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Contextual Modelling of "Propaganda", "Information" and "Upplysning" in Swedish Parliamentary Speeches, 1920–2019

Johan Jarlbrink [1], Fredrik Norén [1] and Robin Saberi [2]

[1] *Umeå University, Universitetstorget 4, 90187 Umeå, Sweden*
[2] *Uppsala University, Box 256, 751 05 Uppsala, Sweden*

Abstract

This paper explores the contexts of the keywords "propaganda", "information" and "upplysning" in the Swedish parliamentary debate protocols, from 1920 to 2019. The digitized protocols have recently been annotated with metadata for speakers' gender and party affiliation. Based on perspectives developed within conceptual history, we have traced the concepts in the parliamentary debates and used computational methods to cluster the contexts in which they occur. Word windows around the three keywords were compiled into a sub-corpus, and topic modelling was used to cluster the contexts. The findings show that the distribution of the topics gets more even over time, partly explained by the spread of the term "information" in various political areas in the mid-20th century. Furthermore, the only distinct topic shared between the three keywords relates to campaigns to limit and prevent the consumption of alcohol, narcotics and tobacco. While a conceptual shift takes place within this topic, from "upplysning" to "information", it is also shown that it was possible to discuss and frame these issues in terms of "propaganda" post-WWII – it even became more common to do so in the 1950s and 1960s.

Keywords

propaganda, information, conceptual history, parliamentary debates, Sweden

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1. Introduction

Today, "information" and "propaganda" are perceived as almost contradictory terms. Information is supposed to bring facts and rational order. If not, it needs to be corrected or be dismissed as disinformation. Propaganda, in turn, only carries lies and confusion. Scholars who have studied the history of propaganda often argue that this conceptual distinction started to emerge during WWI. According to this narrative, the notion became cemented after WWII, partly as a consequence of Goebbels' authoritarian propaganda apparatus [1][2]. However, this seemingly obvious and clear distinction between "propaganda" and "information" should not be taken for granted. In fact, the narrative of the propaganda concept going bad after 1945 seems empirically incorrect, at least if we look at the Swedish parliamentary debates. How could it otherwise be that a parliamentarian, as late as in the 1980s, was able to say this during a debate: "Within the Centre party, there is a strong belief that young people's attitudes towards alcohol can be influenced through information and propaganda and that a very important channel for this influence is the school".[2]

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EMAIL: johan.jarlbrink@umu.se (Johan Jarlbrink); fredrik.noren@umu.se (Fredrik Norén); robin.saberinasseri@statistik.uu.se (Robin Saberi)
ORCID: 0000-0002-1167-046X (Fredrik Norén); 0000-0001-8820-1082 (Fredrik Norén); 0000-0002-4026-9122 (Robin Saberi)
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[2] Protocol (Prot.), 1986/87:110. All Swedish quotes are translated by the authors. The bicameral Riksdag protocols (1867–1970) are referred to as "FK" (första kammaren/first chamber), and "AK" (andra kammaren/second chamber), followed by year and protocol number. After the unicameral reform in 1970, protocols are only referred to by year and protocol number.

The purpose of this paper is to explore the contexts in which "propaganda", "information" and "upplysning" (a word more common before the emergence of "information", and with a similar meaning: it translates as both "information" and "enlightenment" in English) were used in the Swedish parliamentary debate protocols over a hundred-year period, from 1920 to 2019. Two research questions are being examined: Which political areas were "propaganda", "information" and "upplysning" associated with? Were there common topics in which all three terms were used? And how did the distribution of topics and associated concepts change over time?

The analysis is based on all chamber protocols of the Swedish Riksdag between 1920 and 2019 – 401 million tokens divided over some 11,000 protocols. Theoretically, the paper builds on ideas developed within the field of conceptual history, perspectives that have been operationalized using computational methods in recent years. Methodologically, the paper builds on models developed for word sense induction. More specifically, we have constructed a sub-corpus of extracted word windows around the three keyword lemmas, which we have processed using LDA topic modelling. This methodological approach provides a way to model the contexts around the terms "propaganda", "information" and "upplysning".

The results presented here are based on a corpus still being curated. During 2021, individual speeches were identified and metadata for individual speakers, party affiliation and gender were added. Yet, there are still unidentified speakers and speeches in the dataset and some bugs remain to be fixed. What this paper presents is ongoing work and preliminary results.

2. Previous results

This paper builds on our previous work in which we explored how "propaganda" and "information" were used in Swedish parliamentary speeches, from the establishment of the bicameral Riksdag in 1867 to 2019 [3]. Through basic statistical measurements – word window co-occurrence, bigram extraction and keyword extraction – we examined what these concepts referred to in the parliamentary debates. Our results revealed that the negative notion of "propaganda" was dominant already in the 19th century. This is a finding in line with what conceptual historians have shown in relation to Germany and the UK [4][5]. Still, our results pointed to the fact that it was also possible to use the concept of propaganda in a positive and neutral sense between the 1910s and 1980s. Interestingly, scholars of propaganda history have often described this particular period as a time when "propaganda" became more or less useless as a neutral concept in western democracies [6][7][1].

In our previous study we also saw that when the frequencies of "propaganda" decreased in the 1960s and 1970s, the neutral sense of the concept was partly replaced by "information". The spread of "information" in its singular form turned it into a flexible concept that could be used in a variety of political contexts. This result echoes what other scholars studying the history of "information" have shown, that the term first spread to various academic disciplines [8] and then into the political sphere, where it was used to make sense of and handle various problems [9]. Providing "adequate information" was presented as a solution to all kinds of problems in the "information age", but information would also generate problems of its own: an "information divide", "information overload", "information pollution" etc. [10].

In the Swedish parliamentary debates, "information" usually carried positive connotations: nobody was against "information" per se. Hence, a redescription of "propaganda" as "information" was close at hand. Following Skinner [11], we argued that "information" seems to have provided a space for political action that "propaganda" was not able to, partly because of the political radicalization during the 1960s and the shift towards an ideal of two-way communication during the 1970s. However, the methods we used in our previous work were not able to capture the political contexts or themes of "propaganda" and "information" in a systematic way. Hence, in this paper, we turn to another method to expand the exploration of our conceptual investigation – also including the information-related term "upplysning".

3. Theoretical perspectives and method

"Propaganda" could be seen as a key (or basic) concept. "Information" may not qualify as such, since the concept (re)entered politics from communication theory, where it was defined primarily in technical terms [10]. In the tradition of conceptual history, key concepts are those that are both indispensable and contested in political discourse. Defining them, restricting, expanding or challenging their meaning and use, is part of a political struggle. The redefinition of concepts is a way to redefine social reality, interpret it and frame it, and perhaps legitimize goals and point out the necessity of certain actions [12][13]. By focusing on parliamentary speeches and examining key concepts of communication – how and when they are defined and used, and by whom, in which context – we get a better understanding of the struggles and strategies that have defined communication between the state and the citizens.

While "propaganda" has been a concept to disagree about, used both as a negative label and a communication strategy to embrace, the use of "information" has to a large degree been characterized by consensus: few actors were ever against information per se. *Geschichtliche Grundbegriffe*, the dictionary of political concepts edited by Reinhart Koselleck and a team of researchers between 1972 and 1997, included an extensive chapter on "propaganda" [4], but "information" was not covered at all. Still, "information" has been used both as a synonym and as a counter-concept to propaganda" [9], and this is why "information" is included in our paper, along with its older synonym "upplysning".

In the last decade, several efforts have been made to utilize digital text databases and computational methods to continue – and perhaps challenge – what Koselleck started. These efforts also include research based on parliamentary records [14][15][16]. The computational approaches are usually based on the analysis of different word co-occurrence measures, and the idea that you "shall know a word by the company it keeps" [17]. Peter de Bolla and his team at the Cambridge Concept Lab have examined different word co-occurrence metrics in order to capture the way "concepts are constructed through 'constellations' or 'bundles' of individual words" [18]. Michael Gavin et al. have proposed an alternative method based on vector semantics, but it is founded on similar principles: "concepts are clusters of terms that co-occur throughout a corpus" [19]. The model makes it possible to distinguish between different clusters, indicating different contexts of use.

Our own method is based on similar principles, but we have used topic modelling to cluster the words co-occurring with our target words. This approach is borrowed from research on word sense induction, where words co-occurring within a window around a target word are clustered in order to identify different senses of ambiguous words [20][21]. However, reviewing the results of this research, "sense" does not seem to be the most appropriate word to characterize what is captured. Often, it seems that many of the clusters identified present the same word sense. What the models do capture, however, is the different contexts – that is themes, or topics – where the target word is used, and that is precisely what we have aimed for in this paper using the LDA model, implemented in Mallet [22][23]. For this paper, we have experimented with context windows of 5, 10 and 20 words, and produced models with 5, 10, 20 and 50 topics. After a manual assessment, a context window of 20 words was considered to capture a meaningful semantic structure around the three keywords. A context window of 50 words was considered too wide and thus risked losing more specific themes of our three keywords (more attention towards exploring optimal context window sizes for sub-corpus topic modelling would, however, be desirable). Moreover, based on a manual interpretation of distinct top words for each topic, as well as an examination of the documents with high scores for individual topics, a model of 20 topics was chosen. For the purpose of this paper and our research questions, we found that this model captured a satisfying number of distinct themes and provided an overview of the political areas associated with "information", "propaganda" and "upplysning" (the 50-topic model generated too many overlapping topics that were too alike). Still, as Appendix 1 shows, some of the 20 topics were also of a general kind and thus more difficult to give a distinct label.

In previous research within computational conceptual history, context is usually defined as word context: "The context may be a short window of words around the target word or defined by a grammatical relation discovered by automatic syntactic parsing of the text" [18]. This word context is important, but what is missing is often the social and political context, the different genres and authors, etc. Our own research is based on a single source, the proceedings of the Swedish parliament, but we

have used metadata that has recently been made available to examine and contextualize how topics are distributed based on gender and political parties.

4. Sources and corpus data

Before we move on to the analysis, some details are needed about the chamber protocols as a source and as a corpus. The chamber protocol series (Kammarens protokoll) consists of the minutes from the parliament and contains both speeches and various notes on activities in the chambers, such as votes and reports of attendance. The speeches have an inherent polemical character, and speakers' expressions are sometimes provocative and rhetorical, which in turn affects the nature of the semantic content, for example in terms of the adjectives used and the phrasing of questions. Moreover, the political language also reflects the parliamentary procedures. These procedures and the speech-genre itself generate high frequencies of certain phrases and words: "Mr speaker", "question", "committee" etc. The yearly cycle of the parliament also produces repetitive activities and elements – hearings of ministers, budget debates, the closing of the parliament during summer – all following their own particular rules and formalities. The recorded speeches, furthermore, follow certain conventions, for example how speakers are introduced, and how a speech starts (by addressing the speaker of the parliament). One needs to be aware of these aspects since they have an influence on the computational results derived from the corpus as a whole.

The Swedish parliamentary records have been digitized by the Swedish Riksdag Library, and represent a vast and rich source to study parliamentary culture, dating back to the diets of the 16th century (available for free at riksdagstryck.kb.se and data.riksdagen.se). For this paper, we have used all the protocols from 1920 to 2019, 11,195 protocols of varying length, and 401 million tokens in total. During the digitization process, the quality of the optical character recognition was controlled through random samples of the material. No additional cleaning has been conducted during the work on this paper. However, within the research project Welfare State Analytics (westac.se), in which all three authors are involved, we have been working together in a team of humanities scholars and statisticians to identify speeches and speakers, and annotate metadata for name, party affiliation, gender and geographical representation. A first version of this annotated corpus, stretching from 1920 to 2019, was recently presented at the 2021 conference on Digital History in Sweden [24]. Obstacles with the metadata still exist and will be dealt with continuously within the project. For example, while writing this paper, it was discovered that the metadata for party affiliation was missing for speakers representing the Left Party pre-1966.

5. The topics of "information", "propaganda" and "upplysning"

In the 20-topic model, we find a handful of generic topics somewhat difficult to label, but also several topics related to specific issues and contexts (see Appendix 1). Among the generic ones are topics referring to names and titles (topic 3, 12), to the rhetoric and formalities of the proceedings (6, 10), and to various committees and different branches of government (1, 5). Yet, the most prominent topic is related to consumers (16). Other dominant topics capture party-political propaganda and election campaigns (8), issues concerning media and freedom of speech (11), and foreign relations (17).

Examining the distribution of topics over time, we see that the 1920s, 1930s and 1940s were dominated by few and mostly generic topics (Figure 1). Topic 1 is the most significant, primarily referring to the inner workings of the parliament and government. The most distinct words within the topic are "majt", "majts", and "kungl", which are words partly used within the context of His Majesty the King and the function of royal decision making in the Council of State pre-1974. The second and third largest topics are topic 3 (names and titles) and topic 10 (debate rhetoric). The general character of these topics, and the fact that none of them refer explicitly to actions and activities outside of the parliamentary sphere, is consistent with findings in our previous research. In the 1920s, 1930s and

1940s, for example, “information” was primarily used in reference to information that members of parliament (MP) needed in order to make decisions – not external information to educate citizens [3]. The fourth topic identified here is more specific, however: media and freedom of speech (11) – an important issue during WWII.

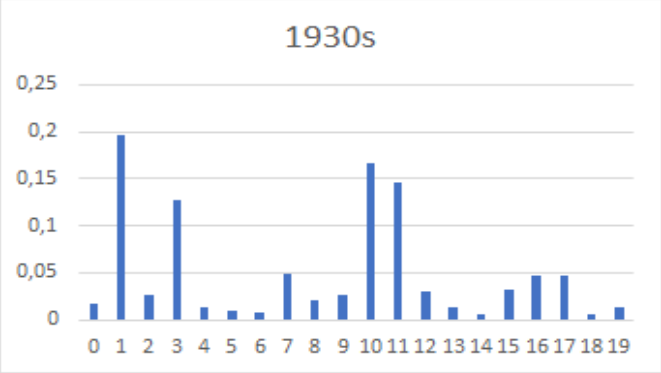

Figure 1. Topic distribution in the 1930s based on the 20-topic model.

Beginning in the mid-20th century, the key concepts are used in relation to a wider field of topics (Figure 2). In the 1950s and 1960s, they were frequently used within the topic of election campaigns and party-political propaganda (8), foreign policy (17), and the labor market (7). Consumer issues (16) became important in the 1970s, along with alcohol, narcotics and tobacco (13). Economy (19) became a significant topic in the 1980s. The last few decades have seen a further increase in the consumer topic (16) – explained perhaps by privatizations within many sectors, and the need to inform consumers about available options (Figure 3).

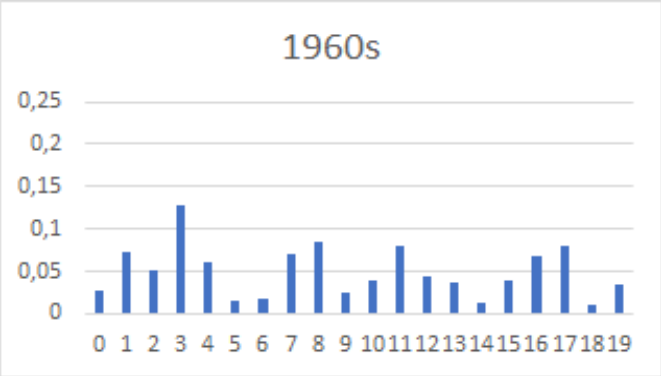

Figure 2. Topic distribution in the 1960s based on the 20-topic model.

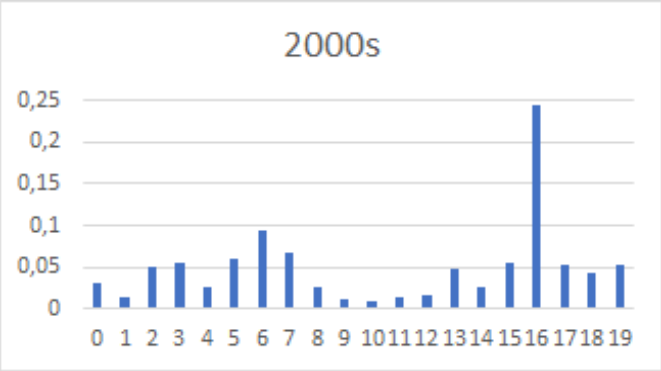

Figure 3. Topic distribution in the 2000s based on the 20-topic model.

6. Keyword-specific topics

Of the three keywords, "information" occurs in most topics for the whole sub-corpus of all word windows. Out of 20 topics, 14 are connected to this keyword with a value of at least 0.01. For "upplysning" the same ratio is 9/20 topics, and for "propaganda" only 4/20 topics (Tables 1 and 2). While "information" is present in most topics, it is often with a low and even rate compared to the other keywords. This might be an indication that "information" became a general discursive element – but not always the most prominent one – within a greater variety of political areas, whereas "propaganda" and "upplysning" were connected to fewer issues but with stronger ties. Yet, what is also shown is that the topics that became prominent in the 1950s, 1960s and 1970s – such as labour market (7), alcohol, narcotics and tobacco (13), consumers (16) and foreign policy (17) (see Figure 2) – are those dominated by the keyword "information". This attachment of "information" to an increasing number of political issues in Sweden confirms what previous research has shown: increased use of "information" as a discursive element within a growing number of political areas [25]. Furthermore, in the 20-topic model, six topics are only connected to "information" and not to "propaganda" and "upplysning". Of these, three topics connote more distinct political areas: consumers (16), foreign relations (17), and school and pupils (18).

Fewer topics are connected to "propaganda", but those that are tend to have a higher score. Here we find, for example, one topic relating to threatening propaganda (2), and one relating to party-political propaganda and election campaigns (8). The different topic distribution of "propaganda", compared to that of "information", indicates that the contexts in which "propaganda" is found were both more limited and more specifically connected to this keyword. Moving on to "upplysning", the top three topics connected to the term connote a more generic content: various branches of government (1), names and titles (3), and descriptions and generic phrases (4).

Keyword	T0	T1	T2	T3	T4	T5	T6	T7	T8	T9
information	0.227	0.009	0.0	0.003	0.009	0.088	0.088	0.077	0.0	0.072
propaganda	0.0	0.0	0.519	0.0	0.036	0.0	0.0	0.0	0.405	0.0
upplysning	0.0	0.357	0.046	0.24	0.173	0.0	0.0	0.011	0.0	0.007

Keyword	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19
information	0.057	0.069	0.055	0.023	0.057	0.054	0.044	0.034	0.032	0.0
propaganda	0.0	0.0	0.0	0.034	0.0	0.0	0.0	0.0	0.0	0.006
upplysning	0.039	0.001	0.015	0.067	0.005	0.005	0.0	0.0	0.0	0.034

Tables 1–2. The relative distribution of each keyword lemma in the 20-topic model.

7. Alcohol, narcotics and tobacco – the shared theme of "information", "propaganda" and "upplysning"

In both the 20-topic model and the 50-topic model, very few topics are shared between the three keywords. In the 50-topic model, three topics are connected to "information", "propaganda" and "upplysning": two generic topics capturing parliamentarian names and terms related to economy, and one more distinct topic about drugs and alcohol. The latter topic also has its equivalence in the 20 model: topic 13, labelled "alcohol, narcotics, tobacco". (The 20-topic model also contains another shared topic, number 4, however it is a less meaningful one labelled "generic".) In the 20-topic model,

the topic related to alcohol, narcotics and tobacco becomes gradually more significant up until the 1990s. During the last decades it is slightly less prominent (Figure 4).

In our previous study on the history of "propaganda" and "information" in Swedish parliamentary debates, we found that "propaganda" was used primarily in a negative way. However, between the 1910s and the 1980s, it was also possible to use the concept in a number of other contexts – mainly related to uncontroversial issues such as traffic safety, promotion of healthy food, and campaigns to restrict or prevent the use of alcohol, drugs and alcohol [3]. The latter issue resembles topic 13. The graph in Figure 5 shows the absolute distribution of the three keyword lemma of "information", "propaganda" and "upplysning" within topic 13. As the topic becomes more prominent (Figure 4), a conceptual shift seems to occur. During the 1950s and the 1960s, "upplysning" dominated the topic. Then, from the 1970s onwards, "information" takes over as the most significant keyword (Figure 5). "Propaganda" is not as present in the topic as "information" and "upplysning". Still, the graph indicates that it was indeed possible to discuss issues concerning alcohol, narcotics and tobacco in terms of "propaganda" in post-war Sweden – it even became more common to do so in the 1950s and 1960s. "Propaganda" was part of the solution, as indicated by the documents where topic 13 scores highly: "increased information and uncompromising propaganda against narcotics".[3]

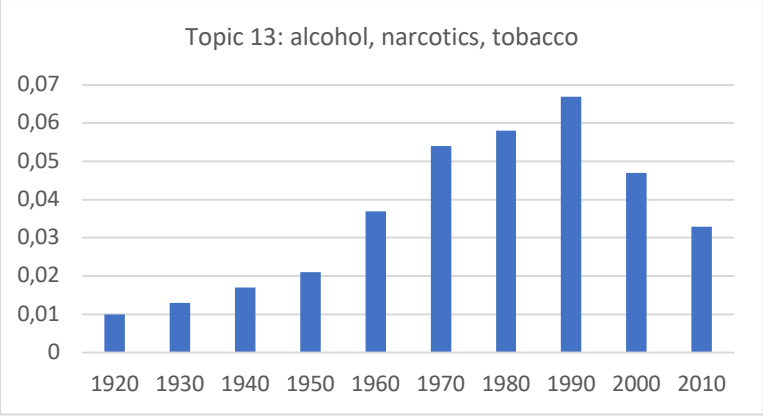

Figure 4. The distribution of topic 13 (labelled "alcohol, narcotics, tobacco") over time.

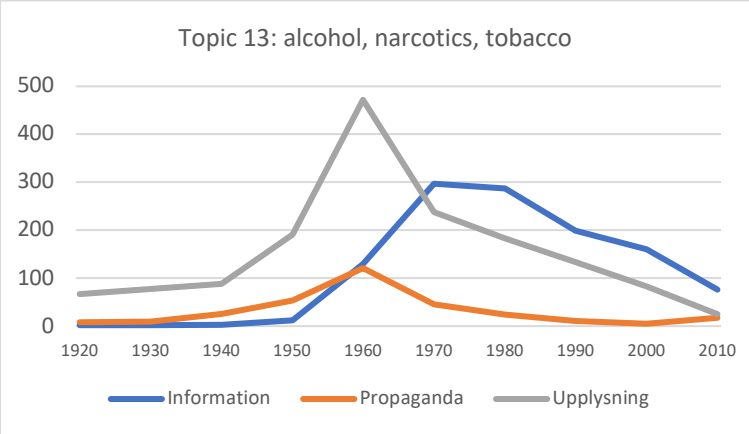

Figure 5. The absolute lemma distribution counts for "information", "propaganda" and "upplysning" within topic 13.

The issues where it was possible to suggest "propaganda" as a legitimate solution seem to have one thing in common: they were non-controversial and characterized by political consensus. Eat more fruit, wear a seatbelt, save fuel, learn how to swim – these are examples of such issues debated in parliament in post-war Sweden [3]. Issues related to the restriction and prevention of alcohol, narcotics and tobacco

[3] Prot. AK 1969:9.

were non-controversial in a similar way. Edman [26] has argued that few issues were as depoliticized as those concerning alcohol and narcotics. MPs from left to right agreed on both the problems and the solutions. Suggesting "propaganda" against drug use and excessive drinking in such a context would not cause any conflicts – everyone agreed that it was for the common good.

Using the metadata for gender and party, it is possible to make other observations regarding the distribution of topic 13. Figure 6, for example, shows how much female and male parliamentarians talked about the issue. The bar chart for women represents the percentage of all speeches by female parliamentarians that are allocated to topic 13. Hence, during the 1970s, six percent of all female speeches are allocated to this topic. The remaining 94 percent belong to the remaining 19 topics in the model. This approach takes the unequal representation of men and women into account.

The normalized numbers used in Figure 6 make it possible to compare, across different time periods, how much of the female and male speeches are allocated to a certain topic. Hence, this is a way to explore gender-coded topics. If we examine the gender distribution of topic 13, the graph indicates that female parliamentarians spend slightly more time talking about alcohol, narcotics and tobacco using the selected keywords, especially from the 1950s to the 1970s. Then, after the 1970s, the distribution becomes more even. Moving on to the distribution of topic 13 for each party per decade (Figure 7), differences are less distinct, although overall a higher percentage of speeches from the Social Democrats (S) and the Centre Party (C) are allocated to this topic compared to the other parties over time.

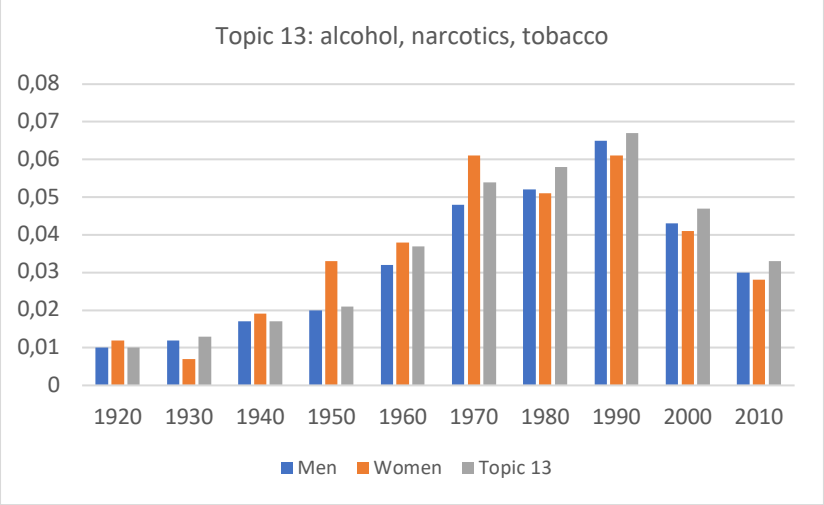

Figure 6. The distribution of topic 13 for men and for women.

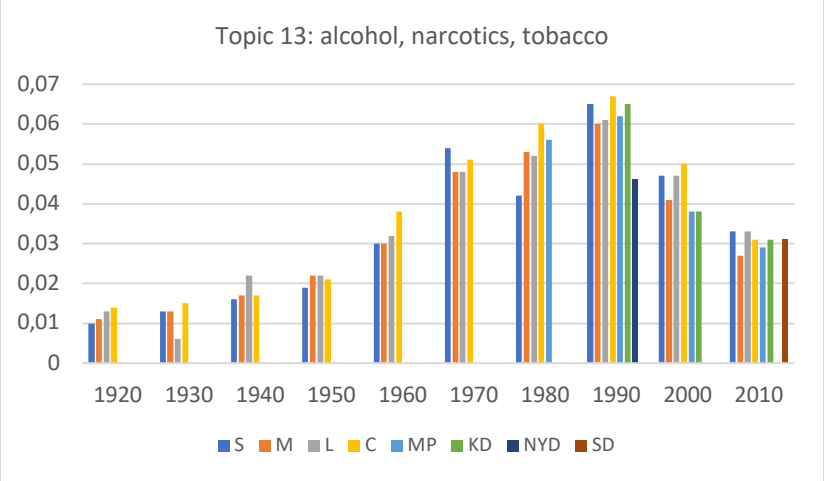

Figure 7. The distribution of topic 13 for Social Democratic Party (S), Moderate Party (M), Liberals (L), Centre Party (C), Green Party (MP), Christian Democrats (KD), New Democracy (NYD), and Sweden Democrats (SD). The graph excludes the Left Party due to shortcomings in the metadata annotations.

8. Concluding discussion

In this paper we have examined the contexts of "information", "propaganda" and "upplysning", based on all speech protocols in the Swedish parliament from 1920 to 2019. A sub-corpus was generated by extracting a context window of 20 words for all occurrences of the three keywords. Topic modelling was then used to explore the themes in the sub-corpus, and a 20-topic model was chosen for the analysis. The corpus is still being curated and some bugs remain, so the results presented here are preliminary.

One finding is that the topic distribution gets more even over time. This result is related to the increased usage of "information" from the 1960s and onwards. More political issues were talked about in terms of "information" and the keyword starts to dominate a growing number of topics. In contrast, the context of "propaganda" was more limited and the use of the keyword decreased over time.

Few topics are shared between "information", "propaganda" and "upplysning". In fact, only one distinct topic is shared in the 20-topic model. This topic relates to the political area of alcohol, narcotics and tobacco. One reason why this particular issue is shared between the three keywords, and why it is possible to use the term "propaganda" in this context, might be that campaigns to limit and prevent the use of alcohol, narcotics and tobacco constituted a non-controversial political area, at least before the 1970s. This observation, in turn, is strengthened by results in previous research on the history of "propaganda" and "information" in the Swedish parliament [3], as well as research on the political consensus surrounding narcotics and alcohol [26].

Furthermore, this is the first paper that makes use of annotated metadata for gender and party affiliations in the corpus of Swedish parliamentary speeches over a longer period of time, from 1920 to 2019. While the metadata is not yet perfect, the analysis shows that these categories are potential tools for investigations of differences between female and male parliamentarians, as well as differences between parties. Hence, besides the empirical findings, this paper gives a hint about the possibilities of large-scale conceptual history using the curated parliamentary corpus, enabling researchers to contextualize the use of certain concepts through metadata categories.

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Appendix 1: The 20-topic model with manually interpreted labels

No	Weight	Label	Top distinct words
0	0.03	descriptions	strange, similar, fantastic
1	0.086	branches of government	royal, majesty, obtained
2	0.051	threatening propaganda	antireligious, religious, revolutionary
3	0.098	names & titles	excellency, vice, first
4	0,03	generic	possible, expertise, valuable
5	0.037	branches of government	national, regional, municipality

6	0.046	debate formalities	plead, reject, present
7	0.065	labour market	labour market, employee, unions
8	0.044	election campaigns and party-political propaganda	party political, election campaign, baiting
9	0.02	generic	years, spread, enough
10	0.055	generic	any, definitions, regulations
11	0.067	media & freedom of speech	media, freedom of speech, public
12	0.032	names & titles	mrs, göran, pettersson
13	0.036	alcohol, narcotics, tobacco	harm, narcotics, tobacco
14	0.014	private integrity	integrity, damage, secrecy act
15	0.044	generic	told, secretary, hearing
16	0.122	consumer policy	consumers, producers, buyer
17	0.059	foreign policy	Un's, nordic, united
18	0.023	schools & pupils	parents, grades, pupils
19	0.04	economy	crowns, million, budget