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A National Public Sphere? Analyzing the Language, Location, and Form of Newspapers in Finland, 1771–1917

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ABSTRACT

This article uses metadata from serial publications as a means of modelling the historical development of the public sphere. Given that a great deal of historical knowledge is generated through narratives relying on anecdotal evidence, a well-conceived attempt to rely on newspapers for modeling the past can challenge customary approaches in political and cultural history. Our aim is to explore this possibility by using well-established statistical methods. The focus in this article is on Finland, but our approach is also scalable to other regions. During the period 1771–1917 newspapers developed as a mass medium in the Grand Duchy of Finland within two imperial configurations (Sweden until 1809 and Russia in 1809–1917), and in the two main languages — Swedish and Finnish. Finland is an ideal starting point for conducting comparative studies in that its bilingual profile already includes two linguistically separated public spheres that nonetheless were heavily connected. Our particular interest here is in newspaper metadata, which we use to trace the expansion of public discourse in Finland by statistical means. We coordinate information on publication places, language, number of issues, number of words, newspaper size, and publishers, which we compare with existing scholarship on newspaper history and censorship, and thereby offer a more robust statistical analysis of newspaper publishing in Finland than has previously been possible. We specifically examine the interplay between the Swedish- and Finnish-language newspapers and show that, whereas the public discussions were inherently bilingual, the technological and journalistic developments advanced at different pace in the two language forums. This analysis challenges the perception of a uniform public sphere in the country. In addition, we assess the development of the press in comparison with

1 Jani Marjanen and Mikko Tolonen have conceptualized the study and analyses, and have been responsible for writing the article. Ville Vaara, Antti Kanner, and Eetu Mäkelä have implemented most of the statistical analyses. Leo Lahti and Hege Roivainen have contributed to the analysis ecosystem.

the production of books and periodicals, which points toward the specialization of newspapers as a medium in the period after 1860. This confirms some earlier findings about Finnish print production. We then show how this specialization came about through the establishment of forums for local debates that other less localized print media such as magazines and books could not provide.

KEYWORDS

Newspaper history, public discourse, metadata, censorship, public sphere

Introduction

Newspapers constitute one of the most widely used sources of digital history, as they record diverse sets of historical topics through time. They also provide valuable datasets for studying historical language change. Several research projects have consequently focused on conceptual change based on newspaper content, thereby broadening the scope of periodical studies.² Although the availability and usability of newspapers has improved greatly, one of the biggest challenges in producing reliable claims about conceptual change based on newspaper content, for instance, is the difficulty in obtaining reliable and extensive knowledge about the data that is used. The aim in this article is to provide such knowledge through a detailed analysis of newspaper data that relies on existing metadata. In so doing, we study the transformation of the newspaper as a periodical publication and, more broadly, the nature of the public sphere in the long nineteenth century in Finland. We show that it is possible to produce a reasonably detailed analysis based only on the metadata, but in certain analyses we also rely on data or textual evidence drawn from the newspaper content.³ In this paper, we have decided to discuss the existing historiography amidst our own analysis as is customary in traditional historical research. As such, the study caters both to those in the field of periodical studies who are interested in newspapers and their transformation as such, and to the ever-expanding group of scholars using textual data from newspapers to study long-term historical trends through language. This analysis of Finnish newspaper metadata could also be used as a model for producing similar records elsewhere in Europe and beyond.

Our study focuses specifically on the intertwined processes by which newspapers developed into a specific category and a medium that covered the whole of Finland, and did so in two languages. These processes certainly have transnational dimensions, but some peculiarities that are local to the Finnish case constitute a good starting point for comparative study. We show that newspapers reached most of the Finnish population by the early twentieth century, and became a distinct category in the mid-nineteenth century. However, developments happened at different speeds according to linguistic and regional divides, which highlights the fact that newspapers should be seen not as the manifestation of a uniform national public sphere, but as a field of communication that was uneven.

The national perspective was a self-evident starting point in earlier research on Finnish newspapers. Although we also use nationally delineated material, and in a sense depart from similar notions of a Finnish development of newspapers, we specifically ask questions that challenge the unitary nature of that sphere.⁴ We study how Swedish- and Finnish-language newspapers developed in constant cross-fertilization, and outline the distinction of the two main languages in the country, the Finnish

2 See Melvin Wevers, Tom Kenter, and Pim Huijnen, 'Concepts Through Time: Tracing Concepts in Dutch Newspaper Discourse (1890–1990) Using Word Embeddings', paper delivered at the Digital Humanities conference (Sydney, 2015); *Viral texts project*; Vincent Buntinx, Cyril Bornet, and Frédéric Kaplan, 'Studying Linguistic Changes over 200 Years of Newspapers through Resilient Words Analysis', *Frontiers in Digital Humanities*, no. 4 (2017), no page.

3 For similar efforts with metadata, see Mikko Tolonen, Leo Lahti, Hege Roivainen, and Jani Marjanen, 'A Quantitative Approach to Book-Printing in Sweden and Finland, 1640–1828', *Historical Methods: A Journal of Quantitative and Interdisciplinary History*, 52.1 (2019), 57–78; and Leo Lahti, Jani Marjanen, Hege Roivainen, and Mikko Tolonen, 'Bibliographic Data Science and the History of the Book (c. 1500–1800)', *Cataloging & Classification Quarterly*, 57.1 (2019), 5–23.

4 We draw on Ulrich Beck and Natan Sznaider, 'Unpacking Cosmopolitanism for the Social Sciences: A Research Agenda', *The British Journal of Sociology*, 57.1 (2006), 1–24.

language slowly developing into a state bearing language.⁵ Our particular interest is in public communication as an interplay of languages. Swedish was dominant in political and learned reasoning up to the late nineteenth century. Finnish was an emerging language at that time, albeit the first language among most of the population. Russian, we should point out, was the main imperial language, although with limited presence in Finnish public discourse.⁶

We further analyze the conditions for public discourse in newspapers on the local level in different parts of the country. Developments during the latter half of the nineteenth century play a crucial role in this, as newspapers became distinguishable from books and periodicals as a channel of communication. Although books and periodicals retained their importance for the urban and educated population, newspapers also attracted the interest of and contributions from rural areas with fewer social institutions. Contrasting newspaper development to the expansion of civic activity enabled us quantitatively to confirm that the era of 1855–90 was one of exceptionally rapid transformation in terms of public discourse in Finland. A new shift began from the 1890s when Finnish-language newspapers surpassed their Swedish-language counterparts in publication volume. We argue in this article that such development should be seen as a combination of regionalization and the distinction of newspapers as a medium from other printed materials. At this point, newspapers were very different from those appearing in the late-eighteenth and early-nineteenth centuries.

Previous Scholarship

It is known from previous historical accounts that public communication was transformed in Finland in the eighteenth and nineteenth centuries with the advent of newspapers as a key medium for spreading information and facilitating political, cultural, and social debate. The first self-identified newspaper in Finland was a Swedish-language publication founded in 1771, entitled *Tidningar Utgifne af et Sällskap i Åbo*, and the first Finnish-language paper, *Turun Wiikko-Sanomat*, subsequently appeared in 1820. Both were published in Turku (known as Åbo in Swedish), the largest town in the country at the time. From these years onward, the ecosystem of Swedish- and Finnish-language newspapers developed, showing a growth (also witnessed elsewhere in Europe) in publications, publication frequency and regional spread, and formats. A total of 502 newspapers were founded in Finland between 1771 and 1920, albeit most of them were short-lived. Almost thirty percent of them (140 in total) survived for less than two years.⁷

Most newspapers in Finland were published in Swedish or Finnish, but there were also some in German and Russian. The newspaper as a medium transformed within this period of 150 years, evolving during the second half of the nineteenth century in particular, and gradually developing into a distinct medium for public discourse that

5 For examples of text virality across the language border, see Hannu Salmi, Asko Nivala, Heli Rantala, Reetta Sippola, Alekski Vesanto, and Filip Ginter, 'Återanvändningen av text i den finska tidningspressen 1771–1853' ['The Reuse of Texts in the Finnish Press 1771–1853'], *Historisk Tidskrift för Finland*, 103.3 (2018), 46–76.

6 On the relationship between these languages, see Max Engman, *Språkfrågan: Finlandssvenskhetens uppkomst 1812–1922* [*The Language Question: The Rise of Finland-Swedish 1812–1922*] (Helsinki: Svenska litteratursällskapet i Finland, 2016).

7 The figures exclude newspapers published outside Finnish borders, such as Finnish-language editions published in St Petersburg, Sweden or America. However, they do include papers published in towns that were Finnish at the time but were later ceded to Russia, such as Vyborg.

encompassed the whole of the country.⁸ The first newspapers, or newsbooks, were not easily distinguishable from pamphlets, for example, and it is difficult at times to assign different types of print material to distinct categories in later periods as well. Small books, pamphlets, newspapers and periodicals differed only marginally, and the categories themselves were in constant flux. As such, the various types of print materials belonged to the same ecosystem of intellectual exchange. Newspapers in the latter half of the nineteenth century were unquestionably seen as being separate from other print products, hence forming a distinct ecosystem of discussion, advertising and competition.

The rise of the press is a key topic in media history and in historical analyses of the development of the public sphere. Ever since the publication of Jürgen Habermas's *Strukturwandel der Öffentlichkeit* (*The Structural Transformation of the Public Sphere*) in German and the later reception of the book in other languages, the theory of a bourgeois public sphere has held a central place in the vast historiography relating to newspapers. Habermas describes a process in modern history in which rational and equal debate become the foundation for political action. Open debate paved way for critical interaction rather than reliance on institutions based on old hierarchies. Newspapers that allowed more people to join the debate were a crucial channel in changing the form of public communication.⁹ At the same time, critics of Habermas have pointed out that many groups were excluded from public debate. This study thus provides a better view of the expansion of one crucial medium for public discourse, thus providing insight into it for studies that want to assess the levels of exclusion at given times.

In the Finnish context, Habermas's theory is most concretely deployed in Hannu Nieminen's study of the central institutions of the Finnish public sphere.¹⁰ Nevertheless, the most influential studies relating to newspapers predate Habermas. Most of them focus on individual titles¹¹ or discuss the cultural history of the early newspapers.¹² Timo Myllyntaus studied the material development of newspapers as part of the emerging printing industry and the gradual growth in available print material.¹³ A landmark

- 8 Päiviö Tommila, Lars Landgren, and Pirkko Leino-Kaukiainen, *Suomen lehdistön historia 1: Sanomalehdistön vaiheet vuoteen 1905* [*History of the Finnish Press 1: The Stages of the Press up until 1905*] (Kuopio: Kustannuskiila, 1988) emphasize the period from the 1860s onwards, as does Timo Myllyntaus, *The Growth and Structure of Finnish Print Production, 1840–1900* (Helsinki: University of Helsinki, 1984).
- 9 Jürgen Habermas, *Strukturwandel der Öffentlichkeit: Untersuchung zu einer Kategorie der bürgerlichen Gesellschaft* [*The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*] (Darmstadt: Luchterhand, 1981 [1962]). For an influential example of anglophone reception and many valid criticisms, see Craig Calhoun, ed., *Habermas and the Public Sphere* (Cambridge, MA: MIT Press, 1992). For modern reinterpretation, see Agnes S. Ku, 'Revisiting the Notion of "Public" in Habermas's Theory — Toward a Theory of Politics of Public Credibility', *Sociological Theory*, 18.2 (2000), 216–40.
- 10 Hannu Nieminen, *Kun kansa seiso! loitompana: Kansallisen julkisuuden rakentuminen Suomessa 1809–1917* [*The Construction of National Publicity in Finland 1809–1917*] (Tampere: Vastapaino, 2006). See also Henrik Stenius, 'Julkisen keskustelun rajat suuriruhtinaskunnassa' ['The Boundaries of Public Debate'], in *Talous, valta ja valtio: Tutkimuksia 1800-luvun Suomesta*, ed. by Pertti Haapala (Tampere: Vastapaino, 1990).
- 11 Hugo E. Pipping, 'Alexander Blomqvist och Finlands allmänna tidning' ['Alexander Blomqvist and the Finland's general newspaper'], *Historiska och litteraturhistoriska studier*, no. 46 (1971), 77–172; Osmo Apunen and Reino Kuusi, *Hallituksen sanansaattaja: Virallinen lehti — Officiella tidningen 1819–1969* [*The Government's Messenger: The Official Newspaper 1819–1969*] (Helsinki: Virallinen lehti, 1970); and Lars Landgrén, *För Frihet och framåtskridande: Helsingfors Dagblads etableringsskede 1861–1864* [*Freedom and Progress: The Establishment of Helsingfors Dagblad 1861–1864*] (Helsinki: Svenska litteratursällskapet i Finland, 1995).
- 12 Claes Zilliacus and Henrik Knif, *Opinionens tryck: En studie över pressens bildningskede i Finland* [*The Pressure of the Public: A Study of the Formation of the Press in Finland*] (Helsinki: Svenska litteratursällskapet i Finland, 1985).
- 13 Timo Myllyntaus, *Suomen graafisen teollisuuden kasvu 1860–1905* [*The Growth of the Finnish Graphic Industry, 1860–1905*] (Helsinki: Institute of Economic and Social History, 1981); Myllyntaus, *The Growth and Structure*.

publication charting these developments is the multi-volume history of Finnish newspapers and periodicals edited by Päiviö Tommila.¹⁴ The studies conducted by Myllyntaus, Zilliacus, Knif, and Tommila's group form the backbone of current knowledge of newspapers in the nineteenth century, reflecting the huge amount of time devoted to studying their circulation, spread and publication practices.

Material and Methods

The analyses reported in this article derive primarily from metadata records of newspapers published in Finland held by the National Library of Finland. The public digital collection includes the full text of all newspapers and most periodicals published between 1771 and 1917.¹⁵ Metadata is also available for the period 1918–2000, but we have limited the analyses to the period up to 1917 for two reasons. First, the process by which newspapers came to be regarded as a particular medium happened in Finland, for the most part, during the course of the nineteenth century. Twentieth-century developments raise interesting and related questions, but they demand a slightly different take on the material in that it should be related to radio and television broadcasting. Second, some of our analyses require extracting metadata from the full texts, which are not yet available beyond 1919.

Future studies focusing on content analysis can build on our discussion on the asymmetries present in the ecosystem of newspapers that arise from studying metadata. Thinking about combining metadata analysis with the study of full texts also serves as a concrete example of conceptualizing the historian's work as modeling rather than anecdotal castle-building. Metadata records resemble structured serial data that have long been available for quantitative historical analysis, whereas full-text sources were not available for proper quantitative analysis before digitalization and the implementation of methods from natural language processing. Nevertheless, if one uses full-text sources for quantitative analysis one has to focus much more on the balance, representativeness, and meaningfulness of the corpus.¹⁶ Our analysis of metadata thus helps judge how the Finnish newspaper corpus can be divided into meaningful and balanced subcorpora for full-text analysis.

The available metadata contains information on newspaper titles, publication places, publication dates, language, page counts, page sizes, publishers and fonts, as well as on the collections and their provenance.¹⁷ Information about circulation is included only for a limited number of newspapers, but we have been able to enrich such information up to the year 1860 with reference to Tommila's study. This facilitates the estimation of words and printed pages, as well as the analysis of total paper consumption.¹⁸ We have further extracted information about columns, word counts, and publication frequencies

14 *Suomen lehdistön historia 1–10* [*The History of the Finnish Press, Vols 1–10*], ed. by Päiviö Tommila (Kuopio: Kustannuskiila, 1988–92).

15 The data is available through the digital collections of the National Library of Finland. The collection is projected also to include newer material.

16 Michael Piotrowski, 'Historical Models and Serial Sources', *Journal of European Periodical Studies*, 4.1 (2019).

17 A full record of metadata fields is to be found at <https://doi.org/10.5281/zenodo.3382010>.

18 Päiviö Tommila, *Suomen lehdistön levikki ennen vuotta 1860* [*The Circulation of the Finnish Press before 1860*] (Porvoo: WSOY, 1963); see also Päiviö Tommila, Tuire Raitio, and Eeva-Liisa Aalto, *Suomen sanomalehdistön levikki 1861–1900* [*The Circulation of Finnish Newspapers 1861–1900*] (Helsinki: Suomen sanomalehdistön historia -projekti, 1977), which provides more sporadic circulation data for the period after 1860. Myllyntaus has also estimated paper consumption from archival sources.

from the full-text scans to better trace the advancement of newspaper publishing.¹⁹ This tells us more about developments in publishing practices and the materiality of the newspapers than can be gleaned from focusing only on existing metadata.

The starting point in our analyses is that the information (both the original and the enriched) in the metadata can be used to statistically analyze trends in the changing materiality of newspaper publishing in the long nineteenth century. We could also identify instances that deviate from the general trend, thus highlighting occasions when an exceptional size, length, or layout was intended to draw the attention of the newspaper's readers. The material features then tie into the development of journalistic practices. The emergence of public discourse was related to newspapers as a medium, separate from other print media. At the same time, newspapers also included excerpts from other print products including poems, short stories, and essays. Naturally, newspapers' role for members of the public was also discussed on their pages. Seminal articles such as Johan Vilhelm Snellman's 'Publicity' and the 'Perils of Publicity' made crucial contributions to the debate on newspapers and where they might be taking public discourse.²⁰ Nevertheless, we chose in this article to construct an overall picture of how newspapers modernized and formed a distinct medium that set them apart from books, pamphlets, academic journals, and even non-published media such as church announcements, by looking at their format, publishing frequency, degree of localness, and layout.

Indeed, large-scale data harmonization and statistical analysis constitute the key methodological approach enabling this research. We refer to this as bibliographic data science, given that we draw from the objectives outlined in the tradition of analytical bibliography, while at the same time borrowing and expanding methods from contemporary data science. This concept emphasizes the notion that quantitative research based on this material requires careful and semi-automated harmonization and statistical analysis of the records.²¹ In sum, the data harmonization part comprises multiple steps: parsing the original metadata files, harmonizing the data entries by removing occasional special characters and spelling errors, merging synonyms, identifying and removing duplicate entries, augmenting missing metadata based on information derived from other fields and external data sources (the approximate document dimensions can be inferred from partial information for instance), and enriching the data with further information such as geographical coordinates. Automating such a process is not without risks of bias and error, of course, and for this reason we use various complementary summaries, checklists, and unit tests to constantly monitor and evaluate the accuracy of the automated data-cleaning operations. Moreover, the use of the data in itself has proven to be a powerful method for detecting potential problems: careful research incorporates various manual checks and critical inspections of the material. Detected errors or shortcomings are corrected in the algorithmic pipeline, and the automated process can be constantly refined.

19 Eetu Mäkelä, Mikko Tolonen, Jani Marjanen, Antti Kanner, Ville Vaara, and Leo Lahti, 'Interdisciplinary Collaboration in Studying Newspaper Materiality', presentation at the Digital Humanities in the Nordic Countries conference (Copenhagen 2019), CEUR-WS 2365.

20 Johan Vilhelm Snellman, 'Publiciteten' ['Publicity'], *Saima* (15 May 1844); and Johan Vilhelm Snellman, 'Publicitetens vador' ['Perils of Publicity'], *Saima* (23 May 1844).

21 Michael F. Suarez, 'Towards a Bibliometric Analysis of The Surviving Record, 1701–1800', in *The Cambridge History of the Book in Britain*, vol. 5, ed. by Michael F. Suarez and Michael L. Turner, (Cambridge: Cambridge University Press, 2009), pp. 37–65; Michael F. Suarez, 'Book History from Descriptive Bibliographies', in *The Cambridge Companion to the History of the Book*, ed. by Leslie Howsam (Cambridge: Cambridge University Press, 2015), pp. 199–219; and Lahti and others, 'Bibliographic Data Science and the History of the Book'.

With regard to the quantitative analysis of the data following its harmonization, we largely rely in the present work on standard methods of descriptive statistics, but further analyses could take advantage of more advanced statistical techniques that would allow a more accurate characterization of the spatio-temporal spread of newspaper production, for instance. Much of our analysis relies on a combination of the R and Python programming languages that provide a vast toolkit for quantitative research. In particular, we have used the *tidyverse* and *ggplot* R package ecosystem for data manipulation and visualization, together with the custom algorithms we collected in a coherent data-harmonization and analysis ecosystem.²² Hence, the details of the data processing and analysis are open to investigation and criticism by the broader research community. Moreover, open licensing will allow others to use the workflow as a starting point for developing and testing alternatives.

The Birth of Modern Newspapers in Finland

The process by which newspapers became a distinct medium, separable from leaflets, government documents, and journals, is tied to the further and more complex question of how public discourse changed to make space for critical debate among citizens. Newspapers were certainly part of this, but definitely not the whole story. Jürgen Habermas's seminal account of the structural transformation of the public sphere emphasizes the early and mid-eighteenth century, specifically pointing to the *Spectator* (1711–14) by Joseph Addison and Richard Steele as a landmark publication that marked a shift in how public discourse was conducted in Britain.²³ Swedish newspaper history tends to build on Habermas, implying that *Aftonbladet* (the *Evening Paper*), a seminal newspaper published from 1830 onwards, marked a shift in newspaper publishing and the introduction of modern press debate to Sweden.²⁴

In the Finnish case, the symbolically laden honour of being the beacon of modern newspaper publishing is usually given to Snellman's *Saima* (1844–46) due to its journalistically ambitious profile.²⁵ This newspaper was produced in Swedish, and it is more difficult to name the newspaper that signaled a shift in public discourse among the Finnish-language titles. Possible candidates include Paavo Tikkanen's *Suometar* (1847–66) and Georg Forsman's *Helsingin Uutiset* (founded in 1863). The breakthrough of the modern Swedish-language and Finnish-language press in Finland was obviously an intertwined process. Most intellectuals operated in both languages, but there was still a certain asynchronicity in this development. This difference is even clearer if one considers the modernization of the press overall from a quantitative perspective, implying that the 1830s and 1840s were crucial periods for the development of the Swedish-language newspapers and the two decades after that marked a pronounced change with regard to Finnish-language newspapers.

22 <https://github.com/madewild/MERCKX>; Hadley Wickham, *tidyverse: Easily Install and Load the 'Tidyverse'*. R package version 1.2.1 (2017); Hadley Wickham, *Ggplot2: Elegant Graphics for Data Analysis* (New York, NJ: Springer, 2009).

23 Habermas, *Strukturwandel der Öffentlichkeit*, p. 45; and Habermas, *Structural Transformation*, p. 29. For a critical discussion see Brian Cowan, 'Mr. Spectator and the Coffeehouse Public Sphere', *Eighteenth-Century Studies*, 37.3 (2004), 345–366.

24 Karl Erik Gustafsson and Per Rydén, eds, *Den svenska pressens historia I: I begynnelsen (tiden före 1830)* [*The History of the Swedish Press I: In the Beginning (the time before 1830)*] (Stockholm; Ekerlid, 2000); Karl Erik Gustafsson and Per Rydén, eds, *Den svenska pressens historia II: Åren då allting hände (1830–1897)* [*The History of the Swedish Press II: The Years when Everything Happened (1830–1897)*] (Stockholm: Ekerlid, 2001). For a critical discussion, see Patrik Lundell, *Pressen i provinsen: Från medborgerliga samtal till modern opinionsbildning 1750–1850* [*The Press in the Provinces*] (Lund: Nordic Academic Press, 2002).

25 Tommila, Landgrén, and Kaukiainen, pp. 130–42; and Zilliacus and Knif, pp. 33–38.

Not surprisingly, the development of newspapers in the long nineteenth century is a story of growth with some critical junctures. As such, it should not be told from a national perspective, since the Finnish development naturally follows Europe-wide trends, and Finland's relationship to Sweden is particularly important. The newspapers published from 1771 onwards were of course the first to be published in Finland, but more than that they were published in the provincial university town of Turku (Åbo in Swedish), which belonged to the Swedish kingdom. These newspapers emerged from a need to place Turku on a par with the other intellectual hubs in Sweden, namely Stockholm, Uppsala, Lund, and Greifswald, as well as with other towns with established local newspapers such as Gothenburg, Linköping, and Norrköping.²⁶ With the establishment of the Finnish Grand Duchy within the Russian Empire in 1809, the newspapers from Stockholm and other Swedish towns remained influential, but the new political setting also created a space for shaping a public sphere that strove towards national coverage in Finland. This entailed both the development of a Finnish-language press, and the geographical spread of the newspapers to smaller towns in the country.

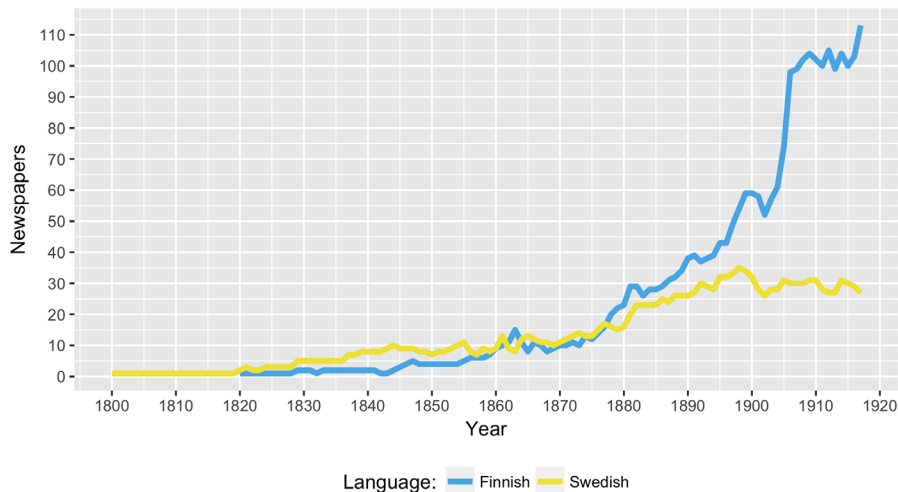


Fig. 1 Distinct newspapers published per year in Swedish and in Finnish, 1800–1917

A good starting point from which to study the language development of newspapers in Finland is to consider a simple timeline account of how many distinct titles were published in different languages during the period under study (Fig. 1), which gives a crude picture of the critical junctures. A plurality of newspapers in Swedish started to emerge in the 1830s and 1840s, meaning that they could refer to one another, and they began to compete for public approval. The Finnish-language papers started to show a similar trend in the 1850s. The Diet meeting of 1863 played a role in this by giving rise to several new newspapers in Finnish. There was steady growth after 1863 until the restrictions on publishing that were imposed in the early 1900s and the revolution of 1905. The relaxing of censorship in November 1905 resulted in a dramatic proliferation of Finnish-language newspapers, whereas it seems that saturation point had by then already been reached for the Swedish-language press (Fig. 1).

26 On Turku in competition with other Swedish cities, see Tolonen and others, 'A Quantitative Approach to Book-Printing in Sweden and Finland'; and Jani Marjanen, 'Finland som begrepp' ['Finland as Concept'], *Historisk Tidskrift för Finland*, 102.3 (2017), 533–44.

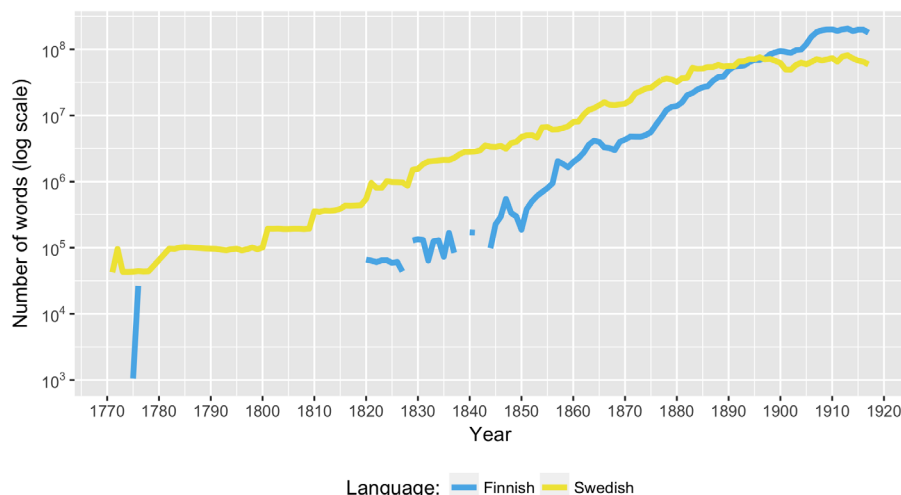


Fig. 2 Words published in Finnish-language and Swedish-language newspapers in Finland, 1771–1905

A more fine-grained image of the stabilization process of newspapers in Finland can be achieved by using full-text data to extract numbers of words published in both languages (Fig. 2). This illustrates the volatility of publishing in Swedish in 1770–90 and in Finnish in 1820–50. One way of characterizing these periods is to call them emerging eras of newspaper publishing. It was only after these decades of trial and error that a certain stability was achieved. Although newspapers were also founded and then quickly folded in the later periods, breaks in publishing were no longer acceptable as continuity and publication at regular intervals became the norm for newspapers as a medium. It is evident from these graphs (Figs 1 and 2) that the peaks and drops in printed words (after these periods of uncertainty of 1770–90 in Swedish and 1820–50 in Finnish) had to do with changes in the overall landscape of newspapers, and not with the inability of individual titles to publish issues regularly.

Key moments in international politics (such as the revolutions of 1848 and 1905), changes in censorship laws (1829, 1850, 1854–55, and 1905), and local politics (e.g. the beginning of Bobrikov’s tenure as Governor-General in 1898) affected the life and death of newspapers. Although some years saw several closures (Fig. 3), there was a surprising continuity in publishing during the second half of the nineteenth century, despite the changes in the ecosystem of newspapers. Many titles were short-lived after the turn of the century, too. Whenever there was a peak in the founding of new newspapers, a rapid decline soon followed as there were several closures (Fig. 3). As mentioned above, surviving for two years after the first issue was indeed a challenge for any newspaper, as a third of established papers did not do so. Previous scholarship has not paid attention to survival rates of newspapers, and the complex reasons for, and varying contexts in which papers either thriving or struggling would require more data (preferably from different countries) to assess in a statistically robust manner.

Our circulation data (Fig. 4) further illustrates how the Finnish- and Swedish-language newspapers developed at different paces. The Finnish-language press became much more prominent in public discourse in 1854–55, following the gradual relaxation

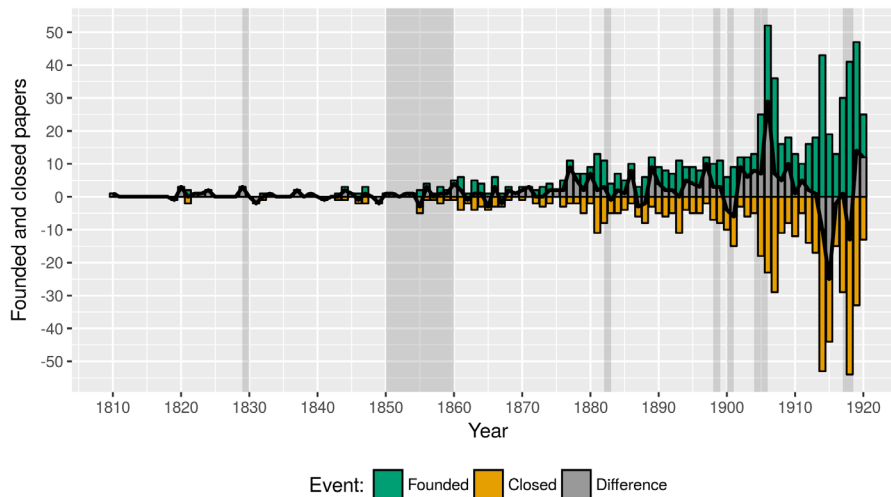


Fig. 3 The founding of new newspapers and the closing of existing ones, 1810–1920. The following key junctures are plotted in the figure: the introduction of censorship of all printed documents prior to publication (1829); a partial ban on publishing articles in the Finnish language on subjects other than the economy and religion (1850–55); the relaxing of censorship (1855, 1860); increased powers for the Governor-General to control newspapers (1882); Bobrikov appointed Governor-General (1898); the Governor-General is allowed to ban advertisements (1900); a ban on single-issue sales and the murder of Bobrikov (1904); press freedom introduced (November 1905); Finland’s declaration of independence and the civil war (1917–18).

of censorship rules related to publishing in Finnish and the consequent expansion of topics that could be addressed (including foreign news and politics).²⁷

Circulation data also reveals that the first Finnish-language newspaper, *Turun Wiikko-Sanomat*, had a positive reception during its first year of publication in 1820. At the time there was an immediate interest in developing the Finnish language, not least among so-called romantics who were influenced by Herderian ideas about national languages, but also generally among intellectuals in the city of Turku.²⁸ However, if the development of the circulation of *Turun Wiikko-Sanomat* is any indication, the initial enthusiasm for a Finnish-language newspaper waned due to a lack of interest among the potential readership.²⁹ There were not yet enough potential readers who preferred it over a Swedish-language paper.

Publishing in Turku was further hampered by the great fire in 1827 and the university’s move the following year to Helsinki, which had a higher Swedish-language profile in terms of population. Further, as pointed out by previous research, Helsinki became the center of loyalist public discourse in which the promotion of the Finnish language had a central role, but it happened in a more paternalistic way rather than

27 Finnish- and Swedish-language publications were subject to different censorship legislation during the period 1850–1860. Censorship of Finnish-language publications was gradually relaxed from 1854 onwards and finally in 1860 was aligned with the same legislation as for Swedish-language publications. Yrjö Nurmio, *Taistelu suomen kielen asemasta 1800-luvun puolivälissä: Vuoden 1850 kielisäännöksen syntyhistorian, voimassaolon ja kumoamisen selvittelyä* [*The Battle for the Status of the Finnish Language in the Mid-Nineteenth Century: Exploring the Origin, Validity, and Repeal of the 1850 Language Act*] (Helsinki: WSOY, 1947).

28 Łukasz Sommer, ‘A Step away from Herder: Turku Romantics and the Question of National Language’, *Slavonic and East European review*, 90.1 (2012), 1–32.

29 See also Tommila, Landgren, and Leino-Kaukiainen, pp. 87–91.

through the activation of the Finnish-speaking part of the population through new media outlets.³⁰ The first Finnish-language newspaper was published in Helsinki as late as 1846, but it turned out to be a short-lived weekly publication that was shut down within six months of inception. It should also be noted that Finnish-language newspapers had started appearing in Oulu and Viipuri (Vyborg) before that time. It is quite possible that the establishment of the predominantly Swedish-speaking city of Helsinki as the home for central administration and the university slowed down the development of the Finnish-language press in general. The pressure to publish and read in Finnish also increased in Helsinki in the late 1840s, but was hampered yet again in the 1850s with the introduction of new censorship legislation.

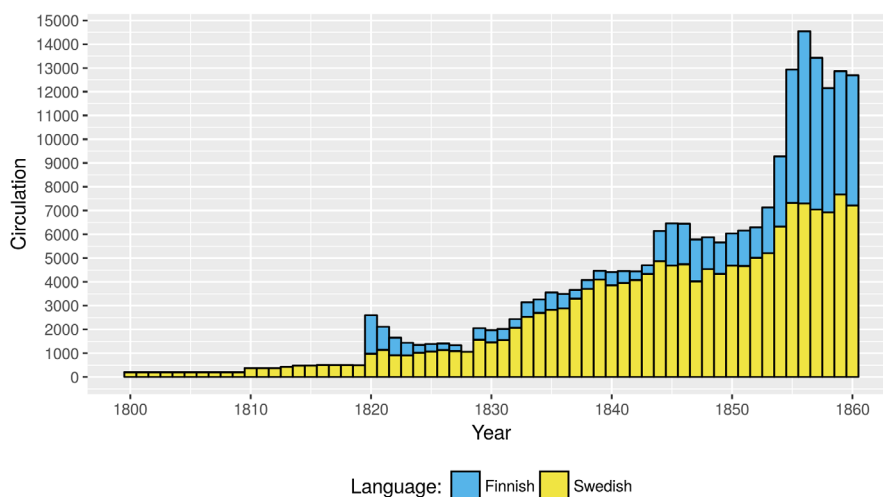


Fig. 4 The circulation of Finnish and Swedish newspapers per year

Other measures related to the level of professionalization of the press point toward similar differences between Finnish- and Swedish-language publications. As Figs 5 and 6 show regarding the respective publication frequency, the first Swedish-language newspapers to be published six times a week started appearing in the 1830s. It was not until the 1860s that the first Finnish-language newspapers followed suit, and it was only from the 1880s that this became the norm.

One intriguing aspect of the historical development of newspaper publication is the expansion of the newspaper as a medium. There are obviously different ways in which this might have taken place, such as the growth in size of the newspaper, publishing frequency, and volume. Clearly, publication frequency seems to have been a convenient way for the publisher to adapt to the increasing number of news items, as well as to meet the need to address issues quickly. Another way of expanding the content was to increase the word count in each issue, and it seems that the easiest way to accomplish this was to increase the size of the sheet.

The metadata records of the National Library of Finland contain information on page size for some newspapers, but not all. We therefore made use of the information included in the full-text scans to calculate the page sizes automatically, covering all pages of all newspapers for the whole period from 1771 to 1917.³¹ It was immediately apparent

30 On the establishment of Helsinki as the capital, see Matti Klinge, *Pääkaupunki: Helsinki ja suomen valtio 1808–1863* [*The Capital City: Helsinki and the Finnish State 1808–1863*] (Helsinki: Otava, 2012). On loyalism, see Matti Klinge, *Från lojalism till rysshat* [*From Loyalism to Hatred of Russians*] (Helsinki: Söderström, 1988); and Irma Sulkunen, *Suomalaisen Kirjallisuuden Seura 1831–1892* [*Finnish Literature Society 1831–1892*] (Helsinki: Suomalaisen Kirjallisuuden Seura, 2004).

31 Mäkelä and others, 'Interdisciplinary Collaboration in Studying Newspaper Materiality'.

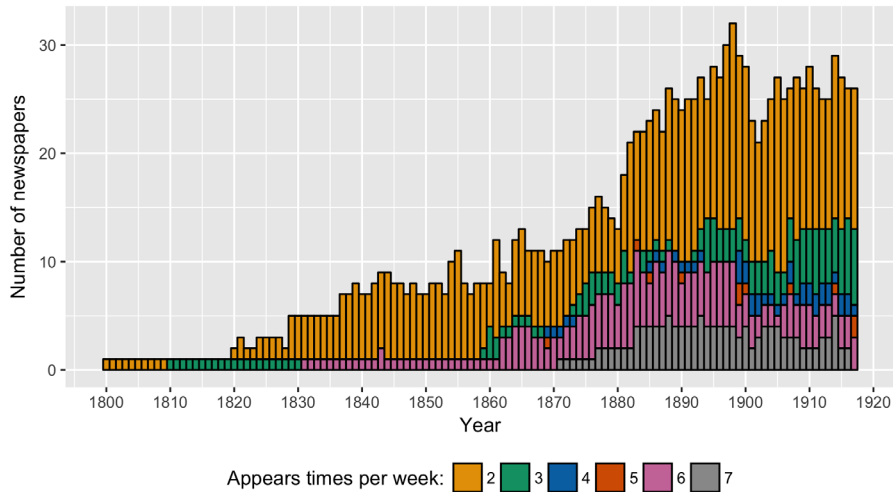


Fig. 5 Annual numbers of Swedish-language newspapers published more than once a week according to publication frequency

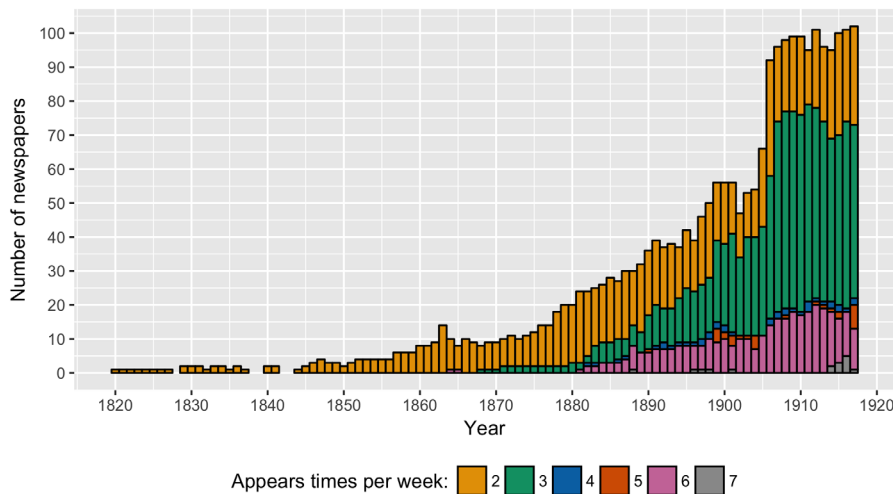


Fig. 6 Annual numbers of Finnish-language newspapers published more than once a week according to publication frequency

from this data that the page sizes of the individual newspapers varied a lot during this period, and some newspapers (such as *Åbo Underrättelser* and *Sanomia Turusta*) even varied their page size and layout within the span of a single week. However, overall there was a clear shift towards larger page sizes. To highlight this, we calculated the mean page size per year for each newspaper, and then clustered them into the nearest A-series size familiar to present-day readers (Fig. 7).

We also used the image files to estimate the number of columns per page. Because column layout may differ by page and even within the page depending on the content, to obtain an aggregate approximation, our algorithm produced an area-weighted median column count as an indicator for each page. We then took a yearly median of this per-page approximation to further distill the data into a visualizable aggregate for each newspaper (Fig. 8).

The data reveals a clear but gradual shift towards larger page sizes with more columns from the 1860s onwards. Newspapers in Finland changed from a column format to a format resembling modern tabloid format with four or more columns as a standard by the 1880s (Figs 7 and 8). The implications of larger page sizes for the practice of

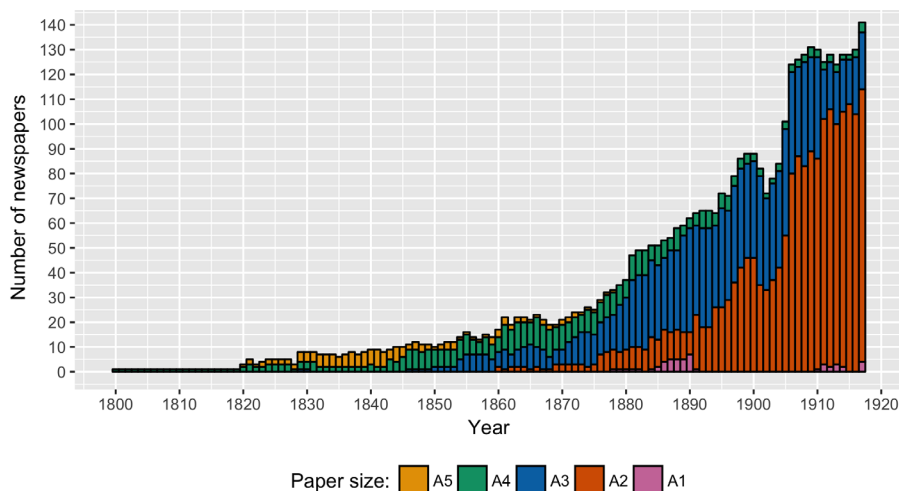


Fig. 7 Newspapers published annually according to approximate page size, 1800–1917

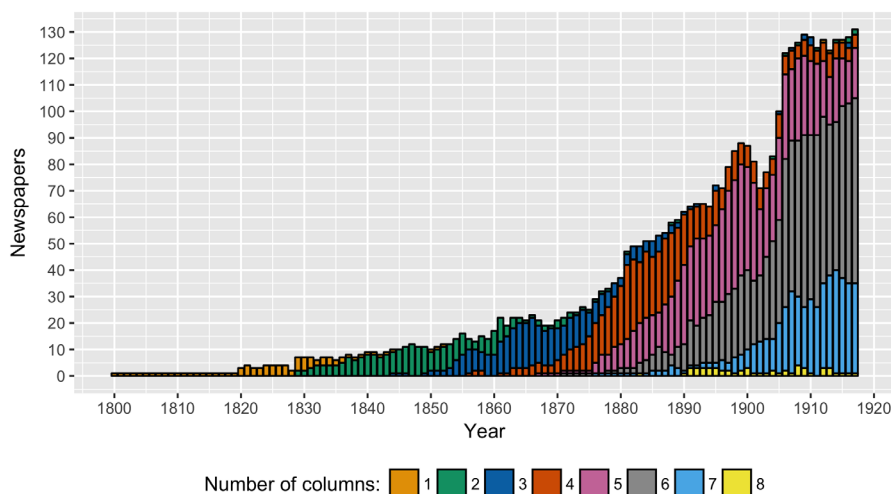


Fig. 8 Annual numbers of newspapers published with a particular column count in Finland, 1800–1917

reading require more investigation. Nevertheless, it is interesting that whereas books tended to gravitate towards slightly smaller formats (especially octavo and duodecimo after the eighteenth century),³² newspapers seemed to follow the opposite road towards larger pages. In both cases, reading habits seemed to move towards reading alone in silence, although newspapers were read only once.³³

Given the development of individual newspapers published, the number of words printed, and the publication frequency, one could hypothesize that newspapers in general tended to expand and reinvent themselves in a similar pattern: 1) the layout was changed such that more words per page could be included, 2) the page size increased, 3) publication frequency was increased, and only after this did 4) the number of pages in the newspaper increase. In fact, a manual inspection of issues with several pages shows

32 Tolonen and others, 'A Quantitative Approach to Book-Printing in Sweden and Finland'.

33 Eltjo Buringh and Jan Luiten van Zanden, 'Charting the "Rise of the West": Manuscripts and Printed Books in Europe, a Long-Term Perspective from the Sixth through Eighteenth Centuries', *Journal of Economic History*, 69.2 (2009), 409–45; Reinhard Wittmann, 'Was there a Reading Revolution at the End of the Eighteenth Century?' in *A History of Reading in the West*, ed. by Guglielmo Cavallo and Roger Chartier (Amherst: University of Massachusetts Press, 1999), pp. 284–312.

that this tended to happen primarily with special issues and appendices relating to an exceptional newsworthy event or an advertisement. The average number of pages in newspapers published in Finland during the entire nineteenth century was around four. It seems that the most common feature of the newspapers included in the database of the National Library of Finland is that they were printed on sheets that were folded only once in the middle (thus constituting four pages) and then distributed to the customer. An overall decrease in paper size took place in the first years of the twentieth century (Fig. 7). The same tendency is also evident in the overall trend in words published at that time (Fig. 2). Changes in the material outlook of the newspapers predominantly relates to technological advances in printing.³⁴ Particular newspapers could shift back and forth with regard to page size or publication frequency. It seems that the material aspects carried with them culturally embedded meanings and that publishers tested how readers felt about the changes in form of newspapers.

Regionalization of the Newspaper Medium

Whereas the development of specific newspapers followed the pattern described above, the overall development of the industry in the nineteenth century was a story that is perhaps best described in terms of regionalization.

In general, the growth in newspaper publishing reflected other long-term trends in Finnish society. For instance, the increase in the amount of Finnish in newspapers compared to the population growth reveals a steady growth in public discourse. In 1820, for example, with the advent of the first Finnish-language newspaper, the number of Finnish words published in newspapers per inhabitant in the country was about 0.63, compared with 69.94 in 1900. This apparent growth corresponds with the number of newly-founded newspapers, but significantly, it was not restricted to the largest cities: newspapers were established all over the country. On the local level, Turku was a major center for newspaper publishing in 1815 at 403.83 words per inhabitant: this had increased to 659.5 in 1900, in other words it had not even doubled in almost a hundred years.³⁵ Using the number of published words per inhabitant in a municipality obviously does not account for the spread of newspapers beyond the location of their publication, nevertheless the difference in numbers between Turku and the national average illustrates a noteworthy point. Namely, the major shift in the landscape of public discourse took place when smaller rural towns also started hosting newspapers as mediums for the local exchange of news, ideas, commercial opportunities, and gossip.

This expansion clearly also relates to language relations within Finland. Fig. 9 below shows the number of towns in which newspapers were published in Finnish, Swedish, or both.

Zooming in on particular years gives a clearer picture of language relations in terms of newspaper publishing. The only town with a Finnish-language newspaper in 1837 was Oulu, whereas Helsinki and Porvoo only hosted Swedish-language newspapers. Helsinki, the new elevated city of central administration and higher education, published less in Finnish than bilingual Turku. Viipuri had also developed a publishing landscape

34 Myllyntaus, *Suomen graafisen teollisuuden kasvu*, provides dates to the introduction of new printing technology, which was used to assess the relationship between technological change and change in outlook.

35 The population estimates are from *Suomen tilastollinen vuosikirja: Uusi sarja 1906* [*Statistical Yearbook of Finland: New Series 1906*] (Helsinki: Keisarillisen senaatin kirjapaino, 1906), pp. 6 and 10. There are no estimates for Turku for 1820, only 1815. We think that the words per inhabitant in the country is an illustrative metric, although at the same time we are aware that as an institution a small, local newspaper can matter a great deal and thus we cannot compare large national papers to them in all respects.

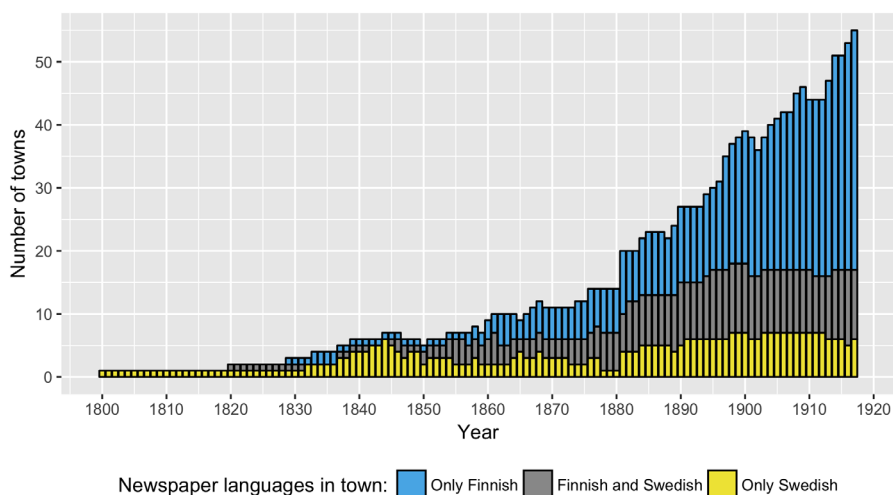


Fig. 9 Number of towns that hosted newspapers in Finnish, Swedish or both, 1800–1917

that hosted both Swedish- and Finnish-language newspapers. As noted above, the establishment of Helsinki as the capital may have slowed down the development of the Finnish-language press as Helsinki gradually became the central node for news and political life.

Jumping ahead three decades to 1867, one notices that regionalization was advancing at a decent pace. By that time the number of towns with both Swedish- and Finnish-language newspapers had grown to six, whereas titles published in Porvoo (since 1837) and Vaasa, which was close to the Swedish border, were only in Swedish. It is also noteworthy that the number of towns with exclusively Finnish newspapers (and hence clearly larger Finnish-speaking audiences) had risen to four. All of the newcomers up to the 1860s (Hämeenlinna, Tampere, and Jyväskylä) are still major inland towns. At this time news from smaller towns were often spread through local letters sent to newspapers in bigger towns.³⁶

Regionalization continued to develop on a similar course. Not surprisingly, by 1900 the towns with only Swedish-language newspaper(s) tended to be on the coast, whereas those with only Finnish-language newspaper(s) were spreading inland. This is an important point from the statistical perspective, and something we are planning to develop further in other papers. It is also worth noting that there were already more than a dozen Finnish towns with both Swedish- and Finnish-language newspapers at the turn of the century. It seems that towns in general tended to have newspapers in two languages; if the population was large enough and included speakers of both languages there would eventually be newspapers in both languages. As noted earlier, the first half of the century was less stable in this regard.

Viipuri is perhaps the most flexible case in terms of language relations, publishing newspapers in German as well as in Swedish and Finnish. The rapid establishment and closing of newspapers in Viipuri did not follow strict language lines: in the period 1830–70 Viipuri shifted back and forth between having newspapers in either Swedish or Finnish. For instance, in 1833 a Finnish-language paper, *Sanan Saattaja Wiipurista*, was launched and published for four years, after which the Swedish-language paper,

36 Heikki Kokko, 'Database of Local Letters to Newspapers — Digital History Project', in *Proceedings of the 4th Conference of the Association of Digital Humanities in the Nordic Countries* (Copenhagen: Association of Digital Humanities in the Nordic Countries, 2019).

Wiborgs Annonce Blad, took over for three years. Then the two papers altered in short stints up to 1849 with a short stint by the paper *Kanava* in 1845–47. In the 1850s and 1860s the town further altered between languages, although periodically (1855–58, 1860–61, 1866–70) the town could sustain a paper in both languages.³⁷ It is also clear that the producers of a Swedish-language newspaper could switch to a Finnish-language one and vice versa; the actors involved and the readers seemed to be readily multilingual.

However, the trend towards bilingualism in towns and flexibility regarding publication language seems to have changed by the turn of the century, with another major shift in the publishing landscape in the early twentieth century. By the time of Finnish independence in 1917 the number of towns with only a Finnish newspaper had more than tripled, thus publishing only in Finnish very quickly became the norm in large parts of the country. Nevertheless, larger towns remained bilingual, including Porvoo, which for a long time had only published Swedish-language newspapers. At the same time, the towns with only a Swedish-language newspaper were increasingly limited to smaller places on the coast.

Finally, we consider publication languages in the year 1920 (Fig. 10). Most of the big towns and cities were still bilingual. The main trend locally up to the end of the nineteenth century was that those with a large enough population would host one or more newspapers in each language.

It seems that the expansion of Finnish newspapers spread over two phases. Within the ecosystem in which they existed up to the end of the nineteenth century, the first ones were published in the local dominant language, but as time went on they also offered a title in the second language. In a sense, therefore, they seemed to gravitate towards bilingualism from 1880s onwards (Fig. 9) regardless of whether the first paper was in Finnish or Swedish. However, towards the end of the period in the early 1900s, new locations were predominantly smaller Finnish-language towns that did not have the market to support many newspapers. This corresponds with the overall trend described earlier. There was no real growth in Swedish-speaking readers after the year 1900, whereas Finnish-language newspapers continued to expand until the end of the twentieth century. This period was one in which language relations in the bilingual ecosystem of newspapers started to shift, as Finnish became the dominant language. Studied together with existing research on the Swedish-speaking minority, our plots indicate that language use was strongly related to geography, the size of the conurbation and, to a certain extent, class. This obviously had a huge impact on the public discourse in Finland, and on language relations. One concrete outcome was the need to conceptualize Swedish speakers as a minority. Vocabulary such as ‘Finland-Swede’ and ‘Finlanders’ (to denote both Finnish-speaking Finns and Swedish-speaking Finland-Swedes) entered the lexicon.³⁸

Consideration of how the bigger cities became less important in the overall landscape of newspapers further refines the analysis of language relations. Turku, Helsinki, and Viipuri were the first to host newspapers, but although still publishers of the major titles, they followed the strong trend in the nineteenth century in becoming more like every other town in the country (Fig. 11). However, even though more

37 On language relations in Viipuri, see Peter Stadius, ‘Språkpolitik och språkpraxis i viborgsk tidningspress’ [‘Language Policy and Language Practice in the Viborg Press’], in *Viborgs fyra språk under sju sekel*, ed. by Marika Tandefelt (Esbo: Schildts, 2002).

38 Engman; Johanna Wassholm, *Svenskt, finskt och ryskt: Nationens, språkets och historiens dimensioner hos E. G. Ebrström 1808–1835* [Swedish, Finnish, and Russian: The Dimensions of Nation, Language, and History in E. G. Ebrström 1808–1835] (Helsinki: Svenska litteratursällskapet i Helsingfors, 2014).

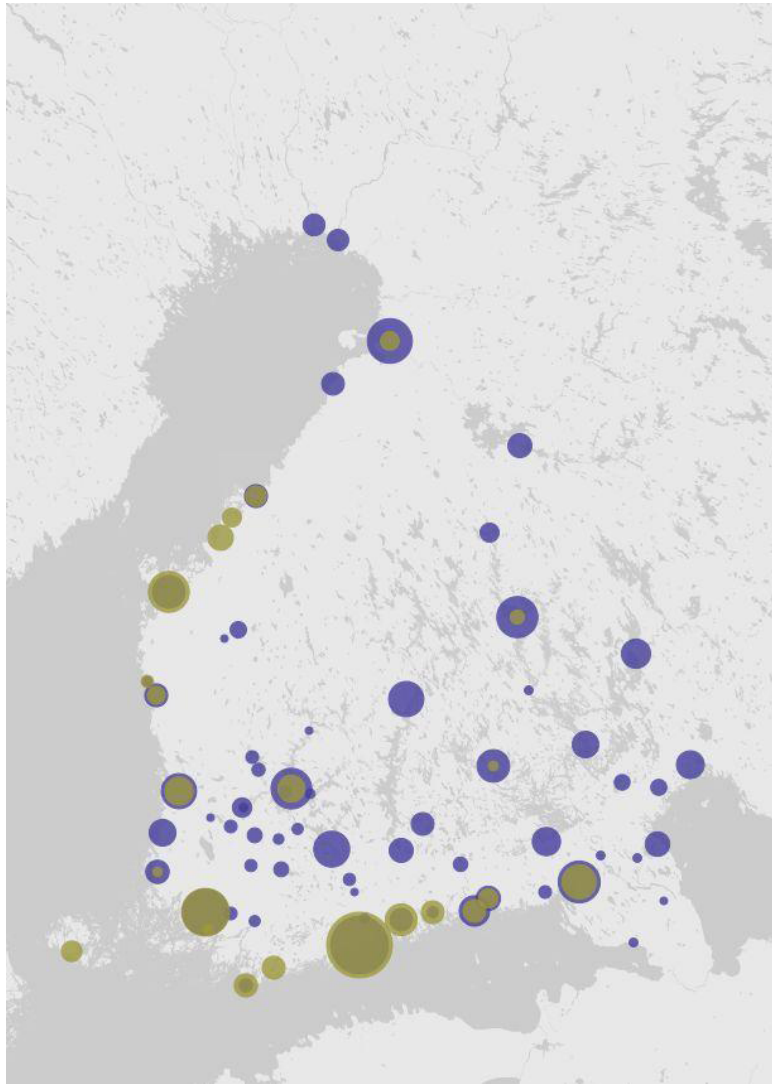


Fig. 10 Newspapers published in Swedish and in Finnish in the year 1920: Swedish-language newspapers are in yellow, Finnish-language newspapers in blue. Size denotes number of titles.

cities published newspapers, the titles from bigger cities remained more influential, as indicated by studies on text reuse in Finnish newspapers.³⁹

Turku was the only place in Finland that published newspapers between 1771 and 1820, which is unsurprising given that it was the biggest city and the center of academic life. What is notable is that its position weakened after the 1812 decision to make Helsinki the new capital. This shift from Turku to Helsinki was accelerated by the great fire of Turku in 1827, and the move of the university to Helsinki in 1828.⁴⁰ As a consequence of the geopolitical shift, Viipuri gained prominence as a multicultural commercial city between Helsinki, the capital in the Grand Duchy, and St. Petersburg, the capital of the Empire.

Interestingly, the effects of this shift are more evident in book production than in the new forms of public discourse facilitated by newspapers. Although the early newspapers from the late eighteenth century were, by and large, produced and read

39 Salmi and others, 'Återanvändningen av text i den finska tidningspressen'.

40 For an influential account, see Klinge, *Pääkaupunki*.

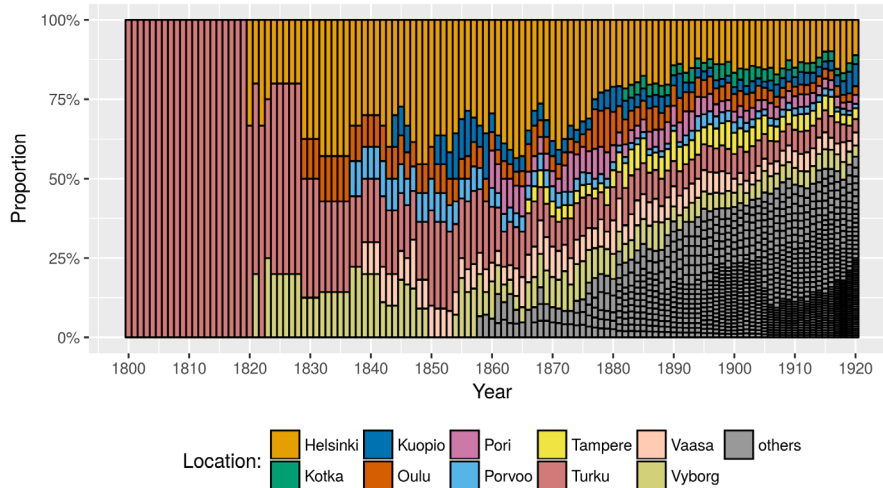


Fig. 11 The proportions of all newspapers published in selected towns, 1800–1920

by academics, the local newspapers being published by 1810 and the first Finnish-language title, together with a few partisan newspapers appearing in the 1820s, were not directly tied to the university milieu. However, although the post-1809 period brought a drop in both book production and newspaper publishing in Turku, book production suffered most, and did not recover until much later.⁴¹ We argue that even in this period newspapers as a forum for public discourse engaged a broader public and a broader range of authors than books did. One of the Turku newspapers continued to be printed even during the year of the great fire of 1827, and those that ceased publication for that year were soon revived. The revitalization of book production was much slower and much more difficult, in that there was no university to shoulder the burden. Newspapers, on the other hand, did not rely on academia to flourish.

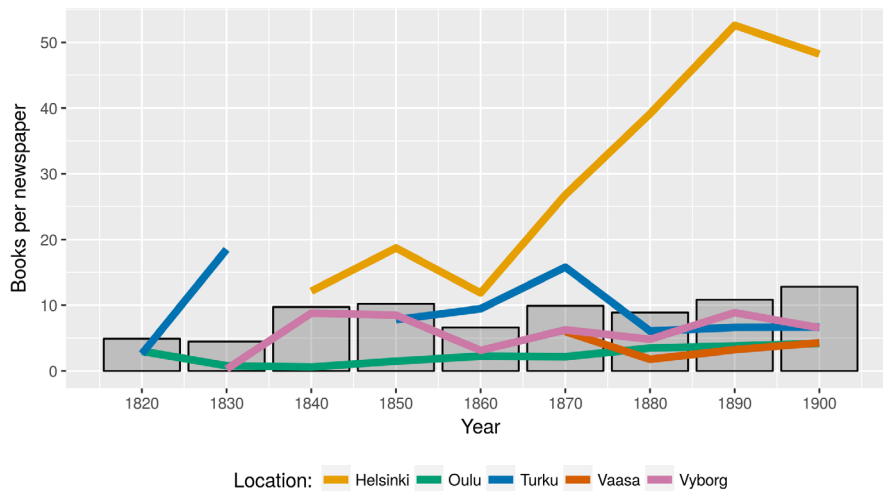


Fig. 12 The numbers of Finnish-language books published per decade at selected locations from 1820 to 1900, divided by the respective numbers of Finnish-language newspaper titles: the bars show the national average of Finnish-language books published per Finnish-language newspaper title⁴²

Another way of measuring the growth in newspapers is to compare it with developments in other publication forums. An analysis of newspapers published in

41 Tolonen and others, 'A Quantitative Approach to Book-Printing in Sweden and Finland'.

comparison with books published in Finnish in the same year shows the diverging developmental paths in the long nineteenth century. As Fig. 12 shows, Helsinki differed from the national average and all other major towns from the 1860s onwards. Newspapers as a medium gained a broader geographical spread than books, which remained a largely academic endeavour. As a result, the university city of Helsinki not only produced many newspapers, but also published a lot more books per newspaper than any other town.

Hence, not only did newspapers start to diverge from books on the material level (Figs 7 and 12), they clearly also assumed a different logic in terms of production and circulation. Books were produced predominantly in the university town and then spread throughout the country, whereas newspapers became more local and followed the logic of rapid distribution. Newspapers were also no longer dependent on sites of formal learning, and were produced in places that did not boast a wealth of learned editors. Finland certainly had its share of prominent academic newspaper editors, such as Professor Zacharias Topelius, but in general, newspapers became a medium that was less bound to representatives of academia.

Conclusion

The development of newspapers in Finland is a well-researched topic. Our examination of newspaper publishing through metadata collections held by the National Library of Finland supplements earlier findings in providing a quantitatively solid overview of the related trends. The analyses we have produced underline at least three major issues to be taken into consideration in framing the Finnish landscape of newspaper publishing.

First, one could refer to a national public sphere in Finland, with some qualifications. The newspaper medium developed in tandem with other aspects of the Swedish realm. Moreover, national-level development was far from even after the establishment of a Finnish Grand Duchy within the Russian Empire. Swedish- and Finnish-language newspapers were in constant interaction, but developed at different speeds.⁴³ In broad terms, Finnish-language papers simply lagged behind in terms of journalistic standards during the late-eighteenth century and the first half of the nineteenth, the public sphere was inherently bilingual around the mid-century, and Finnish-language papers came to dominate public discourse toward the turn of the twentieth century. It is necessary to take these long-term, entangled developments into consideration in developing an understanding of the role of newspapers in the transformation of public discourse in Finland.

Second, regionalization was the most influential factor in the development of the national sphere in Finland towards the very end of the nineteenth (and in the early twentieth) century. The fact that so many Finnish towns started printing their own local newspapers had a substantial impact on this development. It was possible to conduct both regional and national debates on the local level, in many cases in both Finnish and Swedish. To what degree the new regional perspectives were present in national debates remains a task for textual analysis.

Third, we demonstrate that the emergence of modern newspapers, the language question, and regionalization were tightly intertwined. Although Finnish-language and Swedish-language papers developed at different speeds in the early part of the

43 We borrowed the phrase from Helge Jordheim, 'Europe at Different Speeds: Asynchronities and Multiple Times in European Conceptual History', in *Conceptual History in the European Space*, ed. by Willibald Steinmetz, Michael Freeden, and Javier Fernández-Sebastián (New York: Berghahn Books, 2017).

nineteenth century, the titles and the debates were inherently connected. Earlier research on language relations suggests that readers and editors simply attributed a different status to the two languages.⁴⁴ Our statistical analysis of the changes in language relations of newspaper publishing supports this claim and suggests that Finnish-language papers and public discourse caught up, and Finnish ultimately became the dominant national language. In this process the views on the two languages also changed. This coincided with the expansion of the regional press, mostly in Finnish, which helped to bring about a Finnish-language public that was not as tied to the Swedish-language minority, and that ultimately came to dominate public discourse. The elevation of Finnish to a high position in public discourse also meant a stronger separation of the language spheres.

The fact that the Finnish data includes all newspapers (and most journals) from this period, it allows for a more accurate ecosystem-focused perspective on the development of the trajectory of the medium. It should be borne in mind that the history of newspapers was not an isolated national development, but was entangled with developments in neighbouring countries and influenced by strong international trends. Subsequently, our case of two interlinked public spheres in one country may help to enhance understanding of cross-fertilization between different languages outside Finland. Our examples drawn from Finnish newspaper metadata may thus benefit other related studies. Newspapers are digitized globally, which makes similar metadata collections available in much larger geographical areas. We envision that this study could serve as proof of concept in other similar undertakings aimed at finding new ways to model how public discourse was shaped nationally and internationally.

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