Tracing Swiss National Identity in Regional Newspapers across the XIX and XX Century

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1   Introduction

The XIX century in Europe is, among others, defined by the emergence of the nation state as exemplified by the German (1871), Italian (1870) and Swiss nation (1848). Whereas the French, English, German or Italian nations emerged either from a preceding dynastic power over a given geographic territory or a common language, ethnicity and culture [1], Switzerland constitutes a special case[2].

For most of its history, Switzerland was a loose federation of different city-states or small independent regions bound together by a military entity called the Swiss confederation. Thus, Swiss people preferably identified with their local region, canton, or even city than with the Swiss confederation for a long time.

However, during the last two centuries, a Swiss identity arguably emerged, aided by shared military service, education, historical education, and common values. This "growing together" was also manifested in the growth in central authority (implementation of national pension schemes and inter-cantonal transfers; Ladner and Mathys (2018)).

Due to their exceptional stance, Swiss nationalism and national identity have been discussed by a rich body of literature from different scientific communities. In our analysis, we would like to contribute to this general discussion by tracing the evolution of Swiss national identity from the XIX century using computational methods. Specifically, we consider the period from the 1820s to the 1950s, when the formation and development of the modern Swiss Nation took place. This analysis aims to articulate the concept of Swiss nationality in a computer-understandable manner and to scan the vast corpus of regional Swiss newspapers for its evolution in time. Newspapers have been chosen as, we believe, they largely reflect and model the opinions and topics of interest to the regional population. To the best of our knowledge, the adoption of newspapers as a primary source has not yet been considered in the analysis of Swiss nationality and could hopefully provide new insights into the matter.

The investigation will comprise two parts: the extraction of expressions that identify Swiss identity and the temporal evolution of how these expressions were used in the selected

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[1]"Tantôt l'unité a été réalisée par une dynastie, comme c'est le cas pour la France ; tantôt elle l'a été par la volonté directe des provinces, comme c'est le cas pour la Hollande, la Suisse, la Belgique ; tantôt par un esprit général, tardivement vainqueur des caprices de la féodalité, comme c'est le cas pour l'Italie et l'Allema-gne." (Renan, 1882)

[2]"Comment la Suisse, qui a trois langues, deux religions, trois ou quatre races, est-elle une nation" (Renan, 1882)

newspapers. For the extraction, we adopt several textual sources that can serve as proxies of national identity. Those proxies are: 1) Early Swiss history books. 2) World War I propaganda articles in newspapers. 3) Political sociology papers on (Swiss) nationalism. Although all presented proxies are inherently biased, by looking at the question from several angles and taking different proxies into account, this paper aims to produce meaningful and robust results.

2   Context

This section presents the historical and sociological discussion surrounding the exceptional case of the Swiss nation and the Swiss identity, which motivates this project and its Methodology. Furthermore, the presented sources carry different definitions of Swiss identity and can thus be used to extract meaningful terms, which define Swiss identity throughout the century. In practice, this project uses two history books[3], World War I propaganda articles published in Swiss newspapers available in Impresso platform, and several sociological papers which deal with Swiss identity to extract 'Swiss identity terms' as it will be described in the Methodology.

2.1   Swiss History

The modern Swiss nation arguably emerged from a complex construct of treaties and inter-regional dependencies commonly referred to as the 'Swiss Confederation' (Würgler, 2012). The members of this confederation were bound together by a multitude of contracts [4]. (Stettler, 2012).

Those medieval contracts and treaties often resisted the influence of surrounding European powers (especially France and the Hapsburg) while reinforcing economic links between the Swiss regions. Early historians would reinterpret those early contracts between the members of the Swiss confederation as a shared endeavor for self-government, autarchy, and self-determination of the individual Swiss regions (see 'Chronicon Helveticum' Tschudi (1734).

In the 18th century, nationalistic forces driven by the spirit of the enlightenment used a similar narrative to solidify their case for a unified Swiss nation. Extending on it by claiming that the Swiss people must be considered a homogeneous ethnicity[5] and thus belong in a common nation (see 'The history of the Swiss confederates' Müller (1780).

This ethnic understanding of the Swiss nation was deeply questioned at the end of the 19th century. Historians increasingly argued that the concept of 'the Swiss nation and its people' was created during the 19th century aided by national institutions as standard

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[3]Müller (1780) and Seippel (1900)

[4]The oldest still existing contract dates back to 1291

[5]The so-called 'helvetics', populating the central alps

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military service, national celebrations, national societies, and a common myth of origin (see Seippel (1900) and Renan (1882)).

The two world wars asserted again the importance of a common Swiss national identity. During this time, the central government and military leadership allocated considerable resources to solidify Swiss patriotism, in an act which would be referred to as 'spiritual defense'. This ideology stated that Switzerland in its cultural and ethnic diversity was unified by a common set of beliefs and a 'spiritual unity'[6]. (Jorio, 2006)

In practice, for extracting Swiss identity from Swiss history books, the works of Müller (1780) and Seippel (1900) in French and German language have been used.

2.2 Political Sociology of Nation

Many influential authors addressed the 'Swiss case' as that edge case that could confirm or dismiss their theory on nationhood. Among others, the names Anderson, Renan, Weber, Kohn appear in the long list (Wimmer (2011)).

According to Wimmer (2011), Switzerland is a case of a multi-ethnic nation, where even cantonal borders are independent of language borders. However, even considering Switzerland multi-ethnic has been widely questioned, and numerous other options have been put forward. Switzerland has been considered post-national, multi-national, quasi-ethnic, and much more (Helbling and Stojanović, 2011). Alongside the problematization of its definition as a nation, Wimmer (2011) and Helbling and Stojanović (2011) show how major theorists differ widely in their explanation on the nature and foundation of Swiss nationality: Weber [7] sees Switzerland as an example of how a nation can be based on the commonality of political spirit rather than objective attributes. For Kohn [8] and Deutsch [9], the republican regime and the advanced communication channel created the cohesion of this nation despite its lack of common cultural background. Gellner [10] argues that the Swiss nation can only be explained taking into account the extremely high level of literacy, which removes the need for a shared language. Based on the above theories, Wimmer (2011) identifies the creation of the Swiss national concept in the bourgeois associations that formed in the XVII century. These associations aimed at a progressive union and equality between rural and urban areas. Those societies proclaimed a 'community of progress' that was meant to disseminate the national sentiment, based on republican and liberal ideals rather than nationalism itself.

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[6]"L'idée suisse n'est pas un produit dela race, c'est-à-dire de la chair, mais une œuvre de l'esprit. C'est un faitadmirable qu'autour du Gothard, montagne qui sépare et col qui unit,une grande idée, une idée européenne, universelle, ait pu prendre naissanceet devenir une réalité politique: l'idée d'une communauté spirituelle despeuples et des cultures occidentales." (P. 1012, Conseil fédéral de la Suisse (1938))

[7](Weber, 1978)

[8](Kohn, 1956)

[9](Deutsch, 1953)

[10](Gellner, 1991), (Gellner, 2008)

Overall, the Swiss case can be well explained as a process shaped by a changing social context, where the will of the people (Willensnation) and the natural communion of the different ethnicities (Wesensgeheimschaft) forged Switzerland as a nation (Zimmer, 1999). The first entails a political action, where some key actors form the Swiss concept of nation and the population follows. The second is the ensemble of pre-existing indigenous folk traditions, myths, symbols, narratives, and beliefs, which distinguish the Swiss from the outside (Zimmer, 1999).

Lastly, it is necessary to keep in mind the critical accounts given by Anderson and Renan. The first envisages nation as "an imagined political community [...] It is imagined because the members [...] will never know most of their fellow-members [...], yet in the minds of each lives the image of their communion (p.2)" (Anderson, 2006). Switzerland is, therefore, a nation in virtue of the imagination of its members to belong to the same nation. According to Renan (1882), the nation is a "spiritual principle" based on a shared past and heritage. In line with this theory, the Swiss proclaim themselves Swiss given their common past.

To create the corpus for extraction, the papers cited by Wimmer (2011) and Helbling and Stojanović (2011) and written in either French or German were searched for (i.e. Imhof (1993)). Since not all of those were publicly available, papers citing the major theorists were also downloaded whenever possible (i.e., Godechot (1971)). Attention was paid to retrieving older, foundational papers (from the 1960s-1990s) and more recent ones (XXI century). Moreover, both papers discussing specifically the Swiss case and those introducing a general theory of nationalism were included. Finally, texts about different theories (subjectivist, objectivist, ...) were retrieved. The full list of papers gathered can be found in Appendix 1.

3 Data

For the analysis, data are used for two purposes: extracting expressions on Swiss identity and tracing the expressions in newspapers. Regarding the first use, the three types of sources were already mentioned in the Research Context. The texts mentioned are retrieved in .txt format, and they consist of two history books, newspapers containing propaganda, and 18 political sociology papers. Most of these resources are retrieved from the Swiss National Library, French National Library (Gallica), Google Books, and E-Periodica.

Each of the three types of sources is associated with a reference corpus to extract TF-IDF scores by computing an inverse document frequency. For the three corpora, texts with similar language to the original corpus but a different content are searched. A suitable reference corpus for Swiss historical literature in French and German is provided in the 'Trés Grand Bibliotheque' (Bibliothèque nationale de France, 2018) and the 'Deutsches Textarchiv'(Berlin-Brandenburgischen Akademie der Wissenschaften, 2021). For WW1 propaganda newspapers, a sample of 10000 articles from the Swiss press, published in

the two major newspapers in the period before WW1 (1901-1914) serves as a reference, assuming there was no need for national propaganda before the war had started. For sociology articles, a corpus of papers published in JSTOR sociology journals between 1960-2020 in French (and containing the word sociologie) and German (and containing the word Soziologie) is used.

In terms of the second use, this project adopts a large-scale corpus of different regional newspapers, the Impresso Platform, by Ehrmann et al. (2020). The Impresso project gathered and pre-processed an impressive corpus of over 36 million articles from a diverse set of Swiss newspapers. To our best knowledge, it is the largest data set that can be easily used to analyze Swiss newspapers over the XIX and XX centuries. An exploratory analysis has shown that a reasonable amount of data is available in two out of the four Swiss national languages: French and German.

Finally, only the Gazette de Lausanne and Neue Zuricher Zeitung were used as these are two local newspapers representative of their regions, issued in the capitals of the cantons with the biggest french-speaking and german-speaking population.

4 Methods

As for the Data, the Methodology comprises two steps: a TF-IDF n-gram extraction from the corpora on Swiss identity and a longitudinal analysis of the frequency of the extracted unigrams over the two selected journals in the Impresso Platform.

From the three corpora gathered (as described in the sections above), pre-processing steps were applied to obtain a clear extraction: the texts were tokenized, stopwords were removed, and POS (Part of Speech) tagging was used to maintain only adjectives, adverbs, nouns, pronouns, and verbs (as we consider those the most informative parts of a sentence). Furthermore, lemmatization was used to reduce terms to their word stem.

Following, the TF-IDF scores were computed for 1-grams to 4-grams, where the inverse term frequencies were computed against reference corpora, and the resulting weights for each word were determined as follows:

$$w_{i,j} = tf_{i,j} \cdot log(\frac{N}{df_i})$$

where $w_{i,j}$ is weight of the word i in document j, the $tf_{i,j}$ is the number of occurrences of i in j, N is the number of documents and df_i is the number of documents containing the word i.

Each type of source was considered as one document and compared against all the documents in the corresponding baseline corpus. The 50 unigrams with the highest resulting weights for each type of source were then used in the n-gram frequency analyzer in the Impresso Platform[11]. The previous work of Twenge et al. (2012) shows that the

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[11]The tool can be found here

quantitative analysis of the word frequency in time on the large corpora can unveil the trends, not only in language but also in the changing society and public opinions. With this purpose in mind, this project uses the extracted words to show how their aggregated yearly trends of use fluctuated through time. Once the words are plugged in, the tool scans through all the OCRed corpus and calculates the aggregated frequency in time for the selected n-grams, in absolute values, and as a ratio per million tokens. Some filtering is applied before the search: only articles in French and German published in Switzerland in Gazette de Lausanne, or Neue Zuricher Zeitung were selected.

Finally, the frequency per million tokens of the 50 unigrams is aggregated and plotted in time with a running mean of a decade. The resulting plots can be observed in the Results section.

5 Results

5.1 History

By using the historical works of Müller (1780) and Seippel (1900) and comparing them with the aforementioned reference corpora with the TFIDF method, we obtain the term list presented in Appendix 6.

Table 1: Selected terms, Swiss history

Self identified Topic	German terms	French terms
Swiss places or nation	zürich / luzern / bern / waadt / žurich bern / schweiz eidgenossenschaft / helvetien / helvetischen republik	berne / zurich / bernois / schwyz suisse allemand / suisse / alliance
Significant people in Swiss history	numa droz / bonaparte / general bachmann	comte pierre / rodolphe habsbourg / abbé saint-gall empereur frédeřic / jean bubenberge
European powers	französisch / frankreich / franžosisch gesandte schweiz frankreich / franžosisch truppe	habsbourg / empereur / savoie / maison habsbourg empereur frédeřic / habsbourg lauffenbourg
Political institutions	tagsatzung / partei / behörde / verfassung bürger / öffentlich / republik / volk öffentliche meinung / volks nah demokratischer kanton / neutralität schweiz	bourgeois / charte / alliance / frère bourgeois berne/ traité paix / électeur mayence

Analyzing the obtained German and French terms, one can identify recurring themes expressed by a group of terms that seem to describe the same concepts. Many of those identifiable themes occur in the German as well as in the French term lists.

The first apparent and intuitive topic is that of Swiss cantons, cities, places, or the Swiss nation itself. This topic seems to be a relatively intuitive result due to the chosen TF-IDF method, given that the comparative corpora probably rarely contain books that discuss Switzerland or Swiss cities. The three different terms used to name Switzerland (e.g., Schweiz, Eidgenossenschaft, Helvetik) correspond to names for Switzerland during different historical periods and already might imply the multifaceted nature of the Swiss identity throughout history. Furthermore, it is also interesting to analyze the cantons,

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cities, and places mentioned and, on the other hand, the places that are not mentioned. Here, one could state that the historical rivalry between and the importance of Bern and Zürich is visible given the high TF-IDF values of both cities and that there is even a bigram 'Zürich Bern'.

A similarly intuitive theme is the frequent mentioning of people, which might be significant for Swiss history. The most relevant bigram for the German list, for example, is the name Numa Droz, who was an influential Swiss politician and one of the first members of the federal council. The French list refers multiple times to Rodolphe Habsbourg, a medieval ruler who repeatedly waged war against the Swiss confederation. The French term list also mentions Whilhelm Tell (Guillaume Tell), who reportedly rebelled against the Habsburgs.

Another related and dominant theme visible in the term lists is that of foreign European powers. This theme might substantiate the fact that the surrounding European powers deeply influence the creation of the Swiss nation, as already discussed in the literature part. Interestingly, comparing the French to the German term list, it is notable that, while the French list mostly mentions the Habsburgs, the German term list instead mentions the French empire. This phenomenon is most probably the result of the different reference corpora, given that the French reference corpus is more likely the discuss French history, while the German reference corpus instead discusses the history of the German empires.

A last notable theme discusses Swiss political institutions and principles. This topic is more ambiguous and mentions terms like the government, the constitution, the public, the people, the military, and neutrality. Although many of those words have a very strong connotation in discussing Swiss identity, it still seems interesting that the obtained words describe rather abstract concepts. Furthermore, the German and French lists also do not seem to be always consistent. For example, whereas the French list mentions the Bourgeois (of different cities) several times, the German list only mentions the people (e.g., Volk, volksnah, bürger).

Using the top 50 French and German uni-grams and inputting them into the Impresso frequency analyzer, we obtain the time series presented in Figure 1. The time trend of the mentions of the obtained Swiss history terms reveals an interesting pattern with peaks corresponding to critical historical events, as marked by the red dotted lines in Figure 1. The selected historical dates signify instances during which the Swiss nation was either questioned or crucially influenced by external events[12]. Thus the peaks in the usage of the Swiss history terms might have been caused by the newspaper journalists reflecting upon Swiss identity during those historically significant times. Furthermore, comparing the trend in usage of German terms to the usage of the French terms, it can be observed that the German trend line is more accentuated and better defined by the proposed historical events. Assessing the term list, this might be because the German terms appear more

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[12]E.g.: The biggest peak corresponds to the year 1848, which is the funding year of the modern Swiss nation

meaningful and less specific (e.g.: less names) than the French one.

In general, the obtained terms seem to be an intuitive representation of the two selected books, and considering the obtained time trend, they seem to encode some notion of Swiss identity.

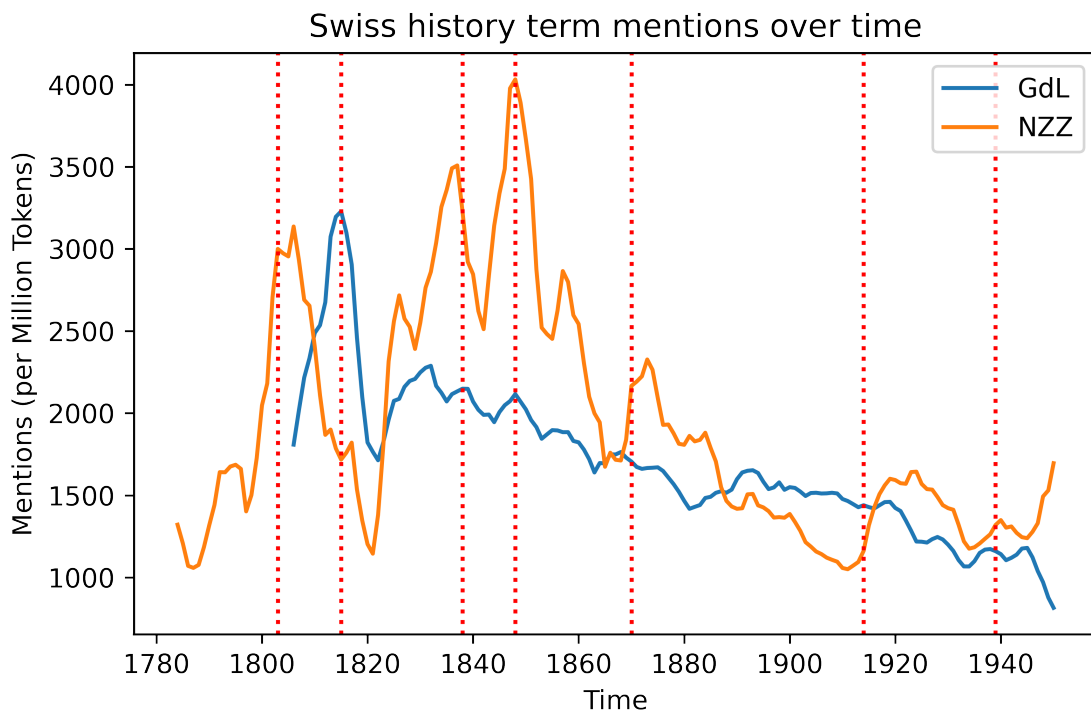Swiss history term mentions over time

Figure 1: Longitudinal analysis of cumulative frequencies of the 50 most important TF-IDF tokens in the corpus. The red lines represent important historical events: Mediation under Napoleon (1803), Congress of Vienna (1815), Diplomatic conflict between Swiss confederacy and France (1838), Creation of modern Switzerland (1848), Creation of Italy and Germany (1870), Beginning of I. World War (1915), Beginning of II. World War (1939).

5.2 Political Sociology

The n-grams extracted from the political sociology sources are reported in Appendix 5. The extraction, mirroring the focus of the sources, shapes a concept of national identity based on the role of community, state politics, and of construction (or invention) of shared values[13]. In particular, the terms extracted delineate a concept of nation that is biased

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[13]Some words that are particularly representative of this vision are 'convention', 'droit', 'etat', 'politique', 'patrie', 'culture', 'tradition', 'peuple', 'inventer', 'sentiment', 'politisch', 'staat', 'geschichte', 'politische',

towards a cultural representation, where the nation is voluntary (the already mentioned concept of Willensnation).

The words for the French and the German extraction appear radically different. This diversity is motivated by the sources, as words are likely to encode aspects inherent to the two countries of Germany and France, other than only Switzerland. Accordingly, the words can be interpreted in terms of how the two sets can be used to create a partial interpretation of the Swiss nation as seen under the influence of neighboring countries. In this sense, we analyze the resulting words in terms of how, and to what extent, the conveyed socio-political representation of the national identity of the two neighboring nations can be used to model the share of Swiss identity that is a projection of its neighbors.

Looking at the expressions extracted from the French corpus, the representation of nation appears rather abstract [14]. The concept is tightly linked to words referring to a patriotic feeling[15], which is a distinctive aspect of French Nationalism and the French Revolution. Patriotism is also significant in the Swiss case, which witnessed a rise of patriotism around the 1760s and a boom during the French Revolution ((Zimmer, 1999)). Swiss patriotism was funded upon the invocation of a glorious past and veneration of the Swiss Confederation during the 14th and 15th centuries. Among the French words, a large deal of importance is given to the n-grams representing nationalist thinkers and theories. Among these, the aforementioned 'imagined community' by Anderson figures in the top 50 list, and an ever greater resonance can be seen in the bigram 'invented traditions'. The expression was coined by Hobsbawm, and it indicates the action of the nationalist elites who shape and construct how a nation enters the public discourse ((Anderson, 2006; Hobsbawm and Ranger, 2012)). In this view, public rituals, ceremonies, and national symbols are nothing more than utilitarian inventions of those striving to create the nation. In line with the patriotic nature of Swiss nationalism, this view mirrors the great effort of creation of Swiss identity employing myths and symbols, which culminated in the ceremonies of celebration of the Swiss nation of 1891 and 1937 ((Zimmer, 1999; Wimmer, 2011)).

Regarding the German words, attention is given, contrarily, to both abstract aspects and physical ones. We see the appearance of temporal terms[16], indicating a greater focus on the temporal evolution of the concept in the German corpus, but also terms referring to cultural and sportive activities such as singers and gymnast movement[17]. As it becomes evident by the excessive use during the Nazi and Fascist regimes, attention to sportive activities is a profound source of national sentiment, rooted in the political aesthetics of the performance (Rossol, 2010). Many terms, moreover, refer to the military[18], yet another symbol of national power and pride. Both sportive activities and military are elements at

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'reich', 'einheit', ..

[14]sens, sentiment, identité, definition, volunté

[15]patrie, patriotisme, patriote

[16]19 jahrhundert, hälfte 19, französische revolution, 20 jahrhundert

[17]sängerbewegung and turnbewegung

[18]militärisch, krieg, stark

the root of Swiss identity, as epitomized by the Olympics and the pride put into the military system (Seippel, 1900). The German words acquire a somewhat socialist and constructivist connotation, stressing the importance of the Volk and the social sphere, positing attention to Nationsbildung (nation-building), which morphologically implies a concept of nation that has to be constructed by the population.

Altogether, the two words extractions define the Swiss nation as a Willensnation based on common ideals and values and regulations. The most frequent regulations that appear are nationality law[19], and naturalization[20]. This latter, morphologically based on the Latin natura (nature, natural state) is, counter-intuitively, the acquisition of the nationality and the formal entrance in the social state. In the Swiss nation, naturalization is based on normative elements as well as on values[21]. This term is one of the driving words in the longitudinal plot in 2, peaking in frequency in 1848 (see Appendix 7). It often resonates with articles citing or explaining the constitution (as can be seen again in Appendix 7), which explains the peak in attention in 1848, the year of publication of the Swiss constitution.

In the aggregated trend in Figure 2, high resonance is achieved around 1848 and coinciding with the official creation of the nation. However, higher frequencies are found for the French part right before the Diplomatic conflict between the Swiss and French (in 1838) and the completion of the nationalist movements in Italy and Germany. Therefore, the trend seems to be anticipating international events, indicating a public discourse about nationalism in the French-speaking part in conjunction with conflicts in/with the neighboring countries. On the other hand, the trend for the German is instead reaching maximum resonance during the World Wars, where, as expected, the military and cultural symbols of the nation, which were predominantly extracted in the German words, were mentioned frequently to invoke a Swiss spirit during the wars.

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[19]nationalitè droit, distinguishing citizenship from statelessness

[20]naturalisation

[21]'The applicant must be well integrated, The applicant must be familiar with life in Switzerland, The applicant must not endanger Switzerland's interior or exterior security, The applicant must show respect for public order and security, The applicant must respect the values of the federal constitution, The applicant must be able to communicate in a national language, both orally and in writing, The applicant must participate in the economy or be in education, The applicant must, if married, in a registered partnership, or a parent, encourage and support the integration of his or her spouse and/or minor children' from Wikipedia on Naturalisation
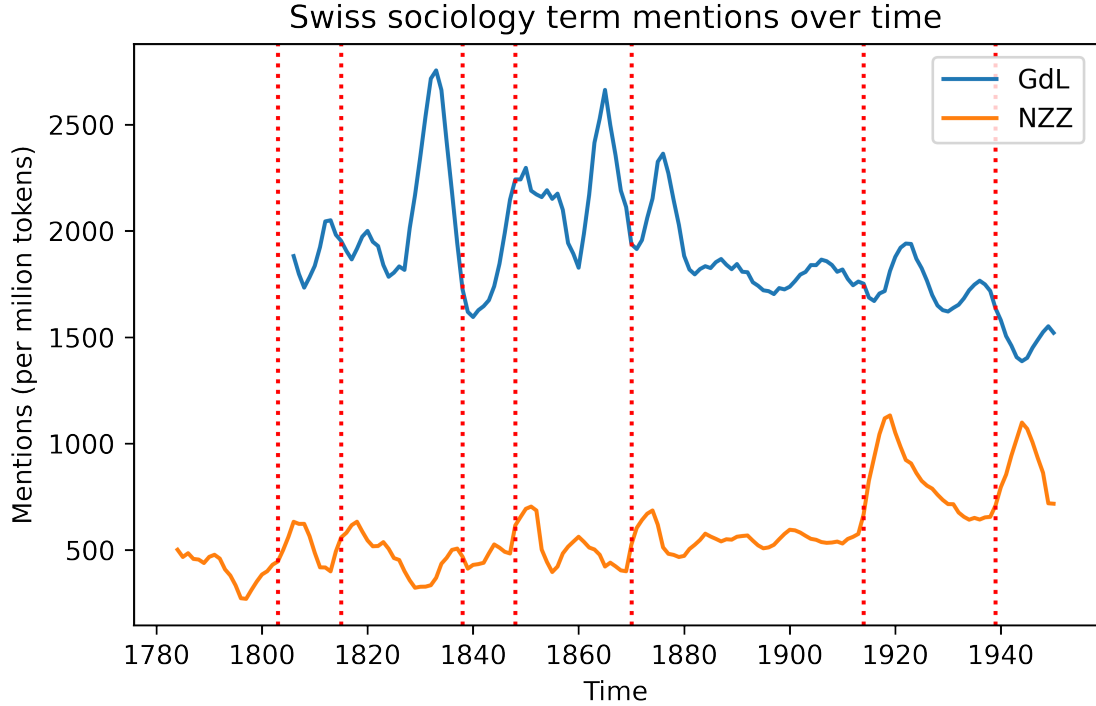
Figure 2: Longitudinal analysis of cumulative frequencies of the 50 most popular TF-IDF tokens in the corpus. The frequencies are normalized per million tokens. The red lines represent the following important dates: Mediation under Napoleon (1803), Congress of Vienna (1815), Diplomatic conflict between Swiss confederacy and France (1838), Creation of modern Switzerland (1848), Creation of Italy and Germany (1870), Beginning of I. World War (1915), Beginning of II. World War (1939).

5.3 WWI Propaganda

Considering that we used war vs. non-war years newspapers for the WWI propaganda extraction, it is reasonable that all the factual information about the war will be present as the important tokens. Therefore, we did not take into account any terms which explicitly refer to the military. The remaining terms were closely analyzed in terms of their possible propaganda use. Finally, we decided to elaborate on three topics, which were frequent in the TF-IDF scores and essential in Swiss internal affairs during the wars.

The Red cross (tokens: croix rouge) is an organization of great importance for the perception of the Swiss during the war conflicts, both in foreign and internal relations. Its position and recognition were sizably increased during the first World War. Internally, the actions taken by the red cross could have been perceived as Swiss participation in

the conflict, but not as an armed force but as a humanitarian power. It might have been essential for the population to criticize the government for not taking any action during the major conflict. For external politics, the actions taken by the red cross boosted the perception of Switzerland as a neutral country.

Swiss Neutrality (tokens: pays neutre, neutral staat, neutral land) is an important concept, which was the key point of the Swiss political coherence during the major conflicts.The narration of opposition, the Swiss unlikeness, which allowed them to stay neutral (*neutral staat*) while the continent was in the tragic conflict (*kriegführend staat*), was a tightly integrating collaborative sentiment.

Swiss Railways took an important role in country integration, considering the challenging travel conditions and the prior alienation of small mountain villages. The project, which was a great achievement both in infrastructure and nation-building, mainly took part in the XIX and the beginning of the XX century. It paved the way for fast information and ideas sharing through the country and made a Swiss internal integration a much more convincing alternative to cross-border integration, which could otherwise take place for each part of Switzerland independently, decreasing the national coherence.
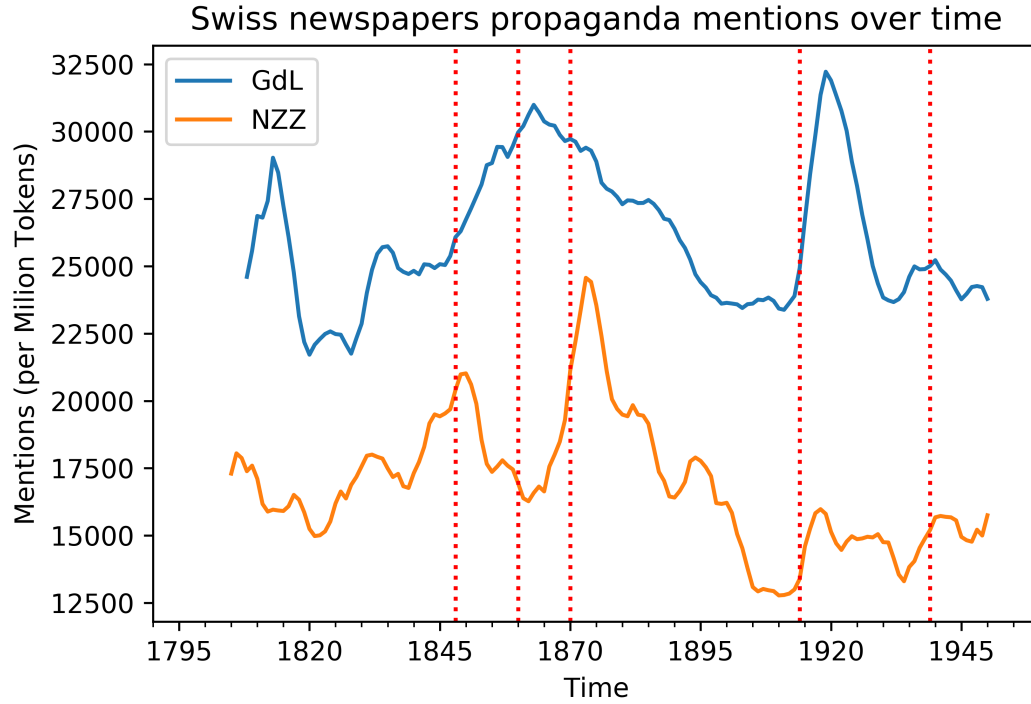
Figure 3: Longitudinal analysis of cumulative frequences of the most popular TF-IDF tokens in the corpus. The red lines represent important conflicts: Sonderbunden war, Savoy conflict, Franco-Prussian war, WWI, WWII

The detailed trend visible in Figure 3, alongside the full TF-IDF result tables, available in Appendix 6, provides some interesting insights into the Swiss newspapers' propaganda. First, there is a visible trend of propaganda increase, consistent with the appearance of political situations dangerous for Swiss integrity. Secondly, while the Franco-Prussian war and WWI remain of the highest importance, the other situations seem to be covered more locally only in the more active part of Switzerland. Finally, we note nearly complete Swiss indifference to WWII, which is surprising but might be explained by the success of the WWI armed neutrality strategy and the broad consensus of Swiss public opinion that the same strategy might work again.

6   Discussion & Conclusions

The extraction methods presented, the resulting sets of words depicting national identity, and the final aggregated trends create a considerable overhead in the results. Therefore, a conclusion is crucial and critical, and similarities and differences in the produced results need to be explained.

First, considering the resulting terms, different concepts and topics describing Swiss national identity have been detected within each obtained term list. Terms that encode locations or important historical protagonists constitute one of the common topics to all extractions. This topic, however, is somewhat unsurprising, thus discarded by this paper. A topic of interest is that which places Switzerland in relation with the international, relating Switzerland and neighboring European powers. This topic is present in all three sources, although the precise functionality varies across the sources. In the historical sources, the surrounding powers seem to be the acting powers that force the Swiss cantons to build an alliance, which eventually would yield into a nation. The WWI propaganda shows a cemented nation resisting external forces. Lastly, the sociological papers depict Switzerland as influenced by its surrounding countries. The substantial focus on external powers to define Swiss sentiment in all three sources indicates that the definition of Swiss nationhood is bound to discriminate between Swiss and non-Swiss.

Moreover, the topic of Switzerland's neutrality and its military recur in all extractions. Its connotation varies again between the sources; however, parallels in its functionality can be found across all sources. First, the historical sources reflect the importance of the Swiss military alliance and its resistance against outside powers. This narrative is continued by the WWI propaganda, which also strongly focuses on Swiss neutrality. At last, the sociological papers reflect on the cohesive powers of the shared military service and shared experience of resistance as symbols for constructing the identity.

A last, rather abstract topic, mainly covered by historical and political sources, describes political participation and institutions. Here the obtained terms seem to draw on two opposing concepts. One indicates that Swiss national identity is an invention of local elites and the other that the Swiss nation is deeply rooted in the population by a sort of collective awareness and memory. This dichotomy reflects the discourse of Switzerland as both a voluntary nation (Willensnation) or a natural community (Wesensgemeinschaft) (Zimmer, 1999) introduced in the Research Context.

The time trends obtained by each term list partially mirror each other but vary in magnitude and accentuation. It is visible that each source is a biased representation of its own time and thus yields higher trends during its respective time frame. However, the obtained time trends draw peaks in term mentions which coincide with significant historical events. Those historical events are either internal or external conflicts, which question or redefine the Swiss nation. During such events, the investigated newspapers use a vocabulary that reflects or predetermines the terms that were computationally obtained. The usage of national identity-defining words during internal or external conflict and restructuring

might indicate that Swiss national identity still had to be solidified over the XIX century. However, it seems that the peak indicating the beginning of the Second World is lower and less significant in all three plots. The decrease in importance might signify that during WWII, Swiss nationalism was solidified to the point that less public discussion was necessary to convey Swiss national identity.

The overall picture of Swiss identity traced by this project can be summarized as follows: It is a process that is boosted by internal or external conflicts, by the need to define the Swiss from the non-Swiss. It is also a concept shaped by both political and cultural factors, by abstract and concrete ones. It relies on the symbols of military honors and sports ceremonies. It also relies on a shared past rich of ideals of democracy, neutrality, and driven by a strong patriotism.

However, this reconstruction is inherently limited, and it is important to acknowledge its limitations. Firstly, the term extraction is mainly biased in two directions: temporally and thematically. It is plausible that each source type resonates most with the language and events of the time the source was made; hence, there is an increase in frequency around the time of the sources. Furthermore, each source depicts only a partial view of the nation, the first based on political-historical events, the second on demagogic myths and values, and the last on abstract definitions of nationality. The already biased and lateral view of the Swiss nation is further problematized by the inherent limitations of the TF-IDF method, which can determine which words are rather specific to a document but cannot distinguish which words are more valuable than others. More specifically, the algorithm has no concept of the semantics of the words; thus, it cannot filter out infrequent words with very general meanings or words that distance too much from the concept of nation. This limitation also introduces the need for vast manual filtering when analyzing the extracted words.

Moving to the frequency-time trends, properly normalizing the frequencies in time and across newspapers is complex. Although currently, this paper normalizes by million tokens (so how many times a word appears every million tokens published in the newspaper in the specific year), this does not take into account the actual total number of articles in the year, nor in the Swiss region nor among a newspaper's specific edition. It does not indicate how relevant a word is to the unit of the article, and it weighs too heavily when a word appears several times in the same article. Moreover, when a peak is detected, it is not easy to separate when the mention is about the Swiss case or an international event. It is also challenging to understand whether the word extracted was used in the article with the same connotation it had when it was extracted. For instance, the 'XIX century' can be mentioned about the rise of nationalism but also in various other contexts. Finally, the language barrier between the French and German corpora extractions makes the comparison between the two languages and corresponding trends almost impossible.

Extensive future work is needed to overcome these limitations. A first step, which was partly tried in Appendix 7, is to investigate the context in which the words were used in the newspapers to check that they are used with the intended meaning and better understand

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the modalities with which Swiss identity was treated. Another step consists of extracting more similar words for the two languages, addressing the translation between one and the other, either by using the same corpora for the extraction or just translating the extracted words. Expansions to obviate the problems inherent to the method are to expand the reference corpora to texts treating nationalism of other countries (but not Switzerland, to extract more 'Swiss nationality' terms), and filter words using word embeddings and a distance measure from the concept of nationality. We also acknowledge that a complete analysis of the Swiss identity should also extend to Romansh and Italian sources.

Despite these limitations, this project, aided by vast research and manual analysis, could produce numerous and convincing results describing Swiss national identity. Most importantly this includes the quantitative representation of the account of Swiss national identity which was delineated by the given sources and its numerical evolution over time.

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Appendix 1: Sociology Corpus

Following is the list of papers used for expression extraction from a political sociology side:

French:

1. Ipperciel, D. (2001). *Habermas, Taylor et le nationalisme québécois.* Dialogue: Canadian Philosophical Review/Revue canadienne de philosophie, 40(3), 529-544.

2. Babadzan, A. (1999). *L'invention des traditions et le nationalisme.* Journal de la Société des Océanistes, 109(2), 13-35.

3. Ipperciel, D. (2007). *La Suisse: un cas d'exception pour le nationalisme?.* Swiss political science review, 13(1), 39-67. Godechot, J. (1971, October). *Nation, patrie, nationalisme et patriotisme en France au XVIII e siècle.* In Annales historiques de la Révolution française (pp. 481-501). Soci t des Etudes Robespierristes.

4. Gellner, E. (1991). *Le nationalisme en apesanteur.* Terrain. Anthropologie et sciences humaines, (17), 7-16.

5. Hermet, G. (1997). *Populisme et nationalisme.* Vingtième siècle. Revue d'histoire, 34-47.

6. Dieckhoff, A. (1996). *La déconstruction d'une illusion. L'introuvable opposition entre nationalisme politique et nationalisme culturel.* L'Année sociologique (1940/1948-), 43-55.

7. Gutzwiller, C. (2008). *Droit de la nationalité et fédéralisme en Suisse.* Schulthess.

8. Darmau, F. (1988). *Les ambiguïtés de Renan: Nation, Nationalisme, Internationalisme.* Raison présente, 86(1), 27-35.

9. Argast, R. and Arlettaz, S. and Arlettaz, G. (2003). *Citoyenneté, nationalité et formation nationale en Suisse 1798-1925.* In Sonderdruck aus: Studien und Quellen/Etudes et Sources-Integration und Ausschluss/Intégration et Exclusion (No. 29, pp. 129-160). Haupt.

10. Lalande Bernatchez, J. (2013). *Aux limites de la nation: les théories du nationalisme et le débat conceptuel sur l'articulation du racisme et du nationalisme.*

11. Laszlo Ledermann (1959). *La Nationalisme et sa Signification pour les Relations Internationales.* Contribution à une étude historique et psycho-sociale. (E-Periodica)

[3,8,10] are specifically about the Swiss case, [1,9] are commentaries of other authors, and [12] is an E-Periodica article (not a peer reviewed paper).

German:

1. Scriba, F. (2007). *Siegfried Weichlein, Nationalbewegungen und Nationalismus in Europa, Darmstadt.* Comparativ, 17(1), 141-143.

2. (2000). *Dossier : die Schweiz - eine Utopie?* Zeitschrift: Schweizer Monatshefte : Zeitschrift für Politik, Wirtschaft, Kultur. (E-Periodica)

3. Imhof, K. (1993). *Nationalismus, Nationalstaat und Minderheiten: Zu einer Soziologie der Minoritäten.* Soziale Welt, 327-357.

4. Langewiesche, D. (2000). *Nation, Nationalismus, Nationalstaat in Deutschland und Europa* (Vol. 1399, p. 267). Beck.

[2] is an E-Periodica dossier about the Swiss case.

Appendix 4: TF-IDF results for Swiss history corpus

Table 2: Top 50 French n-grams from Swiss history books ordered by TFIDF values

Rank	Unigram	TFIDF Value	Bigram	TFIDF Value
0	rodolphe	0.332393	comte pierre	0.094145
1	comte	0.245470	comte rodolphe	0.081070
2	tschudi	0.221161	comte savoie	0.071235
3	berne	0.198825	abbé saint-gall	0.054139
4	ville	0.158460	ville berne	0.054139
5	zurich	0.147189	maison habsbourg	0.051289
6	albert	0.119029	marc argent	0.048720
7	ch	0.117110	rodolphe habsbourg	0.048440
8	suisse	0.116733	comte palatin	0.047073
9	bourgeois	0.115486	bourgeois berne	0.042741
10	seigneur	0.114379	comte eberhard	0.042741
11	roi	0.107953	rodolphe broun	0.039892
12	habsbourg	0.107745	avoyer conseil	0.039892
13	jean	0.107196	jean bubenberg	0.039892
14	pays	0.106166	empereur louis	0.039227
15	château	0.105915	empereur henri	0.039227
16	charte	0.102741	comte amédée	0.037042
17	évêque	0.102735	comte habsbourg	0.037042
18	waldstetten	0.102074	comte hartmann	0.034193
19	kibourg	0.093001	comte kibourg	0.034193
20	guerre	0.087685	cent marc	0.034193
21	hartmann	0.087330	suisse allemand	0.034193
22	bernois	0.086396	pierre gruyère	0.034193
23	maison	0.083701	gouverneur impérial	0.034193
24	schwyz	0.081660	bourgeois ville	0.033997
25	abbé	0.077291	empereur frédéric	0.031382
26	empereur	0.076203	bourgeois zurich	0.031344
27	saint	0.075517	évêque constance	0.031344
28	savoie	0.075300	maison neuchâtel	0.031344
29	henri	0.074452	cent homme	0.028767
30	chevalier	0.072443	rodolphe comte	0.028494
31	grand	0.071780	évêque henri	0.028494
32	neuchâtel	0.070782	habsbourg lauffenbourg	0.028494
33	duc	0.070215	pays schwyz	0.028494
34	fribourg	0.068758	comte tokenbourg	0.028494
35	gall	0.068335	rodolphe neuchâtel	0.028494
36	eberhard	0.063513	grand église	0.026151
37	bâle	0.063496	bannière ville	0.025645
38	chron	0.062385	vallée urseren	0.025645
39	pierre	0.062333	louis bavière	0.025645
40	alliance	0.062278	acte achat	0.025645
41	couvent	0.061644	public domain	0.025645
42	baron	0.061043	électeur mayence	0.025645
43	temps	0.060852	rodolphe fils	0.025645
44	fils	0.060265	traité paix	0.024361
45	homme	0.060136	grand nombre	0.024163
46	frère	0.058822	avoir lieu	0.023765
47	zuricoi	0.057842	guillaume tell	0.023536
48	erlach	0.056708	comte jean	0.023536
49	impérial	0.056401	long temps	0.023479

Table 3: Top 50 German n-grams from Swiss history books ordered by TFIDF values

Rank	Unigram	TFIDF Value	Bigram	TFIDF Value
0	kanton	0.517982	numa droz	0.113806
1	schweiz	0.314341	französisch truppe	0.096147
2	regierung	0.165484	helvetische regierung	0.090260
3	truppe	0.153276	helvetischen republik	0.074563
4	französisch	0.146008	droz wiedergeburt	0.068676
5	zürich	0.143091	öffentlich meinung	0.066714
6	tagsatzung	0.127124	droz protektorat	0.064752
7	partei	0.126443	bull lois	0.062790
8	frankreich	0.107725	helvetische republik	0.056903
9	eidgenössisch	0.106244	helvetischen regierung	0.056903
10	helvetischen	0.095005	französisch regierung	0.049054
11	behörde	0.093347	regie rung	0.045130
12	luzern	0.090891	kanton bern	0.043168
13	droz	0.089048	ordnung ding	0.039652
14	eidgenossenschaft	0.083982	französische regierung	0.039244
15	verfassung	0.081092	vollz nathes	0.039244
16	bern	0.080510	zürich bern	0.037281
17	waadt	0.076152	prot vollz	0.037281
18	helvetische	0.075527	kanton waadt	0.037281
19	bürger	0.071599	demokratisch kanton	0.035319
20	schweizerisch	0.071504	protof vollz	0.035319
21	öffentlich	0.071504	numa droz wiedergeburt	0.035319
22	verninac	0.069396	verfassung geben	0.035319
23	erklären	0.069212	lluma droz	0.033357
24	französische	0.067636	numa droz protektorat	0.033357
25	consul	0.063209	helvetischen truppe	0.033357
26	wallis	0.063135	general bachmann	0.031395
27	juli	0.062052	heutige staatsrecht	0.031395
28	märz	0.059643	eidgenössisch truppe	0.029433
29	schwyz	0.059570	provisorische regierung	0.029433
30	republik	0.059005	helvetischen behörde	0.029433
31	bundesrat	0.058342	schwyz unterwalden	0.029433
32	freiburg	0.058055	vollz rathes	0.029433
33	helvetien	0.056364	kanton luzern	0.027470
34	volk	0.054565	vollz nath	0.027470
35	genf	0.054350	regierung bern	0.027470
36	neutralität	0.054109	kanton zürich	0.027470
37	mehrheit	0.053847	schweiz frankreich	0.025508
38	abgeordnete	0.053783	wirtschaftlich schwierigkeit	0.025508
39	basel	0.053031	solothurn basel	0.025508
40	militärisch	0.052815	basel schaffhausen	0.023546
41	minister	0.052291	bern luzern	0.023546
42	rat	0.051857	französisch gesandte	0.023546
43	reding	0.051587	einzeln kanton	0.023546
44	politisch	0.051028	bull hely	0.023546
45	dezember	0.050972	neutralität schweiz	0.023546
46	land	0.050874	achtzehnten jahrhundert	0.023546
47	aargau	0.050164	aufrecht erhalten	0.021820
48	juni	0.050142	kantonalen revolution	0.021584
49	bonaparte	0.049744	kanton aargau	0.021584

Appendix 5: TF-IDF results for political sociology corpus

Table 4: Top 50 French n-grams from political sociology corpus ordered by TFIDF Values

Rank	Unigram	TFIDF Value	Bigram	TFIDF Value
0	nationalisme	0.53	racisme nationalisme	0.25
1	nationalité	0.32	droit nationalité	0.14
2	nation	0.25	théorie nationalisme	0.11
3	racisme	0.23	convention nationalité	0.09
4	suisse	0.19	théoricien nationalisme	0.08
5	convention	0.17	tradition inventer	0.07
6	droit	0.14	convention européen	0.06
7	etat	0.14	droit homme	0.06
8	national	0.12	art convention	0.06
9	politique	0.11	mot patrie	0.06
10	patrie	0.11	nationalisme racisme	0.06
11	anderson	0.11	articulation racism	0.06
12	smith	0.10	articulation racisme nationalisme	0.06
13	culture	0.09	lien racisme	0.05
14	tradition	0.09	lien racisme nationalisme	0.05
15	culturel	0.08	convention européen nationalité	0.05
16	peuple	0.07	invention tradition	0.05
17	nationaliste	0.06	européen nationalité	0.05
18	hobsbawm	0.06	naturalisation ordinaire	0.04
19	voir	0.06	explicatif convention européen	0.04
20	naturalisation	0.06	art let	0.04
21	nairn	0.06	rapport explicatif convention européen	0.04
22	habermas	0.06	rapport explicatif convention	0.04
23	nationaliter	0.06	rapport explicatif	0.04
24	social	0.05	nationalité droit	0.04
25	nationalism	0.05	explicatif convention	0.04
26	langue	0.05	droit international	0.04
27	moderne	0.05	nationalité numéro	0.04
28	europe	0.05	nation moderne	0.04
29	patriote	0.05	mot nation	0.04
30	gellner	0.05	relation racisme	0.03
31	renan	0.05	convention européen nationalité numéro	0.03
32	homme	0.05	anthony smith	0.03
33	mot	0.05	explicatif convention européen nationalité	0.03
34	principe	0.05	droit fondamental	0.03
35	phénomène	0.05	européen nationalité numéro	0.03
36	linguistique	0.04	espace public	0.03
37	art	0.04	let convention nationalité	0.03
38	question	0.04	let convention	0.03
39	citoyen	0.04	benedict anderson	0.03
40	pouvoir	0.04	art convention nationalité	0.03
41	rapport	0.04	procédure naturalisation	0.03
42	naim	0.04	art let convention nationalité	0.03
43	patriotisme	0.04	batiffol henri	0.03
44	public	0.04	relation racisme nationalisme	0.03
45	sens	0.04	art let convention	0.03
46	théoricien	0.04	général droit	0.03
47	inventer	0.04	imagined communities	0.03
48	sentiment	0.04	nationalité art	0.03
49	cas	0.04	borella françois	0.03

Table 5: Top 50 German n-grams from political sociology corpus ordered by TFIDF values

Rank	Unigram	TFIDF Value	Bigram	TFIDF Value
0	nation	0.46	deutsch nation	0.19
1	nationalstaat	0.30	19 jahrhundert	0.19
2	deutsch	0.23	deutsch nationalstaat	0.11
3	nationalismus	0.23	deutsche bund	0.10
4	national	0.17	deutsch staat	0.09
5	europa	0.16	nation nationalstaat	0.07
6	politisch	0.14	deutsch geschichte	0.07
7	schweiz	0.13	hälfte 19 jahrhundert	0.06
8	staat	0.13	modern nationalismus	0.06
9	österreich	0.12	hälfte 19	0.06
10	revolution	0.12	schwäbisch sängerbewegung	0.06
11	deutschland	0.10	deutsch nationalbewegung	0.06
12	jahrhundert	0.10	18 jahrhundert	0.05
13	volk	0.09	prozeß nationsbildung	0.04
14	nationsbildung	0.09	idee nation	0.04
15	19	0.09	schwäbische sängerbewegung	0.04
16	geschichte	0.09	national bewegung	0.04
17	politische	0.08	modern nation	0.04
18	reich	0.08	20 jahrhundert	0.03
19	jahn	0.08	französische revolution	0.03
20	einheit	0.08	alte reich	0.03
21	sängerbewegung	0.08	deutsch sängerbewegung	0.03
22	entstehen	0.07	schwäbisch sängerbund	0.03
23	krieg	0.07	schwäbische sängerbundes	0.03
24	schwäbisch	0.07	deutsch volk	0.03
25	fremde	0.07	spät 18	0.03
26	frankreich	0.07	idee deutsch	0.03
27	europäisch	0.06	partizipation aggression	0.03
28	kulturell	0.06	kleindeutschen nationalstaat	0.03
29	gesellschaft	0.06	staat gesellschaft	0.03
30	preuße	0.06	otto elben	0.03
31	idee	0.06	19 20	0.03
32	deutsche	0.06	sozial bewegung	0.02
33	leben	0.06	karl pfaff	0.02
34	bund	0.06	frage stellen	0.02
35	turnbewegung	0.06	mehrheits minderheitenspannungen	0.02
36	lassen	0.05	deutsch kulturnation	0.02
37	modern	0.05	einzeln staat	0.02
38	schweizer	0.05	deutsch nationalismus	0.02
39	alt	0.05	gründung nationalstaat	0.02
40	verein	0.05	nation nationalismus	0.02
41	turner	0.05	19 20 jahrhundert	0.02
42	grenze	0.05	innen außen	0.02
43	land	0.05	staat deutsche	0.02
44	bewegung	0.05	spät 18 jahrhundert	0.02
45	müssen	0.05	weimarer republik	0.02
46	gemeinsam	0.05	europäisch staat	0.02
47	bilden	0.05	deutsch nationalgeschichte	0.02
48	bleiben	0.05	deutsch nationsbildung	0.02
49	ziel	0.05	staat deutsche bund	0.02

Appendix 6: TF-IDF results for WW1 propaganda corpus

Table 6: Top 50 French n-grams from Swiss newspapers propaganda

Rank	Unigram	TFIDF Value	Bigram	TFIDF Value
0	guerre	0.067719	conseil fédéral	0.009438
1	allemand	0.041407	sous marin	0.008998
2	monsieur	0.036717	etats unis	0.007338
3	allemagne	0.029903	prisonnier guerre	0.006319
4	suisse	0.028935	peut être	0.00614
5	grand	0.023987	autriche hongrie	0.005965
6	pays	0.021985	état major	0.005069
7	gouvernement	0.021658	point vue	0.004928
8	français	0.019973	guerre naval	0.004837
9	faire	0.019232	grand hôtel	0.0046
10	armée	0.018993	grande bretagne	0.004333
11	france	0.017375	début guerre	0.004253
12	peuple	0.016846	guerre actuel	0.004251
13	italie	0.01648	prix modérer	0.004113
14	devoir	0.016071	new york	0.004089
15	jour	0.015745	austro allemand	0.004001
16	paix	0.015542	chemin fer	0.003925
17	journal	0.015221	monsieur venizelos	0.003809
18	pouvoir	0.014947	temps guerre	0.003683
19	politique	0.014702	pays neutre	0.003624
20	conseil	0.014508	croix rouge	0.003602
21	général	0.014501	déclaration guerre	0.003577
22	prendre	0.014427	austro hongrois	0.003437
23	militaire	0.01421	timbre poste	0.003412
24	nouveau	0.013678	opinion public	0.003325
25	fédéral	0.013583	affaire étranger	0.003216
26	russe	0.013497	gazette lausanne	0.0031
27	homme	0.013395	allemagne autriche	0.003075
28	angleterre	0.013253	armée allemand	0.003016
29	situation	0.013245	grand nombre	0.002943
30	paris	0.01312	gouvernement allemand	0.002936
31	ennemi	0.013098	commencement guerre	0.002895
32	temps	0.013095	marin allemand	0.002888
33	italien	0.013045	monsieur asquith	0.00284
34	donner	0.012983	maison peuple	0.002815
35	neutralité	0.012851	impôt guerre	0.002793
36	allié	0.012712	france angleterre	0.002785
37	vouloir	0.012673	suisse allemand	0.002784
38	août	0.012645	président conseil	0.00278
39	prisonnier	0.012458	confort moderne	0.002753
40	etat	0.012449	peuple allemand	0.002737
41	lausanne	0.012355	prix guerre	0.00272
42	heure	0.01234	champ bataille	0.002685
43	anglais	0.012293	conseil etat	0.002661
44	droit	0.012208	gouvernement italien	0.002644
45	fr	0.012092	sous marin allemand	0.002635
46	falloir	0.011987	ordre jour	0.002627
47	neutre	0.011826	guerre aérien	0.002556
48	belgique	0.011674	emprunt guerre	0.002522
49	étranger	0.01152	monde entier	0.002431

Table 7: Top 50 German n-grams from Swiss newspapers propaganda

Rank	Unigram	TFIDF Value	Bigram	TFIDF Value
0	krieg	0.051574	vereinigte staat	0.00819
1	deutsch	0.038239	fr fr	0.007286
2	de	0.030943	täglich ausgabe	0.006127
3	deutschland	0.025976	wiener korr	0.005881
4	fr	0.024083	sept havas	0.005365
5	land	0.021087	staat deutschland	0.005331
6	feind	0.020704	oesterreich ungarn	0.005325
7	staat	0.01983	st galle	0.004997
8	stehen	0.018275	ausbruch krieg	0.004683
9	lassen	0.017752	havas amtliche	0.004646
10	kriegsschauplatz	0.017719	della sera	0.004543
11	ge	0.017484	neutral staat	0.004459
12	england	0.016757	deutsch land	0.004455
13	bringen	0.016658	de krieg	0.004386
14	regierung	0.016263	amtliche mitteilung	0.00435
15	feindlich	0.016228	neutral land	0.004325
16	finden	0.016109	mill fr	0.004314
17	front	0.015792	deutsch volk	0.004268
18	volk	0.015762	kriegführend staat	0.004182
19	truppe	0.015605	wolff amtlich	0.004144
20	italien	0.014835	öffentlich meinung	0.003882
21	telephon	0.014813	mai havas	0.00386
22	friede	0.014577	nov havas	0.003795
23	di	0.014363	europäisch krieg	0.003658
24	dr	0.014266	deutsch truppe	0.003651
25	nehmen	0.014261	deut schen	0.003635
26	schweiz	0.014225	schwer verlust	0.003543
27	bleiben	0.014214	prof dr	0.003486
28	letzt	0.014163	deutsch regierung	0.003465
29	ver	0.01405	okt havas	0.00344
30	frankreich	0.014037	kanton zürich	0.003217
31	frau	0.013769	verfügung stellen	0.003167
32	fein	0.013728	sept wolff	0.003117
33	sehen	0.013664	million franke	0.003074
34	unb	0.013524	frankreich england	0.00301
35	havas	0.013501	england frankreich	0.002933
36	dah	0.013458	frau kind	0.002856
37	prozent	0.013296	deutsch reich	0.002831
38	kampf	0.013272	beginn krieg	0.002813
39	russisch	0.013191	italien mailand	0.002753
40	sept	0.013185	aug havas	0.002707
41	armee	0.012967	fangen nehmen	0.002698
42	stellen	0.012852	dr meyer	0.002656
43	mai	0.012786	deutsch seite	0.002596
44	frage	0.012764	juni havas	0.00259
45	halten	0.012732	stadt zürich	0.002561
46	geben	0.01249	unb bie	0.002554
47	liegen	0.012156	deutsch österreichisch	0.002539
48	leben	0.01212	präsident wilson	0.002533
49	schwer	0.012108	anspruch nehmen	0.002509

Appendix 7: Examples of words in context for French and German

Figure 4: Mention of Nationsbildung in Neue Zuricher Zeitung. Translation by Google: 'Aristocracy the most plump kind of arbitrariness and oligarchy generated, and no wonder is e "therefore, when ta" people focus on all " Weis "stimulates to put an end to it. The legal status and di «nation building have hardly much to« er .. «.»; or whatever is then from the representatives of these senior electors for there " Education, for spreading the scientific spirit », for Improvement of the Richtsvfitge, for there «Defense and s. f. happen?'

Figure 5: Trend of "naturalisation" occurrences (on the right), with example of occurrence (on the left). Translation of the example: Art. 59. "Is eligible as a member of the national council any secular Swiss citizen with the right to fly. »Swiss citizens who become citizens through naturalization are not eligible only after five years of possession of the right of citizenship. "