to have been in Swedish." Unlike many Eastern European nationalist movements, Finnish nationalism originated in and was led by the upper classes, not the middle classes (Alapuro 1988, p. 107).

From the 1840s onward, the Fennoman movement purposefully sought to create a national awakening among the Finnish-speaking majority. Until the mid-1800s, there was no widely shared sense of a distinct Finnish identity or the concept of a Finnish nation-state among the broader population (Hroch 1985, p. 63). Before 1809, Finnish cultural development had largely followed Swedish patterns, and identities were regional rather than national. To bolster national awakening, the Fennomans pushed for Finnish to gain administrative status alongside Swedish and the Finnish Literature Society sponsored Finnish-language newspapers and books, and propagated cultural symbols such as the national epic, the Kalevala (1849) (Honko 1980).

Tsar Alexander II's accession and subsequent liberal reforms expanded Finnish autonomy in the 1860s and 1870s and further accelerated the rise of Finnish nationalism (Hroch 1985, p. 63). After Alexander II's accession in 1855, J. V. Snellman received an unsolicited appointment as professor at the University of Helsinki in 1856 and became a

[6] In the eighteenth-century Swedish system, most influential elites were embedded in state service. From the Vasa era onwards, the office-holding nobility (*virka-aateli* in Finnish) comprised families whose income and influence depended largely on public service. Under Russian rule, nobles retained Swedish-era privileges such as preferential taxation and access to office (Haikari et al. 2020).

leading advocate of the government's reform agenda. In 1863, he was appointed a senator and head of the Senate's Finance Department (Klinge 1997). Alexander II favored Fennoman elites, appointing many of its members to the Senate at the expense of other elite families to further weaken Swedish influence in Finland (Savolainen 1994; Thaden 1981).[7] The language decrees of 1863–1864 established Finnish as an official language of administration alongside Swedish, signaling a major symbolic victory for the Fennoman movement. The reopening of the Finnish Diet in 1863, after more than half a century of inactivity, and the municipal reform of 1865 further expanded opportunities for political participation and civic organization—arenas in which Fennomans became highly active.

Perhaps most importantly, Fennomans championed the expansion of Finnish-language schooling in the late nineteenth century. They held that national unity would be achieved through the school system (Alapuro 2018, p. 87). The education reform of 1866 laid the foundation for the Finnish folk school system (*kansakoulu*) and greatly expanded access to Finnish-language education. The reform created new institutions through which national identity and language norms spread among ordinary people. In addition, teacher-training seminaries, the publication of Finnish-language textbooks, and rising Finnish literacy helped carry Fennoman ideals well beyond elite circles.

While the early Fennomans promoted Finnish language and culture, they still resisted many liberal reforms, such as constitutionalism, that threatened elite privileges (Alapuro 1988, p. 115). Socially conservative, they favored a paternalistic vision of governance; rather than displacing the old elite, they sought to preserve it by recasting that elite's cultural identity as Finnish rather than Swedish (Klinge 1975, p. 17; Alapuro 1988, p. 110).[8]

Why were the Finnish elites interested in nation building? Following Finland's incorporation into the Russian Empire, the Swedish-speaking Finnish elite launched an assertive nation-building project. As Gellner (1983, p. 1) notes, nationalist sentiment often intensifies when the rulers and the ruled belong to different nations, whether through absorption into a larger empire or domination by an alien group. In Finland, however, the "alien" group itself, the Swedish-speaking elite, drove the nationalist mobilization.

Finland's Swedish-speaking elite was anchored in office-holding rather than landholding, socially distinct from the broader population, and comparatively weak—features that created

[7] This shift intensified political divisions, leading to the formation of the Svecoman movement, which sought to defend Swedish language and culture in Finland (Engman 1995).

[8] As one student quoted in Alapuro 2018, p. 88 (originally from Wuorinen 1935) put it: "The fact that the Finnicisation movement was directed against the exclusively privileged Swedish-speaking upper class of that time did not imply that the upper class should have been eliminated in order to found a democratically organised society, but that the upper class speaking Swedish and oriented to the Swedish culture should have been replaced by an upper class speaking Finnish and oriented to the Finnish culture."

strong incentives to build coalitions against the new Russian rulers (Alapuro 1988). Unlike much of Eastern Europe, where landed elites aligned with the imperial center, Finnish elites lacked both a solid landed base and a history of feudalism and exercised influence chiefly through the emerging state apparatus (Alapuro 2018, p. 84).[9] Consistent with this, only about 15% of Swedish-era nobles owned land in 1810 (Snellman 2014, p. 250). The loss of Finland's own military was also a major shock to the old ruling elites: roughly 90% of Finnish nobles held military posts in 1800, falling to about 30% by 1890 (Vuorinen 2020, p. 412).

Self-interest was not the sole driver of elite interest in nation-building in Finland, but it plausibly played a role. The Fennoman movement had a genuine philosophical foundation, and throughout the nineteenth century nationalism and nation-building spread across Europe, often driven by cultural ideals. In particular, J. V. Snellman "wanted to educate the people and, as its condition and prerequisite, to make the educated more like the people" (Klinge 1980, p. 31). Even so, Finland's relatively weak, state-serving elites had more to gain from embracing a national identity than did the landed elites common in Eastern Europe (Alapuro 2018, p. 85). These conditions at least made Finnish elites especially receptive to a top-down national awakening.

Demand for independence and institutional change By the late nineteenth century, tensions within Finland deepened as the Russian Empire pursued policies of Russification aimed at curbing Finnish autonomy and integrating the Grand Duchy more tightly into imperial structures (Thaden 1981). These measures included censorship of newspapers, the establishment of a Russian police force, and restrictions on parliamentary sessions. Finnish elites, whose status and livelihoods depended heavily on autonomous state institutions, opposed these policies most fiercely (Alapuro 1988, p. 106). The imposition of Russian as the main language of instruction in secondary and higher education and the 1901 introduction of universal conscription into the Russian army led to broader resistance. These policies were viewed as attempts at cultural assimilation and symbols of eroding autonomy, fueling widespread anti-Russian sentiment across social groups and culminating in organized strikes and the assassination of Governor-General Nikolai Bobrikov in 1904 (Alapuro 1988; Thaden 1981).

Although the Fennoman movement was not inherently democratic, its promotion of a shared Finnish identity unified opposition to Russian rule but also amplified demands for institutional reform curbing domestic elite privilege. The national awakening thus

[9]High reliance on office-holding, rather than estates, distinguishes Finnish elites (and their incentives to nation-build) from, for example, German-speaking elites in the Baltics and Polish landowners in Lithuania (Alapuro 1988, p. 105).

transformed cultural mobilization into political action. In the early 1900s, protest and strike activity, especially the 1905 general strike, forced concessions from both domestic elites and Russian authorities. In the aftermath of the 1905 general strike, the four-estate Diet dissolved itself, and in 1906, Finland adopted a unicameral parliament with universal suffrage, holding its first democratic national elections in 1907.[10] These reforms not only institutionalized mass political participation but also laid the foundation for Finland's independence in 1917.

2.2 Empirical Predictions

In Figure 2, we present a timeline of the main historical events we study in this paper. We also highlight the main empirical predictions that emerge. We examine the sequence of events and present evidence consistent with, though not proving, each step. Online Appendix E provides a simple analytical framework to fix these ideas.

The transition from Swedish to Russian rule in 1809 plausibly created additional incentives for Swedish-speaking elites to align with the Finnish majority as a counterbalance to Russian authority. This realignment was particularly notable for elites with significant initial power. Despite not speaking Finnish, these elites spearheaded the Fennoman movement (officially founded in the 1840s) and the national sentiment quickly spread among the elite circles. The Fennomans aggressively promoted and created Finnish culture, adopted Finnish names and advocated for Finnish-language education and press; they promoted rural folk schools and local governance reforms, fostering national cohesion beyond class boundaries (Alapuro 1988; Jutikkala 1989).

This elite-driven promotion of Finnish culture and education influenced national sentiment among the broader Finnish-speaking population. The fostered national unity later paved the way for increased demands for independence and institutional change, especially during the period of Russification. When individuals saw themselves as part of a unified community, repression was perceived more as an attack on the nation as a whole, increasing mass mobilization. Shared national identity also plausibly enabled more coordinated resistance to the governing regime.

[10] By 1907, virtually all citizens aged 24 and over, including women, could vote in parliamentary elections, although ultimate authority remained with the Russian emperor. Universal municipal suffrage was enacted in 1917, with the first municipal elections under it in 1918.

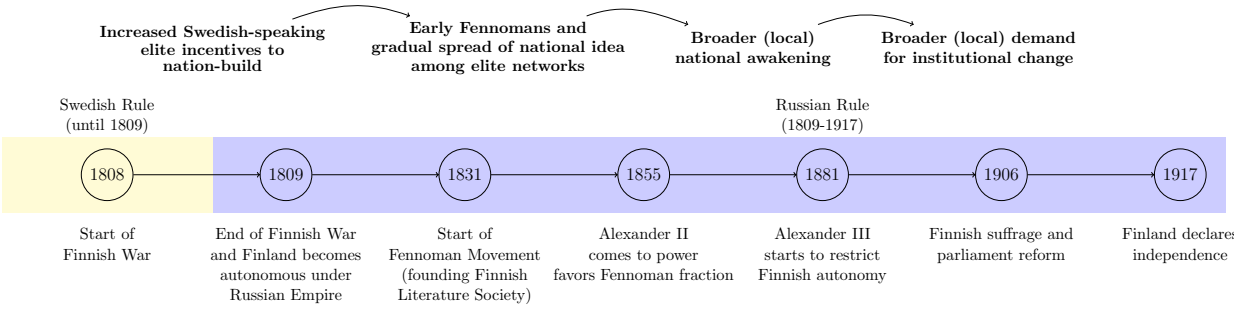


Figure 2. Timeline.

3 Data

To study the impact of the elite incentives on Finnish national awakening, we have collected and combined several new datasets. Our main data are described briefly here and in more detail in Online Appendix A.

3.1 Elite-level data

Elite network data We construct a network of elite families using relational data from two sources. The first data source is *BiographySampo*, a collection of some 13,000 biographies of prominent Finns. This dataset also documents family and other relational links (references) among the individuals it contains. The second data source is *AcademySampo*, a register of the Imperial Alexander University which later became the University of Helsinki, the only institution of higher education in Finland at the time. These data are based on digitized Student Registers of 1640–1899. The university register data contain a rich set of relations documented for the universe of students, including their parents, spouses, other possible relatives, as well as, professors, and teachers.[11] These student register data also contain mentions of relatives who were not enrolled at the university.

Panel A of Figure 3 presents the direct connections of the leading Fennoman, J.,V. Snellman, based on relational data from *AcademySampo*. Most connections are to academics listed in the student registers; however, several are to family members. The *BiographySampo* database includes a further 206 direct references to him, reflecting Snellman's central role in nineteenth-century Finland.

These data depict the Finnish elite of the 1800s in detail. We restrict the sample to individuals who were alive during the 1800s and have a recorded birthplace, resulting in

[11]The *BiographySampo* data are publicly available at https://biografiasampo.fi (accessed January, 2025). The *AcademySampo* data are publicly available at https://akatemiasampo.fi/en/ (accessed October 14, 2024).

17,016 members of the elite and 4,609 separate elite families. The data sources are further detailed in Appendix A.3.

Finnish Literature Society membership Following Hroch (1985), we classify early Fennomans based on their membership in the Finnish Literature Society (FLS), a non-governmental organization founded in 1831 to support research and promote Finnish culture and heritage. This individual-level dataset, compiled from FLS membership records, includes information on each member's name, membership period, domicile, occupation, title, field of study, degree, and father's occupation, among other attributes. During the available data period (1831-1892), the FLS had a total of 2,096 members—men and women dedicated to fostering a Finnish national ethos—of which we can link 1,033 to the individual-level elite network data.[12] Though primarily an elite cultural organization, its membership spanned civil servants, university students, and a few enlightened commoners.[13]

Fennoman families As a second source of Fennoman status, we use the list of 189 elite Fennoman families compiled and classified by historian Eino Jutikkala (Jutikkala 1989). In addition to identifying Fennoman families, this dataset further documents measures of national sentiment among elite Fennomans, such as adopting a Finnish name, speaking only Finnish at home, speaking Finnish to their children, and ensuring their children were educated in Finnish.

Name changes As a third approach, we classify families within the elite as Fennomans if at least one family member finnicized their surname, translating it from Swedish to Finnish. These name changes are documented in AcademySampo, an open dataset containing records of all individuals registered at the University of Helsinki from 1640 to 1899. These data should capture a good proportion of the (highly-educated) elite and their network as the University of Helsinki was Finland's sole university before the 20th century.

[12] We can link all members to the municipal-level data. Most missing individuals-level links are later joined members from Helsinki that are likely less prominent and therefore do not have their own biography page.

[13] We characterize the socioeconomic status of FLS members in Online Appendix Figure OA1 which confirms that the members came primarily from middle and upper social classes. Also a significant number of students joined FLS. They later became primarily government officials, clergy, academics, and doctors. The data are publicly available here: `https://kansallisbiografia.fi/jasenet` (accessed March 20, 2025).

3.2 Local-Level Data

Population-tax registries We measure naming conventions drawing on the 1915 edition of the population-tax registers (known as *henkikirjat*), which record all individuals resident in each municipality for tax and military-census purposes. The registers list adults and household members who were taxable or liable for muster rolls (thus typically excluding very young children and non-taxable persons). According to the online index provided by the Finnish Geneological Society, this database currently covers over 775,000 indexed records from almost 200 municipalities from the year 1915.[14] We use the full year 1915 data across all available municipalities. Our analysis focuses on the cohorts born in 1840–1899.[15]

For each individual, we score whether the recorded last name corresponds to a Finnish versus Swedish language surname. We do so using a custom classification coded via `gpt-4o` applied to the first and last names. There are slightly more than 21,000 unique first name entries and around 26,200 unique last name entries. We then compute, for each municipality and birth-year cohort, the proportion of individuals born in that year who bear a Swedish surname while having a Finnish first name.

Voting for Fennoman parties We measure the strength of national identity using local-level data from parliamentary election support for the Fennoman parties in the early 1900s.[16] The election results by municipality come from official publications by Statistics Finland for the years 1910–1916 and were digitized by Meriläinen and Mitrunen (2025). This measure captures the popularity of the Fennoman movement among the general Finnish-speaking population. In the elections of 1910-1916, over 35% of voters supported the Fennoman parties.

Finnicization of names We further measure the spread of national identity among the Finnish populace by computing the number of people who announced the finnicization of their surname in the *Suomen Wirallinen Lehti* (The Official Newspaper of Finland) newspaper in 1906–1907. Overall, we find that around 32,000 people made the announcement. Considering that most times children's name change was not reported,

[14] The data are publicly available at https://www.genealogia.fi/henkikirjahaku/ (accessed October 18, 2025).

[15] Our cohort choice begins in 1840 to allow for full adult exposure and life-span attainment and ends in 1899, since underage individuals are less systematically captured in the registers.

[16] This outcome variable is defined as the joint support of the Finnish Party and the Young Finnish Party. The Finnish Party was founded in 1863. It split into two the Finnish Party and the Young Finnish Party in 1905

historians evaluate that in reality some 70,000–100,000 people finnicized their names in 1906–1907, corresponding to about 3% of the population at the time.

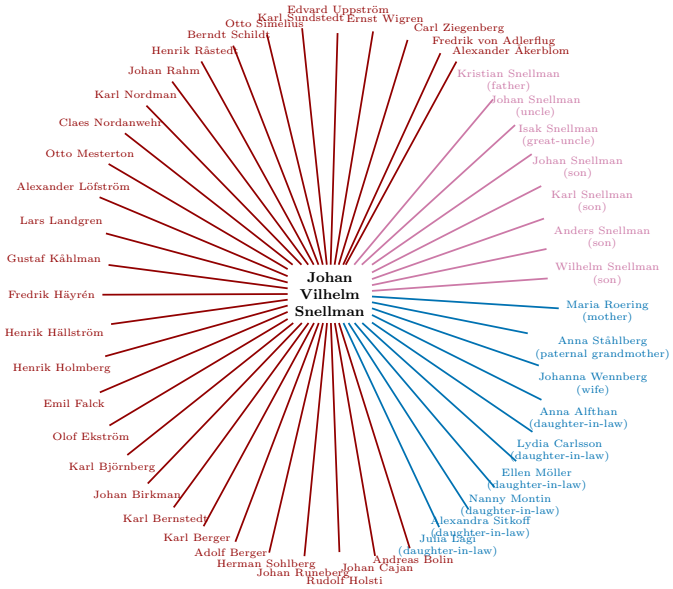
Fennoman newspaper circulation Finally, we study the circulation of *Uusi Suometar* in the year 1899, a nationwide newspaper published in the latter part of Finland's autonomy under Russian rule, collected from Tommila, Raitio, and Aalto (1977). *Uusi Suometar* was founded by leading Fennomans to promote the political and cultural goals of the Finnish nationalist movement. By the early 20th century, it had become the principal mouthpiece of the Finnish Party and, by circulation, the second largest newspaper in the country after the Swedish-language *Hufvudstadsbladet*.

Demand for instutional change We use data on the number of strikes from 1903-1906, and participation in them from 1907-1908, drawn from *Työtilastollinen aikakauslehti* and *Sosialinen aikakauskirja* (the *Journal of Employment Statistics* and the *Journal of Social Issues*), collected by Meriläinen, Mitrunen, and Virkola (2023). Many of these strikes were part of the broader turmoil across the Russian Empire, demanding greater political freedoms, including universal suffrage, an end to Russification policies, and increased workers' rights. Strikers also called for improved labor conditions, higher wages, and the restoration of Finland's constitutional autonomy, which had been eroded by Russian imperial policies.

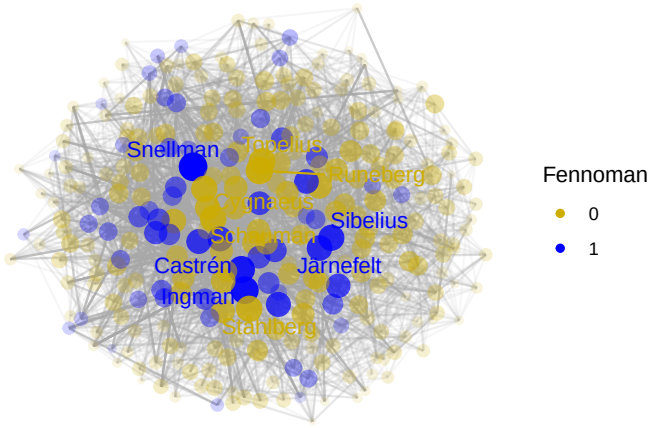
3.3 Covariates

In our empirical analysis, we control for various municipal-level population characteristics: population and population density in 1865 and Swedish-speaking population in 1880, collected from official publications by Statistics Finland (Suomenmaan virallinen tilasto 1870, 1882), the number of elites born before 1809 constructed based on the elite data detailed above. We control for 1865 municipal taxed income and number of taxpayers drawn from Suomenmaan virallinen tilasto (1869).[17] We further include geographic controls: longitude and latitude (assigned based on the centroid of a municipality), and the soil suitability for different crops and terrain slope in each municipality constructed using data from the Global Agro-Ecological Zones database and the 1865 municipal borders.

[17]These data were originally collected by and used in Meriläinen, Mitrunen, and Virkola (2023).



(A.) J. V. Snellman's network in *AcademySampo*.



(B.) Network of 300 most central Swedish-era families by subsequent Fennoman status.

Figure 3. Network examples.

Notes: Panel A illustrates J. V. Snellman's network based on *AcademySampo* student-register data. Red denotes academic ties within the university; blue denotes family relationships recorded in the student registers but outside the university; purple denotes family members also enrolled in the university at some point. The *BiographySampo* database includes a further 206 direct references to J. V. Snellman not depicted here. Panel B presents a network of 300 elite families calculated among those born during the Swedish era (pre-1809) and indicates whether any family member was a Fennoman. Fennoman status is measured as membership in the Finnish Literature Society.

4 Elite Network Analysis

This section examines the relationship between elite status and nation-building using detailed individual-level data. From the relational data, we build a network where each node represents a family, and edges represent documented relationships (i.e., marriage ties, biographical mentions, and teacher-student relationships). We document how most central Swedish-speaking elites became key proponents of the Fennoman movement. We show how individual-level network proximity to J. V. Snellman was an important factor in predicting nationalistic behavior among the elite. We further illustrate how the nationalistic ideas propagated through the elite network via peer links.

4.1 Elite-Level Network Measures

Initial family centrality To assess the "structural importance" of families within the network, we compute a harmonic centrality measure using only networks observed for those born during the Swedish rule (before 1809). This *initial family centrality* is to take into account that later network centrality can be impacted by family Fennoman activity. Harmonic centrality measures how close a node is to all other nodes in the network. Intuitively, an individual with high harmonic centrality has shorter distances to others in the network, allowing for more efficient access to information and influence. For each family f, harmonic centrality is calculated as

$$Initial\ centrality_f = \frac{1}{n-1} \sum_{f \neq g} \frac{1}{d(f,g)}, \tag{1}$$

where $d(f,g)$ is the shortest path distance between nodes (families) f and g, with the convention that $\frac{1}{d(f,g)} = 0$ if there is no path between f and g. n is the number of nodes in the network. This centrality metric works in disconnected networks by downweighting faraway nodes and ignoring unreachable ones. In our context, families with high harmonic centrality occupy central positions in family and educational networks, enabling them to access and potentially control the flow of information and influence among elites, even in the presence of disconnected groups.

With this measure, we can quantitatively assess the centrality of individuals within the elite, identifying those who are well-positioned within the overall structure. Panel B of Figure 3 presents the network of 300 most central families and the Fennoman status. We also provide an illustrative example in the Online Appendix A.

Proximity to J. V. Snellman We further calculate individual-level proximity to J. V. Snellman, a leading figure in the Fennoman movement. This approach follows the idea that powerful and central individuals can exert far-reaching effects on their networks of influence (Bai, Jia, and Yang 2023). Proximity is measured through a network of individual-level connections (see Panel A of Figure 3 for an example), where the distance reflects the minimum number of connections needed to link an elite to Snellman. We define the proximity as:

$$Proximity\ to\ J.\ V.\ Snellman_i = \frac{1}{d(\text{Snellman}, i) + 1} \tag{2}$$

where $d(\text{Snellman}, i)$ represents the shortest path length between Snellman and individual i in the network.

4.2 Fennoman Families

To show the relationship between network centrality and probability of joining the Fennoman movement empirically, we use family-level data and estimate the following equation:

$$1[Fennoman_f] = \alpha + \beta Initial\ centrality_f + \mathbf{X}'_{\mathbf{m(f)}}\gamma + \mu_r + \epsilon_f. \tag{3}$$

Here, the outcome of interest, $1[Fennoman_f]$, indicates whether family f is a Fennoman family. As the main independent variable, we use harmonic centrality. We define family centrality based on pre-1809 networks as defined in (1). β is our coefficient of interest. All of our regressions include a vector of municipality-level control variables ($\mathbf{X}'_{\mathbf{m(f)}}$).[18] ϵ_f is the error term.

We report the estimation results in Table 1. Family centrality positively correlates with three metrics of Fennoman status: being member of the Finnish Literature Society (FLS), the classification by Jutikkala (1989), and an indicator based on name-changing. Online Appendix Table OA5 shows that the relationship is robust to pooling all three definitions of Fennomans together.

We also correlate other measures of family status with the probability of becoming a Fennoman. Noble families are more likely to become FLS members and to be classified as Fennomans by Jutikkala (1989), but they are less likely to change the family name than non-noble families, as these families are less willing to change names in general. Having more bureaucrats, landowners or clergy in a family does not appear to be associated with

[18] These control variables are the logarithm of population and population density 1865, the logarithm of Swedish speaking population 1880, the logarithm of elites born before 1809, the logarithm of taxpayers and taxes paid, longitude and latitude, region indicators, suitability for rye and barley, and slope. We assign each family to a municipality based on the modal occurrence of a home municipality.

the probability of being associated with the Fennoman movement, as captured by FLS membership or Jutikkala's classification, but there is a negative relationship with finnicizing the family name according to the University of Helsinki registers.

We validate our measure of family centrality by examining how family centrality correlates with different measures of status in Table OA4. We see that more central families were more likely to be nobility, bureaucrats, and landowners.

Table 1. Elite family characteristics and Fennoman status.

	FLS member			Fennoman (Jutikkala)			Changed name		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Initial centrality	0.141***			0.034***			0.036***		
	(0.006)			(0.003)			(0.005)		
Noble family		0.252***			0.156***			-0.056***	
		(0.034)			(0.026)			(0.015)	
Family bureaucrat share			-0.020			0.003			-0.069***
			(0.019)			(0.005)			(0.011)
Family landowner share			-0.018			0.013			-0.071***
			(0.066)			(0.019)			(0.027)
Family clergy share			0.003			-0.004			-0.041***
			(0.018)			(0.005)			(0.010)
N	4509	4509	4509	4509	4509	4509	4509	4509	4509
R^2	0.12	0.03	0.01	0.04	0.04	0.01	0.02	0.01	0.01

Notes: This table represents coefficients in the regression of Fennoman status on standardized network centrality (equation 3), computed using pre-1809 born network. The unit of observation is a family, and the sample consists of families with living descendants in the 1800s with a non-missing birthplace. In columns (1)-(3), the dependent variable is Fennoman status based on FLS membership. In columns (4)-(6), the dependent variable is Fennoman status based on Jutikkala (1989). In columns (7)-(9), the dependent variable is Fennoman status determined by finnicization of the (last) name. All specifications include controls for municipality characteristics according to the family's home municipality: the logarithm of population and population density 1865, the logarithm of Swedish speaking population 1880, the logarithm of elites born before 1809, the logarithm of taxpayers and taxes paid, longitude and latitude, region indicators, suitability for rye and barley, and slope. Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

4.3 Propagation of National Awakening in the Elite Network

Core to periphery pattern We explore our individual-level network of elites and employ data on the timing of joining the FLS to study who joined first to the nationalistic movement. We estimate the following individual-level equations:

$$Y_{if} = \alpha + \beta_1 Initial\ centrality_f + \beta_2 Proximity\ to\ J.V.\ Snellman_{if} + \mathbf{X}'_{\mathbf{m}}\gamma + \epsilon_{if}. \quad (4)$$

Here, the outcome of interest, Y_{if}, indicates whether the individual i in family f joined the Finnish Literature Society (FLS), joined the FLS in the first wave (1831–1840), or the year the individual joined the FLS. As independent variables, we use initial family centrality, as previously defined, and individual-level proximity to the founder of the movement, J.

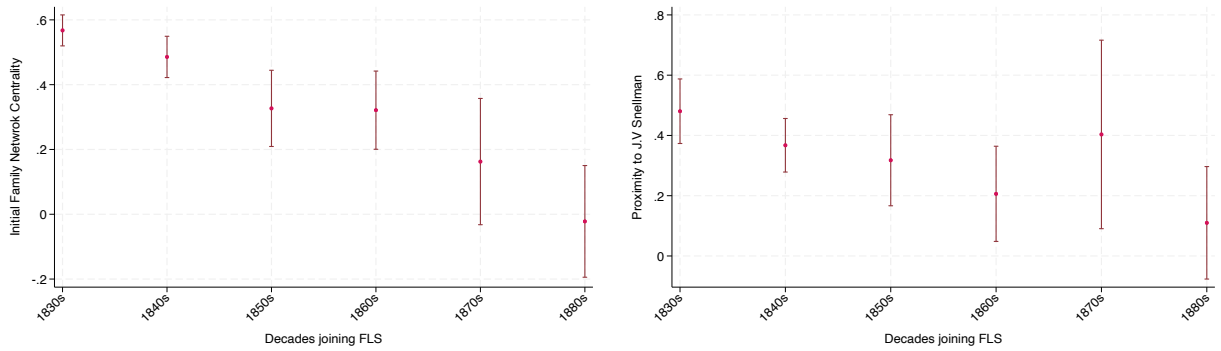
V. Snellman. All of our regressions include a vector of municipality-level control variables, $\mathbf{X}'_{m(f)}$. ϵ_{if} is the error term.

In the estimation results presented in Panel A of Table 2, we establish that the most central families were the first to move, spearheading the movement. Initial family centrality is closely associated with joining the Finnish Literature Society in the first wave: a one-standard-deviation increase in initial family centrality is associated with a 1 p.p. increase in the probability of early joining (a 45% increase relative to the mean). Closeness to J. V. Snellman yields similar estimates: a one-standard-deviation increase is associated with a 40% increase, relative to the mean, in the probability of joining the FLS in the first wave. In columns (7)-(8), we restrict the sample to FLS members identified in the data and document that a one-standard-deviation increase in family centrality is associated with joining nearly seven years earlier, and closeness to J. V. Snellman is associated with joining around two years earlier. In columns (3), (6), and (9), we estimate initial family centrality and closeness to Snellman separately, as these variables could be highly correlated; however, joint estimation does not materially affect the estimates.

In Figure 4, we graphically present the prominent core-to-periphery pattern of national awakening. In Panel A, we regress family centrality (standardized to mean 0 and standard deviation 1) on indicators for the decade in which the family joined and plot the estimated coefficients with 95% confidence bands. The figure shows that the initial members of the national movement were the most central and that family centrality declined in subsequent waves. Panel B shows a similar pattern: the initial waves of Fennoman activists were closer to the founder, J. V. Snellman, in the family network, and this closeness decreased in later waves.

Network peer propagation We then study how the national idea propagates across the elite network via individual connections. Exploiting the time dimension in our data, we estimate the individual-level equation (5), in which an indicator for whether individual i joined the Finnish Literature Society, FLS membership$_i$, is related to the extent to which *connected individuals* in the network had *previously* joined, denoted by the variable Exposure (prior)$_i$. All of our regressions include a vector of municipality-level control variables, $\mathbf{X}'_{m(i)}$. ϵ_i is the error term.

$$FLS\ membership_i = \alpha + \beta\,\text{Exposure (prior)}_i + \mathbf{X}'_{\mathbf{m(f)}}\gamma + \epsilon_i. \tag{5}$$



(A.) Initial family network centrality by decades of joining the FLS.

(B.) Proximity to J. V. Snellman by decades of joining the FLS.

Figure 4. Elite family centrality and family closeness to Snellman by decades of joining the FLS.

Notes: Panel A illustrates the initial elite family centrality by decade of joining the Finnish Literary Society. Panel B illustrates individual-level elite distance to J. V. Snellman by decade of joining the Finnish Literary Society. The plots present estimates from separate regressions on the outcomes and dummies for the decade in which the individual joined the FLS. All specifications include controls for municipality characteristics according to home municipality: the logarithm of population and population density 1865, the logarithm of Swedish speaking population 1880, the logarithm of elites born before 1809, the logarithm of tax payers and taxes paid, longitude and latitude, region fixed effects, suitability for rye and barley, and slope. We show point estimates and their 95% confidence intervals.

In the estimates presented in Panel B of Table 2, we then exploit the full network structure and timing and document in column (10) that having adjacent nodes in the network that had previously joined increases one's probability of joining by 11 p.p. In columns (11)-(13), we report results using alternative definitions of the network-based exposure variable, Exposure_{it}: (i) the share of adjacent nodes that had joined; (ii) an indicator for any close-by nodes (within two steps) having joined; and (iii) the share of close-by nodes that had joined. All three yield consistent estimates. In column (14), we show that network closeness to first-wave FLS members also substantially increases the probability of joining the society later, we estimate that a one-standard-deviation increase (0.19) in proximity is associated with a 3 p.p. increase in the probability of joining.

We further explore the event timing in the network and estimate a discrete-time logistic hazard model given by equation (6).

$$\log[-\log(1-h_{it})] = \psi(t) + \beta\,\text{Exposure (prior)}_{it} + \mathbf{X}'_{\mathbf{m(f)}}\gamma + \mu_r + +\varepsilon_{it}, \tag{6}$$

Here the discrete-time hazard is $h_{it} = \Pr\big(y_{it}=1 \,\big|\, y_{i,t-1}=0,\, \mathbf{X}_{it}\big)$, i.e., the probability that individual i joins in year t conditional on not having joined earlier. We use a complementary log-log link (a discrete-time approximation to a proportional hazards model). $\psi(t)$ captures

baseline time dependence and is modeled either as a fifth-order polynomial in time or as year fixed effects since the founding of the FLS. Exposure $(\text{prior})_{it}$ is a network exposure measure, either an indicator or the share of adjacent nodes that had previously joined. $\mathbf{X}_{it}$ includes population, geographic, and income controls, and μ_r are region fixed effects.

The discrete-time hazard estimates presented in columns (15)-(18) of Panel B of Table 2 again imply large network diffusion effects. In the specification with the binary exposure measure, the coefficient of 1.691 corresponds to a hazard ratio of $\exp(1.664) \approx 5.28$, indicating that exposure through an adjacent node having previously joined increases the conditional probability of joining by more than fivefold. When using the share of adjacent nodes who had joined, a one-standard-deviation increase in adjacent-node exposure (0.077), the implied hazard ratio is $\exp(4.156 \times 0.077) \approx 1.38$, i.e., about a 38% increase in the hazard.

5 Local-Level Analysis

We now turn to analyzing how the local presence of elite Fennomans affected national awakening and demand for institutional change across Finnish municipalities. We provide summary statistics for the local level variables in Table OA2.

5.1 Local-Level Network Measures

We bring our individual-level network measures to the local level following, e.g., Bai, Jia, and Yang 2023. First, we aggregate the initial family centrality of the local elite from equation (1) to the municipal level. Specifically, we compute:

$$Initial\ family\ centrality_m = \ln\left(\sum_{i \in m} Initial\ centrality_{i(f)}\right). \tag{7}$$

This is the local-level sum of centrality scores from the elite network which gives us a measure of the structural importance of elites in each locality.

Similarly, we define the aggregate proximity of J. V. Snellman for municipality m as:

$$Proximity\ to\ J.\ V.\ Snellman_m = \ln\left(\sum_{i \in m} \frac{1}{d(\text{Snellman}, i) + 1}\right). \tag{8}$$

Table 2. Elite network propagation of national awakening.

	FLS member			First-wave FLS member			Year joined FLS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A. Core to periphery									
Initial family centrality	0.022***		0.021***	0.009***		0.009***	-6.836***		-6.520***
	(0.001)		(0.001)	(0.001)		(0.001)	(0.703)		(0.713)
Proximity to J. V. Snellman		0.020***	0.020***		0.007***	0.007***		-2.133***	-1.294**
		(0.002)	(0.002)		(0.001)	(0.001)		(0.703)	(0.653)
N	16763	16763	16763	16763	16763	16763	1017	1017	1017
Mean *Y*	0.06	0.06	0.06	0.02	0.02	0.02	1854.45	1854.45	1854.45
	FLS member								
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Panel B. Network propagation									
Adjacent node joined previously	0.112***					1.673***	1.691***		
	(0.006)					(0.068)	(0.069)		
Share adjacent nodes joined previously		0.606***						4.134***	4.156***
		(0.042)						(0.124)	(0.123)
Close node joined previously			0.081***						
			(0.004)						
Share close nodes joined previously				0.990***					
				(0.060)					
Proximity to first wave FLS member					0.159***				
					(0.012)				
N	16763	16763	16763	16763	16503	1022365	1151973	1022365	1151973
Mean *Y*	0.061	0.061	0.061	0.061	0.046	0.001	0.001	0.001	0.001
Model	OLS	OLS	OLS	OLS	OLS	Discrete-time hazard	Discrete-time hazard	Discrete-time hazard	Discrete-time hazard
Time						FEs	5th order	FEs	5th order

Notes: Unit of analysis is the individual. Panel A reports associations between initial elite-family centrality and elite-network distance to J. V. Snellman and three outcomes: (i) Finnish Literature Society (FLS) membership, (ii) first-wave membership (1831–1840), and (iii) year of joining. Panel B reports network-propagation estimates, where the outcome is FLS membership and the key regressors are: (i) distance to first-wave members (excluding first-wave individuals), (ii) an indicator that any adjacent node had previously joined, (iii) the share of adjacent nodes that had previously joined, (iv) an indicator that any close-by node (within two steps) had previously joined, and (v) the share of close-by nodes that had previously joined. Columns (7)–(9) present discrete-time hazard models. All specifications include controls for municipality characteristics according to the family's home municipality: the logarithm of population and population density 1865, the logarithm of Swedish speaking population 1880, the logarithm of elites born before 1809, the logarithm of tax payers and taxes paid, longitude and latitude, region indicators, suitability for rye and barley, and slope. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

where $d(\text{Snellman}, i)$ represents the shortest path length between Snellman and individual i in the network.[19] The measure S_m captures the extent of Snellman's influence in a municipality.

5.2 Elite Fennomans and Broader National Awakening

Did the Fennoman elites spread the national awakening to the broader population, i.e., how successful was the broader nation-building effort? In this subsection, we provide evidence that in places with more elite Fennomans, Finnish national identity manifested more broadly through increased popularity of Finnish names, electoral support for Fennoman parties in Finnish elections, finnicization of names among non-elites, and subscriptions to the Fennoman newspaper *Uusi Suometar* in the late 1800s and early 1900s.

Evolution of naming practices in the 1800s The 1860s marked a new phase in Finland's national awakening, as the Fennoman movement began to exhibit "mass character" (Hroch 1985, p. 63). Before then, national awakening was confined to small elite circles and left little trace on popular behavior.

The accession of the more liberal Tsar Alexander II, led to victories for the Fennomans: the language decrees of 1863-1864 made Finnish an administrative language, the Diet reopened in 1863, and 1865 municipal reform expanded local participation. The 1866 education reform designed by Uno Cygnaeus established the folk school (*kansakoulu*) system, alongside teacher seminaries and Finnish-language textbooks, rapidly raising Finnish literacy. Together, these changes created institutions through which Fennoman ideals diffused beyond elites and into everyday practices.

Did exposure to local elite Fennomans spur national awakening diffrentially starting from the 1860s onward? We follow prior studies that have used naming practices as a proxy for nation-building and identity formation (Bazzi et al. 2019; Assouad 2021; Fouka 2020; Chiovelli et al. 2023). Drawing individual-level population-tax registers (*henkikirjat*), we quantify the relationship between elite Fennoman exposure and the evolution of naming conventions by estimating the following difference-in-differences specification:

$$Y_{mt} = \beta \text{Elite Fennomans}_m \times \mathbf{1}[\text{Year} \geq 1870] + \lambda_m + \lambda_t + \mathbf{X}'_m \gamma_t + \varepsilon_{mt}. \tag{9}$$

[19] Recall that, at the individual level, proximity to Snellman is measured through a network of biographical references, where the distance reflects the minimum number of connections needed to link a local elite member to Snellman as in equation (2).

Here, Y_m is the share of individuals born in each decade t who were registered in municipality m in 1915 and who have a Swedish surname and a Finnish first name.[20] The main independent variable is exposure to elite Fennomans (members in the Finnish Literature Society), measured as the logarithm or as the share relative to the 1865 population.[21] The coefficient of interest, β, captures the effect of elite Fennoman exposure on naming practices after the 1860s. λ_m and λ_t are municipality and decade fixed effects, respectively. They account for time-invariant municipal characteristics and common changes in naming practices. ε_m denotes the error term. We cluster standard errors at the municipal level.

An concern in interpreting these results is the possibility of omitted-variable bias, namely, that the number of local elite Fennomans may be correlated with unobserved cultural, institutional, or socioeconomic features that also independently influenced trends in naming practices. While the time and municipal fixed effects greatly alleviate such worries, we further address this concern by including a rich set of controls (denoted by $\mathbf{X}'_m$ interacted with time effects) that proxy for such latent factors. The logarithm of population and population density in 1865 to account for municipality size and urbanization. To isolate the effect of Fennoman elites rather than a larger elite presence in general, we include the logarithm of the initial local elites. We also account for local language composition by including the logarithm of the number of Swedish-speaking residents in 1880, the earliest year for which these data are available.[22] We control for the 1865 logarithm of total taxed income and the logarithm of the total number of taxpayers to account for economic differences. We further add controls for latitude, longitude, slope, and the agricultural suitability for rye and barley to account for time-invariant differences in geography. Finally, we add eight region (*lääni*) indicators to restrict variation to geographically proximate municipalities.

The estimates in Table 3 indicate that municipalities more exposed to elite Fennomans experienced a markedly stronger shift in naming behavior after the 1860s. In the most extensive specifications with all controls and regional fixed effects (columns 4 and 8), the interaction term between post-1870 and Fennoman exposure is positive and highly significant. The coefficient of 3.9 in column (4) implies that a one-percentage increase in the number of elite Fennomans is associated with roughly a 4.1 percentage-point higher share of Finnish first names among individuals with Swedish surnames after 1870, relative to the pre-1870s

[20] We aggregate to decade to have more balanced municipal-level panel. Our measure of Swedish-surnames likely incorporates a large share of Finnish speakers as this is not a perfect proxy of language.

[21] As some municipalities have no elite Fennomans, we add one and then take the logarithm.

[22] As the Swedish-speaking population largely concentrated in coastal areas, the 1880 measure likely serves as a good proxy for the time-invariant language composition.

baseline. When the measure of exposure is expressed per capita (Panel A, column 8), the corresponding estimate of 0.37 suggests that a standard deviation increase in elite Fennoman exposure is associated with some 1.5 percentage-point higher share of Finnish first names.

Panel B shows that initial municipality-level network centrality and closeness to J. V. Snellman had similar a similar effect on naming conventions from 1870 onwards. In the richest specifications, a one-log-point increase in initial family centrality or in closeness to Snellman raises the post-1870 prevalence of Finnish naming by about 4 and 3 percentage-points, respectively. These patterns indicate that the spread of Finnish-language identity was not merely correlated with general socioeconomic development, but was specifically linked to the presence of well-connected Fennoman elites whose influence extended to local cultural practices. Together, the results provide consistent evidence that elite-driven nation-building translated into observable popular adoption of Finnish identity markers after the reforms of the 1860s.

The difference-in-differences estimation relies on the parallel trends assumption; that naming practices would have continued along the same trend in the absence of local Fennoman activity. We further estimate a dynamic specification that interacts local Fennoman exposure with decade fixed effects, while otherwise following equation (9), to examine differential trends prior to the 1860s reforms:

$$Y_{mt} = \sum_{s \neq 1860} \beta_s \text{Elite Fennomans}_m + \lambda_m + \lambda_t + \mathbf{X}'_m \times \lambda_t + \varepsilon_{mt}. \tag{10}$$

We visualize the resulting decade-specific estimates β_s ($s \neq 1860$) in Figure 5. We see little trend in naming practices before the 1860s; the point estimates are all close to zero. From the 1870s onwards, the estimates are positive and large in magnitude. The lack of pre-trends in the decades prior to the liberal reforms gives us confidence in our difference-in-differences estimation. The differential shift in naming remains clearly evident for cohorts born after the 1860s.

We complement these analyses by examining names inspired by the characters in Kalevala, a compilation of Finnish epic poetry collected by Elias Lönnrot and published in 1835. We present difference-in-difference and event-study estimates in Online Appendix Table OA6 and Figure OA10, respectively. We find an increase in the prevalence of Kalevala-related names in the decades following Alexander II's liberal reforms.

Table 3. The effect of elite Fennoman presence on later naming conventions.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A.								
ln(Elite Fennomans) × 1[Year ≥ 1870]	3.419***	2.438**	2.739***	2.943***				
	(0.752)	(0.945)	(1.019)	(0.998)				
Elite Fennomans per capita × 1[Year ≥ 1870]					0.649***	0.371***	0.378***	0.370***
					(0.118)	(0.101)	(0.117)	(0.111)
N	1037	971	971	971	977	971	971	971
Mean Y	64.37	64.42	64.42	64.42	64.31	64.42	64.42	64.42
R^2	0.83	0.84	0.84	0.85	0.83	0.84	0.84	0.85
Panel B.								
ln(Initial family centrality) × 1[Year ≥ 1870]	4.568***	3.523**	3.479**	3.335**				
	(1.144)	(1.432)	(1.461)	(1.512)				
ln(Proximity to J. V. Snellman) × 1[Year ≥ 1870]					4.446***	3.720*	3.893*	2.287
					(1.332)	(1.954)	(2.003)	(2.061)
N	1037	971	971	971	1037	971	971	971
Mean Y	64.37	64.42	64.42	64.42	64.37	64.42	64.42	64.42
R^2	0.83	0.84	0.84	0.85	0.83	0.84	0.84	0.85
Elite controls	✓	✓	✓	✓	✓	✓	✓	✓
Geographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Population controls		✓	✓	✓		✓	✓	✓
Income controls			✓	✓			✓	✓
Region FEs				✓				✓

Notes: The unit of observation is a municipality-decade. Fennomans are classified based on FLS membership. The dependent variable is the share of Finnish names given to those with Swedish last names. Elite controls include the logarithm of total 1800s elites and elites born before 1809, by the family's home municipality. Population controls include the logarithm of population and population density in 1865, the logarithm of the Swedish-speaking population in 1880. Income controls include the logarithm of total taxed income in 1865 and the logarithm of taxpayers in 1865. Geographic controls include longitude and latitude, suitability for rye and barley, and slope. Region FEs include indicators for eight regions (*lääni*). Control variables are interacted with 1[$Year \geq 1970$]. Robust standard errors clustered at the municipality level are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

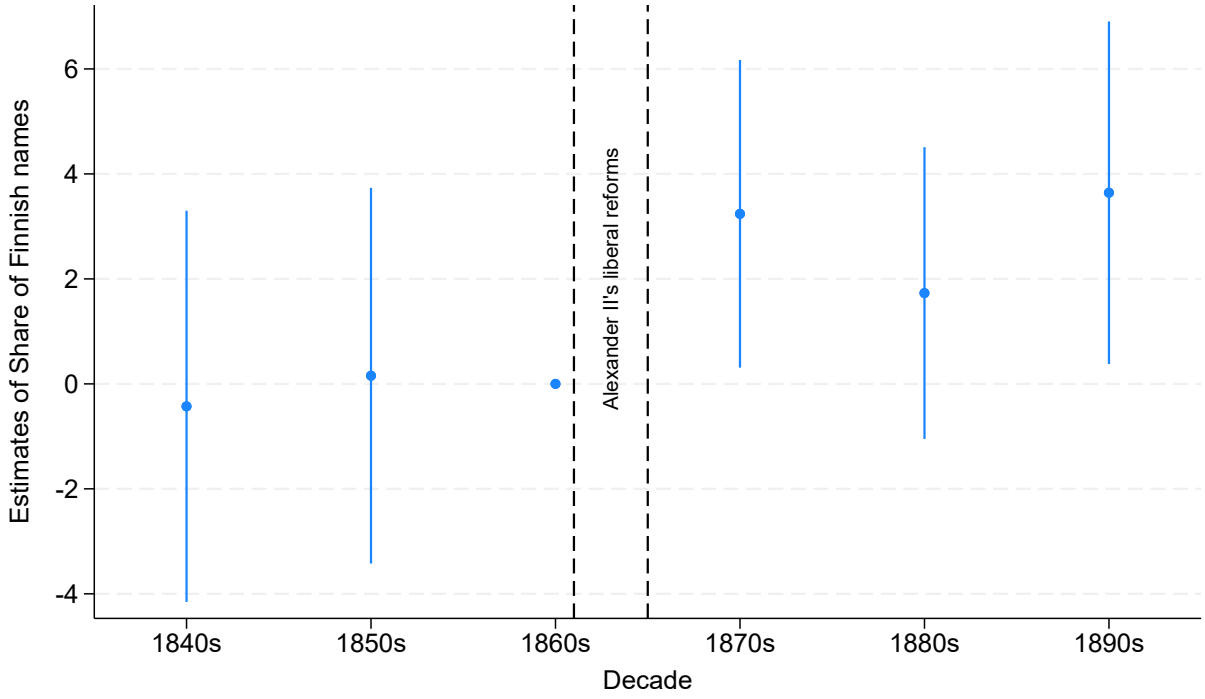


Figure 5. Event-study estimates for naming conventions.

Notes: The event-study plot presents decade-specific estimates of the effect of the logarithm of elite Fennomans on the share of Finnish names among children born to families with a Swedish last name in that decade, obtained using specification (10). We control for the interactions of decade fixed effects and the logarithm of population and population density 1865, the logarithm of Swedish speaking population 1880, the logarithm of elites born before 1809, the logarithm of taxpayers and taxes paid, longitude and latitude, region fixed effects, suitability for rye and barley, and slope. The 95% confidence intervals are constructed using standard errors clustered at the municipality level.

National awakening in the late 19th and early 20th century We now turn to local-level outcomes measured around the early 1900s. We estimate the following equation:

$$Y_m = \alpha + \beta \text{Elite Fennomans}_m + \mathbf{X}'_m\gamma + \varepsilon_m. \tag{11}$$

Here, Y_m is the outcome in municipality m. These include the vote share of Fennoman parties (averaged over 1910–1916), finnicization of names among non-elites (in 1906–1907), and subscriptions to the Fennoman newspaper *Uusi Suometar* (in 1899). We scale the number of finnicized names and the number of *Uusi Suometar* subscriptions by the 1880

population (in thousands).[23] The coefficient of interest, β, captures the relationship between local Fennoman presence and the outcome variable. ε_m denotes the error term.

X_m is a vector of control variables. We include the same rich set of demographic, economic and geographic controls as in equation (9) to account for observable differences in municipalities. To further assess the potential influence of unobserved confounders, we follow Oster (2019) and perform a bounding exercise. She proposes a test for understanding the importance of omitted variables, in particular, the degree of selection on unobservables that would be required to drive the estimated coefficient to zero, that takes into account movements in coefficients and R^2 as controls are added in the regression. The resulting value of δ indicates how strong selection on unobservables would have to be, relative to the observed controls, in order to explain away the effect. Oster (2019) argues that values of $|\delta| > 1$ imply that unobserved factors would need to be more influential than all observed ones, an implausibly strong form of selection, to eliminate the estimated effect, thereby reinforcing confidence in the result's robustness.

We first estimate the impact of early local Fennoman elites on subsequent national identity by using equation (11), with the Fennoman parties' vote shares over the years 1910–1916 as the outcome.[24] This our most direct measure of national identity that encompasses all individuals, including the initially Finnish-speaking population. The Fennoman parties were highly popular, with an average vote share of more than 36 % for the parties. This measure captures also the popularity of the Fennoman movement among the general non-elite and Finnish-speaking population. As Swedish-speakers made up about 13% of the population in the early 1900s, the party's popularity further supports the idea that the movement eventually developed "a mass character" (Hroch 1985, p. 63).

Panel A of Table 4 documents a strong positive local-level association between early Fennoman elites and later support for Fennoman parties (columns 1 and 2). A one-standard deviation increase in the logarithm of Fennoman elites in the 1800s is associated with a 3.6 percentage point increase in the Fennoman party average vote share in 1910-1916. Similarly, a one-standard deviation increase in Fennoman elites per capita is associated with a 3.2 percentage point increase in the average vote share of the Fennoman party.

In columns (3) and (4), we explore how the local presence of early elite Fennomans is associated with the shift in names from Swedish to Finnish among the non-elites. There

[23] We scale by population due to the high number of zeros in the outcome variables, which might be problematic (see, e.g., Chen and Roth 2023). We present estimates with log-transformed outcome variables in the Online Appendix.

[24] Fennoman party votes is defined as the combined support for the Finnish Party (*Suomalainen puolue*) and the Young Finnish Party (*Nuorsuomalainen puolue*). We focus on the years collected in Meriläinen and Mitrunen (2025).

is a strong association between influential early Fennomans and later name changes among commoners at the local level. We find that a one-standard deviation increase in the logarithm of elite Fennomans or Fennoman elites per capita is associated with 4.7−5.2 additional name-change announcements per thousand people.

Local presence of early Fennoman elites is also strongly associated with circulation of *Uusi Suometar* in 1899 (columns 5 and 6). A one-standard deviation increase in the logarithm of elite Fennomans or elite Fennomans per capita is associated with 3.6-5.5 increase in *Uusi Suometar* circulation per thousand people.

A key concern in interpreting these results is the possibility of omitted variable bias, namely, that the number of local elite Fennomans may be correlated with unobserved cultural or socioeconomic features that also independently influenced trends in the national awakening outcomes.[25] We assess the role of omitted variable bias in our OLS regressions by following the approach of Oster (2019). In most specifications, the resulting $|\delta|$ is greater than one, which indicates that the selection on unobservables would have to be substantial in order for omitted variables to explain the estimated effects.[26]

Panel B further shows the reduced form impact of network centrality and elite influence. Municipalities with more central families and families closer to J. V. Snellman in the elite network voted more for the Fennoman parties, saw more name changes per capita, and also had more subscribers to *Uusi Suometar* per capita.

5.3 National Awakening and Demand for Institutional Change

Did the influential Fennomans, by fostering national identity, contribute to the rising demand for institutional change? While the Fennoman movement aimed to create national unity, it also fostered opposition to ruling elites—both the Russian authorities and non-Fennoman Finnish elites. For example, an influential Fennoman Yrjö Koskinen Yrjö-Koskinen wrote in *Kirjallinen Kuukauslehti* regarding the position of the Finnish language in 1869: "The question now is, who shall rule in this country: a small minority, whose position rests on old social injustices, or the majority of the people" (Liikanen 1995, p. 13).[27]

We now go on to empirically assess whether nation-building efforts also turned against the incumbent regime. To empirically measure how the national movement impacted the

[25]The number of Fennoman elites is measured in the 1831-1892 and the local-level outcomes from 1899 onward, so reverse causality can be ruled out.

[26]To calculate Oster's δ, we follow the standard assumption that R^2_{max} obtained from a hypothetical regression of the outcome on the elite Fennoman exposure and all possible covariates is equal to $1.3R^2$, where R^2 is from the actual estimation (Oster 2019).

[27]The writing was done under a pseudonym Y. K. Yrjö-Koskinen. Yrjö Koskinen Yrjö-Koskinen was born Georg Zacharias Forsman until he changed his name to the Finnish version in 1882.

Table 4. The effect of elite Fennomans on early 1900s local national awakening.

	Fennoman party vote share		Name changes per capita		Subscriptions per capita	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A.						
ln(Elite Fennomans)	4.580***		7.621**		3.983***	
	(1.369)		(3.002)		(1.422)	
Elite Fennomans per capita		1.090***		1.830***		1.852***
		(0.398)		(0.394)		(0.338)
N	479	479	485	485	485	485
Mean Y	36.48	36.48	14.11	14.11	4.04	4.04
R^2	0.35	0.35	0.30	0.30	0.35	0.47
Oster δ for $\beta = 0$	9.55	21.16	1.03	1.65	0.94	1.14
Panel B.						
ln(Initial family centrality)	8.018***		7.574**		5.544**	
	(2.119)		(3.267)		(2.201)	
ln(Closeness to J. V. Snellman)		8.623***		13.642***		9.468***
		(2.914)		(3.699)		(3.067)
N	479	479	485	485	485	485
Mean Y	36.48	36.48	14.11	14.11	4.04	4.04
R^2	0.35	0.35	0.29	0.30	0.35	0.38
Oster δ for $\beta = 0$	-4.58	-11.27	0.58	0.56	0.79	0.72

Notes: The unit of observation is the municipality. The dependent variables are Fennoman parties' vote share 1910-1916, name changes 1906-1907 per capita, and *Uusi Suometar* circulation in 1899 per capita. The per capita measures are relative to 1880 population in 1,000s. All specifications include the full set of municipal controls: the logarithm of total initial elites born before 1809, by home municipality, the logarithm of population and population density in 1865, the logarithm of the Swedish-speaking population in 1880, the logarithm of total taxed income in 1865 and the logarithm of total number of taxed individuals in 1865, longitude and latitude, suitability for rye and barley, slope, and region indicators for eight regions (*lääni*). Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

demand for institutional change, we build upon established literature and use strikes as a measure of the "threat of revolution" following Acemoglu and Robinson (2000) and Aidt and Franck (2015). We estimate the equation (11) using two municipal-level measures of unrest in the early 1900s as an outcome: the number of strikes in 1903–1906 and the number of strikers in 1907–1908. We express these outcomes as per thousands of 1880 population.

The strikes of the early 1900s were part of a wider wave of unrest in Finland demanding political freedoms, universal suffrage, an end to Russification, and stronger workers' rights. Protesters also pressed for better working conditions, higher wages, and the restoration of Finland's constitutional autonomy. The upheaval prompted a series of concessions: after the 1905 general strike, Russification measures were rolled back, and domestic elites

Table 5. The effect of elite Fennomans on demand for institutional change.

	Strikes 1903–1906 per capita		Strikers 1906–1908 per capita	
	(1)	(2)	(3)	(4)
Panel A.				
ln(Elite Fennomans)	0.124**		4.694**	
	(0.054)		(2.338)	
Elite Fennomans per capita		0.048**		0.715**
		(0.021)		(0.358)
N	483	483	483	483
Mean Y	0.15	0.15	6.69	6.69
R^2	0.17	0.19	0.19	0.18
Oster δ for $\beta = 0$	0.83	1.28	0.74	0.94
Panel B.				
ln(Initial family centrality)	0.269***		8.121**	
	(0.081)		(3.534)	
ln(Closeness to J.V Snellman)		0.328***		11.870***
		(0.090)		(4.341)
N	483	483	483	483
Mean Y	0.15	0.15	6.69	6.69
R^2	0.19	0.19	0.19	0.20
Oster δ for $\beta = 0$	0.74	0.71	0.64	0.64

Notes: The dependent variables are strikes 1903-1909 per capita and strikers 1906-1908 per capita. The per capita measures are relative to 1880 population in 1,000s. All specifications include the full set of municipal controls: the logarithm of total initial elites born before 1809, by home municipality, the logarithm of population and population density in 1865, the logarithm of the Swedish-speaking population in 1880, the logarithm of total taxed income in 1865 and the logarithm of total number of taxed individuals in 1865, longitude and latitude, suitability for rye and barley, slope, and region indicators for eight regions (*lääni*). Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

advanced further reforms, culminating in universal suffrage (see, e.g., Alapuro 1988; Meriläinen, Mitrunen, and Virkola 2023).

Table 5 examines how the national movement shaped demand for institutional change. Panel A shows that areas with more early Fennoman elites experienced significantly more strikes: a one-standard deviation increase in the logarithm of Fennoman elites in the 1800s is associated with $1.1 - 1.4$ additional strikes per 100 people in 1903-1906. Panel B shows similar effects for strike participation: the same increase is associated with 4.5 or 2.2 more

strikers per 1,000 people in 1906-1908, depending on specification. Panel B further shows that the municipality-level centrality of elites or their closeness to J. V. Snellman are positively associated with both the number of strikes and the number of strikers per capita. However, Oster's δ falls below 1 in all specifications.

5.4 Robustness Checks

In the Online Appendix, we explore the robustness of the local-level results to alternative codings of the outcome variables and exposure to Fennoman elites. Online Appendix Tables OA7 and OA8 show that our results are driven by municipalities with a high Fennoman exposure, defined as the group of municipalities where the number of elite Fennomans is above the median in municipalities with at least one elite Fennoman. Furthermore, the tables illustrate that we obtain qualitatively similar findings if we scale the number of elite Fennomans by the total size of the local elite in 1809. In Online Appendix Tables OA9 and OA10, we use logarithmic transformations of the outcomes, adding one to zeros. Again, we find a strong and statistically significant relationship between local elite Fennomans and the national awakening and protest outcomes.

5.5 IV Estimates

We complement the local-level OLS results with an instrumental-variable strategy to address potential endogeneity in local Fennoman influence. The instrument exploits the network proximity of municipal elites to J. V. Snellman—the central figure of the Fennoman movement—measured through biographical reference links sa well as initial elite network centrality as instruments, the 2SLS estimates (Table OA11) are larger but consistent with the OLS results, reinforcing the interpretation that early elite exposure shaped subsequent national awakening and protest outcomes.

6 Mechanisms

In this section, we present evidence on the underlying mechanisms by which Fennoman elites promoted broader national awakening.

6.1 Finnish-Language Schooling

A plausible mechanism for the observed results is that the Fennomans locally promoted Finnish language education as a large literature in economics has highlighted the importance

of education in nation-building (Bandiera et al. 2018; Alesina, Giuliano, and Reich 2021; Paglayan 2022).

J. V. Snellman and other Fennomans believed that the national unity should be achieved through the school system (Alapuro 2018, p. 87). To further document the importance of education among the Fennoman elites, we use data on speeches in the Diet of Finland and look at the average term frequency of the word "school" in speeches given by Fennomans and non-Fennomans in each of the estates (Online Appendix Table OA12). In all estates except for the clergy (for which there is no major difference in the average term frequency), Fennomans systematically talk more about schools in their speeches.

To explore the schooling mechanism on national awakening, we use information on the number of schools, Finnish-language students, and Swedish-language students in each municipality in the academic year 1883–1884. These data come from the earliest available source, Suomenmaan virallinen tilasto (1885).

We present results on the schooling mechanism in Table 6 where we regress the number of schools, the number of Finnish-language students per capita , and the number of Swedish-language students per capita in the year 1884 against elite Fennoman exposure, controlling for the full set of covariates. We see that the presence of elite Fennomans is associated with the first two outcomes outcomes, where the relationship between elite Fennomans and Finnish-language students particularly stands out as large and statistically significant, while there is no notable effect on the number of Swedish language students.

Table 6. Elite Fennomans and schooling outcomes in 1883.

	Number of schools		Finnish students per capita		Swedish students per capita		Difference in students per capita	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ln(Elite Fennomans)	0.193*		4.494***		0.704		3.791*	
	(0.099)		(1.703)		(1.143)		(2.275)	
Elite Fennomans per capita		0.007		1.158		-0.272		1.431*
		(0.026)		(0.719)		(0.214)		(0.839)
N	482	482	481	481	481	481	481	481
Mean Y	1.30	1.30	11.06	11.06	3.71	3.71	7.35	7.35
R^2	0.45	0.45	0.42	0.42	0.29	0.29	0.28	0.30
Oster δ for $\beta = 0$	0.50	0.27	0.71	1.14	0.60	-0.98	0.84	2.02

Notes: The dependent variable is the number of schools in columns (1) and (2), the number of Finnish-language students per capita (1,000s) in columns (3) and (4), and the number of Swedish-language students per capita (1,000s) in columns (5) and (6). Difference in student linguistic groups are denoted in columns (7) and (8). All specifications include the full set of municipal controls: the logarithm of total initial elites born before 1809, by home municipality, the logarithm of population and population density in 1865, the logarithm of the Swedish-speaking population in 1880, the logarithm of total taxed income in 1865 and the logarithm of total number of taxed individuals in 1865, longitude and latitude, suitability for rye and barley, slope, and region indicators for eight regions (*lääni*). Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

6.2 Dispersion of Ideas Through Letters to the Press

We explore the spread of nationalistic (and other) ideas by examining the contents of over 70,000 letters sent to all Finnish newspapers by their readers over the years 1820–1885 when literacy and access to the press were still largely confined to educated elites. Writing to newspapers was potentially not only a form of self-expression but also a means to disseminate nationalist ideas. As such, the content of these letters provide insight into the mechanisms through which elites attempted to influence public opinion and construct a shared national identity.

These text data come from Finnish National Library's Translocalis database.[28] They contain text on miscellaneous topics and also indicate the municipality where the writer is from. We use an LLM (`gpt-4o`) to identify whether the letters cover any of the following topics: nationalism, democracy, national sovereignty, language politics, education, culture, and inequality. Further information on the classification is available in the data appendix.

Reader letters to the press became a major phenomenon in Finland over the nineteenth century. For example, Kokko (2022) argues that they had a fundamental role in shaping nationalism and civic society in Finland.

In Table 7, we use the sum of letters on each topic per 1865 capita as dependent variables. We see that both measures of elite Fennoman exposure are positively associated with letters on most topics, but especially on nationalism, language politics, education, culture, and inequality. Moreover, there are more letters sent from locations with more elite Fennomans.

[28] The data are publicly available at https://www.kansalliskirjasto.fi/en/projects/translocalis (accessed May 28, 2025).

Table 7. Letters to the press.

	Nationalism		Democracy		Independence		Language politics	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ln(Elite Fennomans)	0.186		0.003		0.010		0.290*	
	(0.117)		(0.044)		(0.016)		(0.166)	
Elite Fennomans per capita		0.094**		0.020		-0.001		0.157**
		(0.040)		(0.018)		(0.004)		(0.078)
N	473	473	473	473	473	473	473	473
Mean Y	0.70	0.70	0.34	0.34	0.08	0.08	0.72	0.72
R^2	0.32	0.35	0.21	0.22	0.07	0.07	0.38	0.44
Oster δ for $\beta = 0$	1.17	1.64	0.06	1.40	-1.09	-1.35	0.95	1.41
	Education		Culture		Inequality		All letters	
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
ln(Elite Fennomans)	0.383		0.324		0.560*		1.147*	
	(0.247)		(0.428)		(0.316)		(0.657)	
Elite Fennomans per capita		0.227**		0.332*		0.330**		0.737***
		(0.095)		(0.171)		(0.128)		(0.275)
N	473	473	473	473	473	473	473	473
Mean Y	2.82	2.82	2.23	2.23	3.19	3.19	6.94	6.94
R^2	0.45	0.48	0.45	0.49	0.50	0.54	0.56	0.60
Oster δ for $\beta = 0$	3.21	2.38	0.68	1.68	2.59	2.19	1.77	2.02

Notes: The dependent variables are the per 1865 capita number of letters to the press discussing the topic indicated in the column titles in columns (1)-(14) and the per 1865 capita total number of letters in columns (15) and (16). All specifications include the full set of municipal controls: the logarithm of total initial elites born before 1809, by home municipality, the logarithm of population and population density in 1865, the logarithm of the Swedish-speaking population in 1880, the logarithm of total taxed income in 1865 and the logarithm of total number of taxed individuals in 1865, longitude and latitude, suitability for rye and barley, slope, and region indicators for eight regions (*lääni*). Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). The unit of observation is a municipality. Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

6.3 Local Presence of Fennoman Clergy

Many members of the local religious elite in nineteenth-century Finland were active participants in the Fennoman movement. Unlike many other parts of the Russian Empire, Finland retained its Lutheran religion and religious institutions during the period of autonomy. This institutional continuity possibly gave the Church a unique capacity to serve as a vehicle for the dissemination of nationalist thought.

We assess this mechanism in Table OA13 where we correlate exposure to Fennoman priests with our national awakening and protest outcomes, holding the total number of priests constant. We see that more exposure to Fennoman priests is positively correlated with all outcomes, and the regression coefficients are statistically significant for the number of name changes, *Uusi Suometar* subscriptions, and the number of strikes in 1903–1906. At

the same time, there is no statistically significant relationship between the outcomes and the total number of priests.

6.4 Evolution of Fennomans' Political Influence

We examine the Fennoman elite's political influence to further understand the timing of increased nation-building and national awakening after 1860. A plausibly important catalyst was that following his accession to power, Tsar Alexander II began to favor the Fennomans in order to further distance the Finnish elite from Swedish influence (Savolainen 1994). Most notably, the Fennoman leader J. V. Snellman was appointed a senator and head of the Senate's Finance Department in 1863 (Klinge 1997). The relative increase in political influence enabled the Fennomans to further advance the nation-building agenda.

In Online Appendix D, we empirically document this power shift and show how the probability of having a senator in an elite family evolved for Fennoman and non-Fennoman elite families. We see that after the 1860s, the probability of having a senator began increasing for Fennoman families but remained stagnant (around 5%) for non-Fennoman elite families. We further present difference-in-differences and event-study estimates, further solidifying the power shift. In line with the results on political power, we also document suggestive evidence in Online Appendix D that Fennoman-aligned families also became more likely to be associated with a top civil servant.

7 Conclusion

Nations differ in their sense of collective identity and social cohesion. Many continue to face challenges in forging a shared national identity, making the processes of nation-building highly relevant.

This paper documents a case of successful top-down national movement. We study Finland's transition from Swedish to Russian rule in the nineteenth century, when Swedish-speaking elites founded the Fennoman movement to promote a Finnish national identity after the chanign circumstances. We find that initially more influential elites were more likely to engage in nation-building, and that the national idea spread from more- to less-central elite actors and among the elite networks. Using information on the timing of joining the Finnish Literature Society, we document that having a directly connected contact (an adjacent node) who had previously joined increased an elite's probability of joining by 1 percentage point.

We then trace the diffusion of these elite efforts at the local level. Early Fennomans pushed for Finnish-language administration, newspapers, books, and schooling. We show

that municipalities with strong ties to early elite Fennomans were more likely to exhibit markers of national sentiment in the early twentieth century. We observe a differential shift in first-name practices after the 1860s reforms among those with Swedish surnames. Residents in municipalities with more Fennoman presence were also more likely to later vote for nationalist parties, to finnicize their names, and to subscribe to Fennoman newspapers, suggesting that national identity spread from the top-down. Moreover, we show that elite-led nation-building was associated with broader political mobilization. This mobilization preceded major reforms—including universal and equal suffrage in 1906—as authorities sought to defuse rising discontent.

The Finnish case highlights the long-term implications of inclusive nation-building. By empirically documenting the individual-level spread of elite-led nationalist behavior, we provide a complement to existing historical accounts and contribute to understanding the micro-foundations of identity formation and institutional change. Contemporary surveys consistently rank Finland among the highest in social cohesion and shared national identity. Our findings suggest that 19th-century elite-led efforts to promote a shared national identity contributed to this outcome. This points to the enduring legacy of early nation-building strategies and their potential to shape political development across generations.

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Online Appendix to "Networks of Nation-Building: Evidence from the Fennoman Movement"

A Data Appendix

In this appendix, we provide additional information on our data. The first subsection illustrates the socioeconomic status of elite Fennomans over time. The second subsection provides further information and examples of the elite biography data and the University of Helsinki student registries that we use to construct our network centrality metrics. In the third subsection, we provide an illustrative example of the construction of the network centrality measures.

A.1 Summary Statistics

We present summary statistics on our main outcome variables and main independent variables of interest in Table OA1. Table OA2 reports summary statistics on covariates. Furthermore, we report OLS estimates from bivariate regressions of each covariate on elite Fennoman exposure, elite centrality, or closeness to J. V. Snellman.

Table OA1. Summary statistics.

	Mean	SD	Min	Max	*N*
Fennoman parties' vote share (average over 1910-1916)	36.49	22.20	0.00	96.48	514
Name changes in 1906-1907 per 1880 capita (1,000s)	14.01	29.71	0.00	306.91	484
Uusi Suometar subscriptions in 1899 per 1880 capita (1,000s)	3.93	11.00	0.00	105.93	484
Strikes in 1903-1906 per 1880 capita (1,000s)	0.15	0.61	0.00	8.77	484
Strikers in 1906-1908 per 1880 capita (1,000s)	6.56	24.59	0.00	214.40	484
ln(Elite Fennomans + 1)	0.47	0.82	0.00	6.86	519
Elite Fennomans per 1865 capita (1,000s)	0.65	2.93	0.00	36.82	489
ln(Closeness to J. V. Snellman + 1)	4.12	25.15	0.00	553.68	519
ln(Elite centrality + 1)	3.92	21.42	0.00	450.49	519

A.2 Socioeconomic Status of Elite Fennomans

Following Hroch (1985), we classify early Fennomans based on their membership in the FLS, a non-governmental organization founded in 1831 to support research and promote Finnish culture and heritage. This dataset, compiled from FLS membership records, includes detailed information on each member's name, domicile, membership duration, occupation, title, field

Table OA2. Summary statistics for covariates and their correlations with elite Fennoman presence.

		$\hat{\beta}$				
Variable	Mean	ln(Fennoman elites)	Fennoman elites per capita	ln(Elite centrality)	ln(Closeness to J. V. Snellman)	N
ln(Elites in 1809)	2.20	0.896***	0.116***	1.335***	1.511***	529
	[1.35]	(0.060)	(0.032)	(0.058)	(0.082)	
ln(Elites)	3.20	1.028***	0.170***	1.397***	1.619***	529
	[1.38]	(0.042)	(0.034)	(0.048)	(0.067)	
ln(Swedish population in 1880)	3.64	0.725***	0.144***	1.244***	1.246***	489
	[2.40]	(0.107)	(0.045)	(0.108)	(0.117)	
ln(Population in 1865)	7.97	0.305***	-0.005	0.328***	0.451***	490
	[0.80]	(0.045)	(0.025)	(0.041)	(0.045)	
ln(Population density in 1865)	2.39	0.695***	0.164***	0.687***	0.790***	490
	[1.25]	(0.085)	(0.046)	(0.089)	(0.092)	
ln(Taxed marks in 1865)	4.64	1.597***	0.220***	1.615***	1.991***	529
	[2.95]	(0.159)	(0.045)	(0.187)	(0.215)	
ln(Taxed population in 1865)	3.60	1.086***	0.118***	1.105***	1.401***	529
	[2.32]	(0.122)	(0.026)	(0.142)	(0.166)	
Latitude	62.07	-0.073	-0.002	-0.092	-0.219**	513
	[1.70]	(0.079)	(0.024)	(0.090)	(0.093)	
Longitude	24.91	0.418***	0.085**	-0.086	-0.050	513
	[2.74]	(0.144)	(0.035)	(0.145)	(0.153)	
ln(Slope)	9.00	-0.008*	-0.000	0.000	-0.004	517
	[0.08]	(0.004)	(0.001)	(0.004)	(0.005)	
ln(Barley suitability)	8.08	0.134***	0.013*	0.149**	0.221***	517
	[1.26]	(0.043)	(0.008)	(0.060)	(0.066)	
ln(Rye suitability)	6.51	0.118***	0.011	0.136***	0.201***	517
	[1.06]	(0.037)	(0.008)	(0.051)	(0.056)	

Notes: Standard deviations are reported in brackets below the mean. $\hat{\beta}$ comes from a bivariate regression of the variable indicated in the first column on the logarithm of Fennoman elites, Fennoman elites per capita (1,000s), the logarithm of elite centrality, or the logarithm of closeness to J. V. Snellman. Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

of study, degree, and father's occupation, among other attributes.[1] We characterize the socioeconomic status of FLS members in Figure OA1 which confirms that the members came primarily from middle and upper social classes. Also a significant number of students joined FLS. They later became primarily government officials, clergy, academics, and doctors.

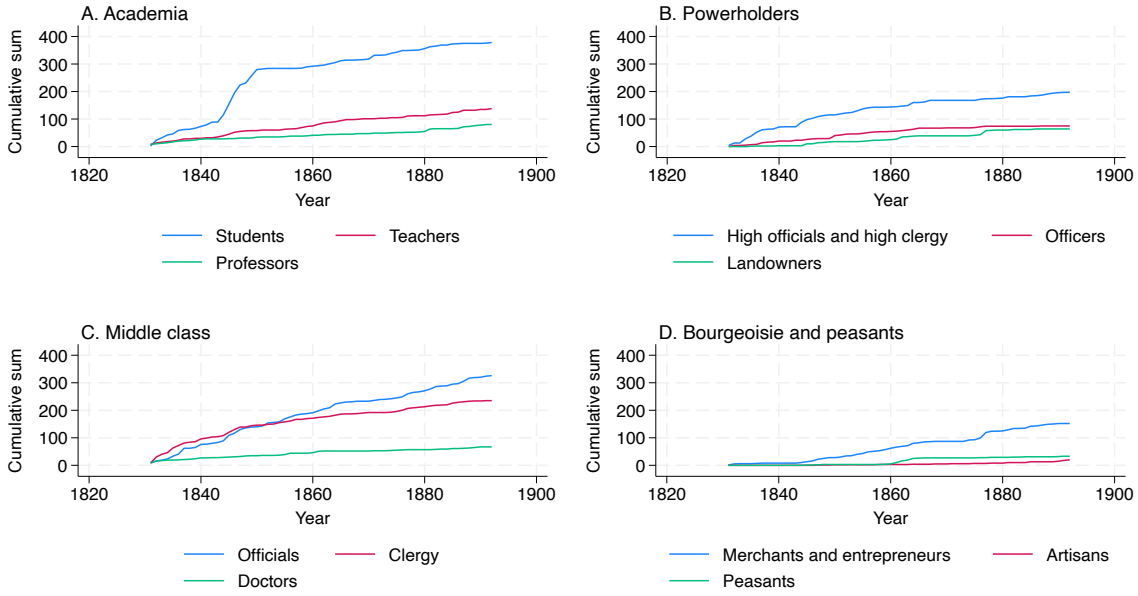


Figure OA1. Socioeconomic status of FLS members.

A.3 Elite Biographies and AcademySampo

This study uses data from BiographySampo and AcademySampo, two linked-data platforms that provide detailed biographical and academic records of prominent individuals in 19th-century Finland.[2] BiographySampo includes around 13,000 biographies of notable Finns—mainly from the National Biography—along with documented relational ties such as family connections and references between individuals. AcademySampo is based on digitized student registers of the Imperial Alexander University (later the University of Helsinki) from 1640-1899 and includes rich relational data on students, their professors, teachers, parents, spouses, and other relatives also affiliated with the university. Together, these sources offer a comprehensive view of the Finnish elite, especially individuals from the nobility and clergy, but also prominent figures from the burgher and peasant estates.

[1] The data are available here: https://kansallisbiografia.fi/jasenet (accessed March 20, 2025).

[2] The *BiographySampo* data are publicly available at https://biografiasampo.fi (accessed January, 2025). The *AcademySampo* data are publicly available at https://akatemiasampo.fi/en/ (accessed October 14, 2024).

From these relational data, we construct a historical network in which each node represents an individual and edges represent documented ties—such as family links, biographical mentions, or student-teacher relationships. This network structure allows us to study elite reproduction, influence, and connectivity within 19th-century Finnish society. To assess individuals' structural positions in the network, we compute standard centrality measures, including closeness centrality and betweenness centrality, which capture their embeddedness and brokerage roles within the elite. These data thus provide the empirical foundation for analyzing how elite status and influence were transmitted and sustained across generations.

Let us illustrate the contents of these data sources by taking one example. Elias Lönnrot was a prominent Fennoman. He appears in both the BiographySampo and the AcademySampo, allowing us to trace not only his personal biography but also his embeddedness in the wider elite network of 19th-century Finland.

In the BiographySampo, we find detailed accounts of his life, including his contributions as a physician, linguist, and compiler of the Kalevala, the Finnish national epic (see Figure OA2). The data also document his familial connections and his influence on contemporaries, capturing how he was both a product of and a contributor to the cultural nationalism of the time. The biography makes various references to other people, and other people's biographies also refer to Lönnrot (see Figure OA3). These data allow us to capture Lönnrot's network rather extensively (see Figure OA4 for his family network and full network inferred based on the biographic mentions).

In the AcademySampo, Lönnrot is recorded as both a student and later a professor, with links to his teachers and students, as well as fellow scholars with whom he collaborated (see Figure OA5). Through these relationships, we can position him within a broader network of academic elites (see Figure OA6 for Lönnrot's family network and his academic network).

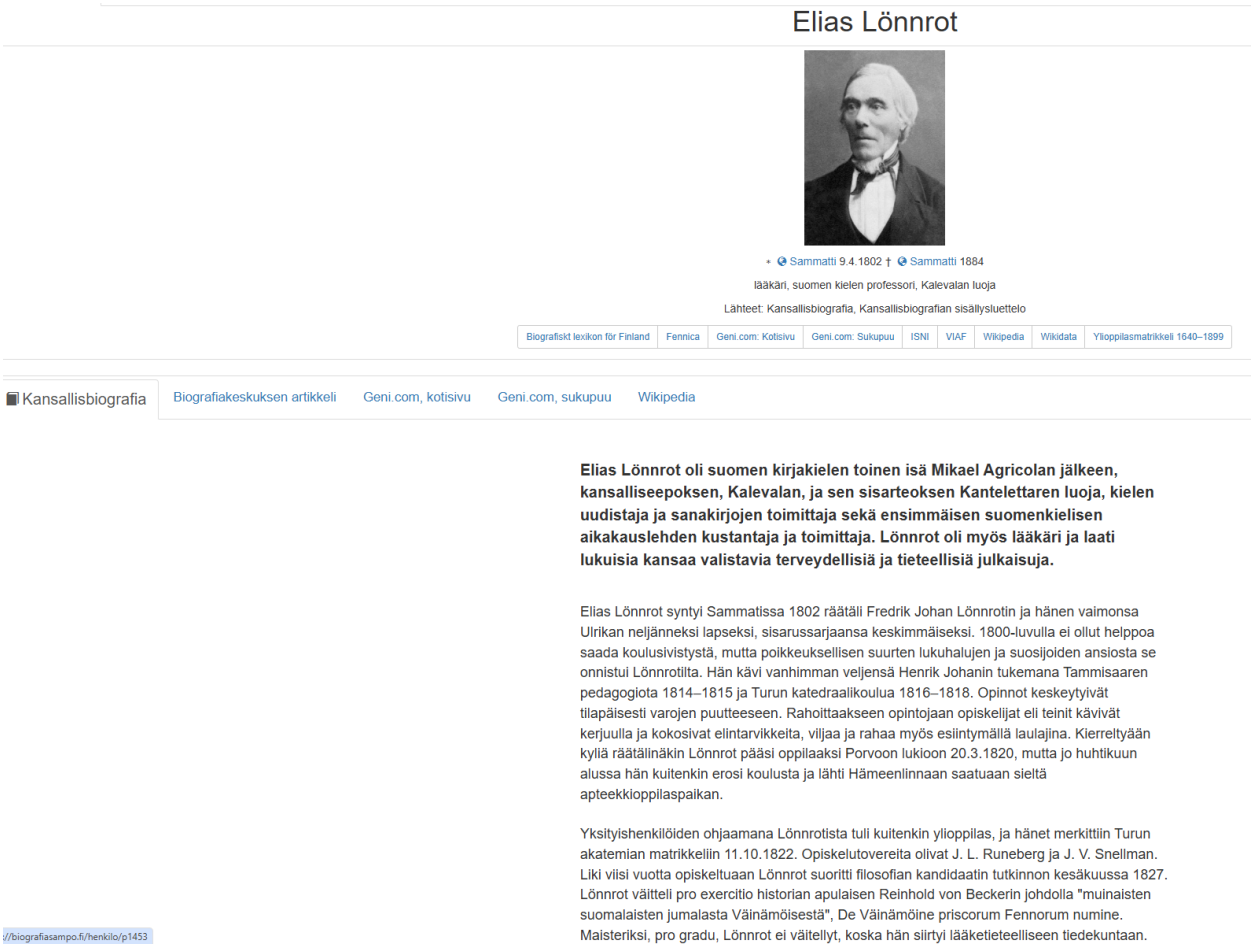
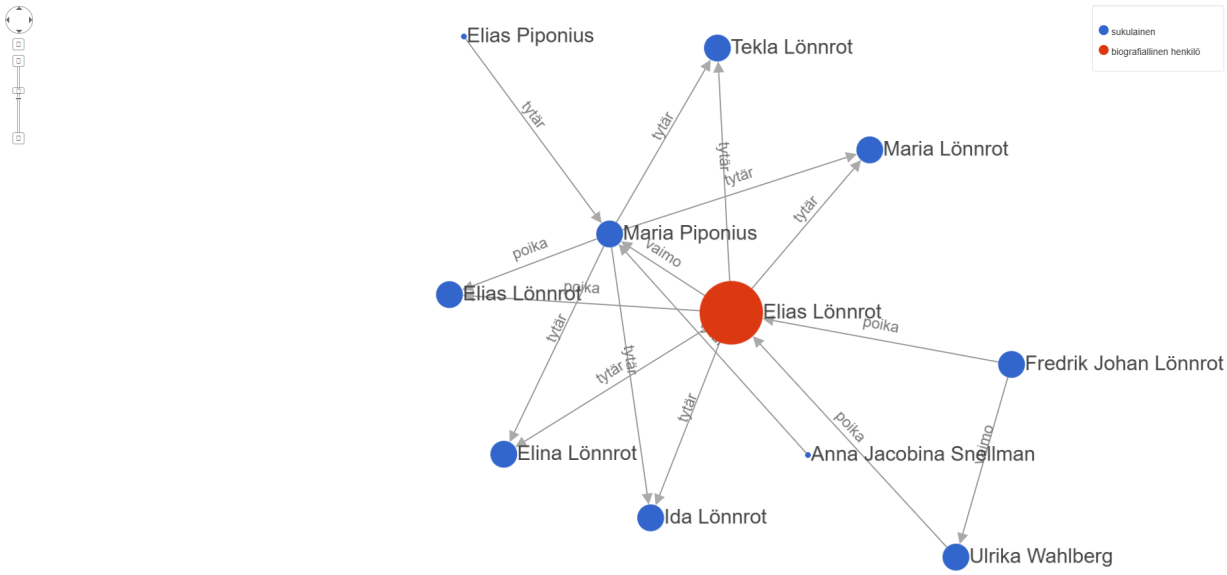


Figure OA2. An excerpt of Lönnrot's biography in the BiographySampo.

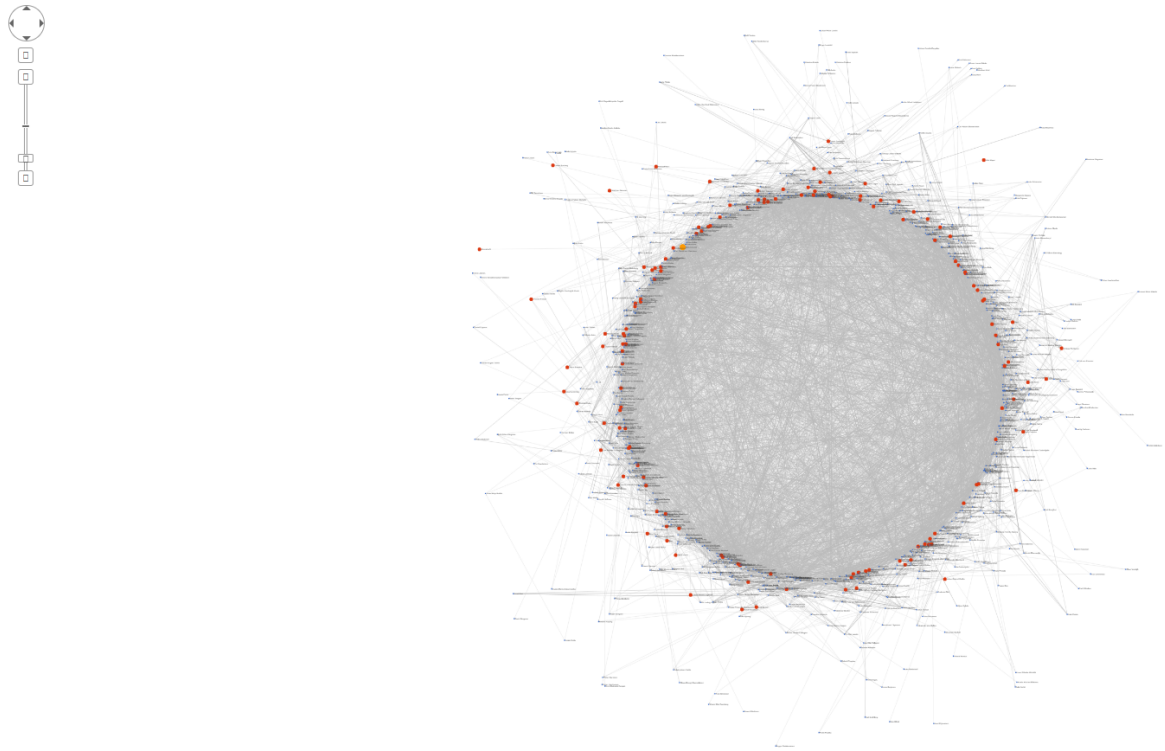
Viittaukset muista biografioista henkilöön

- Cajanus, Johan: Cajanuksen ilmoitus Väinämöisen sukuperästä antoi sittemmin **Elias Lönnrotille** aiheen kutsua tämän tarusankarin kotiseutua Kalevalaksi, mistä taas johtui hänen suuren eepoksensa nimi.
- Saxberg, Johan: Yritys siivota ulos virsikirjan ja katekismuksen selitysten perkeleitä tuotti tulosta vasta sata vuotta myöhemmin, jolloin **Elias Lönnrot** ja virsikirjakomitea poistivat kaikkiaan 282 perkelettä vanhasta virsikirjasta.
- Wacklin, Sara: Osiossa on myös kuvaussarja Oulun suurpalosta 1822, kunnes teos päättyy oululaisiin henkilökuviin ja lopulta suurmiehiin Snellmaniin, Topeliukseen, M. A. Castréniin ja **Elias Lönnrotiin** liittyviin muistoihin.
- Aho, Juhani: Se lienee peräisin Kalevalan ja Kantelettaren maisemakuvauksista, joissa "aho" **Elias Lönnrotin** Suomalais-ruotsalaisen sanakirjan mukaan" ruohoa tai nuorta puustoa kasvava kaskimaa" usein romantisoituu.
- Kivi, Aleksis: Myöhempi aika sovitteli yhteen Suomen kansalliskirjallisuuden luojiksi niin **Elias Lönnrotin**, J. L. Runebergin kuin Aleksis Kiven.
- Runeberg, Johan Ludvig: Runoudellaan Runeberg korotti, yhdessä **Elias Lönnrotin** kanssa, vastamuodostetun Suomen suuriruhtinaskunnan kulttuurikansojen joukkoon suomalaisten omissa ja ulkomaalaisten silmissä.
- Topelius, Zachris: Lehdessään hän osin tietoisesti ja journalistisista syistä kävi jatkuvaa polemiikkia Snellmanin Saiman kanssa, ja ylioppilasjohtajana hän innoittui M. A. Castrénin, **Elias Lönnrotin** ja Runebergin venäläis-fennougrilaisista näköaloista mutta seurasi samalla ajan vasemmistolaistumista Länsi-Euroopassa.
- Keckman, Carl Niclas: Hän luennoi sekä kielioppia että kansanrunoutta **Elias Lönnrotin** Kantele-kokoelman mukaan ja Kalevalasta.
- Kramsu, Kaarlo: Kun Kaarlo Kramsu voitti syksyllä 1874 Pohjalaisen osakunnan kirjoituskilpailun runoillaan ja niitä luettiin osakunnan vuosijuhlassa, kunniavieraina läsnä olivat muiden muassa Johan Vilhelm Snellman, **Elias Lönnrot** ja Zachris Topelius.
- Ahlqvist, August: Ahlqvist nimitettiin **Elias Lönnrotin** seuraajana 1863 suomen kielen ja kirjallisuuden professoriksi.
- Aklander, Matthias: Kirjeessä **Elias Lönnrotille** hän 1840-luvulla ehdotti sellaisen korkeamman oppilaitoksen perustamista, jossa opetus annettaisiin yksinomaan suomeksi.
- Arwidsson, Adolf Ivar: Arwidssonin muistokiveen hakattiin myöhemmin **Elias Lönnrotin** sepittämät säkeet:
- von Becker, Reinhold: **Elias Lönnrot** sai opettajansa von Beckerin artikkeleista vaikutteita Kalevalaan.
- Genetz, Emil: Hämeenlinnan-aikaan liittyy muun muassa Arvid-veljen kirjoittaman Herää, Suomi! -runon säveltäminen **Elias Lönnrotin** 80-vuotisjuhlaan 1882.
- Lindh, Johan Erik: L. Runebergin, R. H. Rehbinderin, Henrik Borgströmin, Charles Bassin, Nikolai Sinebrychoffin, Aurora Karamzinin, Sara Wacklinin, **Elias Lönnrotin** ja Fredrik Paciuksen, mutta yhtä lailla räätälinrouva Amalia Martenssonin, urkuri Gustaf Lucanderin ja kapteeni Jakob Lundströmin.
- Lagus, Wilhelm: Laguksen uran ulkonaisesti loistokkain kausi olivat yliopiston vararehtorin- ja rehtorinkaudet1875 - 1884, jolloin hän järjesti lähes joka vuosi suurimuotoisia akateemisia juhlia: ilojuhlia vietettiin keisari Aleksanteri II:n hallituskauden 25-vuotisjuhlan ja uuden hallitsijaparin kruunajaisten johdosta, surujuhlia keisarin ja keisarillisen kanslerin pitkäaikaisen lähimmän avustajan kreivi Alexander Armfeltin sekä kansallisten merkkimiesten **Elias Lönnrotin** ja J. V. Snellmanin kuoleman johdosta.
- Lille, Bengt Olof: Ilmeisesti takauksista langenneet vastuut velkaannuttivat Lilleä myöhemmin niin, että hän lainaili rahaa muiden muassa **Elias Lönnrotilta**.
- Linsén, Johan Gabriel: Yliopiston professorina ja Suomalaisen Kirjallisuuden Seuran esimiehenä Linsén sai vihdoin vuosikokouksessa 1836 käyttää ruotsiksi kaunopuheisuuttaan vastailmestyneen **Elias Lönnrotin** Kalevalan ylistykseksi:" Kirjallisuutemme on vasta nyt päässyt kehdostaan.
- Salmelainen, Eero: Aikaisemmin tehtävästä olivat kieltäytyneet muun muassa **Elias Lönnrot**, Johan Fredrik Cajan ja D. E. D. Europaeus.
- Ruotsalainen, Paavo: Ensimmäiseksi kynään tarttui piirilääkärinä toimiva **Elias Lönnrot**, joka oli oppinut tuntemaan Ruotsalaisen vaikutukset Kajaanin seudulla.
- Snellman, Johan Vilhelm: Snellmanin serkku Maria Piponius solmi sittemmin avioliiton **Elias Lönnrotin** kanssa.
- Törngren, Johan Agapetus: Tämä vaatimaton suoritus on syytä muistaa mietittäessä, miksi Törngren osoitti ilmeistä suopeutta **Elias Lönnrotin** puuhille.
- Wettenhovi-Aspa, Sigurd: Reliefikoristeinen kirkonkello (Helsingin Tammisalon kirkon tapulissa), Nikolai II:n rintakuva sekä **Elias Lönnrot** pitkässä manttelissaan ovat varsin vaikuttavia monumentteja.
- Törngren, Adolf: Sitäkään ei tiedetä, kuinka ajatus pellavatehtaan perustamisesta alun perin syntyi, mutta taustalla lienee ollut Hämeen silloinen laaja pellavanviljely sekä Törngrenin vaimon, Hattulan Lahdentaan kartanon tyttären Sofia Idestamin, ja ehkä myös Laukossa hyvin tutuksi tulleen **Elias Lönnrotin** vaikutus.
- Hahl, Jalmari: Lisäksi hän suomensi **Elias Lönnrotin** ruotsiksi kirjoittamat matkakertomukset.
- Pihkala, Lauri: Hiihtoa voitiin harjoittaa, kuten Tahko totesi, hiihtourheilumme tienraivaajan **Elias Lönnrotin** tavoin haudan partaalle saakka.
- Anttila, Aarne: Tähän työhön liittyen Anttila sai tehtäväkseen **Elias Lönnrotin** elämäkerran kirjoittamisen.
- Lagervall, Jakob Fredrik: Julkaisujensa suomen kieltä koskevia mielipiteitään hän puolusti sitkeästi **Elias Lönnrotille** lähettämissään kirjeissä.
- Luomajoki, Aappo: **Elias Lönnrot** hiihti samanikäisenä Kajaanista Laukkoon.
- Susitaival, Paavo: Susitaival teki 1950-luvulla eräänlaista (**Elias Lönnrot**)" Lönnrot-työtä" kulkiessaan pari vuotta ympäri maata haastatellen ja keräten aineistoa 1920 1940-luvun oikeistoradikaalista liikehdinnästä.
- Paturi, Kustaa: Paturi saikin ratkaisevat herätteensä kansallishengen elähdyttämien vaikuttajien, kuten **Elias Lönnrotin** ja Jaakko Juteinin, kirjoituksista ja julkaisuista.
- Lagus, Jonas: Hengellisiä sanomia oli ensimmäinen suomenkielinen aikakauslehti **Elias Lönnrotin**1836 - 1840 toimittaman Mehiläisen rinnalla, joten sitä on pidettävä suomalaisen lehdistön historian kannalta uraauurtavana hankkeena.
- Kettunen, Lauri: Esikuvinaan **Elias Lönnrotin** kalevalaisten runojen keruu ja Artturi Kanniston kenttätyö vogulien keskuudessa Kettunen tahtoi pelastaa katoavista suomensukuisista kielistä ja kulttuureista mitä pelastettavissa oli.
- Kuusi, Matti: Antologia ja sen suomalainen laitos Kalevalaista kertomarunoutta (1980) antavat huolellisesti jäsennetyn kuvan tekstiaineistosta, jonka pohjalta **Elias Lönnrot** oli luonut Kalevalan.
- Warelius, Antero: **Elias Lönnrot** piti häntä Suomalais-ruotsalaisen sanakirjan tärkeimpänä avustajanaan.
- Ingman, Anders Wilhelm: Suomen kielen harrastus ja Kalevalaan kohdistunut ihailu vei hänet läheiseen kosketukseen **Elias Lönnrotin** kanssa.
- Europaeus, David Emanuel Daniel: Hän avusti **Elias Lönnrotin** sanakirjatyötä, suomensi geometrian oppikirjan (1847), perusti Suomettaren yhdessä August Ahlqvistin, Paavo Tikkasen ja Antero Wareliuksen kanssa 1846 ja toimitti lehteä aktiivisesti.
- Fellman, Jacob: Fellmanin ystäviä ja kannustajia olivat muiden muassa Matthias Alexander Castrén, **Elias Lönnrot** ja Lars Levi Laestadius.
- Grot, Jakov: Kirjailijoiden veljestyminen johti yhteiseen albumiin, jonka Grot toimitti ja joka ilmestyi ruotsalaisena ja venäläisenä rinnakkaispainoksena 1842, avustajina Runeberg, Cygnaeus, **Elias Lönnrot** ja monet venäläiset kirjailijat.
- Genetz, Arvid: Hän oli aloitteentekijä 1872, kun ylioppilaskunta päätti pitää 50-vuotisjuhlan J. L. Runebergin, **Elias Lönnrotin** ja J. V. Snellmanin ylioppilaaksitulon kunniaksi.
- Aspelin-Haapkylä, Eliel: Hän oli tehnyt tuttavuutta J. V. Snellmanin, **Elias Lönnrotin** ja J. L. Runebergin kanssa ja näiden luomalle perustalle hän rakensi oman katsomuksensa.
- Rabbe, Frans Johan: L. Runeberg, **Elias Lönnrot**, J. V. Snellman ja heidän aikalaisensa olivat Frans Johan Rabben ylioppilastovereilta ja ystäviä.
- Pacius, Fredrik: Fredrik Cygnaeus, Emil Nervander, **Elias Lönnrot** ja J. V. Snellman kuuluivat Paciuksen lähimpiin tuttaviin.
- Frosterus, Abraham: Niistä kolme on tosin **Elias Lönnrotin** uudelleen kääntämänä ja muokkaamana mukana vielä suomalaisessa vuoden 1990 virsikirjassa, tunnetuin niistä on virsi 384.
- Niemi, Aukusti Robert: Kröhn hoiti välialkaisesti myös suomen kielen ja kirjallisuuden professuuria ja johdatti historiaa ja filosofiaakin opiskelleen Niemen Suomalaisen Kirjallisuuden Seuran piiriin, kansanrunouden ja **Elias Lönnrotin** tutkijaksi sekä aikanaan seuran sihteeriksi ja yliopistouralle.
- Salminen, Väinö: Väinö Salminen halusi jo koulupoikana päästä **Elias Lönnrotin** ja M. A. Castrénin esimerkkiä seuraten kansanrunouden keruumatkoille ja keskittyi määrätietoisesti opintojensa alusta pitäen, jopa maantiedettäkin opiskellen, tähän päämääräänsä.

Figure OA3. Some references to Lönnrot in other biographies in the BiographySampo.

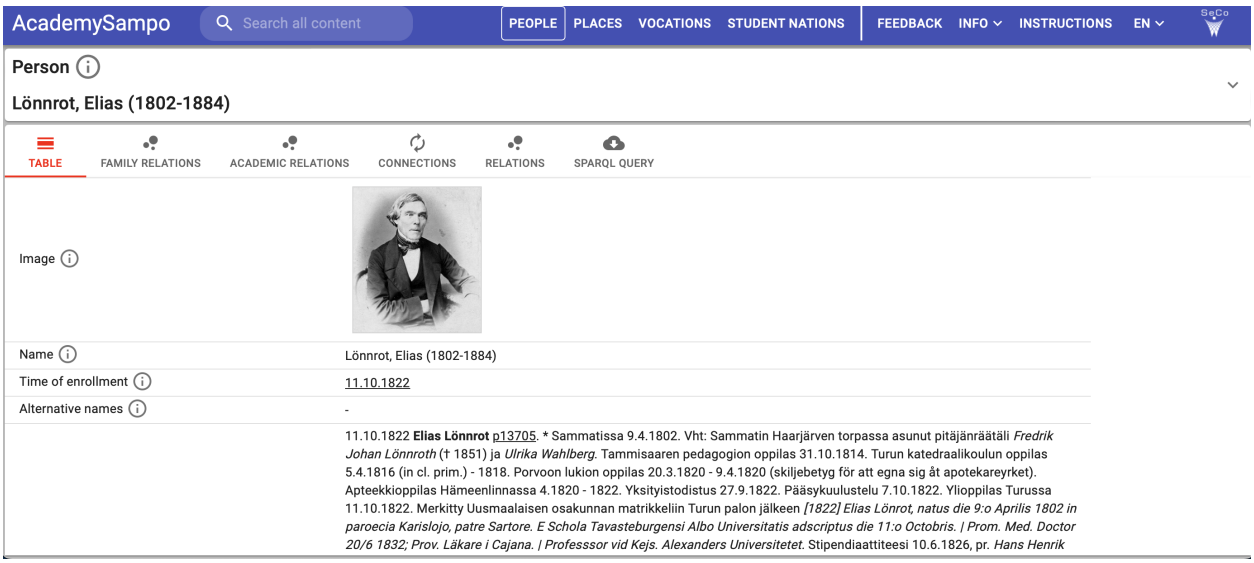


(A.) Family network

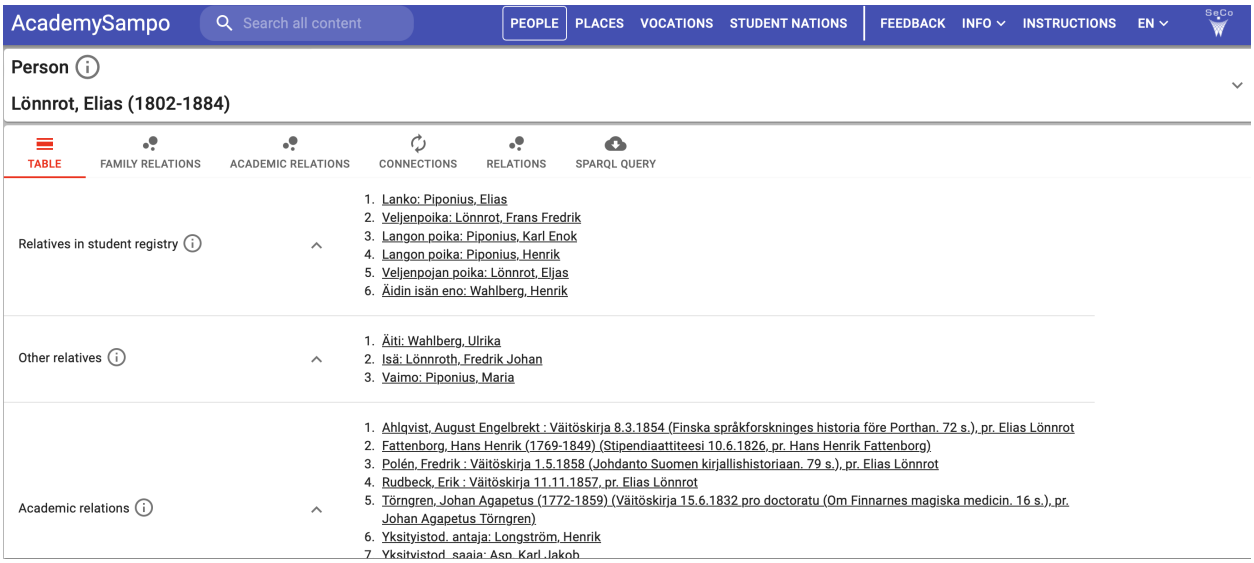


(B.) Full network

Figure OA4. Elias Lönnrot's networks in the BiographySampo.

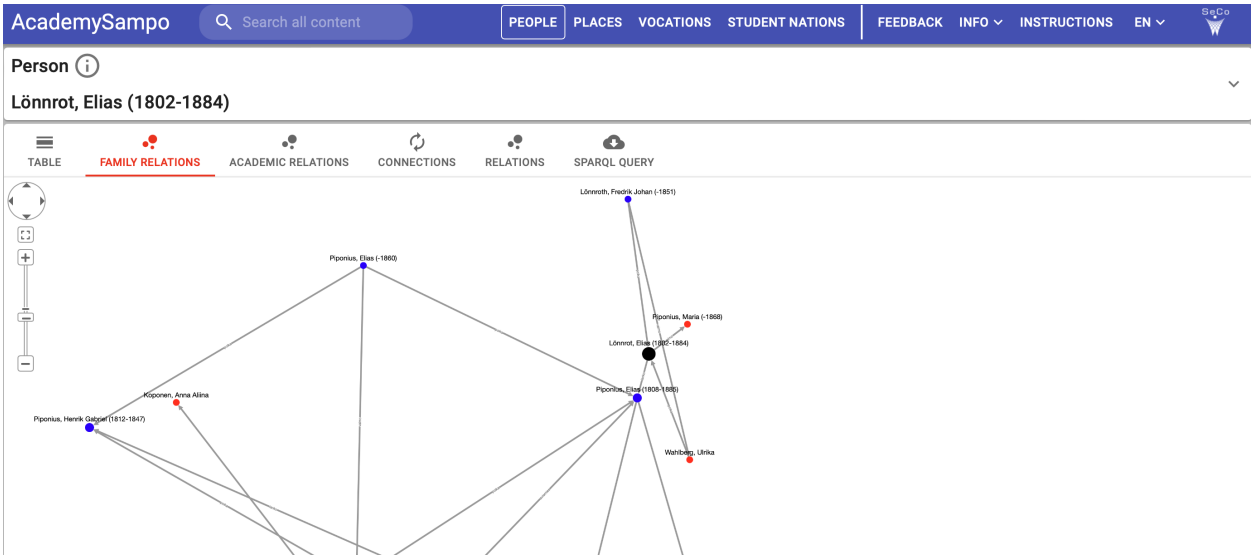


(A.) Lönnrot's profile

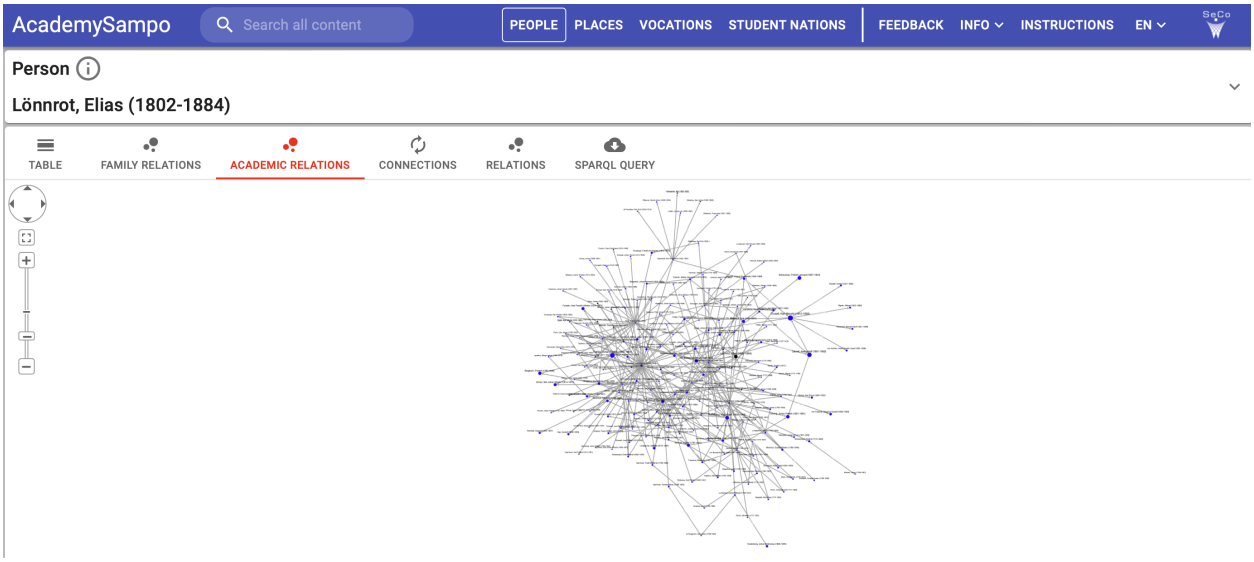


(B.) Lönnrot's family and academic relations

Figure OA5. Illustration of the AcademySampo contents for Elias Lönnrot.



(A.) Family network



(B.) Academic network

Figure OA6. Elias Lönnrot's networks in the AcademySampo.

A.4 An Illustrative Network Example

Let us now illustrate the construction of the network measure using a stylized example. Suppose we were to use text from the biographies of J. V. Snellman, Johan Ludvig Runeberg (a Finnish-Swedish poet, priest, and professor, widely regarded as Finland's national poet), and Elias Lönnrot to construct a network.

J. V. Snellman's biography suggests a connection between him and Runeberg: "Snellman completed his matriculation examination and was admitted to university at the age of 16 on October 5, 1822, in the same autumn as his older contemporaries J. L. Runeberg and Elias Lönnrot." This gives us links between Snellman, Runeberg, and Lönnrot. In Runeberg's biography, his connections to Fredrik Cygnaeus, a Finnish literary scholar, professor, and cultural advocate, and Fredrik Pacius, a German-born composer and music professor, are described as follows: "With the skillful guidance of Fredrik Cygnaeus, Maamme (Our Land) was established as Finland's national anthem at the university student societies' spring festival on May 13, 1848. Fredrik Pacius composed the melody at that time, and Runeberg included Pacius's composition as the musical appendix to the first part of The Tales of Ensign Stål." Lastly, Lönnrot's biography mentions another name that is not connected to any of these people: "Lönnrot defended his dissertation under the supervision of assistant professor of history Reinhold von Becker on the topic of the ancient Finnish god Väinämöinen, titled De Väinämöine priscorum Fennorum numine."

We can use this information to draw the network of these notables. This network is illustrated in Figure OA7. To then assess the "structural importance" of individuals within the network, we compute each person's harmonic centrality. It measures how close a node is to all other nodes in the network by summing the reciprocals of the shortest path distances.

Intuitively, an individual with high harmonic centrality can quickly reach many others, or is not too far from most, allowing for broad and relatively efficient access to information and influence. Unlike closeness centrality, harmonic centrality remains well-defined even in disconnected networks, making it particularly suitable for our data, which capture direct relationships such as family or professional ties that may not connect all individuals.

For individual i, harmonic centrality H_i is calculated as

$$H_i = \frac{1}{n-1} \sum_{j \neq i} \frac{1}{d(i,j)},$$

where $d(i,j)$ is the shortest path distance between nodes i and j, and we define $\frac{1}{d(i,j)} = 0$ if no path exists between them. n is the number of nodes in the network. In our context, individuals with high harmonic centrality may occupy structurally central positions in family

and educational networks, making them key figures in the circulation of information and influence among elites.

We illustrate the resulting centrality measure in Table OA3. In the network depicted in Figure OA7, Runeberg has the highest harmonic centrality because: (i) he is directly connected to four individuals (Snellman, Lönnrot, Cygnaeus, and Pacius); and (ii) the shortest paths from Runeberg to others are relatively short, giving him a high sum of reciprocal distances. In other words, he is structurally well-positioned to access others in the network quickly and efficiently, even when considering indirect connections (see the second column of Table OA3).

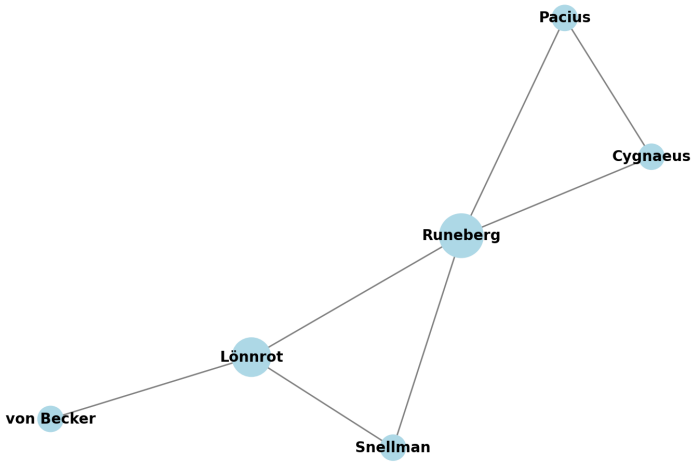


Figure OA7. Stylized example.

Table OA3. Centrality measures in the network.

Name	Sum of reciprocals of distances	Harmonic centrality (normalized)
Snellman	3.50	0.70
Runeberg	4.50	0.90
Lönnrot	4.00	0.80
von Becker	2.67	0.53
Cygnaeus	3.33	0.67
Pacius	3.33	0.67

A.5 Classifying the Contents of Letters to the Press

We explore the spread of nationalistic (and other) ideas by examining the contents of 71,576 letters sent to all Finnish newspapers by their readers over the years 1820-1885. These text data come from the Translocalis database which is publicly available at https://www.kansalliskirjasto.fi/en/projects/translocalis (accessed May 28, 2025). They contain text on miscellaneous topics and also indicate the municipality where the writer is from.[3]

To classify the thematic content of these letters to the press, we developed a custom text classification pipeline using OpenAI's `gpt-4o` language model. Each letter was read from its plain-text format and submitted to the model via API, along with a brief prompt instructing it to assess whether the letter addressed one or more of seven predefined themes: nationalism, democracy, education, culture, political independence, language politics, and inequality. The model was also asked to justify its classifications with a short explanation.

We show the number of letters to the press and the number of letters assigned to each topic over time in Figure OA8, and the share of letters assigned to each topic in Figure OA9. Letters to the press became a more common phenomenon after the 1850s, with issues related to education, culture, and inequality being particularly prevalent in them. A fair share of the letters also include nationalistic content or discussion related to language politics. However, material related to democracy and independence is less common.

[3] A small share of the letters were sent from abroad and are not used in our analyses.

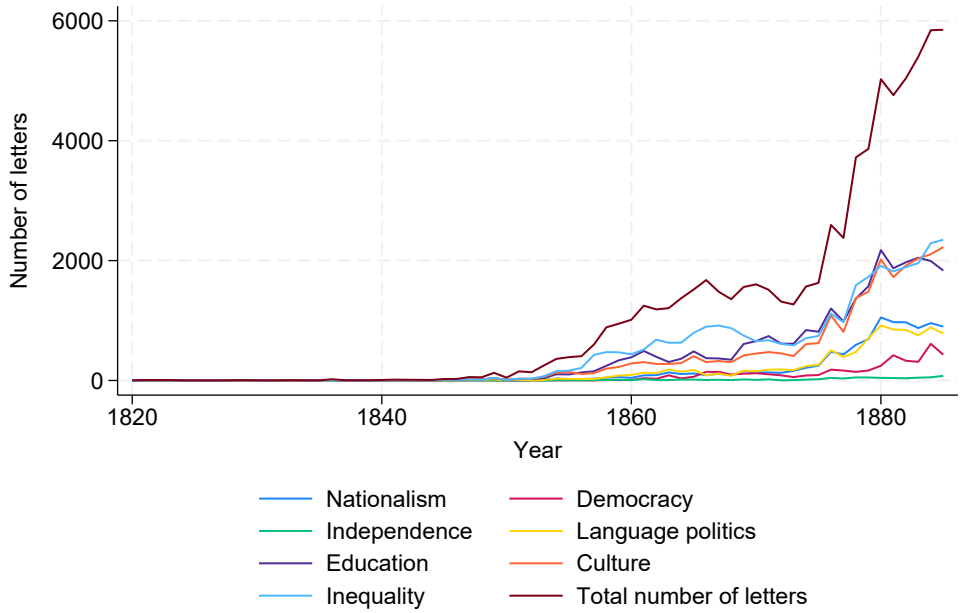


Figure OA8. Number of letters by year.

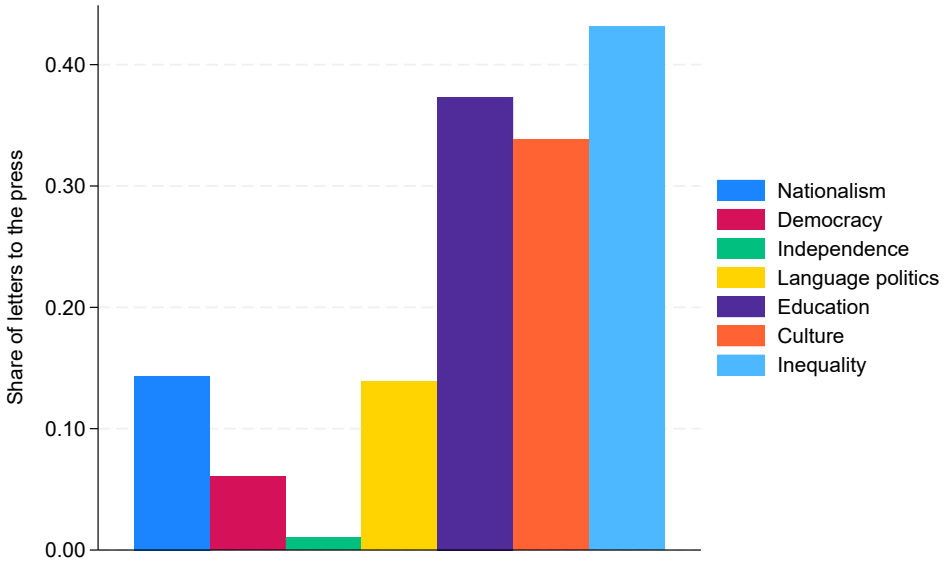


Figure OA9. Share of letters discussing each topic.

B Additional Family-Level Results

This appendix presents additional results on family centrality and who becomes a Fennoman.

We validate our measure of family importance by examining how family centrality correlates with different measures of status in Table OA4. We see that more central families were more likely to be associated with people in such important positions, and thus, in line with our argumentation, they had more to lose from a stronger incorporation of the autonomous Finland in the Russian Empire.

In the main text, we separately studied three metrics of Fennoman status: being member of the Finnish Literature Society (FLS), the classification by Jutikkala (1989), and an indicator based on name-changing. In Table OA5, we show robustness to classifying families that satisfy any of our three criteria as a Fennoman family.

Table OA4. Family centrality and elite status.

	Nobility	Bureaucrat	Landowner	Clergy
	(1)	(2)	(3)	(4)
Family centrality	0.033***	0.198***	0.024***	0.228***
	(0.003)	(0.006)	(0.003)	(0.006)
N	4782	4782	4782	4782
R^2	0.04	0.22	0.02	0.24

Notes: This table represents coefficients in the regression of indicators for being associated with nobility, bureaucrats, landowners, or clergy on standardized network centrality, computed using pre-1850 network. The unit of observation is a family, and the sample consists of families with living descendants from 1800 to 1880 with a non-missing birthplace. We include the full set of (geographic, population, income, and elite) controls. Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table OA5. Elite centrality and Fennoman status, any definition of being a Fennoman.

	(1)	(2)	(3)
Family centrality	0.140***		
	(0.006)		
Noble family		0.248***	
		(0.033)	
Family bureaucrat share			-0.045**
			(0.021)
Family landowner share			-0.137***
			(0.047)
Family clergy share			-0.023
			(0.019)
N	4782	4782	4782
R^2	0.11	0.03	0.01

Notes: This table represents coefficients in the regression of Fennoman status (based on any of our three classifications) on standardized network centrality, computed using pre-1850 network. The unit of observation is a family, and the sample consists of families with living descendants from 1800 to 1880 with a non-missing birthplace. We include the full set of (geographic, population, income, and elite) controls. Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

C Further Municipality-Level Analyses

In this appendix, we present additional results for the municipality-level results.

C.1 Kalevala-Inspired Names

We complement these analyses by examining names inspired by the characters in Kalevala, a compilation of Finnish epic poetry collected by Elias Lönnrot and published in 1835. We present difference-in-difference and event-study estimates in Table OA6 and Figure OA10, respectively. We find an increase in the prevalence of Kalevala-related names in the decades following Alexander II's liberal reforms.

We code an individual as having a Kalevala-inspired name if their first given name matches any personal name, epithet, or commonly used derivative associated with the Kalevala and closely related *runo* tradition. Our coding deliberately adopts a broad definition: in addition to canonical epic characters (e.g., Väinämöinen, Ilmarinen, Aino), we include widely used modern given names and shortened forms that are historically or culturally derived from these figures (e.g., Väinö, Ilmari, Seppo, Sampsa), as well as personified mythological beings that occasionally appear as given names (e.g., Tapio, Ukko, Tuuri).

Table OA6. The effect of elite Fennoman presence on later naming conventions: Kalevala-inspired names.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A.								
ln(Elite Fennomans) × 1[Year ≥ 1870]	3.419***	2.438**	2.739***	2.943***				
	(0.752)	(0.945)	(1.019)	(0.998)				
Elite Fennomans per capita × 1[Year ≥ 1870]					0.649***	0.371***	0.378***	0.370***
					(0.118)	(0.101)	(0.117)	(0.111)
N	1037	971	971	971	977	971	971	971
Mean Y	64.37	64.42	64.42	64.42	64.31	64.42	64.42	64.42
R^2	0.83	0.84	0.84	0.85	0.83	0.84	0.84	0.85
Panel B.								
ln(Initial family centrality) × 1[Year ≥ 1870]	0.281	0.494**	0.488**	0.386*				
	(0.191)	(0.229)	(0.228)	(0.225)				
ln(Proximity to J. V. Snellman) × 1[Year ≥ 1870]					0.067	0.362*	0.414*	0.166
					(0.190)	(0.215)	(0.214)	(0.239)
N	1044	978	978	978	1044	978	978	978
Mean Y	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
R^2	0.83	0.85	0.86	0.87	0.83	0.85	0.86	0.87
Elite controls	✓	✓	✓	✓	✓	✓	✓	✓
Geographic controls	✓	✓	✓	✓	✓	✓	✓	✓
Population controls		✓	✓	✓		✓	✓	✓
Income controls			✓	✓			✓	✓
Region FEs				✓				✓

Notes: The unit of observation is a municipality-decade. Fennomans are classified based on FLS membership. The dependent variable is the share of Kalevala-inspired names given to individuals born in each decade. Elite controls include the logarithm of total 1800s elites and elites born before 1809, by the family's home municipality. Population controls include the logarithm of population and population density in 1865, the logarithm of the Swedish-speaking population in 1880. Income controls include the logarithm of total taxed income in 1865 and the logarithm of taxpayers in 1865. Geographic controls include longitude and latitude, suitability for rye and barley, and slope. Region FEs include indicators for eight regions (*lääni*). Control variables are interacted with 1[$Year \geq 1970$]. Robust standard errors clustered at the municipality level are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

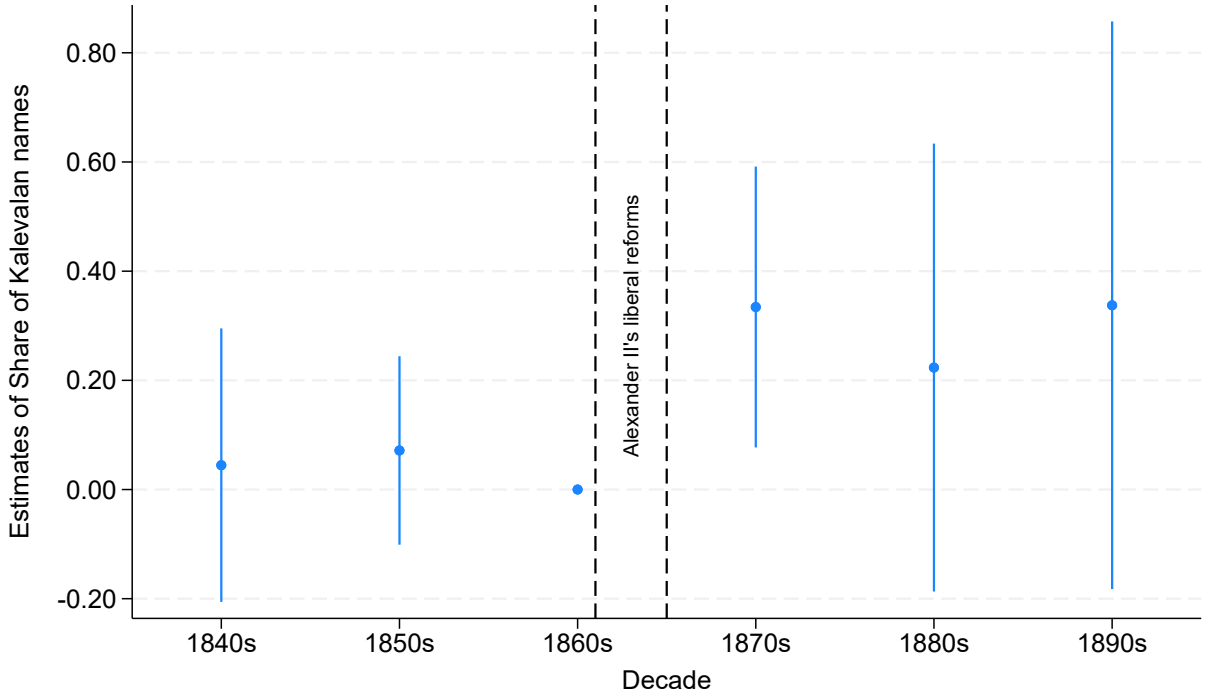


Figure OA10. Event-study estimates for naming conventions: Kalevala-inspired names.

Notes: The event-study plot presents decade-specific estimates of the effect of the logarithm of elite Fennomans on the share of Kalevala-inspired names among individuals born in that decade, obtained using specification (10). We control for the interactions of decade fixed effects and the logarithm of population and population density 1865, the logarithm of Swedish speaking population 1880, the logarithm of elites born before 1809, the logarithm of taxpayers and taxes paid, longitude and latitude, region fixed effects, suitability for rye and barley, and slope. The 95% confidence intervals are constructed using standard errors clustered at the municipality level.

C.2 Alternative Codings of the Outcomes and Fennoman Exposure

In Tables OA7 and OA8, we use logarithmic transformations of the outcome variables, adding one to avoid zeros. We see that both the logarithm of elite Fennomans and the number of elite Fennomans per capita are robustly positively associated with the national awakening (Table OA7 and protest oucomes (Table OA8.

In Tables OA9 and OA10, when then assess the robustness of our OLS results to alternative codings of exposure to the Fennoman elite. First, we split our sample in three parts: no Fennoman exposure, below-median (low) exposure in the sample with at least one elite Fennoman, and above-median (high) exposure in the sample with at least one elite Fennoman. Second, we use an alternative scaling for the number of elite Fennomans by dividing it by the size of the local elite in 1809. We find consistently larger estimates for

the high Fennoman exposure than for the low Fennoman exposure (relative to having no elite Fennomans), although these estimates are not statistically significant for all outcomes. Similarly, the number of elite Fennomans relative to the size of the local elite in 1809 is systematically positively associated with the outcomes. These relationships are statistically significant for all outcomes but the number of strikers per capita.

Table OA7. The effect of elite Fennomans on local national awakening: logarithmic dependent variables.

	ln(Fennoman votes)		ln(Name changes)		ln(Subscriptions)	
	(1)	(2)	(3)	(4)	(5)	(6)
ln(Elite Fennomans)	0.360***		0.507***		0.568***	
	(0.074)		(0.098)		(0.081)	
Elite Fennomans per capita		0.080***		0.104***		0.124***
		(0.015)		(0.026)		(0.020)
N	477	477	484	484	484	484
Mean Y	5.54	5.54	2.50	2.50	1.69	1.69
R^2	0.60	0.60	0.53	0.53	0.49	0.48
Oster δ for $\beta = 0$	1.05	10.79	0.78	2.11	0.75	1.71

Notes: The dependent variable is the logarithm of Fennoman parties' votes 1910-1916 in columns (1) and (2), the logarithm of name changes 1906-1907 in columns (3) and (4), and the logarithm of *Uusi Suometar* circulation in 1899 in columns (5) and (6). We add one to zeros. All specifications include the full set of controls. Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table OA8. The effect of elite Fennomans on demand for institutional change: logarithmic dependent variables.

	ln(Strikes)		ln(Strikers)	
	(1)	(2)	(3)	(4)
ln(Elite Fennomans)	0.216***		0.585***	
	(0.061)		(0.138)	
Elite Fennomans per capita		0.057***		0.132***
		(0.021)		(0.022)
N	484	484	484	484
Mean Y	0.20	0.20	0.79	0.79
R^2	0.44	0.46	0.26	0.26
Oster δ for $\beta = 0$	0.79	1.36	0.87	1.79

Notes: The dependent variable is the logarithm of strikes 1903-1909 in columns (1) and (2) and the logarithm of strikers 1906-1908 in columns (3) and (4). We add one to zeros. All specifications include the full set of controls. Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table OA9. The effect of elite Fennomans on local national awakening: alternative codings of elite Fennoman exposure.

	Fennoman vote share		Name changes per capita)		Subscriptions per capita	
	(1)	(2)	(3)	(4)	(5)	(6)
High elite Fennoman exposure	6.929**		4.492		5.273***	
	(2.941)		(3.882)		(1.631)	
Low elite Fennoman exposure	3.421		0.036		0.669	
	(2.307)		(2.628)		(0.936)	
Fennomans per local elite		46.758***		46.291*		56.804***
		(11.064)		(26.160)		(12.386)
N	478	445	483	450	483	450
Mean Y	36.49	36.68	13.84	14.51	4.06	4.30
R^2	0.34	0.38	0.30	0.31	0.32	0.36
Oster δ for $\beta = 0$	5.61	17.94	0.51	2.29	0.99	2.22

Notes: The dependent variable is Fennoman parties' vote share 1910-1916 in Panel columns (1) and (2), name changes 1906-1907 per capita (1,000s) in columns (3) and (4), and *Uusi Suometar* circulation in 1899 per capita (1,000s) in columns (5) and (6). All specifications include the full set of controls. Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table OA10. The effect of elite Fennomans on demand for institutional change: alternative codings of elite Fennoman exposure.

	Strikes per capita		Strikers per capita	
	(1)	(2)	(3)	(4)
High elite Fennoman exposure	0.091*		2.515	
	(0.054)		(4.042)	
Low elite Fennoman exposure	0.072		1.801	
	(0.080)		(2.903)	
Fennomans per local elite		1.033**		13.560
		(0.443)		(15.796)
N	483	450	483	450
Mean Y	0.15	0.15	6.69	7.13
R^2	0.16	0.16	0.18	0.18
Oster δ for $\beta = 0$	0.53	1.63	0.31	0.73

Notes: The dependent variable is strikes 1903-1909 per capita (1,000s) in columns (1) and (2) and strikers 1906-1908 per capita (1,000s) in columns (3) and (4). All specifications include the full set of controls. Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

C.3 IV Estimates

While the local-level relationships between the early Fennoman influence and later outcomes remain robust across a range of control variables and alternative specifications, we complement our empirical analysis with an instrumental-variable strategy. This is to further mitigate potential omitted-variable bias arising from endogeneity in local Fennoman elite influence. The instrumental-variable approach corroborates our earlier local-level results.

Empirical strategy We employ two instrumental variables. The first one is based on each municipality's elite's proximity to J. V. Snellman, a leading figure in the Fennoman movement. Proximity is measured through a network of biographical references, where the distance reflects the minimum number of connections needed to link a local elite member to Snellman. This approach follows the idea that powerful individuals can exert far-reaching effects on their networks of influence (Assouad 2021; Bai, Jia, and Yang 2023).

Our second instrument is the historical centrality of the local elite. Specifically, we compute individual-level centrality scores from the elite network and aggregate them to the municipality level to obtain a measure of the average structural importance of elites in each locality.

For these variables to be a valid instrument for local elite Fennomans, they must satisfy two core conditions. First, they must be have a non-zero relationship with the endogenous regressor, namely, the influence of Fennoman-aligned elites in municipality m. Second, and more critically, the instruments must satisfy the exclusion restriction: conditional on control variables X_m, the instruments must affect later outcomes *only through* its effect on local elite influence.

For the logarithm of elite Fennomans, we use the logarithmic transformations of these instruments. We add one to zeros. For the elite Fennomans per capita measure, we use the absolute closeness to J. V. Snellman and elite centrality.

Estimation results In columns (1)-(6) of Table OA11, we present the IV estimates for the local national awakening outcomes. We mostly find larger estimates than in the OLS specification, but the estimates qualitatively confirm the lessons from the OLS analysis. Columns (7)-(10) then show the 2SLS estimates for our protest outcomes. The 2SLS estimates are again higher than the OLS estimates, but qualitatively confirm our story. Panel B shows the reduced-form estimates using closeness to J. V. Snellman and elite centrality as instruments for local Fennoman presence.

Table OA11. IV estimates.

	Fennoman vote share		Name changes per capita		Subscriptions per capita		Strikes per capita		Strikers per capita	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A. Second stage of 2SLS										
ln(Elite Fennomans)	11.166***		14.708***		10.219***		0.368***		14.192***	
	(3.590)		(4.350)		(3.249)		(0.106)		(5.468)	
Elite Fennomans per capita		0.073		1.601***		1.862***		0.046***		1.234*
		(0.241)		(0.473)		(0.145)		(0.008)		(0.695)
N	477	477	479	479	479	479	479	479	479	479
Mean Y	36.48	36.48	14.14	14.14	4.00	4.00	0.13	0.13	6.75	6.75
First-stage F-statistic	40.63	930.11	41.58	1009.41	41.58	1009.41	45.50	960.13	45.50	960.13
Overidentification test p-value	0.18	0.30	0.41	0.70	0.21	0.09	0.82	0.86	0.90	0.27
Panel B. Reduced form										
ln(Closeness to J. V. Snellman)	3.656		12.926***		8.672***		0.221***		9.234**	
	(3.534)		(4.286)		(2.897)		(0.067)		(3.713)	
ln(Elite centrality)	6.041**		0.682		0.759		0.108**		3.499	
	(2.531)		(3.876)		(1.415)		(0.050)		(3.087)	
Closeness to J. V. Snellman		-0.142		0.336		0.386***		0.004		-1.700**
		(0.142)		(0.503)		(0.096)		(0.007)		(0.844)
Elite centrality		0.182		-0.295		-0.337***		-0.000		1.546**
		(0.179)		(0.634)		(0.126)		(0.007)		(0.722)
N	477	477	479	479	479	479	479	479	479	479
Mean Y	36.48	36.48	14.14	14.14	4.00	4.00	0.13	0.13	6.75	6.75
R^2	0.36	0.33	0.30	0.29	0.39	0.38	0.23	0.21	0.20	0.24
	ln(Elite Fennomans)	Elite Fennomans per capita								
	(11)	(12)								
Panel C. First stage of 2SLS										
ln(Closeness to J. V. Snellman)	0.667***									
	(0.107)									
ln(Elite centrality)	0.241***									
	(0.074)									
Closeness to J. V. Snellman		0.096***								
		(0.022)								
Elite centrality		-0.043								
		(0.028)								
N	480	480								
Mean Y	0.50	0.66								
R^2	0.68	0.56								

Notes: Panels A and B report the 2SLS and reduced-form estimates; the dependent variables are indicated in column titles. In Panel C, we show the first-stage estimates for two different definitions of exposure to Fennoman elites. All specifications include the full set of (elite, population, income, and geographic) controls. Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Instrument validity We substantiate instrument relevance in Panel C of Table OA11. We see that both Snellman network concentration and municipality-level elite centrality positively contribute to the local presence of Fennomans in column (11), but in column (12), it appears that closeness to J. V. Snellman is driving the Fennoman exposure as captured by elite Fennomans per (1865) capita. For both measures of Fennoman exposure, the first-stage F-statistic clearly surpasses the rule-of-thumb value of 10.

Identification relies on the assumption that Snellman network concentration and pre-1809 elite centrality affect national awakening outcomes only through their effect on the number of elite Fennomans in a municipality. We mitigate concerns about exclusion restriction violations by controlling for a comprehensive set of municipal characteristics.

In the 2SLS estimation with two instruments, the overidentification test (Hansen's J-test) shows that the p-values for instrument validity are large and above 0.10 in all specifications but one, i.e., we fail to reject the null hypothesis that the instruments are valid. This hints that the instruments are jointly consistent with the exclusion restriction, given the model.[4]

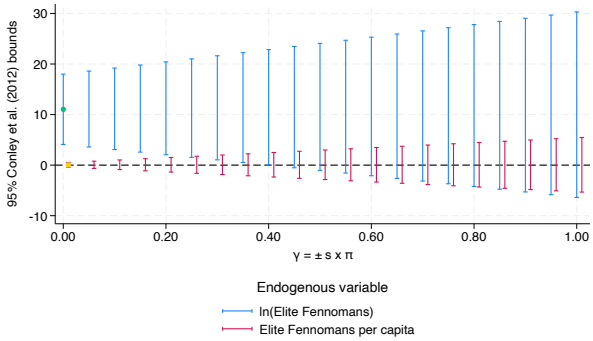
Another concern is that the instrument might exert a direct effect on the outcome, not mediated through elite Fennomans. Such a violation could occur if the Snellman network contributed directly to nationalist mobilization, for example by spreading ideas through clergy, educators, or publications associated with the network, or by influencing local sentiment via ties to central elites involved in national institutions. Similarly, elite centrality may have shaped municipal outcomes through channels other than elite Fennoman presence, such as facilitating access to state resources or reinforcing existing power structures. These mechanisms would induce a direct effect of the instrument on the outcome and bias the IV estimates upward.

At the same time, it is also possible that the direct effect of the instrument could operate in the opposite direction, leading to a downward bias. For instance, proximity to Snellman or the presence of other influential elites may have reinforced conservative or hierarchical social norms that dampened local support for Fennoman ideas, independently of elite Fennomans' presence.

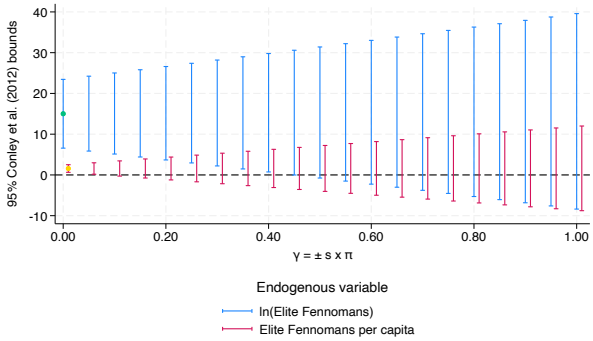
To account for these possibilities, we follow the approach proposed by Conley, Hansen, and Rossi (2012), which allows for small and plausible violations of the exclusion restriction. Rather than assuming the direct effect of the instruments on the outcome is exactly zero, this method places bounds on the possible size of such an effect and constructs corresponding bounds on the IV estimates. We allow for symmetric direct effects of the instruments on the outcome that are of the size $s \times \pi$ where we vary s between zero and one and π is the reduced-form coefficient. We use the union of confidence intervals (UCI) approach which yields conservative yet informative estimates under explicit assumptions about the direction and magnitude of potential violations.

Figure OA11 illustrates the resulting 95% bounds. When using the logarithm of elite Fennomans as the measure of elite Fennoman exposure, we see that even fairly large exclusion restriction violations still yield statistically significant estimates. However, when we use the elite Fennomans per capita measure, the estimates are typically less robust to

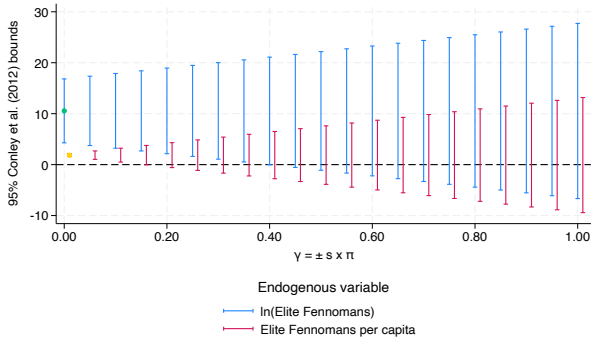
[4]The Hansen J-test is informative about instrument validity only under the assumptions that the structural equation is correctly specified and that at least one of the instruments is valid. If the model is misspecified or all instruments are invalid, or if there is heterogeneous compliance, the test may yield misleading results.



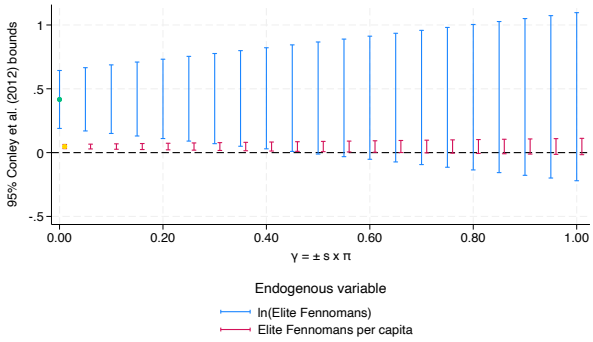
(A.) Fennoman parties' vote share



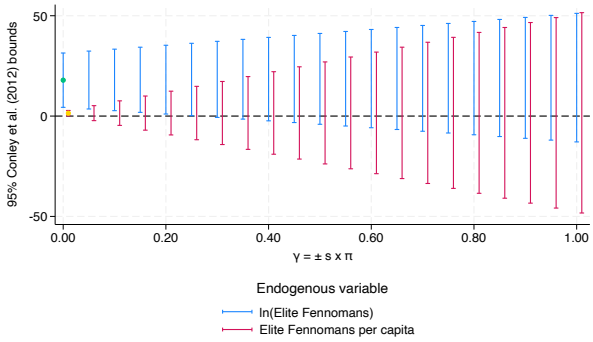
(B.) Name changes



(C.) *Uusi Suometar* circulation



(D.) Strikes 1903–1906



(E.) Strikers 1906–1908

Figure OA11. Conley, Hansen, and Rossi (2012) bounds for IV estimates.

Notes: The figure shows Conley, Hansen, and Rossi (2012) 95% bounds for the 2SLS estimate, allowing for small violations (γ) to the exclusion restriction. We set γ to be s times the reduced-form relationship and vary s. $\gamma = 0$ corresponds to no violation at all.

C.4 Additional Results on Mechanisms

Schooling Providing Finnish-language education to the masses was also a central aim of the Fennoman movement. To further back up this argument, we use data on speeches in the Diet of Finland and look at the average term frequency of the word "school" in speeches given by Fennomans and non-Fennomans in each of the estates (Table OA12). In all estates except for the clergy (for which there is no major difference in the average term frequency), Fennomans systematically talk more about schools in their speeches. Table 6 shows the detailed regression results on our different schooling outcomes.

Table OA12. Policy platforms of Fennomans and non-Fennomans by estate.

	Estate	Fennoman	Non-Fennoman
ATF of "School"	Burghers	1.18	0.78
	Clergy	1.20	1.32
	Noble	1.47	0.68
	Peasants	1.14	0.77
	All	1.23	0.88

Notes: This table presents the average term frequency (ATF) of the word "school" in Diet minutes, cross-tabulated by Fennoman status and Estate.

Fennoman clergy Table OA13 explores the role of religious elites by relating exposure to Fennoman priests to indicators of national mobilization and collective action, controlling for the overall number of priests. The results show that greater exposure to Fennoman clergy is positively associated with all outcomes, with statistically significant effects on name changes, *Uusi Suometar* subscriptions, and strike activity in 1903-1906. By contrast, the total number of priests shows no significant relationship with these outcomes.

Table OA13. Fennoman priests and local-level outcomes.

	Fennoman vote share	Name changes per capita)	Subscriptions per capita	Strikes per capita	Strikers per capita
	(1)	(2)	(3)	(4)	(5)
Share of Fennoman priests	10.649	15.448*	13.448**	0.133	53.847
	(8.511)	(9.301)	(6.798)	(0.266)	(46.803)
ln(Priests)	-0.792	0.833	-1.032	-0.016	-1.996
	(1.305)	(1.505)	(0.766)	(0.025)	(2.320)
N	477	479	479	479	479
Mean Y	36.48	13.64	3.87	0.13	8.55
R^2	0.33	0.34	0.36	0.20	0.08

Notes: The table shows OLS estimates from regressing the outcomes (indicated in column headers) on the share of Fennoman priests, logarithm of the number of priests, and the full set of controls. Robust standard errors are indicated in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

D Evolution of Fennomans' Influence over Time

After his accession to power, Tsar Alexander II started to prefer the Fennomans to further distance the Finnish elite from Swedish influence (Savolainen 1994). We exploit this shift in the behavior of the Tsar and estimate the following event-study specification:

$$1[Senator_f] = \sum_{t \neq 1860} \beta_t 1[Fennoman_f] + \lambda_f + \lambda_t + \mathbf{X}'_{\mathbf{m(f)}}\gamma_{\mathbf{t}} + \varepsilon_{ft}. \quad (1)$$

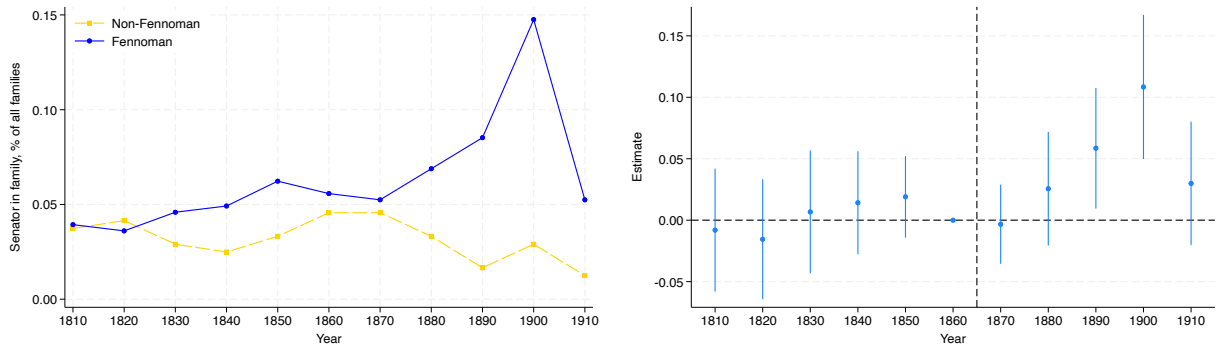
In equation (1), the dependent variable is an indicator equal to one if a member of family f holds a Senate seat in a given year. The coefficient β_t captures the time-varying effect of being associated with the Fennoman movement, based on FLS membership, on having a Senator in the family, relative to the baseline year 1860. We include family fixed effects λ_f to control for time-invariant characteristics of each family, while year fixed effects λ_t account for common shocks affecting all families in a given year. The error term ε_{ft} captures unobserved factors that may influence Senate representation for family f in year t. Here the sample is restricted to families with at least one senator in office over the period.

The event-study results are visualized in Panel B of Figure OA12, where we plot the estimated coefficients β_t and their 95% confidence intervals constructed using standard errors clustered at the family level. The estimates confirm that there is no discernible trend before the year 1870. After the year 1870s, we observe an upward-trending effect of being associated with the Fennoman movement on the probability of having a Senator in the family. The estimates are statistically significant at the 5% level for the years 1880 and 1890, and positive from 1880 onwards.[5]

we show that after the shift in Tsar's policies and the speculated preferential treatment of the Fennoman elites, it was Fennoman-aligned families that became more likely to have a senator associated with the family. In Figures OA13 and OA14, we show that this conclusion is robust to using other definitions of joining the Fennoman movement; being classified as a Fennoman by Jutikkala (1989) or finnicization of the family name.

We present the corresponding difference-in-differences estimates in Panel A of Tables OA15 and OA16. The estimates are in line with those that we obtain when using FLS membership as the definition of a Fennoman. Panel B further shows that being associated with the Fennoman movement positively correlates with the probability of being re-elected to the Parliament of Finland in the first democratic election in 1907.

[5]In Online Appendix Figures OA13 and OA14, we show that these conclusion are robust to using other definitions of joining the Fennoman movement; being classified as a Fennoman by Jutikkala (1989) or finnicization of the family name.



(A.) Raw data (Senators)

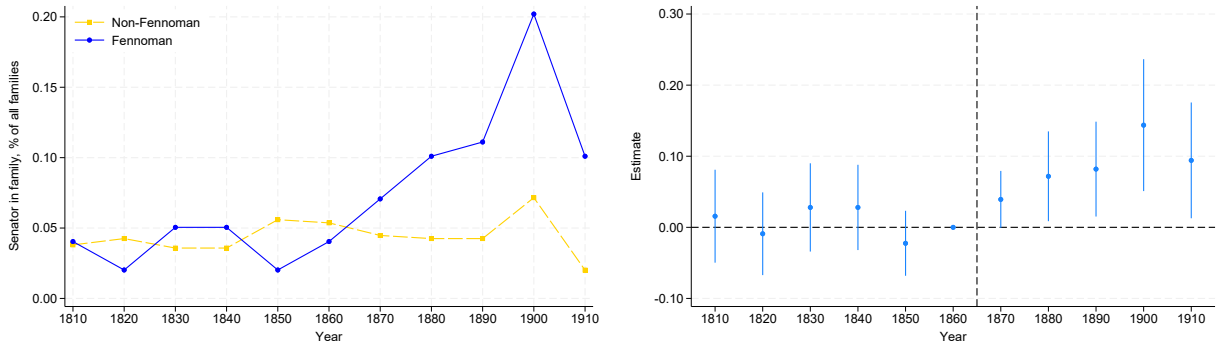
(B.) Event-study estimates (Senators)

Figure OA12. Senators and legislative representation in the Diet of Finland (then the Finnish Parliament) in Fennoman and non-Fennoman elite families.

Notes: Panel A illustrates the evolution of having a senator in a family, splitting the sample to Swedish and Fennoman elites (defined based on FLS membership) in the Diet of Finland. In Panel B, we present regression results from an event-study estimation following equation (1). We show regression coefficients and their 95% confidence intervals constructed using standard errors clustered at the family-level. Panels C and D present the evolution of seat shares of Swedish- and Finnish-speaking families as well as for identified Fennoman (i.e., FLS member) and non-Fennoman families from the original elites in the Diet of Finland (the Finnish Parliament from 1907 onwards).

An alternative interpretation of the result is that Fennomans were promoted because they were more central members of the elite, not because of their national identity. To rule out this possibility, we run an event-study regression that augments our baseline specification with elite centrality and its interaction with being associated with the Fennoman movement. The coefficients, shown in Figure OA15, suggests that more central (non-Fennoman) elites are no more likely to be promoted than others, and being associated with the Fennoman movement appears to have a positive impact on political promotions after 1870 independent of centrality in the elite network.

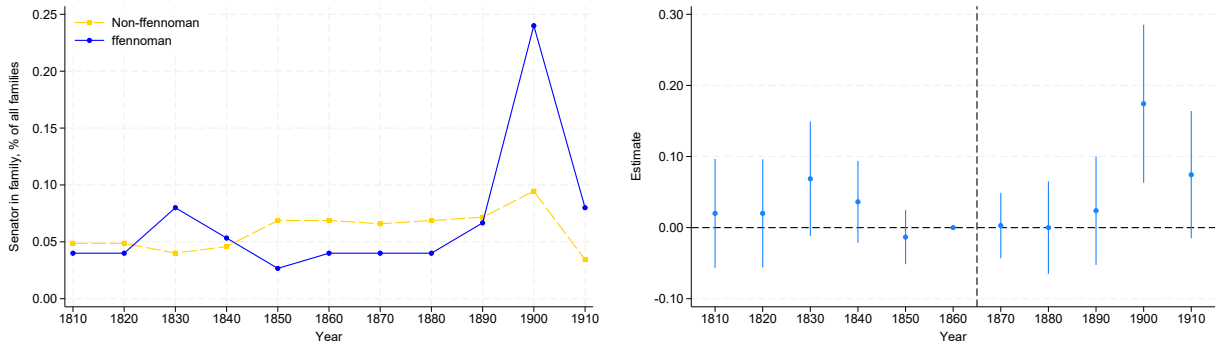
We further complement these analyses by considering an indicator for having a leading bureaucrat in the family in Figure OA16 (event-study results) and Table OA17 (difference-in-differences results). In line with the results on the political power, the estimates suggest that Fennoman-aligned families do become more likely to be associated with a top bureaucrat, although this evidence is weaker in terms of statistical significance.



(A.) Raw data (Senators) **(B.)** Event-study estimates (Senators)

Figure OA13. Senators and legislative representation in the Diet of Finland (then the Finnish Parliament) in Fennoman and non-Fennoman families, name changers.

Notes: Panel A illustrates the evolution of having a senator in a family, splitting the sample to Swedish and Fennoman elites (based on finnicization of last name) in the Diet of Finland. In Panel B, we present regression results from an event-study estimation following equation (1). We show regression coefficients and their 95% confidence intervals constructed using standard errors clustered at the family-level.



(A.) Raw data (Senators) **(B.)** Event-study estimates (Senators)

Figure OA14. Senators and legislative representation in the Diet of Finland (then the Finnish Parliament) in Fennoman and non-Fennoman families, name changers.

Notes: Panel A illustrates the evolution of having a senator in a family, splitting the sample to Swedish and Fennoman elites (based on finnicization of last name) in the Diet of Finland. In Panel B, we present regression results from an event-study estimation following equation (1). We show regression coefficients and their 95% confidence intervals constructed using standard errors clustered at the family-level.

Table OA14. Evolution of Fennomans political influence.

	(1)	(2)	(3)	(4)	(5)
Panel A: Senator in family					
Fennoman × 1[Year ≥ 1870]	0.034***	0.047***	0.041**	0.041**	0.034**
	(0.011)	(0.015)	(0.016)	(0.016)	(0.017)
N	6039	6039	5192	5192	5148
Mean Y	0.05	0.05	0.06	0.06	0.06
R^2	0.24	0.24	0.24	0.24	0.25
Family FE	✓	✓	✓	✓	✓
Elite controls × 1[Year ≥ 1870]		✓	✓	✓	✓
Population controls × 1[Year ≥ 1870]			✓	✓	✓
Income controls × 1[Year ≥ 1870]				✓	✓
Geographic controls × 1[Year ≥ 1870]					✓
Region × 1[Year ≥ 1870]					✓
Panel B: Re-elected in 1907					
Fennoman	0.093**	0.090**	0.121***	0.121***	0.128***
	(0.042)	(0.041)	(0.041)	(0.041)	(0.043)
N	241	241	225	225	224
Mean Y	0.14	0.14	0.13	0.13	0.12
R^2	0.02	0.02	0.07	0.07	0.11
Oster δ for $\beta = 0$		0.58	-14.98	-38.05	-27.09
Elite controls		✓	✓	✓	✓
Population controls			✓	✓	✓
Income controls				✓	✓
Geographic controls					✓
Region					✓

Notes: The unit of observation is a family. Fennomans are classified based on FLS membership. In Panel A, the dependent variable is an indicator variable which gets value 1 if a family has a senator position and 0 otherwise. The estimation sample consists of all families with a member in the Diet at some point during the 19th century. Standard errors clustered at the family level are shown in parentheses. In Panel B, the sample consists of all families with a member in the Diet in 1905, and the dependent variable is an indicator for the family having a senator also in 1907. Robust standard errors are indicated in parentheses. Elite controls include the logarithm of total 1800s elites and elites born before 1809, by the family's home municipality. Population controls include the logarithm of population and population density in 1865, the logarithm of the Swedish-speaking population in 1880. Income controls include the logarithm of total taxed income in 1865 and the logarithm of taxpayers in 1865. Geographic controls include longitude and latitude, suitability for rye and barley, and slope. Region FEs include indicators for eight regions (*lääni*). Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table OA15. Political payoffs of Fennomans, Fennomans according to Jutikkala (1989).

	(1)	(2)	(3)	(4)	(5)
Panel A: Senator in family					
Fennoman × 1[Year ≥ 1870]	0.081***	0.084***	0.079***	0.081***	0.074***
	(0.019)	(0.021)	(0.022)	(0.022)	(0.021)
N	6039	6039	5192	5192	5181
Mean Y	0.05	0.05	0.06	0.06	0.06
R^2	0.25	0.25	0.24	0.24	0.25
Family FE	✓	✓	✓	✓	✓
Elite controls × 1[Year ≥ 1870]		✓	✓	✓	✓
Population controls × 1[Year ≥ 1870]			✓	✓	✓
Income controls × 1[Year ≥ 1870]				✓	✓
Geographic controls × 1[Year ≥ 1870]					✓
Region × 1[Year ≥ 1870]					✓
Panel B: Re-elected in 1907					
Fennoman	0.172***	0.169***	0.173***	0.172***	0.187***
	(0.061)	(0.060)	(0.060)	(0.061)	(0.067)
N	229	229	212	212	212
Mean Y	0.13	0.13	0.12	0.12	0.12
R^2	0.05	0.05	0.10	0.10	0.14
Oster δ for $\beta = 0$		0.63	6.41	5.13	9.49
Elite controls		✓	✓	✓	✓
Population controls			✓	✓	✓
Income controls				✓	✓
Geographic controls					✓
Region					✓

Notes: The unit of observation is a family. Fennomans are classified based on (Jutikkala 1989). The dependent variable is an indicator variable which gets value 1 if a family has a bureaucrat in the family and 0 otherwise. Standard errors clustered at the family level are shown in parentheses. Elite controls include the logarithm of total 1800s elites and elites born before 1809, by the family's home municipality. Population controls include the logarithm of population and population density in 1865, the logarithm of the Swedish-speaking population in 1880. Income controls include the logarithm of total taxed income in 1865 and the logarithm of taxpayers in 1865. Geographic controls include longitude and latitude, suitability for rye and barley, and slope. Region FEs include indicators for eight regions (*lääni*). Control variables are interacted with 1[Year ≥ 1870] in Panel A. Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table OA16. Political payoffs of Fennomans, name changers.

	(1)	(2)	(3)	(4)	(5)
Panel A: Senator in family					
Fennoman × 1[Year ≥ 1870]	0.035**	0.026	0.018	0.019	0.007
	(0.018)	(0.020)	(0.020)	(0.020)	(0.022)
N	6039	6039	5192	5192	5181
Mean Y	0.05	0.05	0.06	0.06	0.06
R^2	0.24	0.24	0.24	0.24	0.25
Family FE	✓	✓	✓	✓	✓
Elite controls × 1[Year ≥ 1870]		✓	✓	✓	✓
Population controls × 1[Year ≥ 1870]			✓	✓	✓
Income controls × 1[Year ≥ 1870]				✓	✓
Geographic controls × 1[Year ≥ 1870]					✓
Region × 1[Year ≥ 1870]					✓
Panel B: Re-elected in 1907					
Fennoman	0.136**	0.133**	0.149**	0.150**	0.133*
	(0.068)	(0.067)	(0.068)	(0.069)	(0.075)
N	229	229	213	213	213
Mean Y	0.12	0.12	0.11	0.11	0.11
R^2	0.03	0.03	0.08	0.08	0.10
Oster δ for $\beta = 0$		0.57	9.59	12.00	3.82
Elite controls		✓	✓	✓	✓
Population controls			✓	✓	✓
Income controls				✓	✓
Geographic controls					✓
Region					✓

Notes: The unit of observation is a family. Fennomans are classified based on name changes. The dependent variable is an indicator variable which gets value 1 if a family has a bureaucrat in the family and 0 otherwise. Standard errors clustered at the family level are shown in parentheses. Elite controls include the logarithm of total 1800s elites and elites born before 1809, by the family's home municipality. Population controls include the logarithm of population and population density in 1865, the logarithm of the Swedish-speaking population in 1880. Income controls include the logarithm of total taxed income in 1865 and the logarithm of taxpayers in 1865. Geographic controls include longitude and latitude, suitability for rye and barley, and slope. Region FEs include indicators for eight regions (*lääni*). Control variables are interacted with 1[Year ≥ 1870] in Panel A. Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

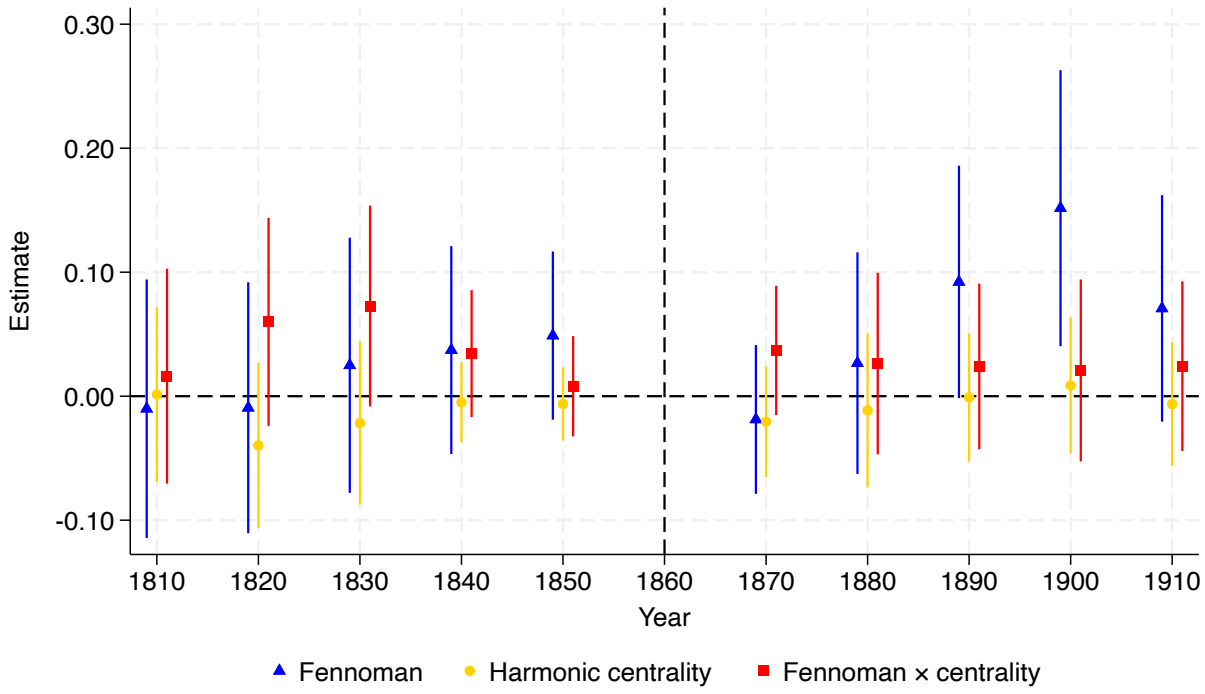
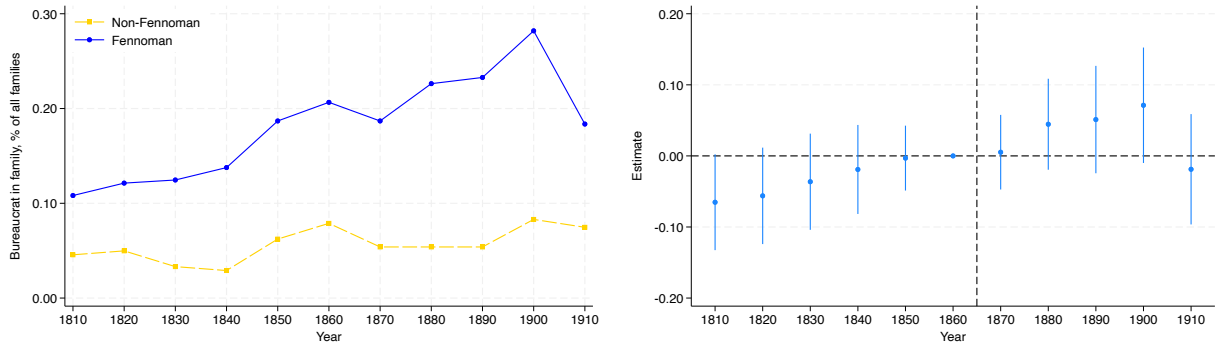


Figure OA15. Heterogeneous effects on promotions to the Senate by centrality.

Notes: We present regression results from an event-study estimation following equation (1), augmented with centrality and its interaction with an indicator for being associated with the Fennoman movement. We show regression coefficients and their 95% confidence intervals constructed using standard errors clustered at the family-level.



(A.) Raw data

(B.) Event-study estimates

Figure OA16. Bureaucrats in Fennoman and non-Fennoman families.

Notes: Panel A illustrates the evolution of having a bureaucrat in a family, splitting the sample to Swedish and Fennoman elites (defined based on FLS membership) in the Diet of Finland. In Panel B, we present regression results from an event-study estimation following equation (1). We show regression coefficients and their 95% confidence intervals constructed using standard errors clustered at the family-level.

Table OA17. Political payoffs of Fennomans, having a bureaucrat in the family.

	(1)	(2)	(3)	(4)	(5)
Fennoman × 1[Year ≥ 1870]	0.077***	0.064***	0.058**	0.058**	0.045
	(0.019)	(0.024)	(0.026)	(0.026)	(0.027)
N	6039	6039	5192	5192	5181
Mean Y	0.13	0.13	0.14	0.14	0.14
R^2	0.34	0.34	0.34	0.34	0.34
Family FE	✓	✓	✓	✓	✓
Elite controls × 1[Year ≥ 1870]		✓	✓	✓	✓
Population controls × 1[Year ≥ 1870]			✓	✓	✓
Income controls × 1[Year ≥ 1870]				✓	✓
Geographic controls × 1[Year ≥ 1870]					✓
Region × 1[Year ≥ 1870]					✓

Notes: The unit of observation is a family. Fennomans are classified based on FLS membership. The dependent variable is an indicator variable which gets value 1 if a family has a bureaucrat in the family and 0 otherwise. Standard errors clustered at the family level are shown in parentheses. Elite controls include the logarithm of total 1800s elites and elites born before 1809, by the family's home municipality. Population controls include the logarithm of population and population density in 1865, the logarithm of the Swedish-speaking population in 1880. Income controls include the logarithm of total taxed income in 1865 and the logarithm of taxpayers in 1865. Geographic controls include longitude and latitude, suitability for rye and barley, and slope. Region FEs include indicators for eight regions (*lääni*). Control variables are interacted with 1[Year ≥ 1870] in Panel A. Oster δ assesses the potential influence of unobserved confounders, following Oster (2019). ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

E Conceptual Framework

In this appendix, we sketch a simple model, in the spirit of Acemoglu and Robinson (2006), to structure our empirical analyses and to provide a stylized explanation of national awakening and it's link to democratization in Finland. Our model formalizes insights from Alapuro (1988) on the nation-building incentives of 19th-century Finnish elites. Alapuro (1988, p. 114) lists three reasons why Finland's situation was unique among Eastern European nations: (i) Few ruling nobles were large landowners, reducing the need to control the commoners. (ii) As many elites were state officials, they had an incentive to expand the tax base. (iii) Finland's non-independent status encouraged elites to build coalitions to counter Russian influence. These factors minimized incentives to oppress commoners, while increasing the motivation to build national unity.

In our model, there are citizens who choose whether to attack the governing regime, and elites who choose whether to protect their status or engage in nation-building. We first describe the behavior of the citizens. The second subsection characterizes the problem faced by the elites. In the third and final subsection, we discuss the empirically testable implications of the framework.

E.1 Citizens

Suppose that there is a continuum of citizens, $i \in [0,1]$, who are modeled to act as in a standard global game of regime change. The citizens decide whether to attack the regime or not, $s_i \in \{0,1\}$. The regime is overthrown if $\theta < S$ where θ represents government strength and is private information to the regime. $S = \int_0^1 s_i di$ is the aggregate attack on the regime. Citizen i's payoff is given by

$$u(s_i, \theta, S) = \begin{cases} bs_i & \text{if } \theta < S \\ (b-p)s_i & \text{if } \theta \geq S \end{cases}$$

where b measures national awareness and p is a repression cost to failed rebels.

Citizens have a common prior belief of θ which is assumed to follow an improper uniform distribution on $\mathbb{R}$, $\theta \sim U(-\infty, \infty)$. Citizens receive noisy signals regarding government strength of the form

$$\begin{aligned} x_i &= \theta + \varepsilon_i \\ \varepsilon_i &\overset{\text{iid}}{\sim} N\left(0, \frac{1}{\alpha}\right), \quad \theta \perp\!\!\!\perp \varepsilon_i. \end{aligned}$$

Regime indifference condition Consider first a strategy where each agent has a threshold $\hat{x}$ such that the agent attacks if and only if they get an indication that the regime is sufficiently weak, $x \leq \hat{x}$. The measure of agents who attack is then given by

$$S(\theta) = P(x_i \leq \hat{x} \mid \theta) = \Phi(\sqrt{\alpha}(\hat{x} - \theta)). \tag{2}$$

The regime is overthrown if and only if $\theta < S(\theta)$, where regime threshold $\hat{\theta}$ solves for the regime indifference condition

$$\Phi(\sqrt{\alpha}(\hat{x} - \hat{\theta})) = \hat{\theta}. \tag{3}$$

Citizen indifference condition Citizen i finds it optimal to attack if

$$\begin{aligned} & u(s_i = 1) > u(s_i = 0) \\ & \quad \iff b > (1 - P(\theta \leq \hat{\theta} \mid x_i))p, \end{aligned}$$

where $P(\theta \leq \hat{\theta} \mid x_i)$ is citizen's posterior belief of regime change, given signal x_i.

To derive $P(\theta \leq \hat{\theta} \mid x_i)$, we need to find the (non-normalized) posterior distribution $f(\theta \mid x_i)$, which is determined by Bayes' rule:

$$f(\theta \mid x_i) \propto f(\theta) f(x_i \mid \theta).$$

The conditional density $f(x_i \mid \theta)$ is given by

$$\begin{aligned} f_{x_i|\theta}(x_i \mid \theta) &= f_{\theta+\varepsilon_i|\theta}(x_i \mid \theta) \\ &= \sqrt{\alpha}\phi(\sqrt{\alpha}(x_i - \theta)), \end{aligned}$$

So that the posterior $f(\theta \mid x_i)$ then is

$$f(\theta \mid x_i) \propto f(\theta) f(x_i \mid \theta) = N\left(x_i, \frac{1}{\alpha}\right).$$

$P(\theta \leq \hat{\theta} \mid x_i)$ then turns out to be

$$\begin{aligned} P(\theta \leq \hat{\theta} \mid x_i) &= F_{\theta|x_i}(\hat{\theta}|x_i) \\ &= \Phi(\sqrt{\alpha}(\hat{\theta} - x_i)). \end{aligned}$$

Citizen i finds it optimal to attack if and only if $b > (1 - \Phi(\sqrt{\alpha}(\hat{\theta} - x_i)))p$, where the participation threshold $\hat{x}$ solves for the citizen indifference condition

$$b = (1 - \Phi(\sqrt{\alpha}(\hat{\theta} - \hat{x})))p. \tag{4}$$

Equilibrium Together, the indifference conditions (3) and (4) form a system of two unknowns, the regime threshold $\hat{\theta}$ and the participation threshold $\hat{x}$:

$$\begin{cases} \Phi(\sqrt{\alpha}(\hat{x} - \hat{\theta})) = \hat{\theta} \\ b = (1 - \Phi(\sqrt{\alpha}(\hat{\theta} - \hat{x})))p. \end{cases}$$

The unique solution to this system determines the unique weak perfect Bayesian equilibrium of the game. To solve the equilibrium, we can start by solving for $\hat{x}$ using the first equation

$$\hat{x} = \frac{\Phi^{-1}(\hat{\theta})}{\sqrt{\alpha}} + \hat{\theta}$$

Substituting this into the second equation gives the equilibrium value of regime threshold, $\hat{\theta}$:

$$\hat{\theta} = \frac{b}{p}.$$

The equilibrium value of participation threshold then is

$$\hat{x} = \frac{\Phi^{-1}\left(\frac{b}{p}\right)}{\sqrt{\alpha}} + \frac{b}{p}.$$

Notice that the greater the national awareness, b, the stronger the regime needs to be to survive. Historical parallels can be drawn to the Finnish national awakening, where increasing nation-building investments raised collective action among citizens, ultimately destabilizing the regime (Klinge 1975).

E.2 Elites

Elite behavior Each member i of the elite can choose between two roles: (i) protect their legacy as part of the establishment and continue business as usual, or (ii) coalesce, revise their identity and become a nation-builder. This decision mirrors historical tensions between the Swedish-speaking nobility, who sought to preserve their privileges, and the emerging Fennomans, who championed Finnish identity (Alapuro 1988). The former role is tempting

in a stable autocracy, as the elites can then avoid the costs of nation-building, and simply enjoy your daily life at the top of the social hierarchy. The role of a nation-builder becomes compelling when the Tsar begins to offer preferential treatment to Fennomans and the threat of democracy becomes more acute.

Elites adapting to either role form coalitions. The elites in each coalition then set their ideal level of taxation for public goods and nation-building, $\boldsymbol{t} = (\tau, \pi)$, respectively, taking into account the uncertainty regarding possible democratization. We start by describing how the two elite coalitions determine $\boldsymbol{t}$.

The non-Fennoman coalition has no credibility to participate in an election. The ideal level of τ_A, π_A for an individual i in non-Fennoman coalition is determined by

$$\max_{\tau_A, \pi_A} \{q(w_i + (1 - \tau_A - \pi_A)r) - (1 - q)(1 - \tau_A - \pi_A)r\}$$

where q is the (status quo) probability regime survival, w_i is the social status of elite member i, $r = \frac{R}{N}$ is the per capita rent for i.[6] The non-Fennoman elite never invests in either public goods or nation-building, $\tau_A = \pi_A = 0$.[7]

In contrast, the ideal level of τ_B, π_B for an individual i in Fennoman elite is given by

$$\max_{\tau_B, \pi_B} \{q(\delta w_i + (1 - \tau_B - \pi_B)r) - (1 - q)(w_i e + (1 - \tau_B - \pi_B)r)\}$$

where $\delta \geq 1$ is the status-quo premium of nation-building and e is the expected vote share of Fennomans under democracy. The definition of e follows a standard probabilistic voting model. For simplicity, suppose that there is only one voter group, the Finnish-speaking majority. Voter i has the following preferences

$$U_i(\tau_P, \pi_P, P) = U(\tau_P P) + \sigma_i,$$

where $U(\tau_P P)$ is voter's material utility, and σ_i represents an ideological shock towards the Fennoman party. We assume that

$$U'(\cdot) > 0, \quad U''(\cdot) < 0, \quad U'(0) = \infty$$

[6]The rent is split equally among each member of respective coalition, i.e.,

$$r = \frac{1}{n}\frac{n}{N}R = \frac{1}{m}\frac{m}{N}R = \frac{R}{N}.$$

[7]For the Fennomans, cultural concessions in nation-building were more appealing than actual power concessions. Thus, they opposed liberal reforms, such as constitutionalism and free-market policies, that would have eroded old elite privileges (Alapuro 1988, p. 115)

The ideological biases σ_i are independent and follow a uniform distribution

$$\sigma_i \sim U\left[b - \frac{1}{2\psi}, b + \frac{1}{2\psi}\right].$$

Recall that b is a measure of national awareness. b biases support toward the Fennoman party, and is assumed to be increasing and strictly concave with respect to aggregate resources $\tau_B B = \tau_B \frac{n}{N} R = \tau_B n r$ put into nation-building with the following properties:

$$b \equiv b(\pi_B B), \qquad b'(\cdot) > 0, \quad b''(\cdot) < 0, \quad b'(0) = \infty.$$

Voter i then votes for the Fennoman party (over any other party B') if $\sigma_i > U(\tau_{B'} B') - U(\tau_B B)$ which implies that the vote share of the Fennoman party is

$$\begin{aligned} e &= P(\sigma_i > U(\tau_{B'} B') - U(\tau_B B)) \\ &= \frac{1}{2} + \psi \left[U(\tau_B B) - U(\tau_{B'} B') + b(\pi_B B)\right]. \end{aligned}$$

Then, individual i's ideal level of τ_B, π_B solves for

$$\begin{aligned} \max_{\tau_B \geq 0, \pi_B \geq 0} \; & \{q(\delta w_i + (1 - \tau_B - \pi_B) r) \\ & + (1 - q)\left(w_i \left[\frac{1}{2} + \psi \left[U(\tau_B B) - U(\tau_{B'} B') + b(\pi_B B)\right]\right] + (1 - \tau_B - \pi_B) r\right)\Big\}. \end{aligned}$$

The ideal values of τ_B and π_B for elite i are implicitly given by

$$\begin{aligned} U'(\tau_B B) &= \frac{r}{(1 - q) w_i \psi B} \\ b'(\pi_B B) &= \frac{r}{(1 - q) w_i \psi B} \end{aligned}$$

The coalition decides on τ_B and π_B democratically, so that

$$\begin{cases} U'(\tilde{\tau}_B B) & = \frac{1}{(1-q)\tilde{w} n \psi} \\ b'(\tilde{\pi}_B B) & = \frac{1}{(1-q)\tilde{w} n \psi}, \end{cases} \tag{5}$$

where $\tilde{w}$ is the median social status within the Fennoman coalition. The Fennoman coalition's problem shows that the coalition will invest a positive amount of resources both into public good provision and nation-building to gain a larger vote share. Individuals with a higher social status w_i would like to invest overall more. Furthermore, the allocation of resources between the two instruments depends on the rate of return on $U(\cdot)$ and $b(\cdot)$.

Elite's problem Formally, elite's behavior can be described as follows. Each member i of the elite decides whether to continue business as usual, $f_i = 0$, or to become a nation-builder, $f_i = 1$. The former group forms a coalition of non-Fennomans, while the latter form a group of Fennomans. The elites in each coalition then set their ideal level of taxation, $\boldsymbol{t} = (\tau, \pi)$, taking into account the uncertainty regarding possible democratization. This sequence of moves is illustrated in the game tree in Figure OA17.

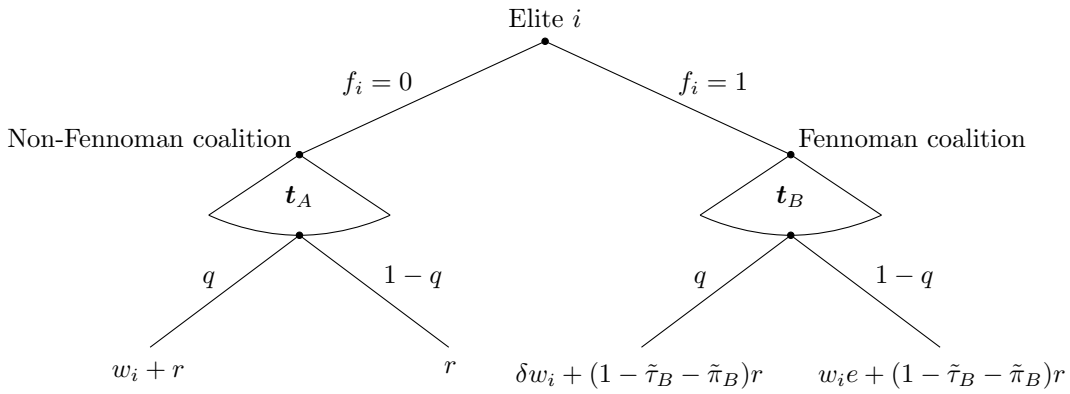


Figure OA17. Elite behavior.

Member i of the elite decides whether to continue as before, or coalesce and turn into a nation-builder. The expected payoff of i is given by

$$u_i = \begin{cases} q\,(w_i + r) + (1-q)r \\ \text{if } i \text{ continues as before} \\ q\,(\delta w_i + (1 - \tilde{\tau}_B - \tilde{\pi}_B)r) + (1-q)\,(w_i e + (1 - \tilde{\tau}_B - \tilde{\pi}_B)r) \\ \text{if } i \text{ becomes Fennoman} \end{cases}$$

Member i will then coalesce if and only if

$$\begin{aligned} & u(f_i = 1) > u(f_i = 0) \\ \iff\ & w_i((1-q)e + q(\delta - 1)) > r(\tilde{\tau}_B + \tilde{\pi}_B), \end{aligned}$$

such that elite participation threshold $\hat{w}$ solves for the elite indifference condition

$$\hat{w}((1-q)e + q(\delta - 1)) = r(\tilde{\tau}_B + \tilde{\pi}_B).$$

The elite's problem bears three important insights. First, elites with a higher social status w_i are more likely to become nation-builders. Second, an increase in the electoral

success e and status-quo rewards δ of Fennomans incentivizes more elites to coalesce. Third, the probability of status quo q has an ambiguous effect on elite's incentives. Specifically, if $\delta < 1 + e$, increase in q will *decrease* the attractiveness of nation-building. Adversely, when $\delta < 1+e$, increase in the probability of regime overthrow $1-q$ will *increase* the attractiveness of nation-building.

E.3 Implications of the Model

Our model can further provide a stylized explanation of national awakening and democratization in Finland. The society starts out as non-democracy, with elites in power. This corresponds to the first half of the 19th century in Finland. The probability of regime overthrow is low, $1 - q \approx 0$ and the Russian Tsar does not discriminate among the elite, so $\delta = 1$. It follows that no individual in the elite has the incentive to deviate from status quo, so there is no intra-elite conflict.

After the Russian defeat in Crimean War in 1856 and January Uprising of 1863 in Poland, Tsar Alexander II intensifies changes policy throughout its Empire to lower the threat of rebellions. In the Grand Duchy of Finland, this turn in the wind manifests itself as a "divide and rule" treatment of the elite, where Fennoman elite receives political patronage at the expense of the old elite families. In terms of the model parameters, δ is now above unity. Consequentially, elite families with the highest social status feel that they have the most to gain, so to improve their family prestige further they turn into nation-builders. Higher-status elites, incentivized by political patronage, lead the initial wave of nation-building, aligning with historical observations of early Fennomans emerging from the Swedish-speaking nobility (Alapuro 1988).

The new coalition of nation-builders, the Fennomans, invest a positive share of their rents into public goods provision and nation-building. The coalition gains popularity among the people, also increasing their expected electoral success, e. It follows that even more members of the elite find it optimal to coalesce and become nation-builders. The Fennoman coalition grows. As the Fennoman coalition grows, more elites defect, increasing nation-building investments and destabilizing the regime. This reflects the snowballing effect of Finnish nationalism after the 1860s (Hobsbawm 2014).

Since the new cohort of nation-builders is necessarily of lower status than the previous cohort, the tax rates $\tilde{\tau}_B, \tilde{\pi}_B$ that the Fennomans democratically decide upon shrink

$$\tilde{\tau}'(n)_B < 0, \qquad \tilde{\pi}'(n)_B < 0.$$

We assume that the Fennoman coalition is relatively homogeneous in terms of their social status, so that $\tilde{w}'(n) \approx 0$.[8] This assumption guarantees that as the coalition grows, the total resources spent into nation-building increase. Using equation (5), we get

$$\begin{aligned} & \tilde{\pi}_B B = b'^{-1}\left(\frac{1}{(1-q)\tilde{w}(n)n\psi}\right) \\ \implies & \frac{\partial \tilde{\pi}_B B}{\partial n} = -\frac{db'^{-1}\left(\frac{1}{(1-q)\tilde{w}(n)n\psi}\right)}{dn}\frac{1}{(1-q)\psi}\left[\tilde{w}'(n)n + \tilde{w}(n)\right] > 0 \\ \iff & \tilde{w}'(n)n + \tilde{w}(n) > 0. \end{aligned}$$

Given that $\partial \tilde{\pi}_B B/\partial n > 0$, the intra-elite conflict turns into a self-reinforcing process. If there are more Fennomans, there is more nation-building, which predicts greater electoral success, and elites defecting in still larger numbers. Eventually, e is so high that $\delta < 1 + e$. At this point, increase in the probability of regime overthrow $1 - q$ will also aggravate the elite conflict.

The anti-establishment message of nation-building has the unintended consequence of undermining the incumbent regime. The probability of regime overthrow, $1 - q = P(\theta < S) = P\left(\theta < \frac{b}{p}\right)$, inflates. The threat of looming democratization due to national awakening increases the number of Fennomans to the maximum. Raising national awareness encourages more and more people to attack the regime, and unless countered with oppression (increase in the repression cost p), it ultimately paves the way to democratization.

[8] At the extreme, if the elite with a high social status consists of identical members, $\tilde{w}'(n) = 0$ and $\partial \tilde{\pi}_B B/\partial n > 0$.

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