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Salla Simola, Jeremias Nieminen and Janne Tukiainen (2025), "A Century of Partisanship in Finnish Political Speech", *Journal of Historical Political Economy*: Vol. 5: No. 2, pp 239-265.

<http://dx.doi.org/10.1561/115.00000095>

A century of partisanship in Finnish political speech*

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Abstract

We use novel data to describe the evolution of left-right polarization in parliamentary speech in Finland during 1907–2018. Overall, polarization fluctuates a lot during the majority of the 20th century. We find the highest peak in left-right polarization in the 1970s. This peak is not explained by the concurrent surge of populism nor by economic conditions, but instead seems driven by Soviet Union related speeches, and especially by the rhetoric of the leftist SKDL party. The peak polarization years in the 1970s are also characterized by inefficient policy-making and higher voter polarization. Although we find polarization has been increasing again since the 1990s to this day, the current levels are low and far from exceptional compared to the 100-year average in overall left-right polarization. However, if we consider polarization without Soviet Union related speeches, the increasing trend in polarization during the latest decades appears more distinct.

word count: 9,995

Keywords: text analysis, parliamentary speech, polarization, partisanship

*We thank Jaakko Meriläinen, Matti Mitrunen, Tuomo Virkola, Andrey Zhukov, Natalia Zinoyeva, Manuel Bagues, Tuomas Pekkarinen, Matti Sarvimäki, Marko Terviö, Salomo Hirvonen, seminar and workshop participants at Helsinki GSE, Linköping Institute for Analytical Sociology, KT-päivät in Turku, EPCS 2024, and King’s College London PGR seminar, for helpful discussions. We also thank Kimmo Kettunen, Markus Alenius, Kimmo Makkonen, Yunus Emre Sahin, Anil Yildirim, Ozan Yanar, parliament library and the staff at CSC for advice. The computer resources of the Finnish IT Center for Science (CSC) and the FGCI project (Finland) are acknowledged. Simola thanks OP Pohjola Group Research Foundation. All inaccuracies and mistakes are of our own. **Funding statement:** Funded by the European Union (ERC, INTRAPOL, 101045239). Views and opinions expressed are however those of the authors only and do not necessarily reflect those of the European Union or the European Research Council Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

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1 Introduction

Political polarization is regarded as an important phenomenon by social scientists due to its associations with political efficiency and stability. For example, high levels of polarization may cause gridlocks in decision-making (Jones, 2001; Binder, 2004) or even threaten democracy (Arbatli and Rosenberg, 2021). In recent decades, many countries have seen increases in political polarization (Gentzkow et al., 2019; Boxell et al., 2017). A common approach for measuring polarization has been to use votes cast in the parliament (roll-call votes) to estimate politicians’ political positions and then aggregate distances between positions to a chosen level (e.g. Poole and Rosenthal (1985)). When party discipline is high, these approaches may underestimate the level of polarization (Schwarz et al., 2017).

In this paper, we document the extent of differences in *speech* between political parties and party groups in the Finnish parliament during the last century. Our paper uses 110 years of parliamentary speech data, covering all speeches from a period from 1907 to 2018. This time period covers large shifts in the societal landscape. Our data begins before the Finnish independence in 1917. During our observation period, there has been a civil war (1918) as well as two wars (1939-1940 and 1941-1944). The period also marks a transition from a poor, agrarian country to a developed, urban welfare society that Finland is today. It includes a time period during the Cold War sometimes called *finlandization*, which was characterized by strong Soviet Union influence in Finnish politics. Although the finlandization period was to some extent a time of consensus regarding foreign policy, there was also a radical left-wing movement called *taistoism* and an extreme left party (SKDL) that drove an openly pro-Soviet agenda. In addition to the aforementioned changes, demographic shifts in the Parliament were also large, e.g., the seat share of women increasing from 10 percent to almost 50 percent. Our paper studies historical, long-term changes in political polarization. Using data from a long time span enables us to put the current trends in partisanship into a historical context. In addition to having a historical perspective, this paper complements the currently sparse literature on the partisanship of political speech in both a multiparty

context and an open list proportional representation (PR) context.

The partisanship measure that we employ in this paper, introduced in [Gentzkow et al. \(2019\)](#), has the advantage of doing well in capturing signal from noise with speech data that is characterized by a strong prevalence of noise. The measure corresponds to the expected posterior probability of correctly guessing the party of the speaker after hearing them speak a single phrase. For this purpose, we first identify phrases that are used disproportionately by a party by contrasting the probability of that phrase in a party’s speech against its total probability in that party’s and the other party’s speech. This phrase-level measure corresponds to the posterior probability of correctly guessing that the speaker comes from a specified party, given that they spoke the phrase. For example, the phrase ‘kansalaissod.jälk’ (‘after the civil war’) is spoken solely by speakers coming from the left parties during the 1920s as the right-wing used a different term when they talked about that war.¹ The posterior that the speaker is from a left party after hearing that phrase thus gets a value of 1. The posterior gets a value equal to 0.5 when a phrase forms a similar share in speech on both sides of the split. Second, we compute the yearly measure of partisanship by averaging the posteriors over the two party blocks (left wing or right wing).

Based on our results, the highest levels of left-right partisanship in the Finnish data are observed in the mid-1970s, and otherwise the levels fluctuate considerably. Comparing to [Gentzkow et al. \(2019\)](#) who employ the same method in the U.S., the peak level of partisanship observed in the 1970s in Finland corresponds to the mid-1990s levels in the US. The US data shows a pattern of steadily increasing partisanship from mid-1990s onwards. Our data paints a picture of a century volatile in partisanship, peaking in the 70s and rising steadily from 1990s onwards to levels that are yet far below the level of the mid-1970s.

The spike in left-right polarization we observe in Finland in the 1970s is not due to the surge of populism during that happened at the same time, because the estimated polarization remains essentially unchanged if the populist party (SMP) is removed from the analysis.

¹Among the right-wing, the term ‘vapaussota’ (freedom war) was used to reflect the alternative framing for the conflict.

Also the political economy explanation of economic downturn or rising economic inequality causing polarization ([Pelizzo and Babones, 2007](#); [Autor et al., 2020](#)) is unlikely to explain this spike as 1970s exhibited a very large decline in inequality and fairly high economic growth. Instead, the observed spike seems to be driven by diverging speech of the extreme left; when the extreme left party (SKDL) is excluded, the large peak in left-right polarization in the 1970s flattens out. Thus, one possible explanation for the high levels of polarization observed in the 1970s is Soviet Union influencing through the extreme left party (SKDL), as the SKDL – and especially the Finnish Communist Party which was part of the SKDL – had close connections to the Soviet Union ([Andrew and Mitrokhin, 1985](#)). This explanation for the peak polarization observed in the 1970s is supported by our observations showing that 1.) SKDL drives the 1970s peak in left-right polarization, 2.) Soviet Union related phrases were spoken very frequently in the Parliament in the 1970s, and 3.) the vast majority (70-80 percent) of Soviet Union related phrases were spoken by the SKDL. The results regarding the high prevalence of Soviet Union phrases in the 1960s and 1970s are also in line with the historical narrative of Finland where the entire post-1958 Cold War period, but especially the 1960s and 1970s, is characterized by strong Soviet influence in Finnish internal politics ([Arter, 1998](#)). As previous research suggests there are similarities between the information influencing tools used by the USSR and those of the contemporary Russia ([Yablokov, 2022](#)), our results may also be relevant to the present day.

Many countries have seen increases in political polarization in recent decades ([Gentzkow et al., 2019](#); [Boxell et al., 2021](#)). Partisanship of political speech in multi-party context is studied by [Peterson and Spirling \(2018\)](#) in the UK and by [Lauderdale and Herzog \(2016\)](#) in Ireland. [Peterson and Spirling \(2018\)](#) find that partisanship in the UK has decreased since the beginning of the 2000s and is currently at levels of the 1960s. [Fiva et al. \(2022\)](#) study left-right partisanship in Norway with a shorter time frame beginning in the 1980s. Their paper is thus primarily informative of the recent changes in polarization. The results of their paper are also similar in a sense as both our paper and theirs observe an increase in

partisanship in the recent decades. Our time frame is somewhat larger than that of [Peterson and Spirling \(2018\)](#) and much larger than that of [Lauderdale and Herzog \(2016\)](#) and [Fiva et al. \(2022\)](#), which is advantageous. For example, having a time period starting from 1907 allows us to study polarization in the context of a newly independent Finland and during a major national conflict like the Finnish civil war. This would not be possible with a shorter time frame. Studying a different (bipartisan) context, [Gentzkow et al. \(2019\)](#) find that partisanship of speech in the United States has increased dramatically during the last two decades. According to the authors, the probability of correctly guessing the party of the speaker based on a minute of speech (around 30 bigrams) has increased from 57 percent in 1989 to 73 percent in 2007. With our data and specification, the probability of guessing the group affiliation right based on hearing 30 bigrams would be around 55 percent nowadays and was somewhat below 70 percent during the peak observed in the 1970s.

We provide historical evidence suggesting that the values of partisanship fluctuate. Thus, unless Finland is an exception, our paper would not support the view that some universal structural change in political polarization would have taken place in the recent decades. Instead, this paper would support the view that polarization depends heavily on circumstances, such as foreign influencing via a single extreme party. Our paper also finds support that the period in the 60s and 70s when polarization was high in Finland, policymaking was less efficient (more bills, less laws) and there was more filibustering.

The paper proceeds as follows. Section 2 discusses the theoretical background. Section 3 discusses Finland during the last century and describes the institutional background. Section 4 describes data. Section 5 discusses methods. Section 6 presents our results. Section 7 concludes.

2 Theoretical background

The polarization we study in this paper is a form of *elite polarization* as we focus on the partisanship of legislators as opposed to that of the electorate, which would be called *mass polarization*. It is often argued that elites are more polarized than the masses (Hetherington, 2001; Enders, 2021) and that mass polarization may follow from elite polarization (Lenz, 2012). There is recent evidence that affective polarization of voters follows elite signals (Wagner and Praprotnik, 2023) and that voters' views in general may be affected by political elites (Holcombe, 2021). Other theories, in turn, argue that elite polarization is due to strategic behavior of party elites in response to citizens' preferences (Callander and Carbajal, 2022). We can estimate associations between polarization of parliamentary speech and voters' polarization to assess whether this phenomena are linked to each other in Finland.

There are many conditions which have been identified as possible drivers of political polarization. First, the political economy literature typically argues that general economic downturn, and in particular increasing economic inequality or unequal exposure to adverse shocks leads to polarization (Pelizzo and Babones, 2007; Grechyna, 2016; Payne, 2017; Autor et al., 2020; Acosta et al., 2020). One intuitive reasoning is that when economic divides between citizens are large, it could also fuel political divides.

Second, in the U.S., potential sociopolitical causes of increasing party polarization identified in the previous literature include social changes, electoral re-districting, party strategies and political leaders (Layman et al., 2006). Of these, at least changes in the social landscape would also apply to Finland. We can analyze the role of economic and social factors in polarization by correlating various contextual factors with the polarization measure. Third, smaller governments have been argued co-occur with polarization (Lindqvist and Östling, 2010). We study associations between polarization and inequality and the size of government as well.

Fourth, recently globalization has given rise to populism (Rodrik, 2021), which could also fuel political polarization. There was an episode of populism in Finland in the 1970s. At that

time, the Finnish Rural Party SMP gained 18 parliament seats in the “protest elections” of 1970. We test whether populism affects estimated polarization between left-wing and right-wing parties by comparing results with and without SMP to each other.

Finally, there are also Finland-specific conditions that could give rise to polarization during specific times in Finnish history. Tensions between extreme left-wing movement called ”taistoism” and other parties were large in the 1960s and 1970s. In the light of historical writing, the reasons for this could include Soviet Union influencing. In general, foreign influencing ² targeting a specific party can create polarization even if other political parties do not change their views. This kind of influencing through political parties and other types of front organizations has been documented for both Soviet Union and current Russia (Karlsen, 2019), and it has been commonly thought that high levels of polarization may benefit adversaries through weakening the country in question (Myrick and Wang, 2024). We assess this channel in the Finnish context through examining the period in the 1960s and 1970s during which the Soviet Union influenced Finnish politics relatively strongly, and likely used the Finnish extreme-left party (SKDL) as a tool to influence political decision making, as it is known that the Soviet Union had strong influence on SKDL and especially the Finnish Communist Party which was part of the SKDL (Andrew and Mitrokhin, 1985). If this was an important mechanism fueling polarization, we would perhaps expect increased instability and inefficient policymaking during the times when SKDL was prominent in Finnish politics.

It is also possible that was increasing voter demand for the SKDL party to become more radical in their pro-Soviet position during the 1960s and 1970s, possibly increasing polarization. This is because at that time there was a minority movement called taistoism inside the Finnish Communist Party (part of SKDL) that more openly advocated a strongly pro-Soviet message (Kylävaara, 2004). This movement gained foothold, e.g., in Finnish universities in 1960s and 1970s Kuusisto (2006). It is, however, also plausible that the taistoism movement itself would have been strongly influenced by the Soviet Union as it is

²See, e.g., Aidt et al. (2021) for a literature review on foreign influencing and domestic policy.

known the Soviet Union influenced the Finnish communists ([Andrew and Mitrokhin, 1985](#)), and taistoism was the most pro-Soviet faction of the party.

One potential consequence of high political polarization is *legislative gridlock* ([Jones, 2001](#); [Binder, 2004](#)). We test this hypothesis by looking at the number of laws, bills, as well as the prevalence of extremely long speeches. The last one of these is a proxy for a type of *filibustering*, i.e., purposefully lengthening the session by giving extremely long speeches. We see these tests more generally as tools to assess whether high levels of polarization are associated with lower efficiency of policymaking. The efficiency of the legislative process (having more legislative output) may, according to recent research, also have a positive effect on economic growth ([Ash et al., 2025](#)).

To summarize the main hypotheses we test in this paper, these are related to three separate phenomena: i.) the drivers of polarization (sections 5.2.1 and 5.2.2, and to some extent 5.4), ii.) associations of polarization with legislative efficiency, and iii.) the interplay between elite and mass polarization (section 5.4). Regarding the causes of polarization, the main tests are a.) whether the emergence of the populist party drives polarization, b.) whether economic conditions correlate with polarization and c.) whether Soviet Union related speeches, and the pro-Soviet SKDL party, contributed to polarization. Regarding the consequences of polarization, we would expect polarization to be associated with less efficient policymaking and test this by looking at the numbers of laws enacted relative to bills, and filibustering. Regarding the interplay between elite and mass polarization, we estimate correlations between the polarization of parliamentary speech and voter polarization to see if they are linked.

3 Background

3.1 Case selection: Finland during the last century

Our choice of Finland as the country of analysis can be seen as an application of “deviant” case selection strategy (see [Seawright and Gerring \(2008\)](#)). Finland is a multi-party system with open list proportional representation (PR) elections. That is, the Finnish case is different from many of the cases studied in the previous literature, such as majoritarian elections in United States ([Gentzkow et al., 2019](#)) or the United Kingdom ([Peterson and Spirling, 2018](#)), or closed list PR in Norway ([Fiva et al., 2022](#)). However, as many countries use open list PR systems, our results could have broad interest.

Proportional representation systems with multiparty coalitions have been found to be less polarized than majoritarian systems ([Bernaerts et al., 2023](#); [Somer and McCoy, 2019](#); [Rodden, 2021](#)). The argument is that consensus based institutions alleviate polarization. PR systems have been found to promote co-operation and decrease partisan hostilities ([Horne et al., 2023](#); [Nemoto and Pinto, 2019](#)). Both issue-based and affective polarization have been found to be lower under proportional representation systems ([Bernaerts et al., 2023](#)).

Another interesting feature of the Finnish election system is the pure open list system where voters have to vote for a single candidate and the candidates are ranked alphabetically in the party list, thus minimizing the role of parties in the voting stage ([Jokela et al., 2023](#)). While there are many studies analyzing the effect of open lists on various outcomes such as corruption (e.g. [Chang and Golden \(2007\)](#)) and incentives of candidates to deliver particularistic services to their constituencies (e.g. [Ames \(1995\)](#)), we are not aware of any studies comparing open and closed list PR from the perspective of polarization. We may speculate that given that having an open list limits the possibilities of parties to control what kind of politicians are elected, within-party polarization could be higher in open list than closed list. On the other hand, [von Schoultz and Papageorgiou \(2021\)](#) show that in Finland, candidates who take on moderate positions within the context of their respective party are

more successful in attracting personal votes than candidates who deviate from the party-median. Moreover, we do not have a clear prediction regarding between party polarization, and thus, the overall impact of open lists on polarization is unclear and analyzing it formally is left for further research.

Moreover, during the time period we study, Finland gain independence from Russia in 1917, grew from a developing country into a developed one, fought two wars and one civil war, and saw a large expansion of the public sector³. As we are interested also in Soviet Union information influencing and its interplay with polarization, Finland is an interesting case as it was not under direct Soviet rule or control, but there were still significant attempts from the Soviet Union to influence Finnish policymaking.

3.2 Finnish parliamentary system and plenary speeches

Our paper is a case study of Finland, and thus, we discuss some relevant characteristics of the Finnish parliamentary system. [Poyet and Raunio \(2021b\)](#) provides a good description of the Finnish *Eduskunta* and various parliamentary rules. The Finnish system is very candidate-centered – [Poyet and Raunio \(2021b\)](#) argue it is in fact one of the most candidate-centered systems in the world. The Finnish parliamentary system is characterized by an open list election system, low party control in candidate selection and MPs getting to speak relatively freely without party interfering ([Poyet and Raunio, 2021b](#)). More context on the functioning of Finnish Eduskunta can be found in [Poyet and Raunio \(2021b\)](#) and [Poyet and Raunio \(2021a\)](#). [Karvonen \(2014\)](#) and [Karvonen et al. \(2016\)](#) also provide a good overview of the Finnish political system and its development.

The Finnish parliamentary system was subject to significant changes between 1907 and 2018. 1907 marks the beginning of the unicameral Parliament of Finland. A multiparty system with no minimum vote threshold replaced the former legislative assembly, where Four Estates of nobility, clergy, bourgeois and peasants had representation. Nearly 90 percent of

³See Online Appendix Figure Figure [E5](#) for time series of various economic indicators

the population above the voting age 24 were eligible to vote (Paloheimo, 2007), while in the 1905 elections the share had been around less than one in ten (Jyränki and Nousiainen, 2006). During its first decade, the unicameral parliament served the purpose of discussing societal matters with a fairly comprehensive representation of the electorate. However, the Parliament was severely limited in its decision making, as any bills needed the approval of the Emperor of Russia to be passed (Jyränki and Nousiainen, 2006). The Russian Emperor also convened the Parliament. During the First World War, Russia would exercise strengthened influence over Finland, and no assembly of the Parliament was called in 1915 and 1916 (Paloheimo, 2007).

Main parties during the majority of the time period are the centre-right wing National Coalition Party, agrarian Centre Party and its predecessor, the centre-left Social Democratic Party, and the extreme left party (SKDL). There were also two episodes of populism, one in the 1970s when the Finnish Rural League (SMP) was active and another after 2011 when The Finns Party (PS) became a large party. The National Coalition Party, which was the most vocal opponent of the Finnish Soviet policies with around 20 percent seat share in the 1970s and 1980s, was left outside of government coalitions for 22 years from 1966 to 1987.

There is no upper limit for the length of a plenary speech – the right for unrestricted speech is constitutional as long as speaker sticks to the topic. However, certain speech types that have emerged since the mid-1960s are exceptions to this rule. Speeches during question hours, a plenary type introduced in 1966 to animate plenary discussions, are restricted in length to a few minutes. This restriction also applies to debates, which have been a part of the plenary type repertoire since 2012. The Speaker of the Parliament is allowed to exercise speaker selection during these plenary types.⁴ According to Poyet and Raunio (2021a), opposition MPs, party leaders, and small parties speak often in the Parliament, and plenary sessions are nowadays more important in Finnish politics than they used to be.

There is a consensus among parliament members that plenary speeches are mainly a

⁴https://www.eduskunta.fi/FI/naineduskuntatoimii/julkaisut/Documents/ekj_2+2017.pdf, retrieved 17 May, 2023.

means to communicate to the media and the electorate instead of trying to convince other parliament members or influence the content of legislative bills (Pekonen, 2011). The chances of parliament members to reach the public through plenary speeches vary with the publicity given to them by the media. The first radio live broadcast took place in 1926 but regular radio broadcasts started later. The first plenary session was broadcast in television in 1960, but regular televised broadcasts of plenaries only started in the 1980s.⁵ Coming to the 2010s, the televised plenaries still reach hundreds of thousands of views.⁶ The causal effects of introducing TV broadcasting of plenary sessions have been analyzed in Nieminen et al. (2023), who finds TV cameras do not increase left-right polarization.

4 Data and methods

4.1 Data

This section briefly describes the data used in this paper. For a detailed description of data construction, preprocessing and sample selection, see Online Appendix B. The main dataset of our paper covers all records of the plenary sessions of the Parliament of Finland (*Eduskunta*) from 1907–2018. Since the Parliament did not gather in 1915 and 1916, the time series has a break for these years. We perform Optical Character Recognition for data from 1907–2015 page by page using the tesseract OCR engine. Text for 2016–2018 is extracted directly from pdf file metadata. After splitting speech sections to speeches, speakers’ names are linked to data from MP register⁷ which contains, for example, speaker’s party label, their gender, municipality of birth, their electoral districts and electoral terms.

In order to represent speeches as a large data matrix, we apply preprocessing to raw speeches, combine preprocessed words to phrases consisting of two consecutive words (*bi-*

⁵Email exchange, Päivi Erkkilä, The Library of Parliament’s Information Service

⁶<https://yle.fi/uutiset/3-6083211>, <https://www.finnpanel.fi/tulokset/tv/kk/ohjryh/viimeisin/ohjryh.html>, retrieved April 10, 2020.

⁷[Kansanedustajamatrikkeli](#), retrieved from the Parliament library as a spreadsheet.

grams), construct a dictionary from unique bigrams and count the occurrences of bigrams in the dictionary on speaker-year level. The word stems are concatenated to bigrams, combinations of two consecutive stems. Using combinations of consecutive stems introduces context – frequencies for *‘työtätekev.luok’* (the stemmed bigram for ‘working class’) may convey more partisan information than frequencies for *‘työtätekev’* (‘working’) and *‘luok’* (‘class’) separately. The common usage of compound words in Finnish to convey multiple meanings would make unigrams, single words, another potential candidate for the vocabulary unit. However, we follow [Gentzkow et al. \(2019\)](#) in sticking with the bigrams, as bigrams capture larger meanings than single words. Even though the Finnish language has long compound words, single words still rarely contain as much information as bigrams, i.e., if we used unigrams, we would lose some of the framing. For example, the context captured in the bigram *ystävyyys.yhteistyö* (refers to the 1948 pact with the Soviet Union) is exactly the kind of relevant topic context we want to capture, as opposed to the generic unigrams *ystävyyys* (friendship) or *yhteistyö* (co-operation).

To be included, a phrase must be used at least 100 times in total over all speeches, it must be used at least 10 times during at least one parliamentary year, and it must be used by 10 unique speaker-years. The restrictions follow the ones made by [Gentzkow et al. \(2019\)](#), and come with the benefit of reducing the dimension of the count matrix. After restrictions, the vocabulary consists of approximately 53,000 phrases. We test robustness of our main result for changing these restrictions from 100-10-10 to 80-10-10 or 100-8-10 in Online Appendix Figures [A9](#) and [A10](#), which show the results remain essentially the same. Reducing the criteria further, e.g., to 80-8-8, is not computationally feasible due to the large increases in the sizes of the data matrices

Using a fixed vocabulary over the whole time period means that any new phrases emerging during the more recent years have less time to reach the total count of 100. Also, phrases popular in the early years and unpopular these days will still be a part of today’s vocabulary while this is not the case in the other direction. We also omit a set of frequently appearing

but ideologically uninformative procedural phrases and attempt to drop phrases containing speaker or party names.

The final data used for analysis consists of counts for the number of times each MP used each dictionary phrase during a parliamentary year. This count matrix has a row for each MP who spoke a positive number of phrases in a year and has in total 19,094 rows (speaker-years) and 53,705 columns (phrases).

4.2 Methods

We use the method introduced in [Gentzkow et al. \(2019\)](#) to measure polarization. The underlying model of speech and the estimation procedure of the partisanship measure are described in detail in the Online Appendix C (“Model and estimation”). However, we describe here briefly the intuition behind the estimator.

To measure partisanship of a single phrase, a natural way to get started are the relative phrase choice probabilities, i.e., the proportion of speech by members of a group (e.g., left parties) that went to the usage of a phrase, and contrast them in some way to the proportion of the phrase usage in other parties’ speech. These phrase choice probabilities are based on regressions where the usage of phrases is regressed on MP-level characteristics, the year indicator, and group affiliation dummy.⁸ Similar to [Gentzkow et al. \(2019\)](#), we also include a LASSO penalty to mitigate finite sample bias when estimating these regressions. Parameter estimates acquired from the regressions are plugged in to the formula of phrase choice probabilities (see Online Appendix).

Based on the probabilities for each party speaking phrase j , we can then compute the probability that a speaker comes from the left party L given that phrase j was spoken. The partisanship measure has the interpretation of the posterior probability that the speaker

⁸The estimation of the multinomial logistic model is computationally infeasible given that the dimension of potential choices is in the tens of thousands. Fortunately, Poisson regressions conditional on the log of total phrase count m_{it} can, fortunately, be used to approximate the parameters of the multinomial logistic distribution [Taddy \(2015\)](#). The Poisson regressions are separable across phrases and can thus be run in parallel.

comes from the left party L given phrase j when the prior probability that the speaker comes from one of two parties is equal for both parties. If a phrase is used only by the left party, this measure will get a value of 1, and if a phrase is only used by the right party, the leftness measure will get a value of 0. The measure of overall partisanship of speech in year t is an average of phrase partisanship over phrases and parties, and always gets values between 0.5 and 1. The final partisanship measure tells the posterior probability of a neutral observer correctly guessing the correct group characteristic (e.g., left-wing or right-wing) for the speaker based on 1 word uttered in the parliament.

Confidence intervals are constructed by subsampling. Intuitively, the subsampling procedure uses the distance of each yearly subsample estimate from the mean over all 100 yearly subsample estimate to approximate the variability of the yearly estimate. We draw 100 20 percent subsamples of data without replacement and re-estimate the series for each draw.

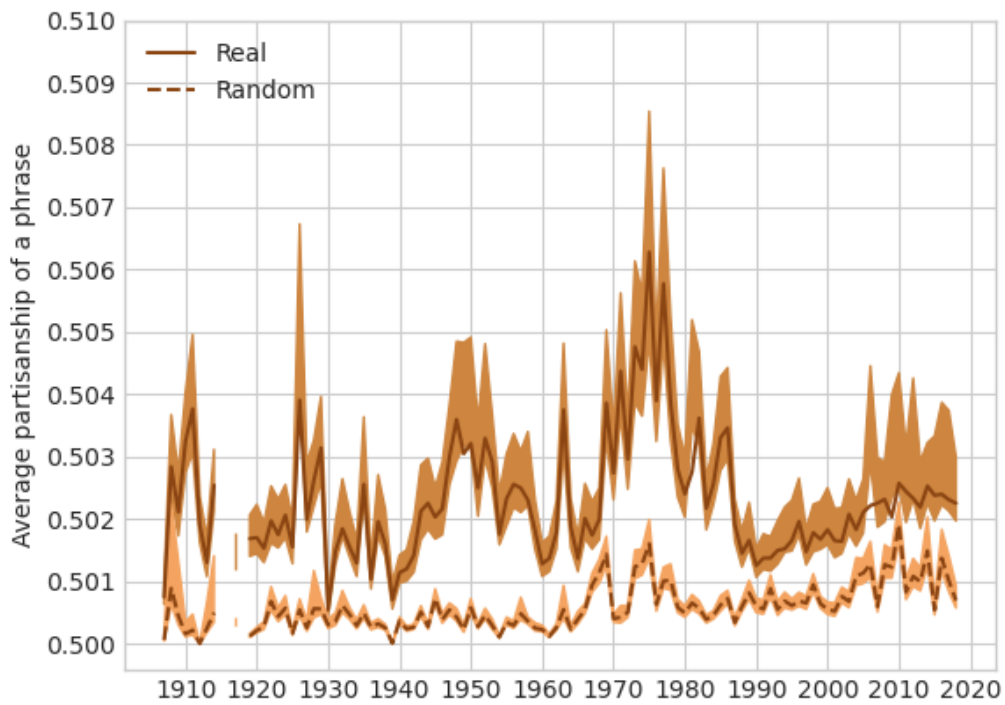
5 Results

5.1 The evolution of left-right polarization

Figure 1 shows the main result of the paper. The left-right partisanship measure is constructed from the penalized choice probabilities. Control variables used for the estimated choice probabilities of this main specification include an indicator for whether the speaker's party is in the government, the speaker's gender, and speaker's region.

The partisanship measure, net of the random series, exhibits high levels before the 1918 Civil War and goes down in the aftermath when all MPs except for one from the losing leftist side have either exiled in Russia, died or been trapped in a prison camp (Jussila et al., 2009). Partisanship again increases during the 1920s, characterized by tensions in the domestic policy and difficulties in parliamentary cooperation, until the passing of Communist laws in 1930. The measure stays flat for the next decade. Partisanship again peaks in 1950. The period from the 1970s to the mid-1980s stands out the most, with left-right reaching it highest

Figure 1: Left-right partisanship, controls for government status, speaker gender and region



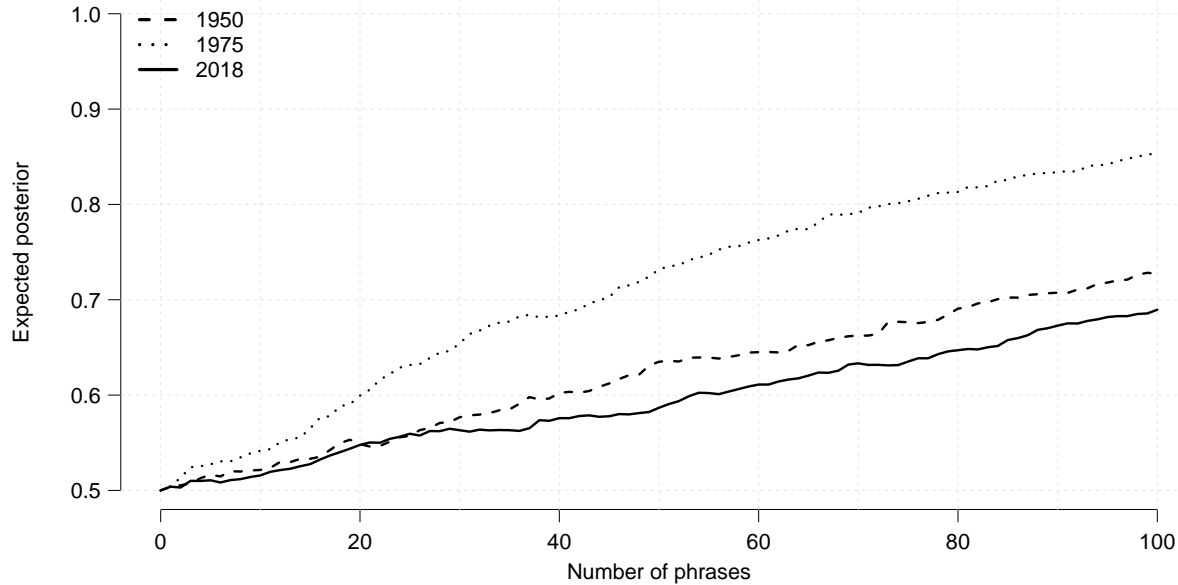
Notes. Results are based on regressions with controls for government status of speaker's party, speaker's gender and the region of the speaker. Confidence intervals are based on subsampling and have 80 percent nominal coverage. The confidence intervals are computed via subsampling. The series breaks in 1915–1916, when the parliament did not gather, and in 1918 and 1939, when the number of speakers from left parties was below 30 (1 and 24, respectively).

levels in mid-1970s. The period starting from 1990 shows relatively stable partisanship. The permutation test, labelled the random series, provides support for a partisan interpretation of the fluctuations in the real series — the random series stays flat throughout the period. In Online Appendix Figure E6 we decompose these estimates to within topic and between topic components in the same way as in Gentzkow et al. (2019).⁹ Those results show that the polarization comes from within-topic polarization, i.e., MPs from left and right wing parties speak differently about the same broad topics.

The magnitude of our main estimate may be hard to judge based only on the estimates presented in Figure 1. Thus, we also present estimates that show probability of guessing the group affiliation right based on hearing more than 1 phrase. See Figure 2 for these results. The results indicate that the probability to guess the group affiliation right after hearing 30 bigrams would be around 55 percent nowadays and was somewhat below 70 percent during the peak observed in the 1970s.

⁹We use topics created before by Nieminen et al. (2025) who manually classified keywords to various topics. Then all bigrams of which those words are part of are included in the topic. Finally, topics are manually checked for mistakes.

Figure 2: Magnitude of polarization when more than 1 phrase is heard



Notes. Figure shows the expected posterior of guessing the group identity right after hearing up to 100 words. The analysis is conducted similarly as in [Gentzkow et al. \(2019\)](#).

Even the highest levels of left-right partisanship in Finland are well below the US levels of recent years. In the US, the average phrase partisanship rises above 0.51 after 2010, with simulations showing that this corresponds to correctly inferring the party of the speaker with around 73 percent probability after one minute of speech (~ 33 phrases, [Gentzkow et al. \(2019\)](#)).

We can also gauge the magnitude of our estimates by comparing them with estimates from other countries ([Gentzkow et al. \(2019\)](#) for U.S. and [Fiva et al. \(2022\)](#) for Norway). However, these studies use somewhat different control variables, and thus, the estimates are not directly comparable to ours. In the Finnish data, the highest level of average phrase partisanship is around 0.506 in the mid-1970s. This corresponds to the mid-1990s levels in the US data, when partisanship had already jumped from its 1990 level. The increase in partisanship from the mid-1960s to 1970s roughly corresponds to the jump in the US from 1990 to the mid-1990s, when the 1994 election presumably professionalized the language of politics for good. In Norway, [Fiva et al. \(2022\)](#) observe that the current levels of partisanship

would be around 0.504, which is higher than the levels we estimate in Finland currently. [Fiva et al. \(2022\)](#) estimate that the polarization levels in Norway would have risen considerably during the last decades as they were around 0.502 in the 1980s. They do not have data before 1980s, and thus, we cannot compare the peak-level 1970s Finnish estimates to the Norwegian case. These results can also be compared to other group comparisons using the same method. In Online Appendix, we show in Figures E11-E13 that urbanicity and professional background do not generate such speech divergence that would be statistically different from placebo estimates. Thus, the left-right divide seems to be more meaningful than, e.g., urbanicity, as expected.

5.1.1 Robustness analysis

Online Appendix Figure [A1](#) illustrates the impact of covariates in the evolution of the partisanship measure. When no controls are added (Online Appendix Figure [A1a](#)), the random series fluctuates together with the real series. The difference between the permutation tests for the main specification in Figure [1](#) and in Online Appendix Figure [A1a](#) with no added covariates could signal about speech differences driven by the changing composition of the parliament. Online Appendix Figure [A1b](#) shows that the evolution in partisanship is not driven by parties' government status. Online Appendix Figure [A1c](#) shows that adding controls for representative's region considerably smoothens the random series. One reason for controlling for region is the dialectical differences in speech between areas. The main specification finally includes controls for the speaker's gender, which further smoothens the random series.

We also assess the possibility of the polarization being driven by more senior politicians. We do this by dropping first-term MPs and re-estimating the main polarization series. The effects are shown in Online Appendix Figure [A8](#). The magnitude of the estimate for senior MPs seems somewhat larger than our main estimate, but taking into account the fact that the random series is also higher for the senior MPs, the polarization subtracted by the

random series would be roughly the same for senior MPs compared to the main estimate. As an additional analysis, we show in Online Appendix Figures [A6a](#), [A6c](#) and [A6e](#) pairwise comparisons between the 4 main Finnish parties that have existed during the whole time frame. We also estimate government-opposition differences (see Online Appendix Figure [A7](#)) to allow for comparison to our main results on left-right polarization.

5.2 Potential mechanisms behind the 1970s spike in polarization

5.2.1 The impact of the populists

One key hypothesis to test we outlined in the theory section is the role of populism in driving polarization. Related to this, one important actor in the Finnish politics of the 1970s (when polarization was high) was the Finnish Rural Party SMP, which gained 18 parliament seats in the “protest elections” of 1970. The party was populist, with a message targeted to the rural population (the “forgotten people”). The party dominates in the number of speeches given throughout the 1970s, with the representatives, having 10 percent of parliament seats, accounting for 30 percent of parliamentary speech. The party was also infamous for constituting an enormous surge in the number of Parliament’s legislative bills – so much so that the surge goes by the name of “Vennamo effect” or the “SMP effect” among Finnish political scientists ([Pajala, 2010](#)). The party is a part of the right parties in our left-right categorization, but ideologically it is hard to classify along the traditional left-right axis. It could, however, have a considerable impact on the partisanship measure given its high proportion in speeches.

Online Appendix Figure [A2](#) shows that while constructing the partisanship measure without representatives from SMP lowers year-specific partisanship peaks in the 1970s, it does not alter the overall salience of the decade in the series. After controlling for gender, dialect region, and government status, the differences in speech between the left and the right in the 1970s do not seem to be driven at all by the populist protest party. Thus, our results do not indicate that the observed peak in polarization would have been caused by

this concurrent increase in populism.

5.2.2 Soviet Union influence and the role of the SKDL party in the 1960s and 1970s

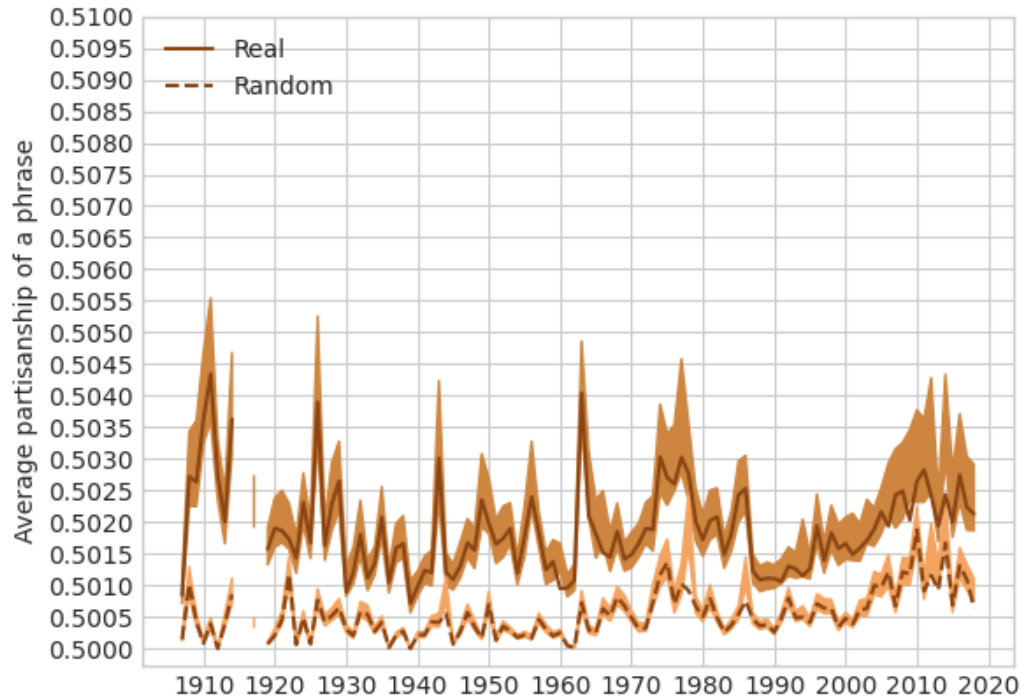
One of the key mechanisms we want to study is the role of Soviet Union related issues in fostering polarization. This is potentially an important mechanism as it is known that Soviet Union attempted to influence the politics of Finland and many other European countries during the Cold War (see, e.g., ([Andrew and Mitrokhin, 1985](#))). Figure 3 shows estimates where speeches that include Soviet Union related phrases have been dropped.¹⁰ The figure shows no peak in the 1960s and 1970s, suggesting that Soviet Union related issues drive the peak observed in left-right polarization.¹¹ As the Figure looks very similar to the main polarization estimates after the collapse of the Soviet Union, it seems that we do not lose much of the other left-right divide when dropping these Soviet Union related phrases.

The 1970 hike in partisanship coincides with the pro-Soviet movement (“taistoism”, according to the movement’s leader Taisto Sinisalo) gaining a foothold within the communist party SKDL. The party was split into two factions with deep disagreement but still functioned as a single parliamentary group. The Finnish Communist Party (part of SKDL) was an important channel for the Soviet Union to advance their interests [Arter \(2022\)](#); [Andrew and Mitrokhin \(1985\)](#). Figure 4 presents left-right partisanship results when SKDL is left out from the analysis. The figure shows that when SKDL is dropped, the time series flattens and the pronounced levels of partisanship in the 1970s shown in Figure 1 disappear. This suggests that the 1970s peak is mainly driven by the SKDL. When SKDL is dropped, we still observe significant left-right partisanship, but the level of partisanship seems to be quite stable at around 0.502 throughout the whole time period.

¹⁰These phrases include the word “soviet” as well as words such as “socialist”, “communist” or references to the Finno-Soviet Co-operation pact.

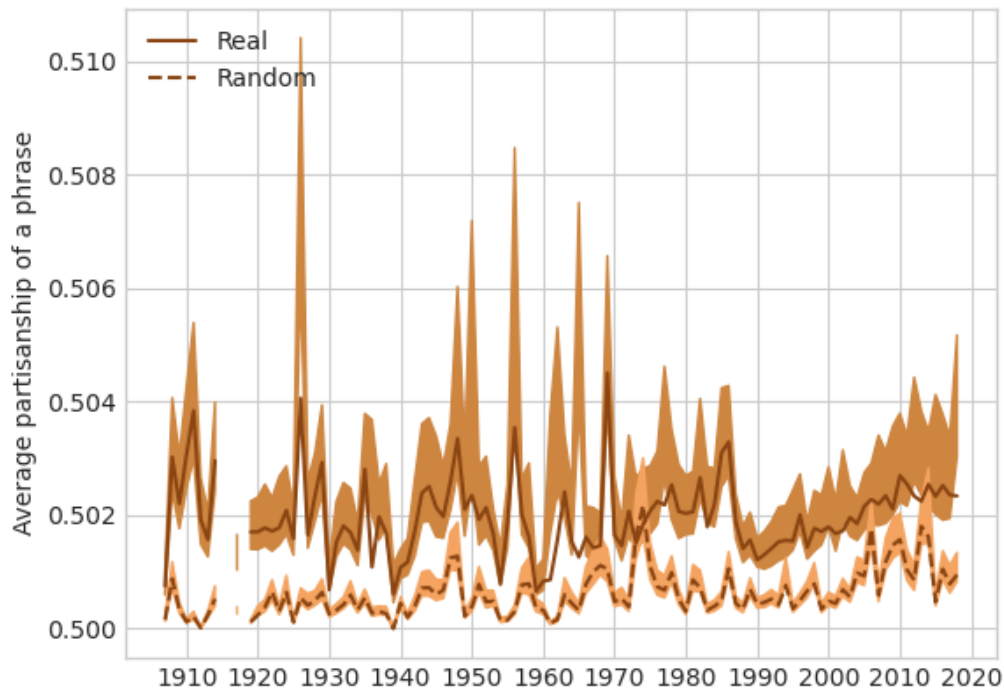
¹¹During the mid-1970s time when left-right polarization was the highest in Finland, Soviet influence was present also in many other countries, including South Africa ([Barratt, 1981](#)), Egypt ([Dawisha, 1979](#)) and Niger ([Ojo, 1985](#)). According to [Andrew and Mitrokhin \(1985\)](#), the 1970s were also a time during which more illegal Soviet agents began working for communist parties in Europe, Asia and Africa

Figure 3: Left-right partisanship after Soviet Union related speeches have been dropped, controls for government status, speaker gender and region



Notes. Results are based on regressions with controls for government status of speaker’s party, speaker’s gender and the region of the speaker. Confidence intervals are based on subsampling and have 80 percent nominal coverage. The confidence intervals are computed via subsampling. The series breaks in 1915–1916, when the parliament did not gather, and in 1918 and 1939, when the number of speakers from left parties was below 30 (1 and 24, respectively). Speeches mentioning Soviet (“neuvosto”), words related to the Finno-Soviet Co-operation pact (“yya”, “ystävyys”, “yhteistyö”, “avunanto”) and the words socialist (“sosialisti”) and communist (“kommunisti”) have been dropped in this analysis.

Figure 4: Left-right partisanship without the extreme left party (SKDL), controls for government status, speaker gender and region



Notes. Results are based on regressions with controls for government status of speaker’s party, speaker’s gender and the region of the speaker. Confidence intervals are based on subsampling and have 80 percent nominal coverage. The confidence intervals are computed via subsampling. The series breaks in 1915–1916, when the parliament did not gather, and in 1918 and 1939, when the number of speakers from left parties was below 30 (1 and 24, respectively).

The SKDL had close ties with the Soviet Communist Party, which was known to employ information influencing and propaganda as ”active measures” - tools in Soviet political warfare (Cull et al., 2017). Thus, we wonder if we can detect any signs of Soviet influence in the speech by SKDL that could then have contributed to the central role the party had in driving polarization in the Finnish parliament in the 1970s. We plot in Online Appendix Figure E1 the prevalence of Soviet Union related phrases¹² in the Finnish Parliament and

¹²These phrases include all bigrams that contain the term ‘neuvostoliito’ (Soviet Union), as well as the phrase ‘ystävyyshyhteistyö’ that was related to a co-operation pact between Finland and the Soviet Union). These bigrams are listed in Online Appendix B (‘List of Soviet Union related bigrams’).

find that these Soviet-related phrases were most common in the 1970s. Online Appendix Figure E1 shows the series. The peak coincides with peak polarization observed in Figure 1. The largest peak ending in around 1985 matches well the fact that Soviet Union influencing efforts decreased when Gorbatshev became the leader of the country in 1985 (Galeotti, 2019). Thus, our figures would be consistent with Soviet Union influencing driving the high prevalence of Soviet Union phrases and high polarization before Gorbachev’s reign. The correlation between the polarization series and the use of Soviet Union phrases totally disappears at the time of the dissolution of the Soviet Union in the 1990s. Online Appendix Figure E2 shows that the vast majority (70 percent) of the Soviet related phrases were spoken by speakers from SKDL.

Regarding the content of the speeches given by SKDL versus other parties, they tend to talk more about labor issues and economic issues (economy and finance topic), compared to both the right-wing National Coalition Party and the Social Democratic party. It also seems they talk less about foreign policy topic even though we showed they use a lot of Soviet Union related phrases. This could happen, e.g., if SKDL politicians talked less about other foreign policy issues such as western co-operation, Europe and Nordics. These topic results are shown in Figure E7 in the Online Appendix. Figure E8 shows comparisons between SKDL, left parties without SKDL and right wing parties. In all of these analyses, we analyze if party affiliation predicts how often MPs mention different topics. In Online Appendix Figures E9 and E10, in turn, we show topic results using a structural topic model for SKDL vs. other parties (Figure E9) and Right-wing vs. Left-wing without SKDL (Figure E10). This is not our main approach for analyzing topics but it also suggests SKDL politicians talk more about budget (Topics 5 and 21) and labor markets (Topic 10).

In addition to the largest spike in the 1970s, there are also two smaller peaks in the polarization series. First, there is an increase in polarization lasting approximately from 1940 to 1948. This coincides with the period that has been later described as “the years of danger” in Finland, as the risk of Finland becoming communist was perceived to be high

at that time (Rautkallio, 1990). During these years, the SKDL was also popular among the public. In 1946, the SKDL parliamentary group was the largest group in the Finnish Parliament, but they lost a large number of seats in 1948. However, we also observe a short hike in left-right partisanship in the early 1960s, when the Cold War had some of its most tense moments, such as the Berlin Crisis of 1961 and the Cuban Missile Crisis of 1962.

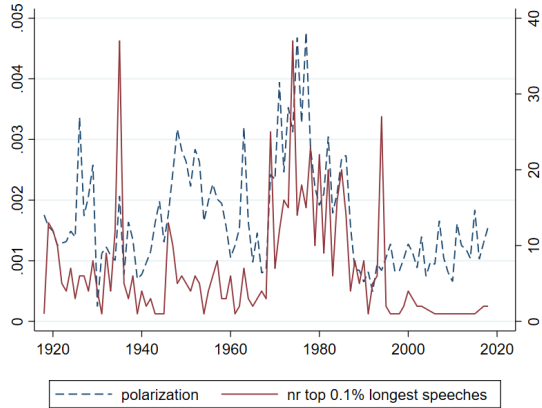
Overall, we show that the all-time high in Finnish polarization coincides with a peak in Soviet-related speech, spoken primarily by the party that is responsible also for the peak in polarization. According to some papers (e.g., Arter (2022)), the existence of the Finnish Communist Party gave the Soviet Union leverage to promote Soviet interests in Finnish politics. These factors together propose a possible link between Soviet information influencing and political polarization in Finland, and thus, are consistent with our hypothesis regarding the role of foreign influence on fostering polarization.

5.3 Polarization and the efficiency of policymaking

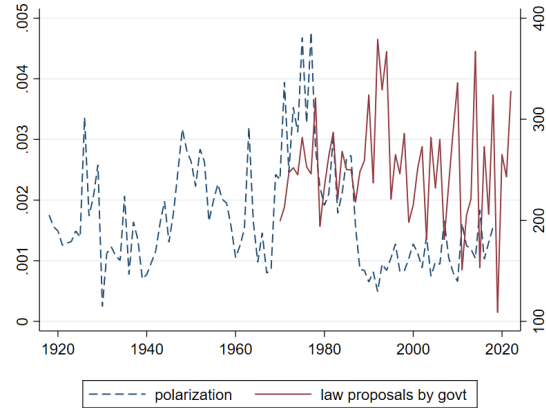
Regarding phenomena associated with polarization, we hypothesized that polarization would be linked to less efficient policymaking. This could be due to delaying political processes, e.g., by long speeches (“filibustering”), or gridlocks in policymaking. To understand more about these dynamics, we plot time series of various societal indicators along with the polarization series in Figure 5. The outcomes we compare to the polarization of parliamentary speech include extremely long speeches (filibustering), law proposals/bills by MPs, laws passed and government law proposals. Based on the series, polarization of parliamentary speech seems to be linked to more inefficient policymaking (more bills, less laws) and the presence of delaying decision making through extremely long speeches, which may also contribute to lower policymaking efficiency.

Table 1 shows Pearson’s product moment correlations between polarization (actual-placebo) and other societal and political variables. The correlations paint a similar picture as the plots shown in Figure 5, suggesting that polarization is positively associated with filibus-

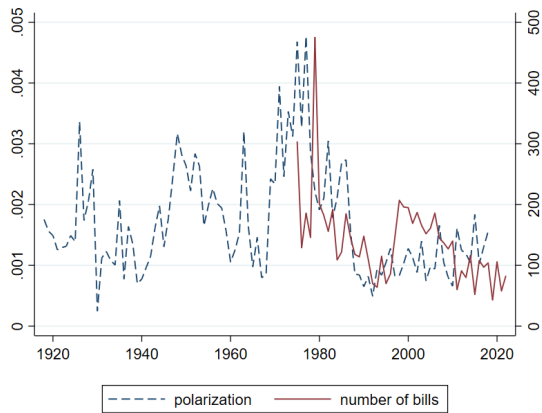
tering/delayed decision making (proxied by long speeches) and inefficient policymaking, i.e., there are more bills while the number of laws is not higher under high polarization. Thus, these results support the hypothesis that polarization would be associated with inefficient policymaking.



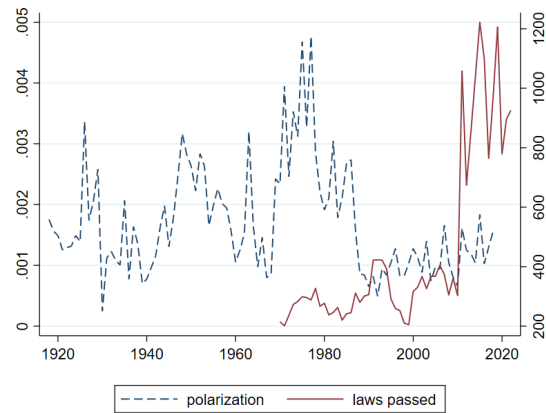
(a) Number of extremely long (top 0.1 percent longest) speeches



(b) Bill proposals by the government



(c) Number of bills by MPs



(d) Laws passed

Figure 5: Polarization of parliamentary speech and the efficiency of policymaking

Notes. Figures compare the development of left-right polarization to that of other societal trends. Polarization is the real series minus the placebo series. The left hand side scale is for polarization (real-placebo).

Variable	Correlation	p value	Correlation (NAs interpolated)	p value (NAs interpolated)
Bills	0.36**	0.02	0.36**	0.02
Long speeches (top 1%)	0.34***	0.00	0.34***	0.00
Long speeches (top 0.1%)	0.46***	0.00	0.49***	0.00
Govt proposals	-0.13	0.21	-0.13	0.21
Laws	-0.14	0.17	-0.14	0.17

Table 1: Pearson’s product moment correlations

Notes. Table shows Pearson’s product moment correlations between polarization (actual-placebo) and various other societal and political variables. In the correlations shown in column (4), NAs in time series have been interpolated using `na.interpolation` function in R. Results using linear regression are available in the Online Appendix Table E4.

5.4 Interplay of parliamentary speech polarization with voter polarization and other societal phenomena

Regarding these other societal phenomena, high polarization of parliamentary speech seems to be correlated with higher voter polarization and shorter length of coalition governments. In addition, we observe a negative correlation with public consumption/GDP ratio, i.e., polarization is correlated with a smaller government size. These results are presented in Table 2. Some of these variables, such as voter polarization, are only measured during a small number of years. Fortunately, we do have data on voter polarization during the 1970s, and see a similar peak there that was observed using the parliamentary speech data. Figure 6 shows the time series of voter polarization and parliamentary speech polarization in the same figure. We do not find any statistically significant correlation between income inequality (Gini) and political polarization.

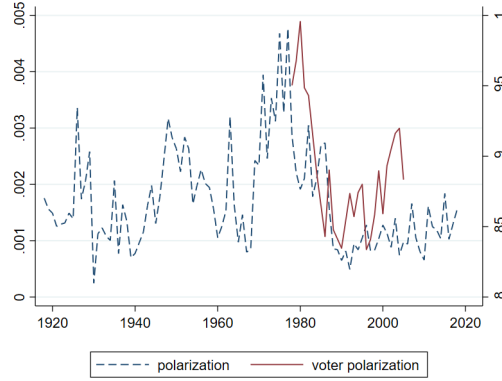


Figure 6: Net-of-random polarization of parliamentary speech and voter polarization

Notes. Figure show the polarization of parliamentary speeches (real - placebo) calculated using the GST method, and the polarization of voters in the left-right dimension. Voter polarization is defined as the standard deviation of a survey question asking where voters place themselves on the left-right scale. For voter polarization, the years where the survey question scale is slightly different, we have harmonized the scale. Voter polarization is calculated using data from Finnish Social Science Archive (Puolueiden ajankohtaistutkimus 1973-1990).

Variable	Correlation	p value	Correlation (NAs interpolated)	p value (NAs interpolated)
Gini index	0.07	0.68	-0.16	0.25
Coalition length	-0.19	0.15	-0.32***	0.00
Voter polarization	0.31*	0.07	0.29*	0.06
Public consumption/GDP	-0.27**	0.01	-0.27**	0.01
GDP growth	0.12	0.25	0.13	0.18

Table 2: Pearson’s product moment correlations

Notes. Table shows Pearson’s product moment correlations between polarization (actual-placebo) and various other societal and political variables. In the correlations shown in column (4), NAs in time series have been interpolated using `na.interpolation` function in R. Results using linear regression are available in the Online Appendix Table E4.

6 Conclusion

We document the evolution of differences in speech between left and right parties, between government and opposition parties, and between the four parties that were active in the Finnish parliament since the introduction of the unicameral parliament in 1907. We find that the recent increases in polarization are nothing unusual in the modern history of Finland. In Finland, the highest levels of speech partisanship are documented in the 1970s. This peak is not explained by populism nor economic conditions.

The relationship with the superpower Soviet Union seems to play a role in speech partisanship especially in the 1960s and 1970s. One interpretation of these results is that Soviet Union influencing may have played a role in increasing left-right divides in Finland in the 1970s, or at the very least, that Soviet Union related matters were behind most of the high left-right divides observed. As the 1970s peak in polarization also co-occured with short-lived government coalitions and less efficient policymaking (more bills, less laws), it looks like Soviet Union may have succeeded in creating instability in Finland in the 1970s.

Although there is previous literature suggesting the Soviet Union impacted policymaking in Finland, we are not aware of any previous studies that would have shown that Soviet Union related issues were driving political polarization in Finland during the last century, although we can make no causal claims. Our results also suggest something about polarization in general, namely that even in a multi-party system, one party (SKDL in this case) can make political debate more polarized even if the preferences of others do not change.

This paper provides a comprehensive, century-long overview of the history of parliamentary speech in Finland. This paper thus offers a long within-country analysis of polarization in a European country, complementing papers such as [Boxell et al. \(2021\)](#) that have studied polarization in cross-country settings. Causal explanations for the reasons behind polarization are beyond the scope of this paper, but we show time series data of several co-occurring phenomena, which may be used as pointers for further examinations of the topic.

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