The (moral) Prince: Moral rhetoric in Spanish political videos and tweets

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Abstract:

Moral Foundations Theory established that left-wing and right-wing voters rely on different sets of moral foundations. However, does this divide in moral judgments also appear in political communication? Throughout this paper, the author assesses differences in the use of moral rhetoric by main political parties and candidates for a particular case study: The last election campaign in Spain (November 2019). A sample of both posts and speeches in videos published on Twitter are collected and the last version of the Moral Foundations Dictionary is translated into Spanish in order to analyze them. Results partially endorse previous theory on the importance that individuals with different political leanings give to each foundation. As expected, Authority and Loyalty are used with a higher frequency by right-wing than left-wing parties. Also consistent with voter preferences according to previous surveys on Moral Foundations Theory, the Fairness foundation is not appealed to more often by right-wing parties. However, there are no differences in the use of the Sanctity foundation. Finally, even though the Care foundation is mentioned as expected by most parties (i.e., without differences between them), the most right-wing party appeals to it more frequently than any other political group.

1. Introduction: Literature review and background to the case study

1.1. Literature review

The main research question of this study revolves around the use of moral vocabulary in political parties discourse on both posts and videos of social media. Nevertheless, before diving into the relationship between moral and politics, there is a basic (although not trivial) question that must be answered: What set of moral values form the core of moral judgments in humans? During the late twentieth century, the theory of moral development of Kohlberg was predominantly used to answer this question (Kohlberg, 1984). According to it, people would develop their moral reasoning abilities through several stages until reaching an adequate level of reaction to justice issues that occurred to other individuals. Nevertheless, these theories were later contested by Shweder (Shweder et al., 1997); on the grounds that his fieldwork showed that moral judgments, especially in Non-Western countries, did not only rely on the ethics of autonomy (or the sphere surrounding the individual, i.e. justice), but also on the ethics of community (understood as reactions to group issues) and divinity (moral judgments on how people treat their souls and bodies, i.e., behaviors that are not clean, pure, or religiously appropriate). At the turn of the century, Shweder's rebuttal sparked the birth of a new theory of moral judgment, named Moral Foundations Theory (for the sake of brevity,

MFT from now on) (Haidt & Joseph, 2004). It defined moral judgments as intuitive (i.e., not reasoned) reactions of approval or disgust to actions that people made to each other, or to themselves. Furthermore, it disaggregated the ethics of Shweder into a series of cognitive modules or moral foundations that formed the basis for the moral matrices of each human. These moral matrices determine how people react to moral issues and finally create moral judgments, but they rely on a first set of moral foundations. These cognitive modules (the foundations) would theoretically stem from emotional reactions developed during the evolution of the human species that would have helped the best morally adapted individuals to survive. More specifically, MFT posited that the three ethics of Shweder could be split into five moral foundations (Haidt & Graham, 2007): the cognitive module regarding the Individual/Autonomy ethic was split between Care (concerns about individual harm, especially related to kids) and Fairness (i.e., reciprocity between individuals), the Community ethic was divided into Loyalty (to a group, such as a country or a family) and Authority (or respect to hierarchy), and Divinity was renamed Sanctity (respect to one's soul or God). But even more importantly for the purpose of our research, this paper also started the literature on the intersection between moral judgment and politics. In the paper, the authors developed a survey to assess the differences in how important the five moral foundations were considered by individuals across the political spectrum. They found that extreme liberals mainly relied on Care and Fairness, but as individuals turned more conservative, all five moral foundations grew in importance; so extreme conservatives would use all of them to form their moral judgments. These results boosted the empirical literature on how conservatives and liberals relied on different moral domains. For instance, larger surveys were developed in the following years, which found support for the hypothesis of humans relying on five moral foundations with greater robustness (and also for the aforementioned differences between liberals and conservatives) (Graham et al., 2009, 2011). Finally, given that the authors had already developed a moral foundations questionnaire for further investigation (Graham et al., 2011), the empirical results were later supported in other national settings, such as South Korea (Kim et al., 2012) or Sweden (Nilsson & Erlandsson, 2015). It was also shown that endorsement of certain moral foundations could be a strong predictor of opinions on controversial topics (Koleva et al., 2012).

Given the empirical support for MFT, it could be used as a basis to understand moral framing of communication strategies. Furthermore, due to the relationship between MFT and politics, many researchers started considering whether the differences between liberals and conservatives were represented in either the media or in political discourse. To begin with, it

was found that moral foundations are indeed present in the former. For instance, a 2018 paper (Bowe, 2018) showed that the debate on mosque building for Muslim communities in the US mainly relied on the Ingroup / Loyalty rhetoric. Moreover, another recent paper observed that liberal and conservative media use a moral vocabulary that corresponds to their position according to MFT (Mokhberian et al., 2020). On the side of political communication, however, the results are not as consistent. Whereas some papers found evidence that US politicians have a discourse aligned with their expected moral foundations on Twitter (Reiter-Haas et al., 2021), other authors did not detect the same regularity in the moral rhetoric of British left and right-wing parties between 1983-2017 (Walter, 2020). Additional results in the US show that the words used by elite politicians are not as different between political sides, arguing that a separate moral discourse is to be found in more extremist representatives than those belonging to the elite (Neiman et al., 2016). On the whole, there is moderate support for the hypothesis of moral framing of communication, although more in the media than in politics.

Nevertheless, why should we pay attention to moral framing of communication strategies? The main reason is that recent literature has shown that MFT framing can enhance public support for ideas. For instance, in a 2017 paper (Darwish et al., 2017), it was observed that conservatives would not endorse as much Trump's ideas when he was associated with messages against loyalty, whereas the same happened with liberals when the figure of Hillary was linked to damages to the care foundation. This can also be extended to other domains, like climate change communication, where it was shown that conservatives give more support to environmental activities if messages are framed using all five moral foundations (i.e., conservative moral framing) (Hurst & Stern, 2020).

After assuming the relevance of moral framing for communication and the inconsistent evidence on how it is used by politicians, a first research question that naturally emerges is to investigate the use of moral framing in political discourse and its differences between parties for a particular case study. However, before diving deep into this first research question, there is another literature thread closely connected to this application of the MFT, which is political communication through social media, and, particularly, through Twitter.

On that note, it is widespread knowledge that political candidates have added social media to their communication strategy. For that reason, an increasing amount of studies has looked at how politicians use different platforms (such as Facebook or Twitter) to disseminate their messages. A recent literature review on the use of Twitter during election campaigns

(Jungherr, 2016) found that the main topics studied so far are three; namely, the reasons for the adoption of Twitter by politicians, the content that they post, and the repercussion of these posts on their followers. Given the previous discussion on the moral framing of political messages, our analysis concerns the second topic: content. Previous research of content in candidates' posts includes papers on the interactions and use of Twitter by politicians (Adams & McCorkindale, 2013), or a qualitative categorization of the communication strategy per group and candidate (Evans et al., 2014). Nevertheless, even though the literature of sentiment analysis on the general user base of Twitter is large, articles that focus only on the text of political candidates are scant, even more if we only consider moral content. Hence, moral framing of political discourse through text in social media is scarce in both literatures: political communication and social psychology. This is the main reason for its study here.

Nonetheless, the literature review on both fields of research shows that almost all studies published so far neglect an essential feature of communication in digital media (and the third literature source for this research proposal) that most political candidates make use of: visuals, i.e., images or videos. These are considered drivers of emotional responses (Brantner et al., 2011), and they are also associated with higher probabilities of content sharing (Ma & Palacios, 2021; Tellis et al., 2019). In spite of this, very few studies have analyzed the visual content of political posts on social media. Some studies have looked at the dissemination of visual propaganda by governments during conflicts, like the Israeli-Hamas strife of 2012 (Seo, 2014), or the 2011-12 Syrian conflict (Seo & Ebrahim, 2016). However, these analyses are related to war propaganda. In terms of political communication, only recently have some studies targeted the use of visuals for marketing strategies like election campaigns. In 2020, some communication researchers qualitatively analyzed the use and content of images posted on Twitter by Spanish politicians during the 2016 election campaign (del Olmo & Díaz, 2020). Another related paper addressed the images posted by users during the 2019 EU Parliament elections (Marchal et al., 2021). All these analyses have two features in common. First, they rely on qualitative techniques to address visuals. Second, they only analyze images, but videos are completely understudied, despite industry reports having already predicted that videos will comprise 82% of all IP traffic in 2022 (Cisco, 2019). On that sense, it could be interesting to use video-mining techniques to probe whether the use of certain visuals is associated with any party or their main moral domain. But, be that as it may, in some particular election campaigns, many of the uploaded videos are not interesting from a visual point of view, since they simply depict the leader of a party taking part in a debate or a speech, or other prosaic moments of a

campaign. Nevertheless, these videos can be quite popular in spite of the lack of appealing visuals, and the reason for it is the actual meaningful content that is displayed. For example, for the case of political parties, the speech that a politician is giving can be the most relevant part of a video because of their appeals to certain values or policies.

But how would the analysis of videos relate to the previous discussion on moral framing of political discourse? This is the piece that connects all three literature sources of this work (i.e., social psychology, political communication, and visuals): political speeches. Political candidates can now take advantage of the possibility of disseminating their ideas not only through a traditional speech, but also through the recording and posting of that same speech on social media. This allows researchers to access a vast array of published speeches and transcribe them into texts, which convey a larger amount of information than that granted by the constraints of social media on text posts. As a result, differences between how political parties morally address their audiences through text on social media and through speeches on more traditional venues can be revealed.

Resuming our discussion around how moral framing enhances the adoption of certain ideas (Hurst & Stern, 2020), it could be argued that the use of moral messaging for the adequate audience can boost the support for a certain political candidate or message. As a result, should it be assumed that communication strategists act accordingly, and speeches and/or posts are designed to appeal to an audience that resonate with a certain moral domain? Do we expect moral framing of messages from a certain party to behave in the same way as the respondents of a similar political leaning on the Moral Foundations Questionnaire? The first step towards answering these questions is checking whether there are significant differences in the moral foundations used by different parties in both texts and audios. That is the aim of this study.

To this end, the author will investigate the videos and texts posted on Twitter by political candidates. The most intense deployment of marketing strategies in politics usually happens during election campaigns. Hence, for the sake of depth of analysis, just one particular election campaign in one country will be studied. Particularly, the last election campaign in Spain (November 2019) will be the unit of study. The justification for its choice follows in the next paragraphs.

1.2. Background to and justification of the case study: 2019 legislative election campaign in Spain

This study focuses on just one election campaign, more specifically, the last election campaign in Spain in November 2019. There are several reasons for choosing it as our unit of study. First and foremost, only a small sample size of tweets and videos should be collected due to feasibility concerns, since there are several tasks to be completed before the analysis that are either time expensive, require payments to access more data, or are computationally heavy. To begin with, given that the case study will be Spain, the current version of the Moral Foundations Dictionary (Frimer et al., 2017) must be translated into Spanish, which is a highly manual process (further details in the Data Analysis section). Second, to download all tweets from certain political candidates a special access to the Full-Archive API of Twitter is required. In the version that provides access for academic researchers, the monthly quotas to download historical tweets are quite tight, except if the researcher pays to obtain greater download quotas. Hence, it would require funding to access a larger sample of tweets within a reduced time frame. Third, to capture the use of moral foundations vocabulary in speeches, all videos that were posted on Twitter during the election campaign should be downloaded through a third-party converter (which is computationally expensive). And finally, the downloaded videos need to be transcribed into text, which requires the use of a pre-trained AI model that performs automatic speech recognition in Spanish, which also needs high computing power. These four tasks justify the use of a smaller sample (especially because of the computational and financial constraints) to conduct a successful study before designing a large-scale research project. The second reason for choosing just one election campaign is related to construct validity. Given that major events impact the political agenda and transform the vocabulary used by parties (e.g., terms related to disease and infection started to be more frequent after the appearance of Covid-19), the same dictionary might capture different references to moral foundations. As a result, an adequate translation requires an extensive effort of looking through the election campaign to code certain culture-dependent words as associated with a certain moral foundation.

Finally, regarding the location, the reasons for the choice of Spain and the last election campaign are twofold. To begin with, the author is a native Spanish speaker and citizen, which allows for proper understanding of cultural and linguistic nuances in texts and speeches, and a more accurate translation of the MFD 2.0 into Spanish. Furthermore, the case study has an inherent interest from the perspective of the MFT because of the political climate that predated the elections and its results. To put the reader into context, this was a

repeated voting. In April 2019, legislative elections had been organized, but the political deadlock impeded the creation of a government. The Parliament was dissolved, and another ballot was announced to take place in November. Between both elections, some polls predicted a surge in the votes of the far-right party (*Vox*), so the communication strategy of left-wing parties during the campaign focused on attracting abstentionism votes by a rhetoric of fear of far-right policies. In the end, the far-right party (*Vox*) parliamentary representation soared during the political deadlock that predated the second election campaign (from 24 to 52 seats, i.e., from 7 % to 15 % of the available seats in the Parliament), whereas the center party (*Cs)* plummeted (from 57 to 10 seats). Hence, it will be interesting to see how all these parties approached their communication strategies during a period of political turmoil, since it could serve as a basis of future studies relating moral framing with political success.

2. Research questions

Given the previous support for the existence of differences between the moral foundations used by liberals and conservatives (Graham et al., 2011), our main aim will be to check whether these differences also appear in the moral discourse of political candidates in social media. A larger study could look at different countries or several election campaigns (even out-of-campaign posts), but in order to gain depth of understanding of these issues, we will focus on the case of the last election campaign in Spain (November 2019). Our research questions are:

- RQ1: How different is the moral framing of texts in posts on Twitter of each party during the election campaign?
- RQ2: How different is the moral framing of speeches (available through Twitter) of each party during the election campaign?

Even though there probably might be nuances in the moral landscape of Spain, I will hypothesize that the differences to be found between the discourse in parties will closely resemble the findings of Figure 8.2 of The Righteous Mind, by Jonathan Haidt (2012), a book with a detailed explanation of MFT and its relationship with politics. In this figure (available here, under "*Here is a pdf file with all figures and images from all chapters*"), extracted from a survey web page with more than 100,000 respondents, Haidt shows how the more left-wing the respondent, the more they only endorse the care and fairness foundation. On the contrary, right-wing respondents tend to use all five moral foundations to create their moral judgments. In that sense, I hypothesize that right-wing parties (*Vox, PP, Cs*) will have a stronger use of the Authority, Loyalty and Sanctity foundations than left-wing parties (*PSOE, Podemos*).

Finally, the use of the Care and Fairness foundations will be equal between both groups, or slightly higher in the left-wing parties. I hypothesize this to be true for both Twitter posts and speeches in videos.

3. Data collection strategies

3.1. Twitter posts

The first step of the whole project required gathering all posts uploaded to Twitter by the main five political candidates that strived for parliamentary representation (and their corresponding party accounts) during the last election campaign in Spain. To this end, the Twitter API was used. As an academic researcher, Twitter grants a special permission which, among other benefits, allows access to products with detailed information about posts and users. Particularly, for this project we needed to use a special endpoint of the API called Full-Archive API, which grants academic researchers access to all public tweets posted by any user since the creation of Twitter. However, the access to this product in its free version for researchers is quite limited (up to a maximum of 4,000 tweets per month), so only posts from the five main political candidates' accounts and their corresponding party profiles were collected.

In terms of time sampled before the election, the previous paper that studied the use of visuals during the 2016 Spanish election campaign (del Olmo & Díaz, 2020) only studied the two weeks previous to the voting day, since the Official State Bulletin of Spain determined that this was the official period of election campaign, when the most intense organization of speeches and propaganda could be deployed. For our case, the author followed a similar sampling strategy, the law that regulated the last election campaign (Real Decreto 551/2019, de 24 de Septiembre, de Disolución Del Congreso de Los Diputados y Del Senado y de Convocatoria de Elecciones, 2019) established in its fourth article that the campaign would last from the 1st until the 8th of November 2019 (and the elections took place on the 10th). Consequently, the search on the Twitter API was limited to those days and the aforementioned accounts, so that the author could focus on moral rhetoric by the main political actors purely during election campaigns.

Finally, duplicated retweets (i.e., retweets from tweets already extant in our dataset) were eliminated, but retweets and replies were left in the final dataset to allow for a greater understanding of the whole communication strategy of each party and political candidate.

3.2. Text in videos of political speeches

After having collected all tweets posted in this period, the data necessary to answer the first research question, i.e., understanding moral differences between political parties on Twitter, was readily available. Nevertheless, there are strong arguments in the previous literature to believe that the audience that these candidates are addressing is not a random sample of the overall voting population in Spain. The first literature source on this issue points out that the sample of Twitter users in the US is a non-random sample of the whole population; based on ethnicity, gender and geography criteria (Mislove et al., 2011). More recently, a 2015 paper that closely studied the representativeness of the Twitter user base over the whole voting population in both Spain and the US (Barberá & Rivero, 2015) determined that the users are predominantly male, living in urban areas and the most active ones tend to have more extreme ideologies. Given these results, a possible shortcoming of the design used to answer the first research question would be that the moral rhetoric used on Twitter might be biased compared with that used by the same political candidates in more traditional venues. However, this shortcoming could be overcome if we had access to texts of each party addressing other audiences. That is precisely the intention of the design of the second research question. After collecting the data, it was observed that many tweets also include a video where the political candidate (or one of the main representatives in the same party) gives a speech, either in a radio programme, on TV, in a debate, or in a venue in front of a large audience. Even though these videos still stem from Twitter, it could be argued that the speeches found in them are addressing a more representative audience of the voter population (or, at least, the voter population of the party). Consequently, analyzing the moral rhetoric that appears on these videos could give us a more unbiased view of moral differences between parties.

After obtaining all tweets posted by the aforementioned accounts, the author created a script that determined which of them contained videos, and proceeded to download the audios present in these videos through a third-party application. Once all the audios had been downloaded, the next step entailed transcribing them into text. However, the quantity of audios was large (922 in total), so manually transcribing them would have been infeasible in terms of time constraints to complete the project. As a result, an open-access AI model for Automatic Speech Recognition in Spanish was used (Grosman, 2021) to automatically transcribe all audios. Both the download of the audios and its subsequent transcription were computationally heavy tasks because of the high sample size of videos, even if the total tweet sample size was not excessively large.

Finally, the model transcribed all the audios, but sometimes either there was considerable noise captured in them, or the quality of the recording was not good enough for the model to properly infer the words used in all audios. Fortunately, the model provided a probability of correct transcription of each character in the audio sequence, which allowed to create a distribution of audios based on the mean probability of correct transcription of each character. After a manual check of the quality of the transcribed texts based on these mean probabilities, the author determined a cutoff point of 93.5% of mean probability in order to include the transcription for the next phase of the analysis. At this threshold (and even higher), there was still text noise in many transcriptions (which will be further discussed later), but the quality was high enough to capture many moral-related terms. Hence, the results might be more sensitive in speeches than in tweets because of the quality of the audio transcriptions being not as high as the raw text posted in tweets.

After both data collection processes, the data availability in terms of both the tweets and the video transcripts (before and after the cleaning process) is outlined in Table 1. All groups have a sample size large enough to provide inference about group differences, and almost a third of the posts has a video included in them. Besides, there are some differences between the amount of eliminated transcriptions due to audio noise per group. The drop in the availability of *VOX* transcriptions is the most remarkable one, especially compared to *PP*. This is due to the former uploading videos that are more noisy (i.e., with music, or in meetings where the recording quality is lower), whereas the latter mainly uploaded conferences with good audio quality.

Table 1: Texts (both tweets and videos) availability by party

Party	Number of tweets (after cleaning, final sample)	Number of audio transcriptions (before cleaning)	Number of audio transcriptions (after cleaning, final sample)
VOX	487	140	80
PP	583	302	276
CS	540	213	170
PSOE	579	115	93
PODEMOS	659	152	138
TOTAL	2848	922	757

Note: Parties are ordered from right to left in terms of political leaning (i.e., *VOX* is the party with a political leaning more to the right than all the other parties; vice versa with *PODEMOS*). Even though *CS* lies at the middle of the spectrum, in this election campaign the party announced its refusal to form a government with its closest left party (*PSOE*), so in these elections they were more aligned with the other two conservative parties (*VOX*, *PP)*. Finally, the *PSOE* was the incumbent party when the elections were called.

4. Data analysis strategies

The main objective of the data analysis phase was to translate the moral foundations dictionary into Spanish, count the number of times that terms related to each foundation were mentioned in each text, and finally compare differences in the relative frequencies of mentions of moral foundations between political parties. The greatest challenge in this phase was the creation of an accurate moral foundations dictionary in Spanish that provided construct validity.

4.1. Translation of the MFD 2.0 into Spanish

Due to the surge in popularity of MFT, a natural research question that arises is checking whether moral foundations are also embedded in text of the media, and also religious or political discourse. In order to create a standard dictionary that captures the use of words loaded with moral meaning for other researchers, some of the authors of MFT recently expanded the first version of their moral foundations dictionary, creating the MFD 2.0 (Frimer et al., 2017), which is recommended by the authors as an improvement to the first one. Then, for our case study, the translation of the MFD 2.0 into Spanish was required to capture moral meaning in Spanish texts. So far, there have been two main attempts at translating the MFD 2.0 into languages different from English. One of them created a Turkish MFD (Alper et al., 2020) through a manual revision and coding of a Turkish dictionary and several checks on each term by external reviewers who were familiar with MFT but not informed about the purpose of the study, to avoid possible biases in the review of the dictionary. On that same note, Matsuo et al. (2019) took a semi-automated approach in six stages to translate the dictionary into Japanese. To that end, they used the word roots of the original MFD 2.0 and gathered all words in English that shared the same root. After eliminating the resulting English words that did not have a moral meaning, the third step consisted in translating English words into Japanese through an online translator, and afterwards they filtered out words according to frequencies in large Japanese corpora and mismatches in back-translations through online dictionaries. The sixth step they took was to validate the dictionary based on essays about moral issues they asked Japanese native speakers to write. Even though this method of translation has been the main methodological reference used in this study to translate the MFD 2.0 into Spanish, some of the authors of the MFD 2.0 (Dehghani & Boyd, 2021, p. 213) have pointed out that translations of the MFD

should also be culture-dependent, so an automatic word-by-word translation is not entirely recommended.

As a result of the previous discussion, a mix of automatic and manual steps were taken to translate the MFD 2.0 into Spanish. First, the whole raw moral foundations dictionary (i.e., without stems) was translated through two different automatic translation engines (Google Translate API and DeepL API) to get a wide variety of translations (since resorting to just one source of translations could hinder the comprehensiveness of the resulting dictionary). Second, all Spanish terms resulting from the translation were manually revised to check that they either represented the original meaning in English or, at least, that they could also display the same moral meaning (i.e., belonging to the same foundation and not being a neutral word). After having all term candidates in Spanish, the author started a process to capture more words than those that appeared as candidates (i.e., being able to capture a word like "degradation" with the candidate term "degrade" if "degradation" did not originally appear in our dictionary). This process is particularly necessary in Spanish due to the high quantity of nouns and adjectives with different declinations depending on genre and quantity (i.e., singular or plural), plus the many declinations of tenses for verbs. Furthermore, given that some audio transcriptions were noisy, creating a bag of words of the text by separating words based on whitespace characters was not an accurate option, so words should somehow be captured in a fuzzy way (e.g., allowing for some mismatch at the end of a word). This process to expand the dictionary and make it more comprehensive consisted of two stages: automatic stemming and manual conversion of the stems into regex. The first phase, called stemming, relies on an algorithm that captures the root (or "stem") of each word and trims it, so that words that have the same root but different declinations are also captured and are assumed to have the same meaning. To that end, we relied on the Python distribution (Bird et al., 2009) of a classical stemmer algorithm called Snowball stemmer (Porter, 2001). As mentioned above, there was a second stage of the expansion of the dictionary, in which the author manually examined each of the resulting stems and checked that they did not capture false positives, i.e., words that also share the same root but have a totally different meaning (or, at least, do not convey the corresponding moral foundation). To this end, the author transformed all candidate stems into a regular expression (or regex for short), an expression in a programming language that allows matching exactly the particular pattern that is intended with high flexibility, e.g., every time a term appears except when some pre-specified exceptions are also found in the same text. For example, the MFD 2.0 includes "union" as a word that is positively associated with the moral foundation of loyalty.

Nevertheless, in some speeches the political candidates debate about issues related to the "European Union", which does not necessarily convey a sense of loyalty; since in that particular context, union is rather the name of an administration than an appeal to loyalty. That is precisely the strength of the regex language, since in many cases it allowed us to capture exactly the meanings of words that were associated with MFT. As a result of this whole process, a moral foundations dictionary in Spanish was obtained. It consisted of stems transformed into regex expressions to avoid capturing false positives. The fourth stage of the translation process was also a careful manual revision of the regex stems, and it entailed an iterative process of the previous phase, i.e., checking for false positives. The process was the following: After reading a random sample of tweets and transcriptions, it was clear that some terms needed to be removed, whereas others should be included even if they did not appear on the original MFD 2.0. For instance, the author removed some words that appeared frequently in the texts just because they were also capturing surnames of politicians; or words that had clear double meanings and, when checking how they were used in the texts, their most common meaning was not moral. On the other hand, there were other words that were frequently used by political candidates appealing to moral foundations related to political events in Spain which did not originally appear in the MFD 2.0. As an example, right-wing parties used certain words to appeal to Loyalty or Authority foundations through terms related to political turmoil events in Spain (such as the independence movement of Catalonia, or violations to the Constitution), but these were not present in the original MFD 2.0 because they are clearly cultural-context-dependent. All these changes have been transparently documented in an Excel spreadsheet that contains sheets of included, removed, sensitive, and final words. Finally, automatic checks were done to ensure that the regex patterns were unique (e.g., that the word "governing" was not counted twice as an authority appeal if we had two terms like "govern*" and "governi*"; hence eliminating "governi*").

4.2. Application of the moral foundations dictionary to tweets and transcriptions

Once the final Moral Foundations Dictionary in Spanish had been created, the author developed an algorithm that counted how many times each term appeared in each text through regex, assigning those counts to the moral foundation(s) to which the term belonged (some terms appeared in more than one foundation, also in the original MFD 2.0). These counts provided an estimate of the amount of times each foundation was mentioned. Given that each of the five moral foundations in the dictionary is divided between vice and virtue,

i.e., endorsement or disapproval of other people's behavior based on the foundation, we computed the estimate of the total number of words mentioning each foundation by summing up both the vice and virtue term counts of each foundation. Finally, given that there were disparities in the length of texts in both tweets and transcriptions, we computed the relative frequency of mentions of each moral foundation per 100 words, more reliable in tweets than in transcriptions because of the aforementioned noise issue (since words were assumed as character sequences between white space, which was not always perfectly captured).

4.3. Party differences in moral terms usage

Finally, once we had the relative frequencies of mentions of each foundation per 100 words, we just needed to compute the pairwise differences of means in this measure between political parties, understood as $\mu_i - \mu_j$, where $i, j \in \{PODEMOS, PSOE, CS, PP, VOX\}$. Traditionally, the hypothesis of no difference in group means has been statistically tested through the use of ANOVA tests. However, if the number of comparisons is large as in our case (since we will perform 10 pairwise comparisons for each foundation, i.e., 50 pairwise comparisons for each research question), the Type I error rate is inflated. As a result, we are no longer setting a threshold of α, but higher, and hence there is a larger likelihood that we make an error on the set of all the tests. In other words, if we are performing too many independent tests at the same time (each with its own probability of a Type I error), we are increasing the probability of making at least one error among all the tests when comparing differences between groups (this probability is called family-wise error rate). In order to correct for the use of multiple tests, there is a statistical method called Tukey Honest Significant Difference (HSD) (as defined in Tukey, 1949), which maintains the family-wise error rate at a pre-specified α level, in our case $\alpha = 0.05$. The effect of this adjustment is creating wider confidence intervals, so the Tukey HSD method provides a conservative test for pairwise differences in means between groups. This is the tool that we will use to ascertain whether there are significant differences between how different political parties mention moral terms in their messages.

5. Results

Based on the aforementioned findings of Haidt (2012), showing how extreme liberals mainly rely on just the two foundations related to the ethics of autonomy, whereas extreme conservatives use all five moral foundations to make moral judgments, the author

hypothesized that these differences would also appear in the language used by the main Spanish political candidates and their corresponding parties. That is, the parties on the right of the spectrum (*VOX, PP, CS*) would mention relatively more (in a statistically significant way) the moral foundations of Loyalty, Authority and Sanctity than the left parties. This would not be true for Care and Fairness, which would be either equal between all parties or higher for left-wing parties. In the following two subsections, the author will first posit the research question related to each communication channel (either tweets or speeches); and then will replicate Figure 8.2 of Haidt (2012). This figure displays differences in the use of all five moral foundations between parties, and we will compare whether this pattern is also similar in our particular case study. Afterwards, a plot of the Tukey HSD intervals for pairwise differences of means between groups will be used to answer in a statistically significant way the research question.

5.1. RQ1: Differences in moral framing of tweets

The first research question that we set out to answer at the beginning of this paper was: How different is the moral framing of tweets between parties? Given that this is an exploratory question, Figure 1 displays in a descriptive way the average relative mentions (per 100 words) of each foundation throughout all the tweets posted by each party (with a standard deviation interval surrounding the average of each term usage). Surprisingly, the patterns of mentions of specific words is quite similar to that of endorsements of each foundation in Figure 8.2 of Haidt (2012).

To begin with, there is a sharp jump in the use of Loyalty terms for right-wing parties compared with left-wing parties. Furthermore, there is an upward trend in the use of Authority terms as we transition into the right of the political spectrum. Finally, the trends in the use of Care and Fairness are also similar to the hypothesized differences, that is, with equal or more mentions of them by left-wing parties. However, there is an unusual pattern to be found in the use of the Care foundation by the most right-wing party (*Vox*), since they appeal to it more than any other party. After a careful review of the texts, this spike might have been caused by a rhetoric of Harm, since the party often mentioned problems of rapes, assaults, agressions and other Harm-related terms that they associated with the presence of immigrants. Even if the anti-immigrant rhetoric might also be related to the Loyalty/Authority foundation (which is already captured by the use of terms like illegal immigrants or foreigners), I argue that most of their messages are also geared towards appealing to protection from assaults and violence, which is rather related to the Care/Harm

foundation. Finally, it seems like there are no relevant differences in terms of the Sanctity foundation, and only the party on the middle of the spectrum (*CS*) made more appeals to this moral. After a careful revision, it was determined that these mentions stemmed from debates where this party claimed the degradation of parts of the country (such as Catalonia) due to polarization, or due to talking about corruption in the traditional parties (i.e., *PP* and *PSOE*).

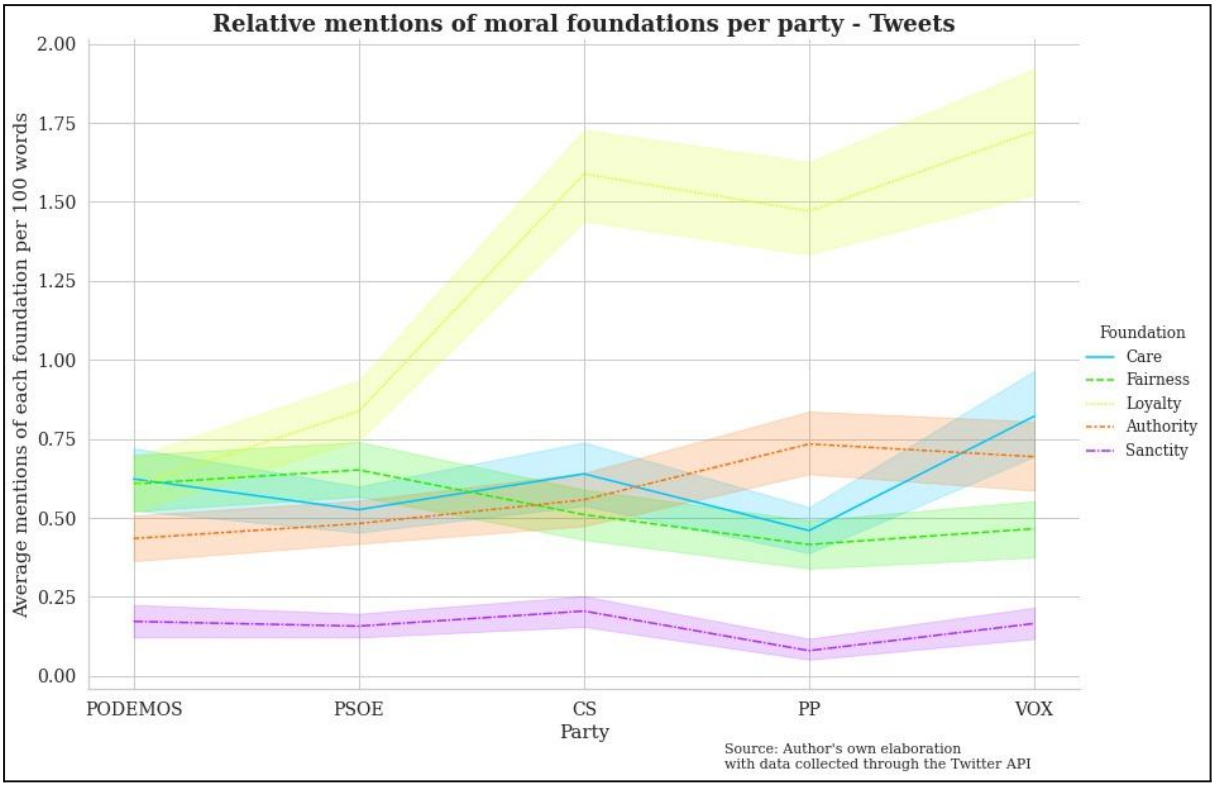

Figure 1: Average mentions of each moral foundation (per 100 words) per party - Tweets

However, if our main aim is answering the question on how different is the moral framing of tweets between parties, we need to create proper confidence intervals for the pairwise differences in the relative mentions of each foundation that allow us to either reject or not our hypothesis. To this end, the author calculated the Tukey HSD intervals for pairwise differences according to each of the five foundations. These are represented in Figure 2. The right way to interpret this figure is to understand the x-axis as the difference of the first party minus the second party (as they appear on the y-axis). The first foundation (Sanctity) does not show the expected results, since our starting hypothesis ascertained that Sanctity was more common in right-wing than in left-wing parties, but most results are not significant (except for the aforementioned difference between *CS-PP*, and another difference between *PODEMOS-PP*). However, the differences are quite clear in terms of the ethic of community as explained by Shweder et al. (1997), i.e., the moral foundations of Authority and Loyalty.

To begin with, the slight upward trend from left to right of the Authority foundation that might have hinted at a higher use of this foundation in right parties is confirmed in Figure 2.

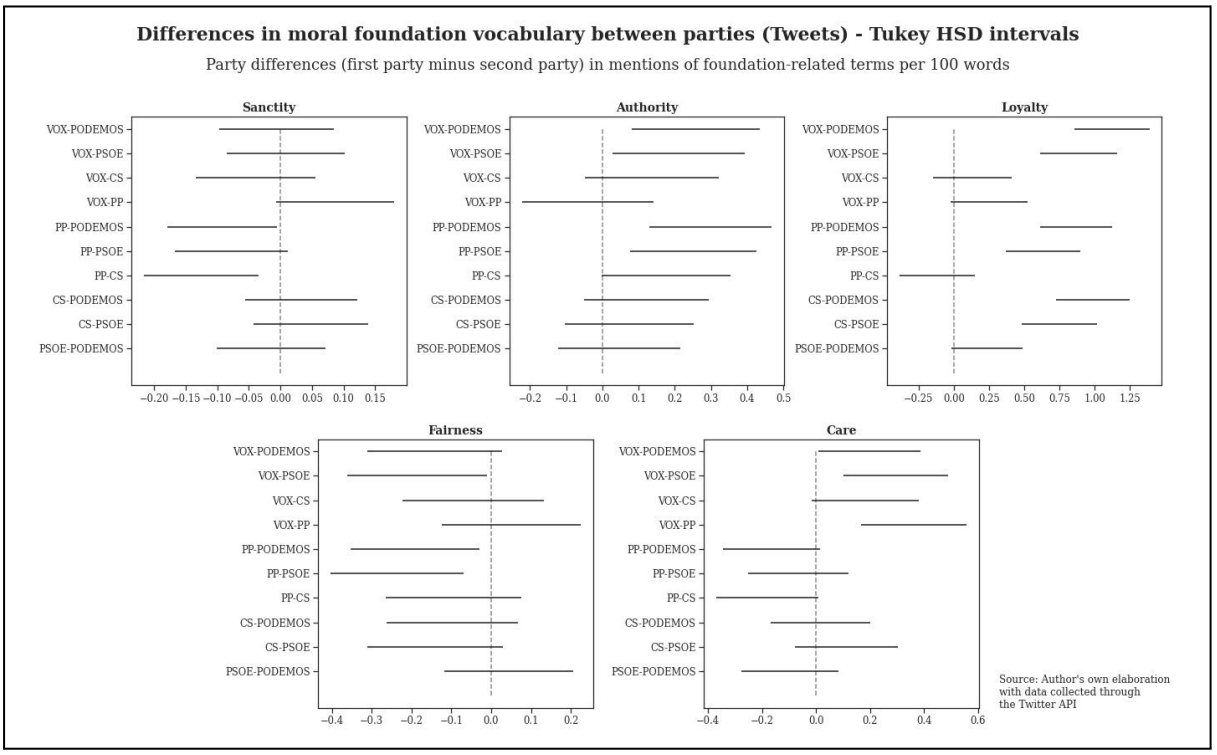

Figure 2: Tukey pairwise differences in relative mentions of moral foundations terms between parties - Tweets

The key takeaway is that the two conservative parties (*VOX*, *PP*) use this foundation significantly more than the two left-wing parties (*PODEMOS, PSOE*) in all possible pairwise differences. These results are not true for the party in the middle of the spectrum (*CS*), which seems more aligned in this sense with the left-wing parties. However, if we focus on the Loyalty foundation, the differences are crystal clear: *VOX*, *PP*, and *CS* are a block that uses Loyalty words much more than left-wing parties, which do not present any significant difference between them. Finally, if we consider the modules that define the ethic of autonomy, i.e., Fairness and Care, there are also interesting results. First and foremost, it seems like the left uses more the Fairness foundation, although only for three out of six possible combinations, which provides evidence supporting the hypothesis that there are no strong differences between left and right for this foundation, or at least its usage is not stronger for right-wing parties. Finally, if we consider the Care foundation, there is an interesting pattern that has been unveiled. Even though there are no differences between most

parties, the far-right party *VOX* resorts to this rhetoric significantly more than all except one party. This implies that their discourse is more moral and emotional than that of other parties.

In order to create a more robust analysis, it is necessary to check whether these results are highly sensitive to the inclusion of certain stems in the dictionary. For instance, after listening to the audios, the author added the stem for Spain (and Spanish) because in many speeches and tweets (especially those belonging to the right-wing parties) it is used with a Loyalty connotation. However, other researchers could argue that this is an arbitrary decision that involves the usage of a highly common word which might hinder the robustness of the analysis. Hence, the analysis was replicated erasing this and other highly frequent or controversial stems, and the pairwise differences still maintained the significant relationships outlined above. These eliminations can be checked in the notebook "2.1 - text_analysis_tweets.ipynb", available in the link to the coding and data materials of the Appendix.

On the whole, the findings are consistent with those of Haidt (2012), especially in terms of the Authority and Loyalty foundations. Only the use of the Sanctity foundation does not behave as expected, and the mentions of terms related to the Care foundation are generally as assumed, except for the rhetoric of the most right-wing party. Do these findings also replicate when we consider only speeches?

5.2. RQ2: Differences in moral framing of speeches

The second research question that we wanted to answer here was: How different is the moral framing of speeches between parties? Again, we imitate Figure 8.2 of Haidt (2012) in Figure 3. This figure represents the average relative mentions (per 100 words) of each foundation per party across all available speeches in our dataset. Strikingly, the results are quite similar to those of tweets in Figure 1, although the confidence intervals are larger, which will require us to focus on the Tukey HSD intervals to reach robust conclusions. In spite of the change in terms of standard deviations, the trends are similar to those of Figure 1.

There is a jump in the use of the Loyalty foundation by the block of *VOX, PP, CS* as compared with the left-wing parties. Again, the Authority foundation follows an upward trend from left to right; slightly more steep, but with a wider confidence interval for the right-wing party (*VOX*). Results are almost identical as in Figure 1 for the Care, Fairness and Sanctity foundations.

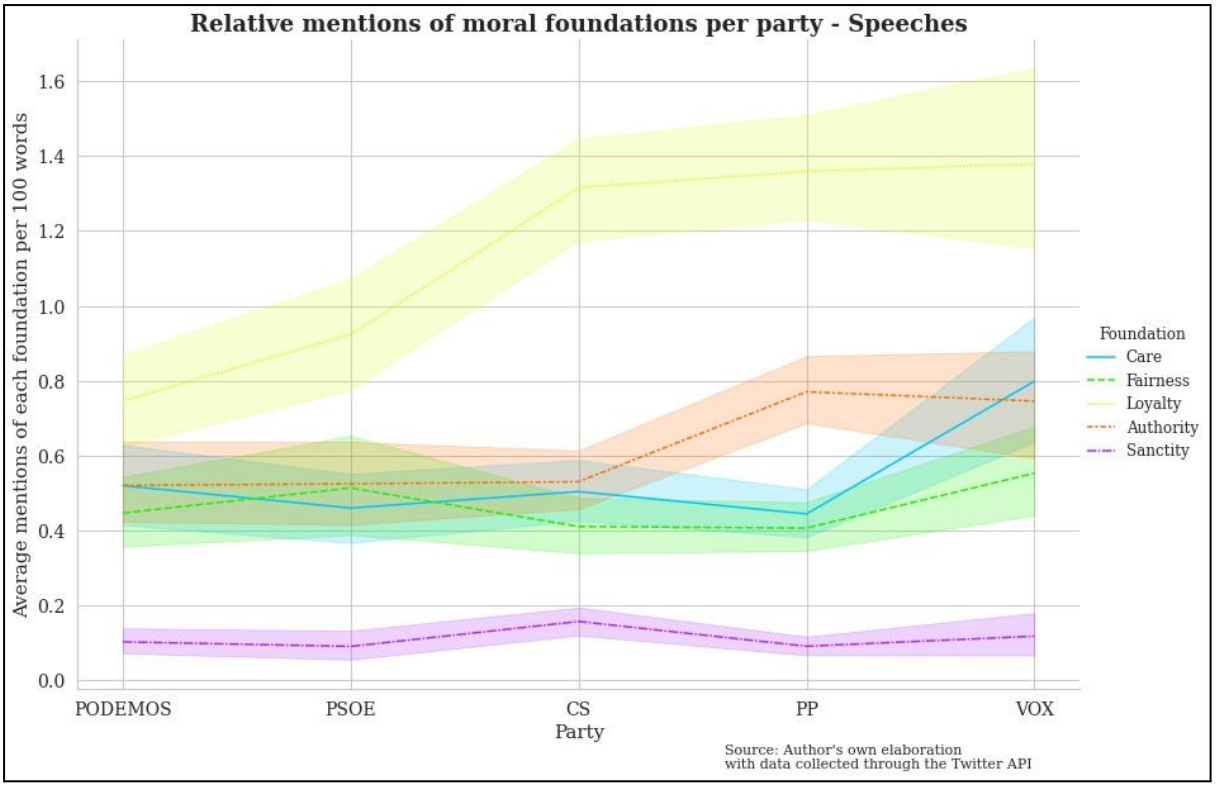

Figure 3: Average mentions of each moral foundation (per 100 words) per party - Speeches

Again, we check whether these differences are significant through the use of Tukey intervals as displayed in Figure 4. First and foremost, the Sanctity foundation exhibits almost the same behaviour as previously, no significant differences except for an increase in its use by the party at the middle of the political spectrum (*CS)* as compared with the conservative group (*PP*). Also the Loyalty foundation shows similar results to those of the tweets sample. However, the Authority foundation changes from Figure 2. Even though the conservative party has a stronger use of these terms, the far-right party does not. However, these results are sensitive to the exclusion of certain words, that is, when some highly common words are erased from the Spanish Moral Foundations Dictionary, the use of the Authority foundation by the far-right party is significantly higher. Finally, the Fairness foundation also changes compared with the analysis of tweets, but without rejecting our hypothesis (that Fairness is not used with a higher frequency by right-wing parties). The Care foundation exhibits the same pattern as in tweets, but even stronger for the far-right party, which repeats the unexpected behavior of the highest frequency of Care terms usage.

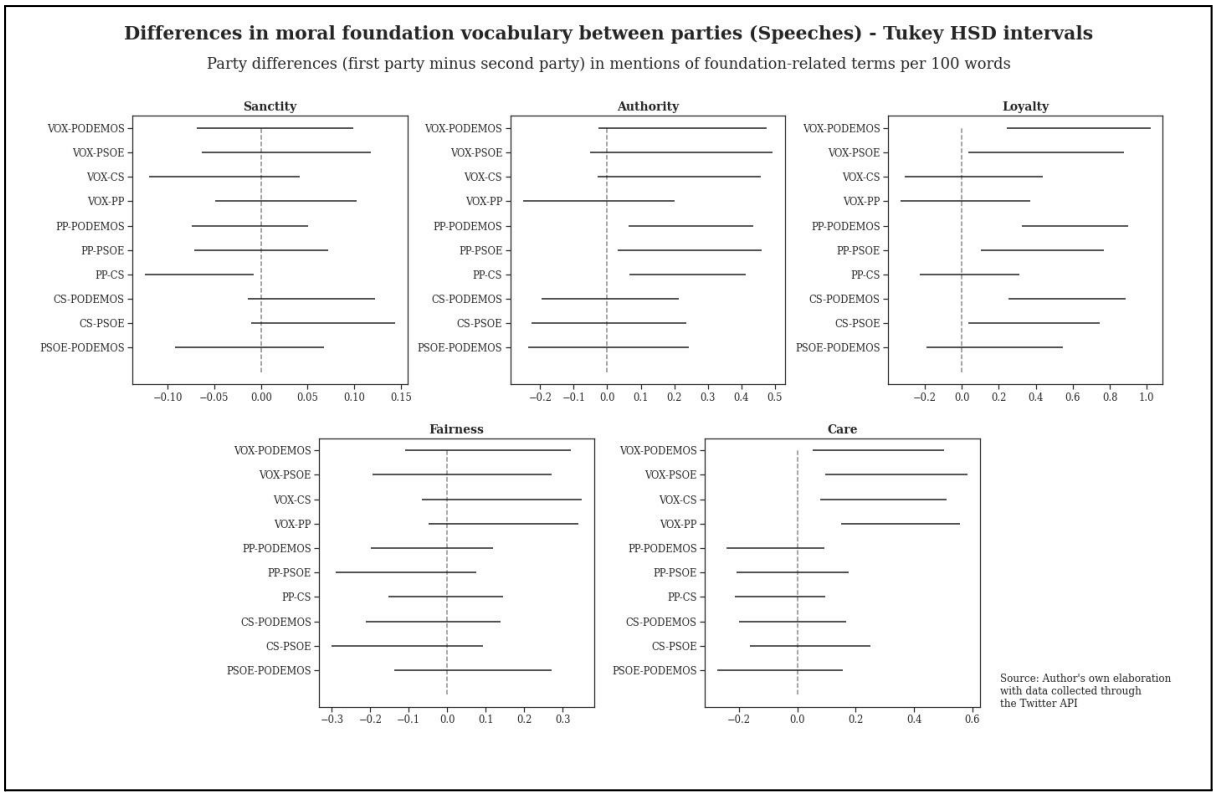

Figure 4: Tukey pairwise differences in relative mentions of moral foundations terms between parties - Speeches

As a summary, an analysis of moral rhetoric in political speeches reaches similar results to those we have found in tweets, most of which are consistent with Haidt (2012). A stronger use of the Loyalty and Authority foundations by right-wing parties (although the latter is not as robust as the former), and no large differences in the use of Fairness and Care. The only exceptions to the theory is the higher use of Care-related terms by the far-right party and the absence of differences in Sanctity-related words.

6. General discussion

The main aim of this paper was to explore the differences in moral rhetoric between political parties in the last election campaign in Spain (November 2019), and check whether they showed an usage of moral terms that we would expect based on how people with different political leanings judge morally, as displayed in Haidt (2012) or Graham et al. (2011). Out of our two studies on tweets and speeches during the campaign, it is clear that parties indeed use a moral rhetoric closely aligned with that of their voters. Right-wing parties use significantly more Authority and Loyalty; but not more Care or Fairness, which

are similar between all parties or somewhat higher on the left. This serves as evidence that there is a highly divided discourse, where different positions of the political spectrum use a significantly different vocabulary, which might in turn hamper political and social stability due to the lack of a common moral vocabulary. On the contrary, our findings do not support the hypothesis that right-wing parties communicate more using the Sanctity foundation. There might be several reasons explaining the rationale behind this result. One option could be that, given that Twitter is oriented towards an audience that is non-random and, especially, not aimed at the oldest strata of the voter population (which are assumed to be more religious for the case of Spain), political parties do not display a Sanctity rhetoric. However, this should have been overcome with the inclusion of speeches, since these are aimed at an audience more representative of the wider voter population. Hence, it could be argued that either there are no big differences in the use of the Sanctity foundation, or, as the author presumes, the political agenda and the context of this particular election campaign does not include enough references to the Sanctity foundation. Hence, it could be interesting to analyze a larger sample, such as speeches and tweets that were uploaded during the pandemic (when discourse about germs, viruses, infections, and other Sanctity-related terms prevailed), or out-of-campaign posts. Finally, there was an additional unexpected result that was consistent in both speeches and tweets: the predominant use of the Care foundation by the far-right party (*Vox*). As discussed before, terms about Harm (i.e., words that create a negative reaction on the Care foundation such as rape, assault or attack) were frequent in many of their speeches. Even if many of them associated this harm with foreigners and illegal immigrants, it could be argued that they still intend to trigger the Care / Harm foundation and not only Loyalty or Authority, due to the recurrent rhetoric on harm and taking care about children or women. Besides, it is surprising to find that the far-right party has used with more frequency a discourse that appeals to both left-wing (Care) and right-wing (Authority, Loyalty and Care) foundations. This could have been a strategy that might lurk behind their success (jumping from being the fifth to the third party in terms of seats in the Parliament from the previous election), which will be further discussed in the Further Research section.

In terms of contributions to the previous literature, I consider that both the social psychology and the political communication disciplines will benefit from this study. First and foremost, MFT literature will expand by having an additional case study, and particularly a new translation of the MFD 2.0 into Spanish. This might open new avenues for further research in both Spain and Latin America (although further revisions will be required for the particular case study at hand because of the extreme cultural sensitivity of the dictionary).

Furthermore, as outlined in the Literature review, the amount of research on political communication on social media is not large, and even more scant if we focus particularly on moral rhetoric, which could be applied to many other settings. Finally, this paper also introduces a methodology to obtain text from videos, which will be useful in many different fields of social research. For instance, it could be used to collect texts on videos that allow the creation of machine learning models to prevent misinformation, hate speech, bullying or other sources of harm on social media.

7. Limitations and further research

There are several limitations in terms of the current study that need to be discussed. The first relevant limitation is the sample size. This paper aims at providing an exploratory answer to how different is the moral framing of political discourse in a particular election campaign. However, larger claims about how parties communicate in Spain should rely on either other election campaigns or even out-of-campaign periods. These two limitations are overcome by simply collecting data during other campaigns or moments, but the main barrier here is financial, since larger downloads from the Full-Archive Twitter API are not free and require funding, which was not available for this particular study. The same could be said in terms of the parties included, since other positions of the political spectrum (such as pro-independence parties) could be sampled. Second, there is another limitation in terms of the data quality, but now regarding the transcription of the videos. For this task, we relied on the use of an AI model for Automatic Speech Recognition in Spanish with high ratings, available through the open-source platform Hugging Face (Grosman, 2021). Nevertheless, some audios were discarded (around 18%) because of bad transcription quality, and some of the remaining ones were not completely accurate, even if they helped to see the use of certain moral foundations terms. This might have hampered the results, and I consider that this is the reason why the results on the Authority foundation in speeches were more sensitive to frequent/dangerous words than those in tweets. There are two potential solutions to this problem, the first approach would require the use of better models (such as new models that outperform the one chosen for this study, or also the model available on Google Cloud Platform for Automatic Speech Recognition). The other option would consist in collecting more videos, so that the threshold on the mean probability of correct transcription per character can be raised without hurting the final sample size of clean videos. Another possible limitation of the study is the process of translation of the MFD 2.0 into Spanish. Even though the author has made an effort to create an accurate dictionary through manual

reviews of the terms included and modifications of regex to avoid capturing false positives, there are other methodologies proposed in the previous literature (Matsuo et al, 2019; Alper et al., 2020). Furthermore, given that the focus of this paper is mainly empirical (to create an MFD 2.0 in Spanish that allows to analyze the election campaign), the design of this research project did not include the validation of the dictionary through the use of e.g., third-party subjects that write texts on each moral foundation so that we could check whether our dictionary properly separates between different moral foundations. The main way in which this has been dealt with is through the use of sensitivity checks on the results around words that the author deemed either common (based on word frequencies of our sample) or with potential neutral meanings. Finally, there has been a big conceptual leap in terms of the foundations included in the current MFT, since the Liberty foundation has been added, so that Fairness is understood as Proportionality or Karma rather than oppression (Haidt, 2012). Even though this new foundation is already being used in the new Moral Foundations Questionnaire (Atari et al, 2022), the last version of the MFD (which is the one that we have relied on in this research project) only relies on the first five foundations that were initially posited (Graham et al., 2011; Frimer et al., 2017).

However, these limitations can create avenues for further research. To begin with, one natural paper that could follow the present research project would consist in the creation and, particularly, the validation, of an MFD in Spanish. The current workflow template could be used as a basis to understand what types of political events should be included in the final dictionary, as well as those words that should be eliminated beforehand. Other alternatives to translate it could follow the example of the translation into Japanese or Turkish of the original MFD (Matsuo et al, 2019; Alper et al., 2020). Furthermore, another alternative technique that could be used to translate the dictionary was suggested by some of the authors of the original MFD 2.0 (Frimer et al., 2017) after the author discussed with them the intended meaning of some words included in the MFD 2.0. The approach would consist in taking into account the current use of the Moral Foundations Questionnaire (where the new Liberty/Oppression foundation appears) (Atari et al., 2022), plus translating a set of key words and expanding them through the use of Distributed Dictionary Representations (DDR) (Garten et al., 2018). This would be a fast approach to continue the research on MFT, since the development of a set of English key words would be faster than waiting for the release of a validated English MFD 3.0. With the current results, there are other questions that could be relevant to explore, such as: Do the present findings replicate throughout other time settings such as other campaigns or out-of-campaign periods (particularly Covid-19 discourse is interesting here)?

Or, even more relevant, is a higher use of moral rhetoric associated with political success (especially for right-wing parties)? The case of the surge of *VOX* and its use of the Authority, Loyalty and Care terms might lay the foundation for experimental studies that show people different texts/audios and ask for their endorsement/voting behavior as a result of those statements, controlling previously for their political leaning. Another alternative (although weaker because of the audience that would be considered and the need for stronger assumptions to claim causal effects) could be an observational study that tracked associations between an aggregate use of moral rhetoric and more retweets or engagement, since this link has already been found in previous literature (Brady et al., 2020). Finally, other studies could take into consideration not only the text in videos, but also purely its visual content, through the use of recently built video-mining techniques (Schwenzow et al., 2021), and probe whether there are certain visual features that are associated with particular moral foundations.

8. Conclusion

This paper has assessed the differences in the use of moral rhetoric as defined by Moral Foundations Theory between political parties. Theory and methods were applied to the particular case of the last election campaign in Spain (November 2019). To this end, the author translated the current version of the Moral Foundations Dictionary into Spanish and collected all posts published on Twitter by the main political candidates and the accounts of their parties during the campaign. Both the texts and the audios present in them were downloaded, where the latter were further transcribed through the use of an AI model that allowed for Automatic Speech Recognition in Spanish. Most results are consistent with previous theory on endorsement of each moral foundation based on political leaning. The Loyalty and Authority foundations are mentioned more frequently by right-wing than left-wing parties (although results on the latter are less robust in speeches). As predicted by results from the previous literature, the Fairness foundation is not used more often by right-wing parties. However, there are no relevant differences in the use of the Sanctity foundation, and, even though the Care foundation is similar between almost all parties, the far-right party mentions it significantly more than any other party.

9. References

Adams, A., & McCorkindale, T. (2013). Dialogue and transparency: A content analysis of how the 2012 presidential candidates used twitter. *Public Relations Review*, *39*(4), 357–359. https://doi.org/10.1016/j.pubrev.2013.07.016

Alper, S., Bayrak, F., Us, E. Ö., & Yilmaz, O. (2020). Do changes in threat salience predict the moral content of sermons? The case of Friday Khutbas in Turkey. *European Journal of Social Psychology*, *50*(3), 662–672. https://doi.org/10.1002/ejsp.2632

Atari, M., Haidt, J., Graham, J., Koleva, S., Stevens, S. T., & Dehghani, M. (2022). *Morality Beyond the WEIRD: How the Nomological Network of Morality Varies Across Cultures*. PsyArXiv. https://doi.org/10.31234/osf.io/q6c9r

Barberá, P., & Rivero, G. (2015). Understanding the Political Representativeness of Twitter Users. *Social Science Computer Review*, *33*(6), 712–729. https://doi.org/10.1177/0894439314558836

Bird, S., Klein, E., & Loper, E. (2009). *Natural language processing with Python: Analyzing text with the natural language toolkit*. O'Reilly Media, Inc.

Bowe, B. J. (2018). Permitted to Build? Moral Foundations in Newspaper Framing of Mosque-Construction Controversies. *Journalism & Mass Communication Quarterly*, *95*(3), 782–810. https://doi.org/10.1177/1077699017709253

Brady, W. J., Gantman, A. P., & Van Bavel, J. J. (2020). Attentional capture helps explain why moral and emotional content go viral. *Journal of Experimental Psychology: General*, *149*(4), 746–756. https://doi.org/10.1037/xge0000673

Brantner, C., Lobinger, K., & Wetzstein, I. (2011). Effects of Visual Framing on Emotional Responses and Evaluations of News Stories about the Gaza Conflict 2009. *Journalism & Mass Communication Quarterly*, *88*(3), 523–540. https://doi.org/10.1177/107769901108800304

Cisco. (2019). *Cisco visual networking index: Forecast and trends, 2017–2022 white paper*.

Darwish, K., Magdy, W., & Zanouda, T. (2017). Trump vs. Hillary: What Went Viral During the 2016 US Presidential Election. In G. L. Ciampaglia, A. Mashhadi, & T. Yasseri (Eds.), *Social Informatics* (pp. 143–161). Springer International Publishing. https://doi.org/10.1007/978-3-319-67217-5_10

Dehghani, M., & Boyd, R. L. (2021). *Handbook of Language Analysis in Psychology*. Guilford Publications.

del Olmo, F. J. R., & Díaz, J. B. (2020). Images published on Twitter as a form of political communication. The case of the general elections in the year 2016 in Spain. *Revista Latina de Comunicación Social, English Ed.*, *75*, 313–326. http://dx.doi.org/10.4185/RLCS-2020-1428en

Evans, H., Cordova, V., & Sipole, S. (2014). Twitter Style: An Analysis of How House Candidates Used Twitter in Their 2012 Campaigns. *Political Science and Politics*, *47*. https://doi.org/10.1017/S1049096514000389

Frimer, J., Haidt, J., Graham, J., Dehghani, M., & Boghrati, R. (2017). *Moral foundations dictionaries for linguistic analyses, 2.0. Unpublished Manuscript. .; Haidt, J.; Graham, J.; Dehghani, M.; and Boghrati, R.* Retrieved from: www.jeremyfrimer.com/uploads/2/1/2/7/ 21278832/summary.pdf

Garten, J., Hoover, J., Johnson, K. M., Boghrati, R., Iskiwitch, C., & Dehghani, M. (2018). Dictionaries and distributions: Combining expert knowledge and large scale textual data content analysis. *Behavior Research Methods*, *50*(1), 344–361. https://doi.org/10.3758/s13428-017-0875-9

Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology*, *96*(5), 1029–1046. https://doi.org/10.1037/a0015141

Graham, J., Nosek, B. A., Haidt, J., Iyer, R., Koleva, S., & Ditto, P. H. (2011). Mapping the

Moral Domain. *Journal of Personality and Social Psychology*, *101*(2), 366–385. https://doi.org/10.1037/a0021847

Grosman, J. (2021). *Fine-tuned XLSR-53 large model for speech recognition in Spanish*. https://huggingface.co/jonatasgrosman/wav2vec2-large-xlsr-53-spanish

Haidt, J. (2012). *The Righteous Mind: Why Good People are Divided by Politics and Religion*. Penguin UK.

Haidt, J., & Graham, J. (2007). When Morality Opposes Justice: Conservatives Have Moral Intuitions that Liberals may not Recognize. *Social Justice Research*, *20*(1), 98–116. https://doi.org/10.1007/s11211-007-0034-z

Haidt, J., & Joseph, C. (2004). Intuitive Ethics: How Innately Prepared Intuitions Generate Culturally Variable Virtues. *Daedalus*, *133*(4), 55–66.

Hurst, K., & Stern, M. (2020). Messaging for environmental action: The role of moral framing and message source. *Journal of Environmental Psychology*, *68*. https://doi.org/10.1016/j.jenvp.2020.101394

Real Decreto 551/2019, de 24 de septiembre, de disolución del Congreso de los Diputados y del Senado y de convocatoria de elecciones, Pub. L. No. Real Decreto 551/2019, BOE-A-2019-13558 105300 (2019). https://www.boe.es/eli/es/rd/2019/09/24/551

Jungherr, A. (2016). Twitter use in election campaigns: A systematic literature review. *Journal of Information Technology & Politics*, *13*(1), 72–91. https://doi.org/10.1080/19331681.2015.1132401

Kim, K. R., Kang, J.-S., & Yun, S. (2012). Moral intuitions and political orientation: Similarities and differences between South Korea and the United States. *Psychological Reports*, *111*(1), 173–185. https://doi.org/10.2466/17.09.21.PR0.111.4.173-185

Kohlberg, L. 1927-1987. (1984). *Essays on moral development / 2 The psychology of moral*

development. Harper & Row.

Koleva, S. P., Graham, J., Iyer, R., Ditto, P. H., & Haidt, J. (2012). Tracing the threads: How five moral concerns (especially Purity) help explain culture war attitudes. *Journal of Research in Personality*, *46*(2), 184–194. https://doi.org/10.1016/j.jrp.2012.01.006

Ma, Z., & Palacios, S. (2021). Image-mining: Exploring the impact of video content on the success of crowdfunding. *Journal of Marketing Analytics*, *9*(4), 265–285. https://doi.org/10.1057/s41270-021-00133-8

Marchal, N., Neudert, L.-M., Kollanyi, B., & Howard, P. N. (2021). Investigating Visual Content Shared over Twitter during the 2019 EU Parliamentary Election Campaign. *Media and Communication*, *9*(1), 158–170. https://doi.org/10.17645/mac.v9i1.3421

Matsuo, A., Sasahara, K., Taguchi, Y., & Karasawa, M. (2019). Development and validation of the Japanese Moral Foundations Dictionary. *PLOS ONE*, *14*(3), e0213343. https://doi.org/10.1371/journal.pone.0213343

Mislove, A., Lehmann, S., Ahn, Y.-Y., Onnela, J.-P., & Rosenquist, J. (2011). Understanding the Demographics of Twitter Users. *Proceedings of the International AAAI Conference on Web and Social Media*, *5*(1), 554–557.

Mokhberian, N., Abeliuk, A., Cummings, P., & Lerman, K. (2020). Moral Framing and Ideological Bias of News. *SocInfo*. https://doi.org/10.1007/978-3-030-60975-7_16

Neiman, J. L., Gonzalez, F. J., Wilkinson, K., Smith, K. B., & Hibbing, J. R. (2016). Speaking Different Languages or Reading from the Same Script? Word Usage of Democratic and Republican Politicians. *Political Communication*, *33*(2), 212–240. https://doi.org/10.1080/10584609.2014.969465

Nilsson, A., & Erlandsson, A. (2015). The Moral Foundations taxonomy: Structural validity and relation to political ideology in Sweden. *Personality and Individual Differences*, *76*, 28–32. https://doi.org/10.1016/j.paid.2014.11.049

Porter, M. F. (2001). *Snowball: A language for stemming algorithms*. http://snowball.tartarus.org/texts/introduction.html

Reiter-Haas, M., Kopeinik, S., & Lex, E. (2021). Studying Moral-based Differences in the Framing of Political Tweets. *ArXiv:2103.11853 [Cs]*. http://arxiv.org/abs/2103.11853

Seo, H. (2014). Visual Propaganda in the Age of Social Media: An Empirical Analysis of Twitter Images During the 2012 Israeli–Hamas Conflict. *Visual Communication Quarterly*, *21*(3), 150–161. https://doi.org/10.1080/15551393.2014.955501

Seo, H., & Ebrahim, H. (2016). *Visual propaganda on Facebook: A comparative analysis of Syrian conflict*. https://doi.org/10.1177/1750635216661648

Shweder, R. A., Much, N. C., Mahapatra, M., & Park, L. (1997). The 'big three' of morality (autonomy, community, divinity) and the 'big three' explanations of suffering. In *Morality and health* (pp. 119–169). Taylor & Frances/Routledge.

Tellis, G., Macinnis, D., Tirunillai, S., & Zhang, Y. (2019). What Drives Virality (Sharing) of Online Digital Content? The Critical Role of Information, Emotion, and Brand Prominence. *Journal of Marketing*, *83*, 002224291984103. https://doi.org/10.1177/0022242919841034

Tukey, J. W. (1949). Comparing Individual Means in the Analysis of Variance. *Biometrics*, *5*(2), 99–114.

Walter, A. (2020). Politicians use of moral appeals in British political advertising 1983–2017. *The Rhetoric of Political Leadership*, 156–171.

Appendix: Coding and files repository

The code and data files used to reproduce the analysis can be accessed through the following GitHub repository.