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The Impact of Journalistic Cultures on Social Media Discourse: US Primary Debates in Cross-Lingual Online Spaces

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ABSTRACT

This cross-lingual project examines how social media posts of Spanish- and English-language media impact incivility in user comments during the 2020 primary political debates in the United States. We analyzed Facebook posts of news organizations that hosted the debates and used a state-of-the-art machine-learning model to analyze the corresponding comments. Our findings reveal distinct journalistic cultures on the post-level: English-language media are significantly more likely to use interpretation while Spanish-language media employ more audience-engagement and factual reporting strategies. We argue that in order to understand incivility in social media discourse during political debates, we need to consider journalistic cultures: While interpretative reporting explains lower levels of incivility in the English-language discourse, factual reporting explains lower levels of incivility in the Spanish-language discourse. We suggest that we need to consider how features of news reporting (textual and visual) impact discourse quality directly but also indirectly via emotional arousal in comments.


KEYWORDS

Social media; user comments; journalistic cultures; Hispanics; incivility; US election

The 2020 election in the United States will go down in history as an election in which people had to vote during a global pandemic. More Americans voted during the 2020 election than in any other election in the last 120 years. In addition, over half of eligible Hispanics voted, which proved a historic first for the largest minority in the United States (Igielnik and Budiman 2020).

Against this backdrop, this computational project seeks to understand the audience engagement strategies and manifestation of journalistic cultures of Spanish- and English-language media organizations on Facebook during the 2020 primary political debates in the United States. We manually analyzed Facebook posts ($N=692$) of news organizations ($N=11$) that hosted democratic primary debates and used computational

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methods to analyze the corresponding comments ($N=59,662$).¹ The main contributions of our study are to identify (1) differences in how political debates are covered on social media across journalistic cultures and (2) to identify how discourse elements such as incivility are impacted by journalistic cultures and coverage. This is of practical significance because political expression on social media can help users exert political influence, build group solidarity, and contest the status quo (Allen and Light 2015; Boulianne 2015; Jackson et al. 2020). We argue that the language in which journalism is produced functions as much as a marker of social distinction as semantic sense and linguistic capital (Chávez 2015). The Latinx population is the largest minority group in the United States; the US is the second largest Spanish speaking country in the world, yet research has shown that this does not translate into equal standing for the language or its speakers (59). Therefore, cross-lingual research can provide a first step in such a direction to move beyond considering Latinx media as ethnic or niche “since it is already a relevant actor in contemporary bilingual and bicultural post-digital spaces” (Sanchez-Muñoz and Retis, 58). Hence, research needs to theorize political expression in more precise and appropriate ways for the groups or cultures under study (Lane et al. 2021).

The changing US electorate makes Spanish-language media (i.e., Univision and Telemundo) important hosts of primary live debates next to their English-language counterparts (like CNN or ABC). Recent research (Gomez-Aguinaga et al. 2021) finds that the language in which news is presented positively impacts trust in news media and hence, trust in political information on social media. Using minority languages (e.g., Spanish) is particularly vital during decision-making processes such as presidential elections. And even more so during the COVID-19 pandemic, which has impacted Latinos and other racial minority groups significantly more than Caucasians in the US.

In this study, we pay attention to Facebook because of the platform’s digital architecture that allows for media-to-user and user-to-user communication that might generate meaningful discussions (Camaj et al. 2024).

How Journalistic Cultures Manifest on Social Media

One of the most common approaches to assess journalistic cultures empirically is by examining the normative roles of journalists (e.g. “What role should and do journalists conceive of and perform in various countries?”). The manifestation of journalistic roles in news stories has been conceptualized as “journalistic role performance” and “journalistic role enactment” (Tandoc, Hellmueller, and Vos 2012). The considerable growth of role-related research in recent years related to the exploration of journalistic cultures, reflects the ongoing relevance of this research. Further research seeks to contextualize role-related research as a *negotiative* process in relation to institutional duties, organizational work realities (Raemy and Vos 2021), and cultural contexts (e.g. audience orientation). Overall, three domains of journalistic role performance have been identified theoretically and empirically: (1) the presence of the journalistic voice in the news story, (2) the way journalists perform their relationship with (relate to) those in power, and (3) audience approach/engagement (Mellado et al. 2017).

Research on social media shows the enduring character of the traditional three domains of journalistic role performance. Conducting interviews with journalistic YouTubers, Lichtenstein, Herbers, and Bause (2021) found that most of them identified with the disseminator role and wanted to contribute to opinion formation and further focus on audience engagement to enhance public participation. Studies on journalists on TikTok (Negreira-Rey, Vázquez-Herrero, and López-García 2022) reveal how new journalistic roles can emerge out of specific affordances of social media. The authors showed how journalists adapt their presence to the TikTok social media logic, seeking a space of influence on a platform that is the natural habitat of younger generations. Journalists' role was perceived as to inform, entertain, or introduce themselves to target new audiences and young fans.

Journalistic role performances on social media can clash with traditional professional roles by generating tensions between personal and professional ideals (Mellado and Hermida 2021), yet asserting that the type of platform determines journalistic content misses the enduring character of journalistic roles (Mellado, Hellmueller, and Donsbach, 2017). In most studies, platforms were found to matter little when compared to the influence other variables had—such as thematic beat or media audience orientation—over the performances of roles in the news (Mellado et al. 2021).

Following Mellado et al. (2021), we adopt a midway position arguing that enduring values and journalistic roles impact the way journalists perform their roles on social media platforms, yet there are also manifestations of roles at play that journalists perform because of the affordance of specific social media platforms. Certainly, the stronger focus on active audience engagement strategies is one example of shifting role performances (e.g. encouraging users to comment and interact with news stories). For example, based on an online survey of 358 news journalists in Australia, Hanusch and Tandoc (2019) find that reading readers' comments frequently is related to an increase in the perceived importance of both consumer and citizen orientations. The perceived effectiveness of web analytics as audience feedback is related to an increase in the perceived importance of consumer orientation. Presuming the three domains of journalistic role performance previously discussed are relevant in an online environment, we ask: *how can we theoretically relate the three domains of journalistic role performances to a social media environment taking into account recent findings of journalistic role performance on social media?*

The Presence of Journalistic Voice in Social Media Posts

Based on the above-outlined theoretical frameworks and research findings, we propose that in an online environment, we can examine *factual reporting* and the integration of *quotes from sources* (i.e., the absence of journalistic voice) as manifestations of the *disseminator role*. Meanwhile, for the *interventionist role* (i.e., actively involved), we propose to examine the *interpretation* and the absence of source quotes in journalistic coverage to be theorized as journalistic involvement (i.e., interventionist role) following previous studies (Mellado et al. 2017).

Power Relations

The second domain of journalistic role performance includes how journalists perform their relationship with those in power. With increased fact-checking initiatives digitally

and the importance thereafter on social media (Hameleers and van der Meer 2020), we propose *fact-checking* of political candidates as an expression of the watchdog role on social media during election debates.

While it seems evident that not all readers or users that consume media coverage on social media also actively comment², the commenting space on social media further impacts the perception of the credibility of the news story. In other words, how journalistic role performance impacts commenting on news stories can indirectly affect the credibility of news stories for readers of such posts.

Audience Orientation

The third domain (i.e., audience orientation) includes the civic model (Rosen 1999), the infotainment model as well as the service model. All of them are concerned with encouraging the public to get involved in public debate and to participate in social, political, and cultural life. Following Blassnig and Esser (2022), we propose the reporting of *polls* and *audience engagement* to perform *connection-strengthening audience logic* on social media as such performance aims at enhancing public participation on social media (Lichtenstein, Herbers, and Bause 2021). Integrating polls in news articles increases the audience's expression of their opinion on public interest (Netzer et al. 2014) and actively involves the individual user.

The other logic connected to audience orientation which Blassnig and Esser (2022) empirically examine is the market-oriented commercial logic. The authors argue digital news outlets may follow a market-oriented logic to a lesser extent than the audience-strengthening logic. One of the elements of social media identified by previous studies (Humprecht et al. 2020) related theoretically to the concept of commercial logic is the manifestation of *negativity* in news stories. Negativity in news stories is accounted for increasing revenue and engagement. There is further evidence of negativity triggering further negativity from users, producing a contagious effect within discussions (Chen 2017). Such stories or comments may include negative events that focus on frustration, rejection, resignation, accusation of incompetence or negative traits and seem to play an important role in election coverage with the relevance of negative campaigning. Examining negativity in media coverage of political debates is further relevant as it tends to focus primarily on candidate attacks – confirming media bias toward negativity, confrontation and conflict (Esser and Strömbäck 2012).

Tonality of Journalistic Role Performance and Affective Attributes

Analyzing 12,179 news stories posted on four major U.S. newspaper Facebook pages, Choi, Lee, and Wook Ji (2021) find that users are less likely to share or comment on news posts that convey positive emotion, yet the most prominent kind of emotion associated with user engagement activities was “sadness.” The inclusion of visuals seems crucial when considering the relationship between emotions in news stories and audience engagement.

Visuals, as well as text, undergo journalistic decision-making processes, particularly on social media, where the prominence of visuals often outweighs the prominence and amount of text, which impacts the way audiences perceive news stories. Hence,

we propose to include emotions in news stories to understand user engagement with such stories.

Differences in Journalistic Cultures Across Spanish and English-Language Outlets

Comparative studies show that US journalism has shifted toward normative roles linked to interventionism and interpretative news (Mellado et al. 2017). Yet, such findings should be carefully contextualized as data collection in most cases includes English-language media only. Hence, we somewhat lack empirical evidence of more within-country studies that focus on journalistic cultures to contextualize findings.

Spanish-language media in the United States produce news for Spanish-speaking audiences that have cultural ties to countries mostly in Central and Latin America (Fernandes and Shumow 2016). We expect Spanish-language media to produce different types of stories when compared to English-language media for several reasons: First, and most obvious, they produce news in Spanish language, directed towards an audience that is socioeconomically different from an English-language media audience in the United States: In fact, a report by Pew Research (2016) exposed deep racial and ethnic divides between the White population and other ethnicities in the United States: Hispanics in 2014 were more than twice less likely as Whites to be living in poverty; more Hispanics (52%) than Whites (30%) reported experiencing discrimination because of their ethnicity (Pew Research 2016), and this challenge most likely increased during the pandemic (Gomez-Aguinaga et al. 2021).

Second, theoretically speaking, we expect Spanish-language media to produce different forms of news coverage because of their distinct journalistic cultures. There are very few studies that tackle this question. Presumably, because such a question implies moving away from a comparative design that includes a country-by-country design and embracing a within-country design. Such a design requires examining distinct journalistic cultural groups within the same media system, yet, following the same logic as comparative communication studies designs (e.g., assuming that there are indeed different journalistic cultures at play).

One of the few studies examining cultural differences within role performance in the United States examining the presidential election 2016 found that while the corporate structure may look similar, English-, and Spanish-language TV networks in the US perform different journalistic roles. Spanish-language media use more civic sources (i.e., sources that are impacted by the issues they are reporting on) and include less interpretation in their reporting than English-language TV networks in the United States (Hellmueller and Arias 2020).

Other findings support the observation of a distinction between English- and Spanish-language journalistic roles on social media (Cárdenas et al. 2021): Through a qualitative analysis of tweets of the Orlando, Florida shooting at a night club in 2016, Cárdenas et al. (2021) find the two largest Spanish-language networks, Univision and Telemundo implemented strategies that connected more directly with their audiences than English-language media organizations in the United States. For example, Univision and Telemundo used tweets inviting the public to share information with the FBI, informing the public about a hotline that had been established, and to share their

stories if they were witnesses of the shooting. The authors (Cárdenas et al. 2021) thus suggest that the question of audience engagement should remain a central focus when investigating journalistic practices on social media and argue to understand distinct journalistic cultures within the media system in the United States.

Based on the above theoretical explanation, we formulate a first research question for the context of political debates:

RQ1: How do journalistic role performances in posts on social media differ between English and Spanish-language media organizations on Facebook?

Journalistic Cultures' Impact on Discourse Cultures

This is one of the first studies that links journalism cultures with discourse cultures that happen in online news spaces. Discourse culture can be defined as the “thickenings” of cultural production, representation and appropriation patterns that determine discourse formations of political communication (Hepp et al. 2016, 27). Facebook as a global platform is both a provider and engineer of national, transnational, and global digital public spheres (Kreiss and McGregor 2018). Comments on news articles can hence be perceived as a manifestation of discourse culture produced on the citizen level (i.e., commenter), shaped by the outlet (i.e., media organization) and national discourse culture level (i.e., political, and cultural system), mediated essentially by the global platform that is Facebook (i.e., platform level).

In this article, we particularly focus on incivility, as an expression of discourse culture across cultural groups within the United States. Incivility in commenting has been outlined as an emergent challenge for news organizations. Scholars that focused on so-called “dark participation”—including “negative, selfish or even deeply sinister contributions such as ‘trolling’” (Quandt 2018, 40) found that most community managers of media organizations perceive the volume of deviant user comments to be increasing (Frischlich et al. 2019).

Given the lack of consensus on how incivility should be defined and variations in levels and types of incivility (Rossini 2020), we acknowledge that incivility is a nuanced concept often bound to context and discourse culture. As such, literature encompasses a variety of definitions and operationalizations of incivility depending on which norm violations it embodies, such as the violation of respect norm (Coe et al. 2014), politeness norm (Mutz 2015), the collective democratic norms (Papacharissi 2004), or the violation of multiple norms (Bormann et al. 2022). In our operationalization, we develop a measure of incivility guided by previous literature that defines incivility as “features of discussion that convey an unnecessarily disrespectful tone towards the discussion forum, its participants, or its topics” (Coe et al. 2014, 3) and violate social norms governing personal interactions (Mutz 2015).

Audience-engaged research in journalism studies finds that cross-country differences further exist when it comes to the discourse of comment sections. Previous research reveals differences in the tonality of news organizations' comment sections as well as variations in toxicity and incivility levels (Humprecht et al. 2020; Majó-Vázquez et al. 2019). One study that compared similar news organizations between the United States to Germany found that hostile comments and negative

emotions were more prevalent in US comments, whereas German comments used more of a neutral tone when responding to news stories on Facebook (Humprecht et al. 2020). Commenting seems not to be driven purely by technology and depends on contextual factors.

In our study, we are therefore curious how this phenomenon plays out *within* a national context (United States) and *across* cultural contexts (English- vs. Spanish-language). We are specifically interested in how the performance of journalistic roles can reduce or limit the occurrence of incivility in user comments. Based on the theoretical context of social norms, we can expect that English and Spanish media and their audiences might express different online cultures, and because people rely on communication to learn social norms (Lapinski and Rimal 2005) this also justifies a potentially important relationship between post level and comment level communication within our cultural samples. The Spanish-language media are considered institutions that have contributed to the building of a Hispanic identity in United States, and television channels such Univision and Telemundo helped to build closer ties and stronger identification with the Hispanic community (Wilkinson 2015).

The growing empirical literature provides strong grounds that connect structural characteristic of news content - such as news values, news frames and news topics, with user engagement with news on social media (e.g., Choi et al. 2021). Similarly, recent research suggests that the quality of discussions in online news comments depends on the characteristics of information that precedes and debate news coverage can prime online conversations (Camaj 2021; Camaj et al. 2024). Relevant to this paper, a recently published study found that news reporting of political debates on Facebook was linked to the discourse quality in the user comment across different news media during the 2020 debates in the United States (Camaj et al. 2024).

Given the assumption of distinct journalistic cultures between Spanish and English-language media in the United States and research that points in the direction of moderation effects of posts, we have formulated two additional research questions as follows:

RQ2: What is the relationship between different journalist cultures in the debate news reporting and the incivility level in the comment section?

RQ3: Is there a difference between English- and Spanish-language news audiences' reaction to debate reporting?

The Design of This Study

To summarize, we combine two theoretical approaches to study news organizations' engagement on social media in this research. We first introduce *journalistic cultures and particularly journalistic role performance* for which we empirically focus on the *post-level* of Facebook accounts of media organizations. Our second approach is on *discourse cultures* that we operationalize as the commenting by news users happening below those posts on Facebook, while audiences are presumably watching the debate and/or reading about it on social media, etc. Our interest in this study is driven by uncovering *journalistic culture differences* on the post-level and further predicting

differences at the comment level by analyzing *discourse cultures*, particularly incivility, across the two linguistic groups.

Method

Sampling

This study is based on a quantitative and computational content analysis of user-generated comments on the Facebook pages of news outlets posted during the 2020 US Election political debates. We used Crimson Hexagon to extract all posts and a random sample of comments related to each post. We generated a random sample of user comments posted under the initial Facebook posts generated in stage one. The Crimson Hexagon limited the number of comments to 10,000 per query, randomly selected from the total number of comments posted during the specified time frame. For each debate night, we run several queries to maximize the number of allowed comments per news organization within our time frame.

The data collection focused on the Facebook pages of the news outlets that moderated the debates following previous studies' suggestions that live debates generate conversation and real-time reactions (Evins 2017). The final sample consists of 11 news organizations including 6 national broadcasters (ABC, CBS, NBC, CNN, MSNBC, PBS), two national Spanish broadcasters (Univision and Telemundo), two newspapers (New York Times, Washington Post) and one online news media (Politico). Comments were selected using a two-stage sampling strategy (Rowe 2015). In the first stage, we collected all Facebook posts by news organizations during the live political debates and the hours immediately following them during the primary democratic debates. It is expected that news media engage in post-debate coverage to continue the conversation beyond to capitalize on the event. In the first stage, we collected all Facebook posts by news organizations posted from 7 pm until 2 am, to capture pre- and post-debate news coverage. We selected only news posts that focused on debates and excluded the duplicates.

Hence, we retrieved Facebook posts from one hour before each debate began until 2am, yielding a total of 1,173 Facebook posts. From this sample, we purposely selected all Facebook posts that focus on debate coverage. We ended up with a final sample of 692 posts, excluding duplicate posts and posts unrelated to the debate. Our sample included $n=93$ posts from ABC, $n=28$ from CBS, $n=91$ from CNN, $n=102$ from MSNBC, $n=74$ from NBC, $n=27$ from NYT, $n=13$ from PBS, $n=25$ from Politico, $n=156$ from Telemundo, $n=78$ from Univision and $n=5$ from the Washington Post. The second sampling stage generated a random sample of user comments posted under the initial Facebook posts (this is following random-sampling procedures by Crimson Hexagon). The Crimson Hexagon limited the number of comments to 10,000 per query, which were randomly selected from the total number of comments posted during the selected time frame. For each debate night, we run several queries to maximize the number of allowed posts and comments per news organization within our time frame. After cleaning the irrelevant posts and duplicates, we kept only comments that were posted in reply to the relevant debate related news posts. Our final sample included 59,683 comments (42,146 comments collected in English

language and 17,537 comments collected in Spanish language). The average number of comments per post was $n=83$ ($n=86$ for comments in the English set and $n=75$ for the Spanish set).

Data Coding

Manual Coding at the Post Level

Following our theoretical approach coding occurred on two levels: post and comment level. On the post level, we manually coded for the following *journalistic role performances*: factual reporting, quotes, interpretation, fact-checking, polls, audience engagement, and tone of news story (neg/pos/neutral).

Journalistic Role Performance. We used a dichotomous variable to code for information on whether the post focused on the context of the debate, provided background information about the topic of discussion. We measured the presence of quotes by including direct quotes or paraphrases. Third, we coded for journalistic interpretation using previous measurements (Mellado et al. 2017). We asked if the journalist explains the causes, meaning and/or suggests possible consequences of certain actions? Fourth, we examined fact-checking of candidates. We coded whether the presence of fact-checking by explicitly looking for a mention of this action (example: we fact-checked the following statement...). Fifth, we coded the inclusion of poll results. And sixth, we coded for the presence of audience engagement. That included posts that call audiences to watch or alert audiences to certain events.

Journalistic Tone. We coded for positive, negative, or neutral following previous coding procedures by Humprecht et al. 2020. The sentiment of each post was coded based on the manifest tonality of the post in the respective language (English and Spanish). By tonality we refer to the overall sentiment of each post. For example, we looked for negative sentiments indicating using disapproving expressions (hate, stupid, unethical, etc.) and confrontational tone. Hostile sentiments for example were indicated using expressions of anger, offensive contempt, disgust, frustration, and hate (Oz et al. 2018). Meanwhile positive tone was coded as a manifestation of cheering or approving expressions or facts.

Intercoder Reliability. Five student coders were trained in the application of the codebook in English and Spanish and coding only advanced once satisfying intercoder reliability scores were achieved. Intercoder reliability was measured on a random sample of 10% of the Facebook posts (Cohen's Kappa ranged from 0.72 to 1.0). After three rounds of coder trainings in both English and Spanish, we found intercoder reliability to be satisfactory ranging from $Ka = 0.94$ for fact-checking to $Ka = 0.70$ for journalistic interpretation and audience engagement. Further intercoder reliability testing involved the following variables and results: $Ka = 0.72$; quotes $Ka = 0.80$; polls $Ka = 0.79$. We also tested for tonality and found satisfactory reliability scores of $Ka = 0.72$.

In addition, this study manually coded for the following variables which were included in our analysis as control variables: media outlet ($Ka = 1.0$), debate date (Ka

=1.0), type of content within the post ($\alpha = 0.95$), and type of issues mentioned in the post ($K_a = 0.75$).

Automated Coding for Emotions in Facebook Visuals

Emotions in visuals of news posts have been coded using the Microsoft Azure Emotion API (Khanal, Barroso, and Lopes 2018). The Emotion API by Microsoft allows to measure emotions in human faces based on several deep-learning algorithms. It can pick up eight emotions including anger, contempt, disgust, fear, happiness, neutral, sadness and surprise. This method has previously been applied and validated in social media research by Choi, Lee, and Wook Ji (2021).

The API returns a score between 0 and 1, where a higher score implies stronger emotion. If there are several faces in a single image, a set of scores is returned for each detected face. We averaged the scores in each emotion category across all detected faces on an image, so we ended up with an average score in each of the eight categories (eight variables) per post where we had selected images. For the posts of English-language organizations, we find that out of 156 selected images, the API was able to detect faces and code emotions on 137 images. For the posts of Spanish-language media, we find that out of the 145 selected images, the API was able to detect faces and code emotions on $n=129$ images. For the English data, $n=30$ had more than one face detected; for Spanish-language posts only $n=11$ visuals had more than one face detected.

Automated Coding at the Comment Level

We applied LIWC (Linguistic Inquiry and Word Count) to measure the percentage proportion of emotions (0 to 100 continuous value). In our case, we tested for negative and positive emotions. LIWC is a dictionary that contains lists of words linked to psychological categories (Pennebaker et al. 2007) including positive and negative emotional tone. It has successfully been applied and validated in previous research (Humprecht et al. 2020) and has been tested in bilingual research comparing Spanish- and English-language social media posts (Ramirez-Esparza et al. 2008). Yet, since we cannot guarantee empirically that the dictionaries count the words the same way, we opt for the more conservative option to use LIWC for within-language comparisons.

Dependent Variable: Incivility Measures in English and Spanish

To create the incivility variable, we trained a Transformers-based machine, XLM-RoBERTa, learning model to predict incivility in comments in both languages. As is common in most supervised-learning approaches, we create a training set, a manually coded dataset that labels Facebook comments as "uncivil" or "non-uncivil." Uncivil comments exhibit abuse, sledging, or threats. We then use the labeled training set to train our machine learning model. Finally, we use the trained model to predict the rest of the comments in our corpus.

To create our labelled data, we trained three English-speaking coders who labeled 1857 Facebook comments in English and three Spanish-speaking coders who labeled

1480 Facebook comments in Spanish. Coders achieved an inter-coder reliability Kappa score of 0.82 in English and a Kappa score 0.78 in Spanish. For English, the following are examples of comments labelled as uncivil: "I think the pile he was speaking of was his own bullshit" and "Jessica Mcgwin what in God's name drugs are you on." For Spanish, the following are examples of comments labelled as uncivil: "Que afortunados son este par de imbeciles, hablando tanta caca del social media virus" and "Nunca va a ser presidente este pervertido immoral viejo senil, es parte de todos los problemas que Estados Unidos tiene!"³

In the following sections we explain our machine-learning model's training, and predicted data.⁴

Detecting Incivility in Facebook Comments Using Machine-Learning. We often use context cues to identify uncivil discourse, as certain expressions or descriptions are uncivil depending on the context in which they are used. We read a text as a whole rather than focus on the discrete meaning of each independent word. Therefore, we need a machine-learning technique that is particularly adept at understanding *context* to build an accurate classifier for incivility. Furthermore, we need a model that can understand English and Spanish text. Our model of choice is XLM-RoBERTa, a state-of-the-art multilingual Transformer based context-understanding machine learning architecture for text classification. XLM-RoBERTa is pre-trained in more than 30 languages, including English and Spanish, and has been to produce high accuracy scores in multilingual applications for data relevant to the social science (Timoneda and Vallejo Vera 2024).

Further training a pre-trained model is called fine-tuning. Using our labeled data, we fine-tune (separately) XLM-RoBERTa in English and Spanish. We apply 10-times repeated 10-fold cross-validation, reporting out-of-sample performance averages for model testing. We report the hyper-parametrization of the model and performance statistics in [Supplementary Material](#). Overall, our models achieve high levels of out-of-sample accuracy. In [Table A.3 \(Supplementary Material\)](#), we report F1 and accuracy scores. For the English model, the overall F1 score is 0.79; for the Spanish model, the overall F1 score is 0.81. Since we have an unbalanced training set (e.g., fewer occurrences of uncivil language), there is to be expected a lower accuracy for the uncivil category. However, the accuracy is well within acceptable ranges for both the English and Spanish language models. We further validate our model by comparing the predicted labels from our main corpus with a second out-of-sample labeled set. The out-of-sample dataset is sampled from the predicted data and hand-coded. This second out-of-sample validation allows us to determine the performance of our models in the data we use in our analysis. For both English and Spanish, our models perform better than the No Information Rate (i.e., randomly choose a category), achieving an accuracy of 0.85 and 0.87, respectively (see [Supplementary Material](#)).

Analytical Strategy

To analyze the relationship between journalistic role performance in the post of media organizations' Facebook pages and incivility in the comment section of these posts, we employ multi-level regression modeling to account for nested data. [Table 1](#) presents a visual overview of the data in our study.

Table 1. Descriptive statistics of the sample across English and Spanish Facebook data.

News Outlets	Facebook Posts	Facebook Comments
	<i>N</i>	<i>N</i>
<i>English media</i>	458	42,146
NBC News	74	7412
ABC News	93	5030
MSNBC	102	8575
CNN	91	11950
PBS	13	1609
CBS News	28	2332
Politico	25	2809
Washington Post	5	618
NYTimes	27	1811
<i>Spanish media</i>	234	17,537
Telemundo	156	12,481
Univision	78	5056
Total	692	59,683

For all models, we run a random intercept model to determine whether there is evidence of clustering in the data with respect to the dependent variable. The interclass correlation coefficients (ICC) and the statistically significant Wald Z test for the variance of intercepts across level two units suggested that there was enough clustering to justify our choice in using HLM. For all models, Facebook posts were entered as random effects, while Journalistic Role Performances (i.e., factual reporting, quotes, interpretation, fact-checking, polls, audience engagement), tonality of posts, and visual features in Facebook posts were included as fixed effects. All models in our sample include controls for media organizations and debate night differences to ensure that significant relationships appear above and beyond the other variables in the model. We also included controls for the type of multimedia content (e.g., whether post included a photo, video or graphic) and the type of issues discussed in the news coverage of the debates. The models presented in Table 2 examine the relationship between post level measures (journalistic role performance, tonality, and facial emotions in visuals) and comment level measures (positive emotions, negative emotions, incivility) within the English-language data, while models in Table 3 represent these relationships within the Spanish-language data.

To answer our first research question, we run a Kruskal–Wallis test to look at differences in journalistic reporting styles on the post level, comparing English-language media to Spanish-language media.⁵ We found that there are significant differences between the language groups for factual reporting, journalistic interpretation, fact checking, and audience engagement. We find the largest divide between English- and Spanish-language media when examining journalistic interpretation and audience engagement strategies. In fact, English-language media use significantly more *interpretation* in their posts than Spanish-language media (Chi-square = 86.64, $p < 0.001$). Meanwhile, Spanish-language media use significantly more *audience engagement strategies* in their posts than English-language media (Chi-square = 97.70, $p < 0.001$). We find significant differences in tonality: Spanish-language media use significantly more neutral tones than English-language media (Chi-square = 8.31, $p < 0.01$). English-language media significantly perform more of a positive tone in their reporting than Spanish-language media (Chi-square = 3.94, $p < 0.05$).⁶

Table 2. Multi-level models assessing the impact of textual and visual features of debate reporting on emotions and incivility in user comments in English media.

	Positive Emotions	Negative Emotions	Incivility
Textual features in Facebook Posts			
Factual reporting	0.003 (0.004)	-0.003 (0.003)	0.940 [0.857-1.030]
Quotes	0.001 (0.002)	-0.001 (0.001)	1.042 [0.946-1.148]
Interpretation	-0.001 (0.003)	-0.001 (0.003)	0.888 [0.817-0.966]**
Fact-Checking	-0.011 (0.009)	0.001 (0.007)	0.949 [0.776-1.160]
Polls	-0.013 (0.008)	-0.018 (0.006) **	0.929 [0.772-1.119]
Audience Engagement	-0.003 (0.004)	-0.001 (0.003)	0.962 [0.867-1.067]
Valence/Tone		-0.007 (0.002) **	0.943 [0.885-1.005]
Visual Features in Facebook Posts			
Anger	-0.010 (0.025)	-0.036 (0.019)	1.165 [0.684-1.985]
Contempt	0.176 (0.095)	-0.021 (0.069)	0.644 [0.079-5.230]
Disgust	-0.128 (1.22)	-0.054 (0.945)	6187 [0.000-9.956E + 14]
Fear	0.162 (0.139)	0.520 (0.101) ***	0.333 [0.006-18.572]
Sadness	0.005 (0.040)	-0.060 (0.030)*	0.657 [0.237-1.817]
Happiness	0.005 (0.008)	0.002 (0.006)	0.867 [0.718-1.048]
Surprise	0.016 (0.027)	-0.028 (0.022)	2.073 [1.206-3.562]**
Neutral	0.003 (0.007)	-0.001 (0.005)	0.943 [0.812-1.096]
Emotions in user Comments			
Positive Emotions			0.229 [0.201-0.261]***
Negative Emotions			11.68 [10.4-13.1]***
Media			
NYTimes	-0.005 (0.008)	-0.019 (0.006) **	0.773 [0.585-1.021]
Washington Post	-0.000 (0.014)	-0.016 (0.011)	0.787 [0.543-1.140]
Politico	0.004 (0.009)	0.003 (0.006)	0.829 [0.678-1.013]
PBS	0.014 (0.010)	-0.020 (0.007)*	0.556 [0.438-0.706]***
ABC	0.012 (0.006)	0.012 (0.005)*	1.112 [0.938-1.318]
NBC	0.010 (0.006)	0.007 (0.004)	1.222 [1.069-1.396]**
CBS	-0.009 (0.009)	0.023 (0.007) **	1.145 [0.946-1.386]
CNN	-0.001 (0.005)	-0.011 (0.004) **	1.180 [1.03-1.350]*
MSNBC- reference point	-	-	-
Variance Component			
Comment (level 1) variance	0.0655 (0.0004) ***	0.0525 (0.0003) ***	-
Post (level 2) variance	0.0004 (0.0000) ***	0.0001 (0.0000) **	0.059*** (0.010)
AIC	4979.268	-4475.493	19,6651.736
Deviance	4935.268	-4533.593	19,6649.736
N of level one units (comments)	42,125	42,125	42,125
N of level two units (FB posts)	490	490	490

Notes. ¹Coefficients represented with standard errors in brackets. ²The values for each variable are odd ratio (OR) with corresponding 95% confidence interval (CI) estimates from multi-level logistic regression models. Values < 1 indicate a negative effect, values > 1 indicate a positive effect.

Additional control variables include individual outlets, debate dates, issues discussed in the post, and multimedia features of the post.

* $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

Our second and third research questions explore if journalistic cultures can predict incivility in news comments. Preliminary results suggest that overall, conversations on Facebook pages of news organizations during political debates contained a substantial number of uncivil comments. However, we found a significant difference in the level of incivility, with debate-related news posts in the English language containing a disproportionately higher level of uncivil comments (25.5%) than news comments on Spanish media (8.8%). In other words, we find support for *different levels of incivility*. However, as we point out in footnote 6, we cannot with absolute certainty say that this difference is due to distinct discourse cultures or an expression of a measurement issue. Additionally, while we did not see any significant differences in the level of incivility between Spanish media broadcasters, media organization level factors were significant predictors of incivility for English language media. Compared

Table 3. Multi-level models assessing the impact of textual and visual features of debate reporting on emotions and incivility in user comments in Spanish media.

	Positive Emotions ¹ Coefficients (SE)	Negative Emotions ¹ Coefficients (SE)	Incivility ² OR [95 % CI]
Textual features in Facebook Posts			
Factual reporting	0.005 (0.007)	-0.011 (.006)	0.660 [0.493–0.884]
Quotes	-0.001 (0.003)	-0.002 (.002)	1.134 [0.848–1.516]
Interpretation	-0.023 (0.007) **	.015 (.006)*	1.005 [0.752–1.343]
Fact-Checking	-0.000 (0.032)	.004 (.027)	1.631 [0.670–3.969]
Polls	0.047 (0.013) **	-0.014 (.011)	0.907 [0.544–1.512]
Audience Engagement	0.009 (0.005)	.000 (.005)	1.048 [0.832–1.320]
Valence/Tone	0.003 (0.005)	.006 (.004)	1.075 [0.887–1.304]
Visual Features in Facebook Posts			
Anger	0.003 (0.005)	-0.006 (0.022)	1.196 [0.887–1.304]
Contempt	-0.030 (0.027)	-0.028 (0.058)	0.576 [0.035–9.481]
Disgust	0.229 (0.125)	0.073 (0.106)	0.031 [0.000–3.588]
Fear	-1.946(2.860)	0.294 (2.357)	0.000 [0.000–1.547E + 41]
Sadness	0.005 (0.043)	-0.028 (0.036)	1.420 [0.382–5.270]
Happiness	-0.011 (0.013)	-0.007 (0.011)	0.956 [0.587–1.555]
Surprise	0.053 (0.035)	-0.067 (0.029)*	0.823 [0.130–5.208]
Neutral	0.011 (0.009)	0.014 (0.007)	0.727 [0.484–1.094]
Emotions in user Comments			
Positive Emotions			0.287 [0.193–0.426]***
Negative Emotions			6.358 [5.219–7.744]***
Media			
Telemundo (Univision = 0)	-0.009 (.006)	0.006 (0.005)	0.874 [0.670–1.139]
Variance Component			
Comment (level 1) variance	0.0475 (0.0005) ***	0.0318 (0.0003) ***	–
Post (level 2) variance	0.0002 (0.0000)*	0.0002 (0.0000) **	0.126 (0.039)***
Deviance			95,987.577
AIC	-3548.106	-10557.452	95,989.577
N of level one units (comments)	1,7537	1,7537	1,7537
N of level two units (FB posts)	234	234	234

Notes. ¹Cell entries for positive emotions and negative emotions are coefficients with standard errors in brackets from the linear mixed-effects models. ²The predictor values for incivility are odd ratio (OR) with corresponding 95% confidence interval (CI) estimates from multi-level logistic regression models. Values < 1 indicate a negative effect, values > 1 indicate a positive effect.

Additional control variables include individual outlets, debate dates, issues discussed in the post, and multimedia features of the post.

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

to MSNBC, debate related news comments posted on Facebook pages of PBS contained less incivility, while comments posted on Facebook pages of NBC and CNN had about 20% higher levels of incivility than MSNBC. In the next step, we explore the relationship between news organizations' reporting styles and news users discourse on Facebook across cultures.

Table 2 represents the results for multilevel regression analysis for English language media. These data suggest that only some of the reporting styles are significant predictors of incivility in the news comment section. The most important result suggests that the journalistic interpretation of debate reporting is associated with a decrease in incivility in news comments. More specifically, Facebook posts that focused on interpretation or analysis of the debates decreased the chance of comments being uncivil by more than 10% (OR = 0.888; 95% CI = 0.817 to 0.966). Since our variables of interest are binary, the results suggests that news posts that pervaded analysis of what occurred during the televised debates were 12% less likely to contain uncivil language than news posts that did not focus on interpretation. In addition, we find that two other facets of reporting styles, namely tonality and the presence of polls

in news comments, had a significant relationship with negative emotions in user comments. Facebook posts that reported on polls had a negative relationship with negativity suggesting that when debate related news posts asked audiences to engage with polls the related discussions expressed lower levels of negativity ($B = -0.018$, $SE=0.006$, $p<0.01$). Similarly, debate-related Facebook posts that had a positive valence had a significant association with a decrease in the level of negativity in the comment section ($B = -0.007$, $SE=0.002$, $p<0.01$).

The analysis of the visual impact on user comment found that the manifestation of fear in visuals increased negativity in user comments ($B=0.52$, $SE=0.10$, $p<0.00$). The opposite relationship holds true for the expression of sadness in photos: The analysis of the visual impact on user comments found that the manifestation of sadness reduces the expression of negativity in user comments ($B= -0.06$, $SE=0.03$, $p<0.05$).

Meanwhile, we also find discourse tonality to impact the expression of incivility. Positive emotions in user comments are associated with a decrease of incivility, for every unit increase in positivity in news comments decreased the chance of comments being uncivil by about 73% (OR = 0.229; 95% CI = 0.201 to 0.261). Conversely, as expected negative emotions are associated with an increase in incivility in user comments, as we find that the odds of the discourse being uncivil increased by 11 times for each unit increase in negativity in news comments (OR = 11.68; 95% CI = 10.4 to 13.1).

Our data reported for the Spanish-language outlets (see [Table 3](#)) suggest a somewhat different story to the one we have seen in the English-language dataset. In the Spanish-language dataset, we find that journalistic interpretation is associated with an increase in the expression of negativity in user comments ($B=0.02$, $SE=.01$, $p<0.05$) and with a decrease in positive emotions in user comments ($B = -0.02$, $SE=0.01$, $p<0.01$). Yet, similar to English-language data, we find that positive emotions in user comments are associated with a decrease of incivility while negative emotions are associated with an increase in incivility in user comments. In other words, every unit increase in positivity in news comments decreased the chance of comments being uncivil by about 72% (OR = 0.287; 95% CI = 0.193 to 0.426). Conversely, the odds of the discourse being uncivil increased by 6 times for each unit increase in negativity in news comments (OR = 6.358; 95% CI = 5.219 to 7.744). Meanwhile, reporting on polls potentially increases positive emotions in user comments ($B=0.05$, $SE=0.01$, $p<0.01$).

But, perhaps most importantly, we find that factual reporting in Spanish language news posts is associated with a decrease in the level of incivility in the comment section. In other words, Facebook posts that focused on factual reporting decreased the chance of comments being uncivil by 34% (OR = 0.660; 95% CI = 0.493 to 0.884). Since our variables of interest are binary, the results suggests that news posts that mostly reported the facts were 34% less likely to contain uncivil language that news posts that did not focus on reporting the facts.

Finally, to answer our fourth research question about the impact of visuals on discourse, we find that fear shown in people's faces in photos of news posts can indeed increase levels of negativity in user comments. Meanwhile, and relevant for media organizations, is the finding that sadness in people's faces in visuals used in

news posts can reduce levels of incivility and negativity. Such findings may also relate to other studies pointing out that humanistic framing of the news story (i.e., reporting stories through real everyday people) can reduce incivility in the comments of an otherwise toxic topic (Salminen et al. 2020).

Discussion

Overall, our empirical findings suggest that reporting features of political debates on Facebook matter for the way audiences engage with news content. It seems important to highlight the enduring journalistic role performance in line with previous findings (Hellmueller and Arias 2020) that already showed the high expression of the civic role on Spanish-language TV networks when compared to English-language TV networks.

Meanwhile, like Blassnig and Esser (2022), we find in our study that even though media have been increasingly shaped by commercialization, negativity in news posts as one of the criteria for commercialism is less evident than the expression of audience engagement logic—at least for the Spanish-language media. This is still not the case for the English-language posts in which negativity prevails over audience engagement.

Yet, there are important distinctions. In line with previous research (Blassnig and Esser 2022), we find that Politico as the only digital-native outlet hosting debates had the highest frequency of audience engagement within the English-language outlets (40% of all its posts engaged with audiences). However, importantly, the Spanish-language TV networks outdid that number and have engagements number of 60% for Telemundo and 64% for Univision. Such findings shed light on important within-country journalistic culture differences.

On the other hand, we find comparatively higher amounts of journalistic interpretation on English-language media posts when compared to the Spanish-language media organizations. These findings support previous research that shows “the gradual transformation of the objectivity ritual toward a more interpretative approach” (Esser and Umbricht 2014, 245). Yet, the difference between Spanish- and English-language media in the United States have also been pointed out in previous studies (Hellmueller and Arias 2020). What is interesting to mention is the link between journalistic reporting and discourse: English-language media engage in interpretative reporting than Spanish-language media, and this style of reporting (interpretation) is also associated with lower levels of incivility in the comment section for English audiences.

On the other hand, we find that factual reporting is associated with reduced levels of incivility in the comment section for Spanish data. Factual reporting is significantly more relevant for Spanish-language media than English-language media in our sample. This suggests that there is a connection between dominant journalistic reporting strategies and the level of incivility in user discourse. Hence, it seems that levels of incivility may be explained by linguistic groups and journalistic reporting, yet what lies behind are actual differences in journalistic reporting and essentially distinct (to some extent dominant) journalistic role performances. In other words, we argue that in order to understand incivility in social media discourse, we need to contextualize and explain incivility in user discourse within its larger

cultural and linguistic discourse. What can work as an explanation for the English-language discourse does not automatically work for Spanish-language media on social media.

We further found a significant relationship between emotions in user comments and incivility in user comments, with positive emotions in user comments negatively related and negative emotions positively related to toxicity. These data suggest a new perspective of studying user commenting based on media reporting, namely that we need to consider how features of news reporting impact discourse quality directly, but also indirectly *via* emotional arousal. This research comes with important limitations. One of them concerning the way media moderate or filter certain uncivil discourse and whether they have ways to block obscene language, which could lead to our predictions of incivility being underestimated. Furthermore, given the specific US context, we cannot generalize to other Spanish-language context. In other words, commenters in US-Spanish media may behave differently than in an Mexican context and so on.

Incivility and Beyond

Certainly, this paper can only scratch the surface of what there is to explore within a cross-lingual social media environment shaped by different journalistic cultures and their role performances. Most importantly, this study aimed to make a contribution by developing a computational model to examine incivility in Spanish and English language. The lack of civil conversations can negatively impact trust in the political process (Mutz, 2015). Yet, our study shows that uncivil messages vary by debate and media organizations and account for between 25.5% in the English-language data and 8.8% in the Spanish-language data of the overall discourse on Facebook. Hence, the important question to follow is what lies *beyond* incivility and how it be embedded into a wider concept of discourse cultures? In other words, we need to develop cross-lingual and multilingual methods to be able to assess not only the so-called dark participation (Quandt 2018) of discourse but even more importantly, the discourse that essentially shapes political participation such as constructive and discursive forms of user commenting. In other words, the question of what type of public sphere nurtures and sustains democratic public life is an important question for digital platforms, the news industry, and citizenry alike. Therefore, exploring the democratic benefits of journalistic role performance would add an important step toward theorizing debate reporting. Very few studies have explored the quality of debate related user comments (Camaj 2021) and none have done so in a multilingual context. As Chen (2017) claims, sometimes uncivil language is necessary for certain groups to be heard; therefore, we need more inclusive metrics to judge social media conversations.

Meanwhile, historically, different understandings of normative criteria for public sphere impact the public understanding of who should participate in public debates (Benson 2008) and presumably on social media. Hence, what this study did not consider is how levels of incivility are perceived by users themselves and whether it had any effect on public opinion. We also did not examine the causes of uncivil comments. More specifically, we did not examine the motivation for leaving uncivil messages on media organizations' Facebook pages.

With no doubt, understanding commenting cultures is highly relevant for media organizations attempting to engage in constructive interactions with their users. Such knowledge gains in importance as audience engagement strategies emerge as core normative roles to news outlets. Hence, we hope to have shown some steps forward toward building empirical knowledge of engagement strategies and their impacts in a cross-lingual setting.

Notes

1. Scripts for pre-processing and SPSS files can be accessed on OSF: https://osf.io/w25af/?view_only=603afc0a7adc463382a15e0dd2d897fa.
2. Only about every seventh user in Germany as compared to every fourth online user in the United States writes comments on news (Newman et al., 2018).
3. The first comments translates to “These to imbeciles are quite fortunate, talking so much shit about the social media virus.” The second comment translates to “This prevented and immoral senile person will never be president, he is part of all the problems that the United States has.”
4. See Appendix A for a more detail recount of the machine-learning models used.
5. Given the differences in sample size, the variables of interest for our English-language and Spanish-language data have different variances, violating one of ANOVA’s assumptions. The Kruskal–Wallis test is a non-parametric alternative that fits better our data. However, there are important limitations, which we address below.
6. As noted earlier, the samples sizes for English and Spanish are different which suggest that the data generation process is different. A Levene’s test shows that the variance across sample is not equal. Beyond limitations on the interpretation of differences of mean comparisons, it is worth noting that selection of the media outlets that covered the debate is probably different for outlets catering to majority English and majority Spanish audience, as well as selection into the sample is probably different for English and Spanish-speaking audiences. While there are some differences in journalistic cultures, these differences can also explained by the type of outlets that are able to access a market, how journalists are trained, and the type of audiences that select into these options.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

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