RESEARCH ARTICLE

The cultural outcomes of social movements: a computational linguistics approach

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ABSTRACT: Scholars have long established the importance of the cultural outcomes of social movements in the context of political power and representation. However, they have also acknowledged the methodological difficulties associated with studying cultural outcomes, especially when culture is manifested through linguistic practices. This paper addresses the potential for dealing with movements and culture as manifested in symbols, public discourse, narratives, and rhetoric and makes two contributions: It links the social movement literature studying culture through language with Natural Language Processing (NLP) techniques for systematic and comprehensive cultural analysis; and introduces a state-of the-art method which provides a better understanding of language change and linguistic influence given the capacity of computational analyses to process large volumes of data for multiple actors and varied data sources during long periods of time. The paper describes the cultural influence of women organizations in Spain between 2000-2020 on issues such as gender inequalities, abortion, gender violence, prostitution, and surrogacy. Tweets and manifestos by women's organizations', as well as national press coverage of women issues and interventions by MPs in the parliamentary arena, are used to describe the advantages and limitations of the method for the study of cultural outcomes. Computational linguistics provides new possibilities for scholarly research on cultural outcomes of social movements but also shows that these methods should be accompanied by precise definitions of cultural outcomes, detailed and replicable operationalisation processes, and theoretical models that identify the mechanisms that explain the linguistic phenomena that underly cultural change.

KEYWORDS: Cultural outcomes; social movements; natural language processing, computational linguistics

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1. Introduction

With the slogan "abortion is a women's right", the Society for Humane Abortions placed abortion in a different cultural context, that of the basic rights, and claimed that women had a right to their own bodies and to control their own lives (Luker, 1984, pp. 96–118 cited in d'Anjou & Van Male, 1998). Cultural analysis has focused on the performative tradition with an emphasis on strategies of action leveraged on cultural expressions such as rituals, symbols, stories, and worldviews (Swidler, 1986). This performative approach has broader implications on the symbolic and cultural influence of social movements. In line with the changing usages and definitions of material symbols, rhetoric is a central resource in the cultural transformation sought out by movements.

This paper analyses the discursive construction of political issues, and how the rhetoric of social movement organizations (SMOs) is adopted in mainstream media and the parliamentary arena. It incorporates current knowledge on the cultural outcomes of social movements with state-of-the-art techniques in computational linguistics. The central argument is that semantic similarity between SMOs and common representations of issues in the media and elite discourse can be useful to understand movement influence in the changing significance of cultural symbols.

A systematic measure of semantic similarity between frames and narratives for multiple issues in the manifestos and tweets of women's organizations and those in news articles and parliamentary interventions of national members of the national Parliament (MPs) in Spain between 2000 and 2020 provides an exploratory and descriptive analysis which shows how computational linguistics is useful in tracing the influence of SMOs. The paper offers a proof-of-concept for the possibility of studying multiple issues in a long timeframe in a reliable and systematic manner by leveraging computational methods. As such, it makes two contributions: It links the social movement literature studying culture through language with the multiple possibilities of Natural Language Processing (NLP) techniques for systematic and comprehensive cultural analysis; and it introduces a state-of the-art method which provides multiple possibilities to better understand language change and linguistic influence given the capacity of computational analyses to process large of volumes of data for multiple actors and varied data sources during long periods of time. This approach solves existing limitations for comparing multiple cases in a replicable manner and for interpreting large volumes of contents from diverse sources. The method is thus applicable to the study of multiple phenomena in social movement research as it provides the capacity to identify patterns and regularities between the contents created by social actors on multiple sources and how these change in time.

In what follows, I briefly review the literature on cultural outcomes of social movements and highlight the importance of language and the discursive aspect of culture. I then describe the data and methods used in analysing the cultural influence of women's organizations in Spain between 2000 and 2020, highlighting the potential and limitations of computational linguistics techniques for the automatic extraction of frames and narratives from unstructured text and the use of semantic similarity methods for studying influence processes. The presentation of the exploratory results is followed by a final discussion on the implications of this work for understanding cultural outcomes of social movements and by identifying some directions for future research.

2. Cultural outcomes of social movements and language

Since the early 80's social movement scholars have raised attention to the analysis of culture as the answer to many questions in social movement literature. This has implied dealing with movement culture as manifested in symbols, public discourse, narratives, and rhetoric (Johnston & Klandermans, 1995).

However, culture can be defined in multiple ways (See Earl, 2007 for a review). The analytical approach to culture proposed by Hart in which culture is constituted by signs, symbols and structures deals directly with the discursive aspect of culture and determines how cultural codes become articulated (Hart, 1996). In a similar manner, Polletta poses culture as emerging from the interaction of the symbolic dimension of structures, institutions, and practices (Polletta, 1999). What is most relevant in this view, is the suggestion that culture is observable in linguistic practices. Together with the notion of movements as constructing and transforming meaning in the course of daily life, it is possible to adopt this definition of culture for the purpose of tracing cultural outcomes through language.

This definition of culture focuses on how cultural knowledge is performed by social movements when they create alternative symbols, and frames of challenge and mobilization (Johnston & Klandermans, 1995). It implies agency in cultural change as movements "process culture by adding, changing, reconstructing, and reformulating [it]" (Johnston & Klandermans, 1995, p. 5) and construct meaning, thus shaping culture through their public discourse.

The framing perspective has developed similar proposals as it suggests that using frames and transforming them are a way of performing culture. This entails that frame adoption by third actors or public opinion can be considered a movement outcome that eventually leads to cultural transformation when it takes place at the proper scale. The fact that framing scholars define frame transformation as the process in which SMO's attempt to change existing definitions, and highlight the importance of frames having "cultural resonance" (Benford & Snow, 2000) can be taken as well as evidence for a two sided relation of movements having an influence on culture and being determined by it.

The underlying element in these characterisations of cultural performance is the process of meaning construction by social movements. Three different processes of meaning construction have been proposed: public discourse, persuasive communication, and consciousness raising in collective action (Helman, 1999b). These processes involve publics and targets at different levels as they have distinctive purposes. However, they aim towards a shared outcome of transforming collective beliefs by proposing new definitions that confront the existing perspectives and dominant cultural codes of particular social issues. This implies as well that these meaning construction processes takes place in the interaction between multiple social actors such as movements, counter-movements, organized interests, and political elites in multiple arenas.

The most relevant aspect of the processes of meaning construction is the fact that social movements rely on symbols, meanings, and beliefs which are expressed through language and that its transformation can be traced. The idea that social movements shape and reshape culture by injecting their symbols, values, meanings, and beliefs into the broader culture has been studied through changes in rhetoric (Helman, 1999a; Zdravomyslova, 1992). Scholars have also supported the idea that rhetoric is not exclusively focused to mobilization but is a cultural instrument on its own. In this sense, the cognitive resources of SMOs should be interpreted as cultural resources that can be used in similar ways as conventional structural resources (Williams, 1995). The rhetorical frames used to make

public political claims are themselves cultural resources which are produced in the context of a particular cultural framework and aim to transform it.

2.1 Cultural outcomes and the women's movement

Research on the women's movement has comprehensively studied its origins, objectives, organizational structures, repertoires of action, political allies and its success or failure in multiple outcomes. Interest on the influence of the women's movement has focused on policy outcomes (Stetson & Mazur, 2000), as well as on its influence on the transformation of political discourse and public debate (Ferree et al., 2002; Jackson et al., 2020).

Since the 1970s and early 1980s women's movements were opposing state and party institutions on issues such as body politics, violence against women, and work participation in Western European democracies. Feminist perspectives have entered the political agenda of the EU as well as the political debates within each country at different paces. Their perspective has been incorporated into official policy documents on gender equality, and discussed by both policy actors (Dahlerup, 2006; Lovenduski, 2005) and the media (Mendes, 2011). The input of women's organizations plays a central role in the political process when they create cultural references that redefine gender issues in the discussions that take place both in public spaces, such as the media (Pavan, 2020), and in the parliamentary or judicial arenas (McCammon, 2009).

2.2 Rhetorical influence as a condition for movement outcomes

"…language change and non-standard usage all feel like threats to the very foundation of a culture, since the language itself is the principal text in which the culture's mental past and its present coherence are grounded" (Joseph, 2006, p. 33).

Research on movement outcomes has largely assessed biographical, cultural, and political outcomes in varying contexts and times (Bosi et al., 2016). A great deal of attention has been devoted to the factors and the mechanisms underlying how social movements obtain such outcomes (see Luders, 2016 for a review on the argument of costs), but mediators which may explain more pervasive or long term effects have received little attention. Edwin Amenta introduced the problem by proposing a political mediation theory of social movement consequences, thus making a distinction between movement successes and consequences (Amenta, 2006). Extending his argument, cultural outcomes can be assessed not only in terms of who benefits from movement outcomes, as they can be seen as multiple sequential successes in which behaviour and social interactions change slowly up to the point in which they can be considered a structural change that signals different cultural traits. Changing public discourse can be considered as a first step towards shifts in values, beliefs or opinions, which constitute cultural outcomes. The transformation of language in arenas with immense social repercussion, such as the media and parliament, would constitute a first indicator of change in the direction that SMOs propose when expressing their worldviews on women issues.

The capability of shaping public discourse is central to policy outcomes as decision-makers need to conceptualize issues as a problem that requires government intervention, and these definitions largely determine how problems will be addressed (Kingdon & Thurber, 1984; Rochefort & Cobb, 1993). Public decisions are preceded by public debates that need to capture the attention of political representatives in order to establish social problems and consider potential definitions and solutions. SMOs advocate directly in these debates and aim at transforming public perceptions by providing

frames and narratives on particular issues which may exert direct influence on the political decision-making process, but also on cultural understandings of social problems which transcend the policy process and have important implications for the inclusion of their perspectives and worldviews.

This paper focuses on narratives defined as "instruments of mind in the construction of reality" (Bruner, 1991) or "causal models that map actions into consequences" (Eliaz & Spiegler, 2020). As narratives provide highly simplified accounts of reality, they are useful for studying the language of movement organizations and their role in building policy narratives where practical referents and moral positions become part of the political debate. These may overlap to some extent with a broad definition of frames as argumentative structures and thematic components (Gerhards & Rucht, 1992) and with claims, defined as "the strategic demands made by collective actors within a specific contested issue field" (Koopmans & Statham, 1999, p. 206). However, narratives represent the discursive dimension of movement action and subsume to a large extent frames and claims.

The purpose of this paper is to assess potential cultural outcomes of social movements, focusing on language change in the parliamentary and media arena when referring to women's issues in Spain between 2012 and 2020. It follows an exploratory approach with an emphasis on the methodological possibilities to study language in movement outcomes and questions to what extent MPs and the press use similar narratives as SMOs when referring to women's issues.

3. Data

A relevance sampling approach (Krippendorff, 2004) is used to gather with various sources of text in which SMOs and parties express their narratives for interpreting women issues and press coverage of these issues. The first source of movement narratives are movement manifestos. These include manifestos published as petitions in the context of campaigns on particular issues and manifestos which are periodically delivered for ritual events such as the International women's day on March 8th and the International Day for the Elimination of Violence against Women on November 25th. These include manifestos by SMOs in Spain between 2012 and 2020 and manifestos by NGOs and Parties which are used to assess differences in movement effects. The sample is composed of 190 women's day manifestos from 32 organizations and 136 manifestos for the Day for the Elimination of Violence against Women from 22 organizations. The second source are SMOs' tweets from 43 women's organizations in which they express their positions on five issues: gender violence, surrogacy, abortion, gender inequalities and prostitution. These 43 women's organizations were selected from three sources: registries of appearances in parliament, co-signature of petitions, and Twitter lists of women's organizations. The issues in tweets were identified by their own use of hashtags (Table A1) and tweets with no hashtags were classified into these five issues using the tagged tweets as labelled issue categories (Table A2 reports the performance of the classifier for each issue).

Manifestos and tweets are public expressions of SMOS's perspectives which express their positions in a condensed manner and highlight both their diagnostic, prognostic, and motivational frames (Snow and Benford, 1988) and a unique language that shapes the movement's identity to a large extent. Research on Twitter use by the women's movements in the US has shown the importance of hashtags for challenging mainstream narratives about violence against women and extending public debates about victimhood based on narrow problem definitions and attributions of blame (Jackson et al., 2020).

The cultural influence of these organizations is traced on two target sources: media coverage of the women issues in the daily broadsheet El País and parliamentary interventions of national MPs in Spain. The mainstream media has been widely accepted as a forum which represents the ideas and perspectives of diverse actors (Gamson et al., 1992). As it provides a daily chronicle of how social problems are defined within society it provides fertile ground to understand social representations of women issues. El País has the highest circulation in Spain and can be regarded as highly influential and able to capture a broad view of the dominant perspective on most issues. However, restricting the study to this unique source is a limitation as it has a centre-left position which is not necessarily representative of how news is reported in the Spanish media. Articles on women issues between January 2000 and December 2020 were selected on 24 tags provided by the newspaper (Table A1. Search terms by issue and source).

Table 1. Data

Type	Source	N	Period
Manifestos for women's day and the Day for the Elimination of Violence against Women	35 SMOs, NGOs and Parties in Spain (Table A4)	326	2001-2020
Tweets	43 Women SMOs (Table A5)	348,1101	2010-2020
Press coverage of women issues2	El País	39,244	2000-2020
Parliamentary interventions on women issues	ParlSpeech (Rauh et al., 2017) 3	6,153	1996-2018

Access to these large sample of press releases and public communications from SMOs and parties during a period of nearly 20 years provides a unique opportunity to follow language changes and strategic adaptation to situations that shape the movement's distinctive vocabulary. However, this period is short in terms of cultural change dynamics, and it may be limited to conclude on potential cultural shifts in public perspectives of long-standing issues. Research on manifestos and movement texts from earlier periods is needed to consider a longer timeframe. Furthermore, the sample selection relies on the identification of contents by their original sources. The use of Twitter hashtags and the tags provided by the press limits the possibilities of considering all the potential dimensions of the issues and is problematic as it may introduce sampling biases as the purpose and motivations for the tagging processes are impossible to identify. A traceable selection of detailed issue dimensions, and the keywords and search strings that delimit them, would provide a more reliable sample.

1 348,110 is the number of original tweets retrieved for the entire period. A subset of 52,024 tweets were identified as dealing with the five issues and used in the analyses (As reported in table A5).

2 Multiple search terms were aggregated into five issues (gender inequalities, abortion, gender violence, prostitution, surrogacy) and articles dealing with multiple issues including "feminism", women strikes, and the international women's day as described in table A1 in the Appendix.

3 Parliamentary interventions for women issues were selected by filtering the agenda (tags of the interventions) on combinations of the following terms: women, gender, equality, couple, equality and, sexist.

4. Methods

Research has long pointed to the challenge of identifying movement frames (Fisher, 1997; Klüver & Mahoney, 2015; Sanfilippo et al., 2008) and especially, extracting them from unstructured text. Computational linguistics has tackled the challenge of extracting usable information from narrative text through the advances in Natural Language Processing (NLP). NLP focuses on transforming written or spoken human language into a form that can be analysed automatically, and it now enables the algorithms for auto-correcting spelling errors, classifying email content, or highly advanced applications which allow users to interact with machines through voice commands. It has also provided useful algorithms for detecting patterns in text which have been applied to identifying events in the media and to protest event analysis (Lorenzini et al., 2021; Papanikolaou & Papageorgiou, 2020).

Recent techniques in NLP make it possible to identify narratives automatically beyond what is feasible through manual curation. The potential of automated analyses through computational methods enables the study of large volumes of textual data in contrast to case studies which focus on small samples of SMOs. Studies which have addressed cultural consequences through the study of framing processes, discourse, and language change have largely relied on descriptive interpretations of case studies. This approach has provided insightful and rich descriptions that have greatly advanced the subfield, but they fall short on the need to deal with large volumes and varied sources of data that change quickly, as well as on the replicability of the results given the difficulties for interpreting language use systematically. Given the massive quantities of text produced by SMOs that are now available from their websites, social media and the press, the opportunity to automatically discover particular narratives that structure the public and political debate can be used to identify the unique contribution of SMOs to the understanding of an issue. This empirical approach allows to scrutinize the venues in which social movements articulate their demands and identify their particular argumentative structures in the spaces where they naturally occur.

4.1 Extracting narratives from unstructured text

The main empirical challenge is extracting narratives which are embedded in unstructured text and studying to what extent they are appropriated by political elites and the mainstream media. Computational linguistics techniques such as argumentation mining enable to automatically extract arguments and their relations from a given document (Lippi & Torroni, 2016; Sanfilippo et al., 2008), and to do this at scale. These techniques provide systematic and reproducible data for analysing multiple properties in text, but they ignore the cultural context in which movement rhetoric was produced by SMOs. Furthermore, understanding arguments requires complex reasoning skills which are difficult to automate. However, the purpose in this paper is to identify the extent in which the frames and narratives of SMOs are adopted in the public discourse with an exploratory purpose. It pretends to make a broad description and serve as a proof-of-concept for the automatic analysis of cultural outcomes through language appropriation. In this sense, knowledge of the context in which the narratives were expressed by SMOs or the actual logic behind their arguments, is not within the scope of this paper.

The method for extracting narratives and frames automatically from unstructured text is based on the identification of the simplest verb and noun phrases that underlie the arguments exposed in manifestos and tweets. Part of speech tagging (PoS) assigns specific tags to each word in a sentence in order to identify its function. The extraction of key noun phrases and verb phrases is performed by

selecting the subsets of tokens that match a particular pattern that communicates the main idea behind each sentence. Patterns for verb and noun phrases with coordination conjunctions were identified and only the phrases with more than three words were selected for the analyses. This means that narratives are operationalised as verb and noun phrases. For example, the keyphrases "*mujeres muertas víctimas de violencia*" or "*no garantiza la libertad de la mujer*"[4] were extracted from longer sentences because they follow the pattern Noun-Adverb-Noun-Possessive pronoun-Noun, and Negation-Verb-Determiner-Noun-Possessive pronoun-Determiner-Noun, respectively. Multiple patterns were specified in order to capture multiple possibilities for composing similar narratives using the Udpipe library in R (Wijffels, 2019). The most salient phrases for each combination of issues and sources with type of actor are presented in tables A6 and A7 to illustrate the most relevant phrases for each group. This approach provides a fast and reliable way to extract the main narratives from texts, but not all of them can be attributed to SMOs, as narratives from other actors can be cited or referred to in the texts. This is a limitation of this study, as which contents can be attributed to each SMO has not been validated through manual annotation. Looking into the frames of parties and international organizations, future research can address this limitation by classifying narratives into those which belong to SMO's and those from other organizations.

Given that women's organizations have distinct perspectives and concerns on multiple issues, the potential for their long-term cultural outcomes can be evaluated by examining the extent to which their views influence public discussion of those issues. In this sense, rhetorical influence is a preliminary condition for changing culture and it can be measured through a clear operationalization of SMO's perspectives and a measure of the extent in which such a perspective is appropriated in public and parliamentary debate -or in other terms- has a rhetorical influence on the parliamentary and media arenas.

4.2 Cultural influence and semantic similarity

Considering the definition of cultural outcome discussed in previous sections, the second part of the empirical challenge is understanding the process of language appropriation by measuring the similarity between the narratives of SMOs and those of political elites and the mainstream media. In line with framing research that considers press coverage of movement frames as an indicator of movement resonance in pushing their interpretations (Polletta et al., 1996), media and elite adoption of movement's narratives can be considered a first indicator of cultural movement outcomes.

Gamson & Modigliani use quantitative content analysis for studying movement influences on media content (1989, 1994) within a similar logic. They argue that policy issues have a culture which is formed as discourse evolves and changes over time, providing interpretations and meanings for relevant events. Furthermore, they consider that there are multiple "interpretive packages" that compete to shape the issue culture as part of a cultural system (Gamson & Modigliani, 1989). In this sense, the adoption of movement frames over competing frames can be traced through the adoption and use of movement frames in common language.

Semantic similarity deals with the similarity between phrases at a semantic level, the meaning of text, beyond the simple lexical matching of the terms that compose the phrases. A comprehensive metric of semantic similarity considers the structure of the text as well as the semantic similarity of the component words.

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4 Which literally translate "Guarantee the freedom of women" or "dead women victims of violence".

The concept of semantic similarity underlies research that studies how the media or political groups have an influence on public discourse (Lens, 2002), whether legislation is similar to the demands of interest groups (Gilens & Page, 2014) or how movements have an effect on the political acceptance of new issues by news media, the general public, and elected officials (Woodly, 2015). This approach follows as well the studies on women's movements that examine whether social movements or government agencies can be representatives (Mazur, 2002; Weldon, 2002) and the links between feminist organizations and legislators (Sawer et al., 2006).

In short, the quantity of interest is the similarity between the narratives in SMO's manifestos and Tweets on a yearly basis with narratives in the media and parliamentary arena when dealing with the same women issues. Narratives are aggregated as well on five issues in tweets and media contents (with an additional "multiple issues" category for the media as multiple pieces dealt with more than one issue), "gender violence" vs. "other issues" in manifestos, and "gender issues" vs. "other issues" in parliamentary data. Similarity between SMO's narratives and those in the press and parliamentary data is measured with a Simple Matching Coefficient (SMC), which indicates the correlation between data samples. It is calculated as the ratio of the total number of matching attributes to the total number of attributes present (Sokal, 1958) in both texts. The value of the SMC lies between 0 and 1 where the larger values mean high similarities between data samples. Alternative similarity measures (such as Jaccard or Pearson correlation methods provide similar results).

The final analyses aim at describing the variation in similarity between the narratives in women's organizations manifestos and tweets and the news articles and parliamentary interventions on women's issues. In order to simplify the analysis, four models are used to explain similarity between the duplets formed by manifestos-press, manifestos-parliamentary interventions, tweets-press and tweets-parliamentary interventions. OLS models are used to explain differences in similarity between issues, actors (women's organizations or other type of organizations authoring manifestos), and type of parliamentary activity (discussion of laws, oral questions or other types of interventions). The observation is the duplet/year and only those duplets in which the manifesto or tweets occurs before the news articles or the parliamentary activity are considered. In order to simplify the analyses, observations are assumed to be independent (no influence between contents of the same type in time). Further research using social network analysis can provide more insight into complex contagion processes.

The complete analysis was implemented with the following steps[5]:

1. Scrape manifestos on women issues and capture tweets by women organizations.

   a. Manifestos

      i. International women's day on March 8th.

      ii. International Day for the Elimination of Violence against Women on November 25th.

   b. Tweets by 43 women organizations.

2. Collect the texts for parliamentary interventions and press articles.

3. Assign the text to categories on the five issues of interest (gender violence, surrogacy, abortion, gender inequalities and prostitution).

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5 Replication materials are available upon request

4. Extract narratives from text.

   a. Parts of Speech tagging.

   b. Pattern identification to identify verb and noun phrases with coordination conjunction (Table A6 and A7 in Appendix).

5. Aggregate texts in a yearly basis (by issue, actor and type of parliamentary activity).

6. Measure similarity between the dyads formed by manifesto/news, manifesto/parliamentary interventions, tweets/news, tweets/parliamentary interventions with a one period lag.

7. Explain similarity by issue, actor and parliamentary activity.

5. Results

An exploratory analysis of the adoption of the narratives of women's organizations by the mainstream media and representatives in the parliamentary arena is proposed as a proof-of-concept for studying cultural outcomes through language. The similarity between the manifestos and tweets of women's organizations and news articles and parliamentary interventions on similar issues was calculated by systematically comparing the narratives which were automatically extracted. Figure 1 presents a heatmap which illustrates the similarity matrix for manifestos and news stories in the gender violence issue. The levels of similarity for all the issues and sources are high and show low variation. This is not problematic as it reflects a population characteristic rather than a selection bias.

Similarity matrices were calculated for all the issues and pair-wise combinations of manifestos/tweets with news articles/parliamentary interventions. The resulting similarity scores are explained in four models that include the issue and year of each observation (the dyads formed by manifesto/news, manifesto/parliamentary interventions, tweets/news, tweets/parliamentary interventions), as well as type of parliamentary activity (in models 3 and 5).

Semantic similarity between the narratives of SMOs in manifestos and tweets with the narratives in the media and in parliamentary debate indicate the extent in which SMOs have cultural influence on how issues are interpreted by relevant policy actors. It is not possible to infer causality from this type of descriptive analysis. However, as only manifestos and tweets by SMOs that precede news articles and parliamentary interventions in time are considered, the results of the analyses provide descriptive evidence for potential influence on cultural interpretations of women issues.

Figures 2 illustrates the predicted values of similarity (OLS models are presented in table A3, Appendix A). Models for actor type in the authorship of manifestos (women organizations, NGOs or Unions) do not show significant differences between women SMOs and others, so these results are not presented in any figure.
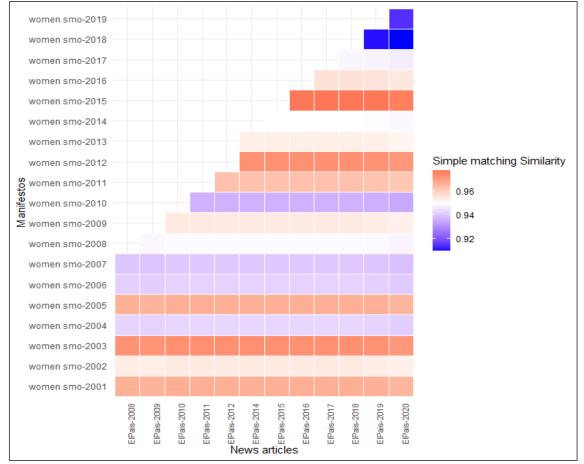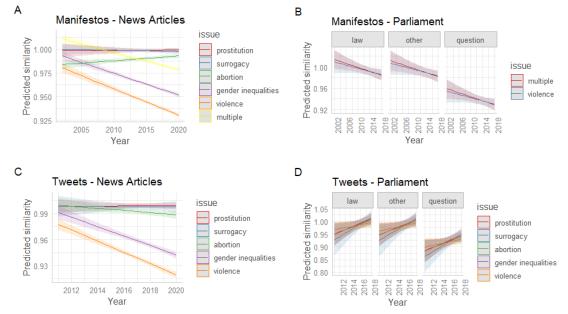
Figure 1. Similarity between narratives in manifestos and news articles (gender violence issue)

Simple matching similarity scores for years in which the news articles precede the manifestos are discarded

Figure 2. Predicted similarity – News articles and parliamentary interventions

Similarity score based on simple matching for verb phrases

Figures 2A and 2C show variability in similarity scores in time and between issues. This indicates that issue-specific attributes should be considered along with the context in which SMOs interact with the media. The issues of prostitution and surrogacy have the highest similarity between manifestos and news articles as well as between tweets and news articles, and there are no significant differences between both issues. The abortion issue follows similar patterns to the prostitution and surrogacy issues when comparing tweets and news articles, but not in manifestos, where it is significantly different and has a growing trend. The gender violence and gender inequalities issues have substantively lower levels of similarity than the other issues both in the manifestos and tweets as compared with news articles (Panels A and C in figure 2). Both issues follow a decreasing trend in the entire period of analyses.

Differences between issues can be interpreted as the result of the diversity of dimensions within issues (as the number of key phrases for each issue shows – table A1) or differences in issue attention by the media (as illustrated in figure A1)[6]. Women's organizations have increased their attention to multiple dimensions of the inequalities and violence issues, especially after the women's march (8M demonstration) in 2016. However, the diverging tendency between SMOs and the media or MPs may also be showing that the latter focus more on following and registering evidence such as indicators of labour market inequalities or gender related crimes, rather than on discussing the claims and potential solutions or prognostic frames in the SMOs' manifestos and tweets.

The similarity between women organizations' tweets and MPs' interventions in the parliamentary arena follows quite different patterns than those of the news articles, and more interestingly, there are also important differences between manifestos and tweets as represented in figures 2B and 2D. There are no differences between issues neither in the manifestos nor in the tweets and the tendencies follow different patterns, with a growing similarity between SMOs and MPs and a divergence between SMOs and the media. The patterns in the three types of parliamentary interventions -laws, oral questions and other types of interventions- are quite similar in both cases. However, the similarity in oral questions is significantly lower than in the other two types of interventions. This may reflect the less formalized and more diverse language in oral questions as compared with the discussion of laws or established subjects in figures such as formal statements or parliamentary committees.

In spite of the differences in the patterns and levels of similarity, the most interesting result is the lack of significant differences between issues. This implies that contextual differences matter as well in explaining the potential influence of SMOs on the press and political representatives. The most substantial contextual change to consider should be the change of government colour during the period of analyses. The manifesto data (Figure 2 Panel B) includes four legislatures with shifts from the conservative Partido Popular to the socialist PSOE in 2004, and back to conservative government between 2011 and May 2019, when the Socialist party came back to power. In contrast, the Twitter data covers mostly the period of the conservative government between 2012 and 2018, as Pedro Sanchez, the current president was elected in June 2018. In order to discriminate between the potential effects of the political context and the differences between the narratives and frames in manifestos and tweets, an additional model using manifesto and parliamentary data between 2012 and 2020 is shown in figure 3.

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6 Note that differences in the volume of text are controlled for by calculating similarity scores on normalized counts of the narratives and frames in text.
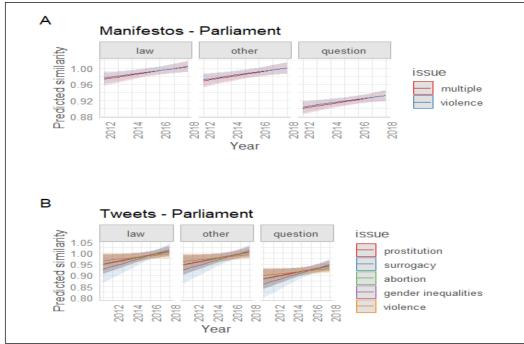
Figure 3. Predicted similarity - parliamentary interventions (2012-2018)

Similarity score based on simple matching for verb phrases

When looking into a similar timeframe with no changes in government, the patterns for similarity between parliamentary activity and manifestos and tweets are similar. This result points to the importance of government colour in the analysis. Changes in the context in the timeframe 2012-2018 can also be quite interesting when interpreting the growing similarity -i.e. the potential influence of SMOs in the understanding of women issues by the media and political representatives- as the period coincides with the fight against austerity policy and the reaction of the conservative government to the progressive policy of the socialist government on women's rights.

6. Discussion and Conclusions

This paper presented an innovative approach to study cultural outcomes of social movements through language and explored the possibilities of Natural Language Processing as a technique for systematic and comprehensive analysis of large volumes of text over long periods of time. It introduced simple and straightforward methods for extracting narratives from unstructured text and measuring the similarity between different sources. The exploratory results for women's organizations in Spain between 2000 and 2020 show numerous possibilities for applying computational linguistics techniques and raise substantive questions for future research. In particular, four questions should guide future research on relevant substantive matters:

First, the variability between the five issues considered in the analyses indicates that a detailed characterization of issues and the issue context is needed in order to fully understand cultural outcomes in terms of rhetorical influence. Within issue diversity is important as it determines how attention is divided between issue dimensions, and consequently, the fragmentation of political discourse. Feminist organizations compose a heterogeneous movement that changes rapidly as issues evolve and the public sensibility towards complex and multidimensional matters augments. The internal

debates on prostitution, transsexuality and gender identity, and surrogacy have been salient in Spanish feminism in the last two decades, and this should definitely matter when studying the meaning-generation processes of women's organizations.

Second, during the period of analysis covered by the study, the women's movement had critical achievements with the passing of important legislation on the right to abortion, against gender violence and for gender equality, the creation of the Ministry of equality in 2008, and major success on the streets, especially regarding the women's march which peaked in 2017 and has maintained a massive turnout in the years after. This entails that movement action and its implications on the salience and public support of particular dimensions of multiple issues can be expected to condition cultural influence and should consequently be incorporated into the analyses of language in text. This points directly to the next point.

Third, as the analyses did not discuss the differences between manifestos and tweets as sources of SMOs' frames and narratives. While both sources can be considered as formal organizational channels, they address different publics and have different purposes, especially considering the implications of social media for social movements (Della Porta & Pavan, 2018). Tweets may incorporate short-term reactions to debates occurring in particular contexts, but they may as well contain formal and thoughtful messages with a strategic intent, such as manifestos. Furthermore, manifestos for ritual events or popular celebrations can be quite different from the "regular" protest manifestos aimed at mobilising action to an unexpected and contentious event as they may be directed to a more general public and emphasize core arguments rather than contextualised frames aimed at contesting particular situations.

Finally, the fourth important matter to consider are the contextual changes. Government change was already discussed in the results, but the social context in which movements operate should also be relevant when explaining cultural outcomes. Looking into the different types of parliamentary activity showed the importance of considering other structural features. Research on elite attributes and the details of the legislative process could also provide further insight on why policymaking privileges particular perspectives and worldviews, i.e., preserves or reforms cultural understandings on particular issues.

Although this work was intended as a proof-of-concept to the potential of studying cultural outcomes of social movements using computational linguistics, three limitations that can be addressed with similar research designs can be noted:

First, attention to the media context is quite limited, not only in terms of studying a single news source, which limits the ideological variation in a pluralist media system, such as the Spanish media. Media attention to critical events should also be considered as they drive issue salience and potentially shape public discourse in particular points in time when controversy and emotional intensity are at the highest levels. A case in point is the case of a group-rape occurred in 2016, ("La Manada" case), which triggered massive media attention to rape, sexual consent and gender violence and to other dimensions which dominated the public debate during the three-year period of the judicial process related to the case. Even though time effects are considered, points of high media attention should be acknowledged given their potential for driving long-term effects.

Second, the exploratory and descriptive purpose of the study involved important assumptions when dealing with influence, i.e., the causal inference of outcomes. The criteria of correlation and time precedence were met in the analyses, but the use of linear models cannot reject alternative explanations (Babbie, 2012). Further research should account for the similarity between and within sources (tweets and manifestos) and targets (news articles and parliamentary interventions) using social

network analyses. The importance of government change and the differences between actors in parliaments are also lines for future research that can provide further insight into cultural influence through language change.

Third, the lack of validation of the extracted frames and narratives from raw text corpora (i.e., without human annotation) is a major limitation as the verb and noun phrases identified automatically probably include more contents than movement-specific and issue-related frames and narratives. The process of automatic extraction needs further refinement in order to reach fine-grained and unique frames and narratives than can be attributed to SMOs. Future research should combine human validation with machine supervision to validate the automatic extraction of movement's frames and narratives.

Finally, future studies may investigate the cultural outcomes of other social movements as well as look into the influence of women's activism on other issues and other types of organizations that advocate for women issues. This would provide new evidence using the discursive contents for advancing our knowledge on theories of issue bridging (Jung et al., 2014) and social movement networks (Krinsky & Crossley, 2014). Regarding the methodological approach, more sophisticated computational linguistics methods would be useful to identify narratives in a more detailed manner which improves or supersedes the proposed approach of verb and noun phrases. Computational methods for diachronic conceptual change (Tahmasebi et al., 2018), semantic role labelling (Zhang et al., 2018), or metaphor extraction (Williams, 1995) would be applicable to extend the proposed approach for studying cultural outcomes of social movements.

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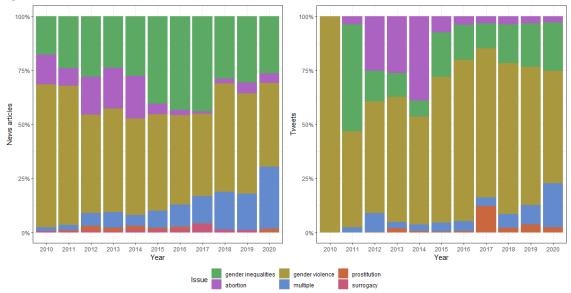
Appendix

Figure A1. Issue salience of news articles and tweets 2010 -2020

Table A1. Search terms by issue and source

Issue	Tags El País	Twitter hashtags
gender inequalities	bajas-maternidad	*igual*
	brecha-salarial	*renunci*
	conciliacion-laboral-familiar	brecha*
	derechos-mujer	*salarial
	discriminacion-sexual	*empleo*
	empleo-femenino	*discrimin*
	igualdad-remuneracion	*carrera*
		techodecristal
gender violence	abusos-sexuales	feminicidio
	acoso-laboral	niunam*
	acoso-sexual	*25n*
	agresiones-sexuales	terrorismomachista
	delitos-sexuales	*mata*
	violaciones	bastaya
	violencia-genero	vivas*
	violencia-machista	meetoo
		asesin
		maltrat
		acoso*
		abus*
		violaci
		agresi*
		noesno
prostitution	explotacion-sexual	*prosti*
	prostitucion	pagarsexo
	trata-mujeres	explotaciónsexual
		abolici
		*proxeneta

		trata
surrogacy	gestacion-subrogada	*vientre*
	vientres-alquiler	*utero*
		nosomosvasijas
		alquil
		mibomboesmio
		noennuestronombre
		explotacionreproductiva
abortion	aborto	abort*
		28s
		decidir
multiple	comision-8-de-marzo	
	dia-internacional-mujer	
	feminismo	
	huelga-feminista-2018	
	huelga-feminista-8-de-marzo	

. Overall Statistics for classification of tweets based on hashtag categories (Naives Bayes)

Accuracy	0.8459
95% CI	(0.8403, 0.8515)
No Information Rate	0.6371
P-Value [Acc > NIR]	< 2.2e-16
Kappa	0.7252
Mcnemar's Test P-Value	< 2.2e-16

Statistics by Class:

	Violence	Prostitution	Inequality	Abortion	Surrogacy
Sensitivity	0.8814	0.75546	0.8683	0.77785	0.43315
Specificity	0.8561	0.98086	0.929	0.97764	0.99516
Pos Pred Value	0.9149	0.75217	0.7114	0.77625	0.7541
Neg Pred Value	0.8043	0.98119	0.9722	0.97784	0.98086
Precision	0.9149	0.75217	0.7114	0.77625	0.7541
Recall	0.8814	0.75546	0.8683	0.77785	0.43315
F1	0.8978	0.75381	0.782	0.77705	0.55024
Prevalence	0.6371	0.07142	0.1677	0.09069	0.03312
Detection Rate	0.5615	0.05395	0.1456	0.07054	0.01435
Detection Prevalence	0.6137	0.07173	0.2046	0.09088	0.01902
Balanced Accuracy	0.8687	0.86816	0.8987	0.87775	0.71415

Table A3. Similarity models (OLS)

	Manifesto-press	Manifesto-parliament	Tweets-press	Tweets -parliament	Manifesto-press	Manifesto-parliament
	(1)	(2)	(3)	(4)	(5)	(6)
Issue:surrogacy	0.331		0.312	-7.719	0.331	
	(0.688)		(2.276)	(14.005)	(0.688)	
Issue:abortion	-0.986		2.828[*]	1.376	-0.987	
	(0.604)		(1.692)	(11.822)	(0.605)	
Issue:inequalities	4.657[***]		11.132[***]	-0.105	4.657[***]	
	(0.604)		(1.692)	(11.822)	(0.605)	
Issue:violence	5.604[***]	-0.762	13.249[***]	8.260	5.603[***]	-0.766
	(0.633)	(2.240)	(1.545)	(10.685)	(0.633)	(2.242)
Issue:multiple	3.732[***]				3.731[***]	
	(0.604)				(0.605)	
Type:other		-0.002		-0.003		-0.002
		(0.005)		(0.008)		(0.005)
Type:question		-0.055[***]		-0.066[***]		-0.055[***]
		(0.005)		(0.008)		(0.005)

Actor:women smo7					0.0001	-0.001
					(0.001)	(0.005)
Year	0.00003	-0.002**	0.0001	0.009**	0.00002	-0.002**
	(0.0002)	(0.001)	(0.001)	(0.004)	(0.0002)	(0.001)
Surrogacy*year	-0.0002		-0.0002	0.004	-0.0002	
	(0.0003)		(0.001)	(0.007)	(0.0003)	
Abortion*year	0.0005		-0.001*	-0.001	0.0005	
	(0.0003)		(0.001)	(0.006)	(0.0003)	
Inequalities*year	-0.002***		-0.006***	0.0001	-0.002***	
	(0.0003)		(0.001)	(0.006)	(0.0003)	
Violence*year	-0.003***	0.0004	-0.007***	-0.004	-0.003***	0.0004
	(0.0003)	(0.001)	(0.001)	(0.005)	(0.0003)	(0.001)
Multiple*year	-0.002***				-0.002***	
	(0.0003)				(0.0003)	
Constant	0.946*	4.744***	0.833	-16.179*	0.949*	4.719***
	(0.499)	(1.462)	(1.197)	(8.359)	(0.502)	(1.484)
Observations	1,272	929	218	397	1,272	929
R^2	0.782	0.158	0.910	0.218	0.782	0.158
Adjusted R^2	0.780	0.153	0.906	0.196	0.780	0.152
Residual Std. Error	0.011 (df = 1260)	0.062 (df = 923)	0.009 (df = 208)	0.066 (df = 385)	0.011 (df = 1259)	0.062 (df = 922)
F Statistic	409.976*** (df = 11; 1260)	34.569*** (df = 5; 923)	233.337*** (df = 9; 208)	9.785*** (df = 11; 385)	375.515*** (df = 12; 1259)	28.779*** (df = 6; 922)

Note: *p<0.1; **p<0.05; ***p<0.01

7 Models 5 and 6 are used as a robustness test. The reference category for actor type is international NGOs.

Table A4. Sources of manifestos by event and actor type

Event	Actor type	Actor	N	Event	Actor type	Actor	N
25N	smo	CERMI	10	8m	smo	APT	2
25N	union	CCOO	1	8m	smo	CERMI	19
25N	union	CCOO-UGT	5	8m	smo	EEA	3
25N	union	CGT	9	8m	union	CCOO-UGT	11
25N	union	CSIF	10	8m	union	CGT	13
25N	union	GLOBAL-UNIONS	2	8m	union	CIS	1
25N	union	ILO	4	8m	union	CSIF	10
25N	union	ITUC-CSI	9	8m	union	FESP-UGT	1
25N	union	USO	5	8m	union	Global Unions	1
25N	women org	ALA	2	8m	union	ILO	8
25N	women org	FEOF	2	8m	union	ITUC-CSI	10
25N	women org	FMP	5	8m	union	SEU	2
25N	women org	MEI	12	8m	union	USO	6
				8m	women org	A. abolicionista	2
				8m	women org	COMISION8M	3
				8m	women org	FEOF	6
				8m	women org	FMP	6
				8m	women org	MEI	8
				8m	women org	MJT	1
				8m	women org	TIEMAR	1

Robustness tests

Event	Actor type	Actor	N	Event	Actor type	Actor	N
25N	party	CS	3	8m	party	CS	2
25N	party	EQUO	10	8m	party	EQUO	8
25N	party	IU	2	8m	party	IU	4
25N	party	PCE	15	8m	party	PCE	17
25N	party	PNV	2	8m	party	PNV	1
25N	party	PP	12	8m	party	PP	11
25N	party	PS	1	8m	party	PS	4
25N	party	PSOE	9	8m	party	PSOE	11

Event	Actor type	Actor	N	Event	Actor type	Actor	N
25N	NGO	ONGD	1	8m	government	Junta de Andalucia	1
25N	NGO	UN	1	8m	NGO	EU	1
25N	NGO	UNW	4	8m	NGO	UN	7

Table A5. Women organizations in Twitter (Number of tweets classified into any of the 5 issues)

Organization	Number of tweets
AMUVI	405
Asociación Española de Mujeres Empresarias de Madrid	30
Coordinadora Española del Lobby Europeo de Mujeres	99
Club de las 25	194
Colectivo8marzo	207
Colectivo Ni Una Menos- Vivas Nos Queremos	573
Coordinadora Estatal de Organizaciones Feministas Estado Español	2799
Clásicas y Modernas	806
DecidirNosHaceLibres	789
EnclaveFeminista	35
Mujeres En Lucha	266
FADEMUR	198
Feminicidio·net	20066
Feminismos Madrid	204
Federación Mujeres Progresistas	2571
Fundación Mujeres	1391
Fórum Política Feminista	358
8M	344
INICIATIVA FEMINISTA	128
Red Estatal Contra el Alquiler de Vientres	26
Letras Feministas	28
Libres y Combativas	98
Locas Del Coño	46
Malas Madres	1356
7N Plataf. Feminista	1723
Movimientos género	236
Mujeres Artistas	33
mujeresantecongreso	170
Mujeres en Igualdad	3492
Federación Mujeres Jóvenes	1173
MujeresTomanPartido	25
Mujeres Jóvenes de Asturias	77
MujeresJóvenesMurcia	528
NOmasVG	3802
Partido Feminista de España	110
Patrulla Feminista	1218
plataforma8demarzo	61
Red Mujeres Líderes	19
Red Ecofeminista	629

RedFeminista	377
Revista Trabajadora	1801
StopVientresAlquiler	310
Tribuna Feminista	3223

Table A6. Most salient verb and noun phrases in manifestos by type of actor (Ranked by TF-IDF)

Manifestos 8M - International women's day	**Manifestos 25N - International Day for the Elimination of Violence against Women**
mujeres y niñas con discapacidad	derechos de las personas con discapacidad
cuerpos y fuerzas de seguridad	representantes de personas con discapacidad
mujeres y las niñas con discapacidad	nos precede una larga genealogía
derechos de las personas con discapacidad	aborto esté fuera de el código
eliminación de la violencia contra la mujer	acogida de todas las personas
menores asesinados por la violencia	apostamos decididamente por la soberanía
violencia contra las mujeres con discapacidad	apoyo y solidaridad entre todas
convención sobre los derechos de las personas	capitalismo para el control de los territorios
causa de mortalidad entre las mujeres	convención sobre los derechos de las personas
primera causa de mortalidad entre las mujeres	criminalizan la protesta y la resistencia
reto de toda la sociedad	cual sea nuestra edad y condición
violencia de género no hay	dedicado a tareas de cuidado
	defensa de la vida
	derecha que nos ha situado a mujeres
	desarrollamos lazos de apoyo y solidaridad entre todas
	destroza nuestro planeta y nuestras vidas
SMO	empleo se adapte a las necesidades
	estamos contra la ley de extranjería
	están marcados por la temporalidad
	exigimos la acogida de todas las personas
	formamos parte de las luchas
	hacen su política desde la mentira
	hemos desarrollado en el campo
	identidad y/o expresión de género
	igualdad de condiciones con las demás personas
	lazos de apoyo y solidaridad entre todas
	mentira y el desprecio a las mujeres
	mujeres de 16 y 17 años
	mujeres en situación de vulnerabilidad
	mujeres refugiadas por todo el mundo
	nos permita desarrollar un proyecto
	pedimos la cotitularidad de las pensiones

política desde la mentira y el desprecio

refugiadas por todo el mundo

se sitúe en el centro de la economía

sea reconocido en el cálculo de las pensiones

señalamos y denunciamos la violencia

situación laboral nos permita desarrollar un proyecto

son producto y extensión de el patriarcado

tiempo dedicado a tareas de cuidado

viejas y nuevas formas de explotación

Union	eliminación de la violencia contra la mujer	fin a la violencia de género
	violencia contra la mujer y la niña	poner fin a la violencia de género
	violencia en el lugar de trabajo	violencia de género en el trabajo
	mujeres en el lugar de trabajo	actividad de la mano de obra
	tipo de violencia contra las mujeres	actos y manifestaciones que se celebran
	violencia contra las mujeres en el lugar de trabajo	avanzar en la eliminación de las violencias
	violencia y el acoso en el mundo	defensoras de los derechos de la mujer
	caja de resistencia y solidaridad	igualdad de género en el corazón
	confederal mujeres e igualdad de ccoo	participación de trabajadoras y trabajadores
	eliminar la violencia contra la mujer	rompamos la etiqueta de la precariedad
	igualdad para el desarrollo de los derechos	secretaría de igualdad de ugt
	movilidad para empleadas públicas víctimas de violencia	tasa de actividad de la mano de obra
	secretaría confederal mujeres e igualdad de ccoo	
	violencia de género en el trabajo	
	violencia y acoso contra las mujeres	

NGO	personas de todo el mundo	poner fin a la violencia contra las mujeres
	brecha de poder entre los géneros	eliminación de la violencia contra la mujer
	empoderamiento de las mujeres y la igualdad	lo largo de su vida
	mujeres y la igualdad de género	prevenir y poner fin a la violencia
	empoderamiento de las mujeres y las niñas	vida sin la amenaza de la violencia
	cuarta parte de la población	forma de violencia hacia las mujeres
	cuotas para asegurar la paridad	violencia contra mujeres y niñas
	derechos de las mujeres y las niñas	
	géneros y el empoderamiento de la mujer	
	igualdad entre los géneros y el empoderamiento	
	logro de la igualdad de género	
	misiones de mantenimiento de la paz	
	país ha alcanzado la igualdad	
	paridad en los consejos de administración	
	paso por la igualdad de género	
	puedan alcanzar todo su potencial	
	vive en condiciones de pobreza	

	eliminación de la violencia contra la mujer	cuidado de los hijos y las personas
	erradicación de la violencia contra la mujer	libertad de la mujer para decidir
	lucha contra cualquier forma de violencia	derechos vamos a la huelga
	objeto de protección de la ley	corresponsabilidad en el cuidado de los hijos
	violencia ejercida contra las mujeres	defensa de la libertad de la mujer
	lucha contra la violencia de género	igualdad de oportunidades en el acceso
	ámbito de la pareja o expareja	llamamiento a toda la ciudadanía
	asignatura de educación para la ciudadanía	derecho de las mujeres a decidir
	compromiso contra la violencia de género	secretaría de la mujer de el pce
	compromiso en la lucha contra cualquier forma de violencia	manifiesto de la secretaría de la mujer
	derecho a la misma asistencia que sus madres	tasa de actividad de las mujeres
	encuentran en situación de especial vulnerabilidad	
Party (robustness tests)	exige avanzar hacia una sociedad	
	género en todos sus aspectos	
	involucrar a toda la sociedad	
	medidas de prevención y protección previstas	
	mujeres en todas sus dimensiones	
	permite detectar las primeras señales	
	prevención y protección previstas	
	proteger más y mejor a las mujeres	
	quiere trasladar un mensaje de esperanza	
	relaciones entre mujeres y hombres	
	se encuentran en situación de especial vulnerabilidad	
	secretaría de área de igualdad	
	sensibilización y prevención de la violencia	
	trasladar un mensaje de esperanza	
	violencia contra las mujeres debe ser un valor	
	violencia de género en todos sus aspectos	

Table A7. Most salient verb and noun phrases in for SMOs' tweets by issue (Ranked by TF-IDF)

Issue	Keyword	N	TF-IDF
violence	#violenciadegenero en la adolescencia	597	0.0084120646
	hemos actualizado el listado de feminicidios	103	0.0014513277
	asesinatos de mujeres en españa	95	0.0013386032
	detenido un hombre de años	92	0.0012963316
	feminicidios y asesinatos de mujeres	73	0.0010286109
	detenido un joven de años	65	0.0009158864
	hombre mata a su mujer	59	0.0008313431
	feminicidios y asesinatos de mujeres en españa	44	0.0006199847
	hombre mata a su pareja	44	0.0006199847
prostitution	trata de mujeres con fines de explotación	29	0.0034006338
	repunte en la prostitución de universitarias	11	0.0012898956
	trata con fines de #explotaciónsexual	19	0.0012684535
	historia de la prostitución como doble opresión	9	0.0010553691
	importan los feminicidios por prostitución	9	0.0010553691
	trata de mujeres con fines de explotación	9	0.0010553691
	mafias y el tráfico de personas	7	0.0008208427
	prostitución es la forma de #violenciadegénero	7	0.0008208427
	prostitución hace aumentar las mafias y el tráfico	7	0.0008208427
	víctimas de trata con fines de explotación	7	0.0008208427
inequality	lesbianas y madres solas #discriminacionlesbianasymujeressolas	61	0.0026574197
	enfoque de género para el voluntariado	30	0.0013069277
	cómo detectar a un joven maltratador	29	0.0012633635
	proyecto ni cuentos con perdices ni novelas	17	0.0007405924
	buscas trabajo y necesitas apoyo	16	0.0006970281
	doy la cara contra la discriminación	16	0.0006970281
	empoderamiento de mujeres	16	0.0006970281
	mujeres para la mejora de la empleabilidad	16	0.0006970281
abortion	reforma de la ley de el aborto	38	0.0064222032
	últimos acontecimientos en torno a el aborto	26	0.0043941390
	derecho de las mujeres a decidir	15	0.0025350802
	movilizaciones por el derecho a el aborto	14	0.0023660748
	#leydelaborto seguimos con la movilización	11	0.0018590588
	reforma de la #leydelaborto seguimos con la movilización	10	0.0016900535
	retirada reforma de la #leydelaborto	10	0.0016900535
	cambiar la ley de el aborto	9	0.0015210481
	convocatorias contra la contrarreforma de ley	9	0.0015210481
	nueva ley de el aborto	9	0.0015210481
surrogacy	comunicado en favor de una diversidad	4	0.0022384394

ddhh de mujeres y bebés	3	0.0016788295
es la nueva forma de vulneración	3	0.0016788295
exigimos que voten con responsabilidad	3	0.0016788295
nada te impida tener un hijo	3	0.0016788295
pisotear los de otras personas	3	0.0016788295
te impida tener un hijo	3	0.0016788295
te lo puedes permitir económicamente	3	0.0016788295
#vientresdealquiler es la nueva forma de vulneración	3	0.0016788295
voz a quienes invoquen la libertad	3	0.0016788