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# Changing Images? Italian Twitter Discourse on China and the United States during the First Wave of COVID-19

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**ABSTRACT**

Although public diplomacy and its influence on foreign public opinion have been central themes in recent research, the latter often lacks methodological diversity and does not consider how states create competing images. Our study offers a framework for understanding Italian public opinion using a triangulation approach that combines traditional public opinion surveys with advanced text analysis of social media content. We compare the representation of China and the United States in the Italian Twitter community during the first wave of the COVID-19 pandemic. Our analysis shows that Italians who perceived China as a viable alternative to Western governments in public opinion surveys did so because they distrusted Western leaders and institutions.

The COVID-19 pandemic influenced global politics, changing the core functions of diplomacy to the point that the health crisis even triggered international tensions (Alhashimi *et al.* 2021). Recent studies have shown how diplomatic relations were profoundly affected by practical responses to the pandemic, such as the donation and trade of medical equipment (Gauttam *et al.* 2020; Rudolf 2021; Saha and Chakrabarti 2021). Some countries also blamed others for being unable to respond to the virus or hiding the number of COVID-19 infection cases. In sum, the COVID-19 pandemic has stimulated a reflection on current approaches in international relations, with a view to better understanding the impact of health diplomacy on global politics.

This tendency has been even more prominent in countries that were severely affected by the first pandemic outbreaks – above all, the People's Republic of China (hereafter the PRC) and Italy – because of the lingering emotional trauma caused by the limited responsiveness of national health authorities in the early stages of the pandemic. Our analysis will focus on the Italian case.

By framing the first months of the COVID-19 pandemic as a dramatic event whose disruptiveness has the potential to revise widespread beliefs (Peffley and Hurwitz 1992), we examine how the responses of international partners influenced Italian

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public opinion. Our research contributes to ongoing discussions in the field of public diplomacy and its role in international relations, particularly concerning foreign public opinion. Once established, images of foreign states – and particularly negative ones – have typically proved resistant to change (Holsti 1967), with national audiences often viewing states as inherently aggressive or deceitful, even when actions show good intentions. However, recent empirical studies have challenged this view, suggesting that states can change even negative foreign public opinion (Andrabi and Das 2017; Blair *et al.* 2022; Goldsmith *et al.* 2014; Rhee *et al.* 2023). For example, foreign aid can be an effective tool for shaping foreign public opinion, particularly in the context of health emergencies (Goldsmith *et al.* 2014; Andrabi and Das 2017).

Scholars have also increasingly recognised that public diplomacy takes place in a competitive environment rather than in isolation (Fanoulis and Revelas 2023). Considering this inherently competitive nature of public diplomacy, our research suggests that the ways in which foreign audiences perceive certain states can serve as a basis for how other states are represented in their imagination. For example, competing images of liberalism and illiberalism may shape foreign perceptions of the United States (hereafter US) and the PRC, leading foreign public opinion to make comparisons.

Drawing on the case study of Italian public attitudes and sentiments towards the US and the PRC, our study empirically assesses the potential for states to change their image. It focuses on the provision of anti-COVID-19 aid by the US and the PRC and how this contributed to a shift in Italian public opinion towards the two actors. Italy was the first country after the PRC to be hit by COVID-19, and the first European country to impose a lockdown following the Chinese containment model. On 12 March, then-Italian Minister of Foreign Affairs Luigi Di Maio welcomed the first airplane carrying medical supplies from the PRC's Red Cross Society (Mariani 2020). Further aid shipments followed (*la Repubblica* 2020a), while the Trump administration in the US continued to ignore the severity of the health crisis (Bump 2020). Only a month later, the US signed a memorandum with Italy, pledging more substantial economic support than the PRC had offered (US Embassy and Consulates in Italy 2020).

Although Italians generally blamed the PRC for spreading the virus, its management of the first wave of COVID-19 had a positive impact on Italian public opinion (DISPOC/LAPS and IAI 2020). A significant share of the respondents in public opinion surveys conducted at the early stages of the pandemic also saw the PRC as a potential model of pandemic management for other countries (Bechis 2020; DISPOC/LAPS and IAI 2020). Between March and April 2020, 52 per cent of Italian respondents considered the PRC a "friendly" country, compared to only 10 per cent in 2019 (Bechis 2020); 25 per cent considered it a benefactor during the pandemic (Krastev and Leonard 2020). In contrast, the US was identified as an "ally" by only 17 per cent of respondents, a decrease of 12 per cent from the previous year (Bechis 2020), and as a benefactor by 6 per cent (Krastev and Leonard 2020).

However, these results followed a global trend that saw a decline in the support for US leadership after the election of Donald Trump (from 48 per cent in 2016 to 31 per cent in 2018), with Italy scoring slightly above average: 36 per cent of Italians supported the US in 2018 (Gallup 2019). At the same time, Italy's public opinion of the PRC moved in the opposite direction. Lorenzo Mariani (2020) reports that in 2014, around seventy per cent of the Italian population had an unfavourable view of the PRC. Conversely, a Demopolis

Institute survey of 2019 showed that 51 per cent of the population supported the Italian government's decision to sign a Memorandum of Understanding to join the Chinese Belt and Road Initiative (Istituto Demopolis 2020). There were many reasons for this positive response, but much of it can be ascribed to the PRC's public diplomacy efforts, which were prominent during the pandemic (Sciorati 2020).

Methodologically, our work is positioned at the crossroads of content analysis, discourse analysis and Natural Language Processing (NLP). The study examines the Italian Twitter debate during the first months of the global pandemic, with a twofold aim: (i) to see whether the trends in the surveys presented above are reflected in the Twitter discourse; and (ii) to test the potential and the limits of a multi-method approach combining topic models and sentiment and emotion analysis to unpack Italian public opinion on the PRC and the US. Through the case study of Chinese and American cooperation with Italy during the early stages of the COVID-19 pandemic wave, we aim to contribute to an empirical analysis of the effects of public diplomacy and aid on foreign public opinion.

The article is structured as follows. The first section provides a literature review of academic publications on foreign public opinion in international relations, followed by a presentation of the data and methods, a discussion of the results and, finally, the conclusion. Our main finding is that the Italian Twitter users did not trust the PRC and blamed the country for the COVID-19 pandemic while at the same time ridiculing Trump's management of the pandemic in the US. Throughout April 2020, Italian Twitter users depicted the PRC as an "evil mastermind" that relied on a self-created pandemic to support its national interests at the expense of a harmless and naïve West drowning in COVID-19 cases. This understanding of the PRC helps to explain why the surveys cited in this article show skewed confidence in the PRC and a negatively affected image for the US, revealing the co-construction of competing images of the two states in Italian public opinion. Although the mixed methods approach proposed here performed satisfactorily, future research should aim to use more sophisticated NLP tools that can account for higher-level semantics.

## Foreign public opinion and international relations

This research contributes to ongoing discussions in the field of public diplomacy and its role in international relations, particularly concerning foreign public opinion. We focus on understanding the circumstances under which states have successfully influenced foreign public opinion, especially during dramatic events (Peffley and Hurwitz 1992). Building on prior academic research that underscores public diplomacy as a means for shaping national images and seeking influence (Gregory 2008), we define public diplomacy as "the deliberate communication practices employed by international actors, primarily nation-states, to advance their foreign policy objectives or foster conditions among foreign publics conducive to diplomatic relations" (Sevin *et al.* 2019, 4815).

While systemic theories of international relations have been criticised for their incapacity to explain the intricate relationship between public diplomacy and foreign policy (for example, Darnton 2020; Hoffman 2002; Cohen 2017), individual-level explanations have provided valuable insights into the potential for a state's image in foreign countries to affect foreign policy outcomes (Cottam 1994; Herrmann and Fischerkeller 1995;

Herrman *et al.* 1997). To date, little attention has been paid to the question of whether states can effectively change their image through public diplomacy initiatives. The prevailing logic is that ordinary citizens tend to seek information that confirms their pre-existing perceptions while rejecting contradictory information, thus reinforcing biases towards foreign states (Hopf 2010). Negative images of states – once established – have typically proved resistant to change (Holsti 1967); foreign audiences often have self-fulfilling prophecies and view states as inherently aggressive or deceitful, even when empirical evidence suggests good intentions. However, recent empirical studies have started to challenge this assumption, suggesting that states can, under specific circumstances, change even negative foreign public opinions (Andrabi and Das 2017; Blair *et al.* 2022; Goldsmith *et al.* 2014; Rhee *et al.* 2023). Notably, research has demonstrated that foreign aid can be an effective tool for shaping foreign public opinion, particularly in health emergency contexts (Goldsmith *et al.* 2014; Andrabi and Das 2017). This transformation hinges on the target audience's awareness and perception of a state's actual goodwill, along with the acknowledgement of the authenticity of a state's intentions in its public diplomacy efforts (Blair *et al.* 2022). In essence, these studies suggest that while the act of reversing negative images can be challenging, well-executed, sincere public diplomacy campaigns that make audiences aware of a state's good intentions can lead to shifts in foreign public opinion.

Recent research has also shown that public diplomacy takes place in a competitive environment, rather than in isolation (Fanoulis and Revelas 2023). It is widely recognised that global actors vie for the attention of the same foreign audiences, and the perceptions of these audiences strongly determine the effectiveness of actors' communication strategies (as noted by Cross and La Porte 2017 and Rhee *et al.* 2023). Considering this inherently competitive nature of public diplomacy, our research shows that competition need not be seen as a zero-sum game, as one state's image-building gains do not necessarily correspond to another state's losses. Instead, it suggests that competing images create opportunities for co-ordination and even "bandwagoning" on other states' images. This argument is grounded in the understanding that the ways in which foreign audiences perceive states are not mutually exclusive but can serve as a basis for how other states are represented. For example, the image of the US as a champion of the liberal economic system can be used as a point of reference in shaping perceptions of the PRC, which promotes norms and principles distinct from those of the US. These alternative constructions do not necessarily damage the image of either country; rather, they leverage the foundational elements of the image of one of them to redefine how we perceive the other. In our study, we aim to empirically assess the potential for states to change their images by conducting a case study analysis of the Italian public's attitudes and sentiments towards the US and the PRC. The specific reasons for choosing this case study will be explained in the following section. Guided by existing literature, we seek to answer the following question: To what extent have public diplomacy practices, such as the provision of anti-COVID-19 aid by the US and the PRC, contributed to a shift in Italian public opinion towards these two nations?

To evaluate the impact of COVID-19 on Italian public opinion, we apply the hypotheses introduced by Kasey Rhee *et al.* (2023). These hypotheses suggest that for the Italian public to change its perceptions of the US and the PRC, it must have been aware of the authentic goodwill expressed by these nations, alongside Italy's status as an aid recipient. In addition, we expand this inquiry by incorporating the relational images constructed by

the audience concerning the two analysed countries, in line with the potential for a non-zero-sum framework within the public diplomacy domain.

## Research design

Journalistic reports have used the survey findings presented in the introduction as relevant empirical evidence to explain the PRC's rise in the international system *vis-à-vis* the relative decline of the US. While many traditional accounts of the PRC's rise to great-power status are based on material assets at the state level, we follow an alternative position that measures power as a combination of material assets and political influence, mainly focusing on the latter through an analysis of foreign public opinion (Clark 2011). The first months of the pandemic provided useful data to analyse public opinion and test the abilities of the PRC and the US to build their respective images through the analysis of public opinion. While journalistic reports have focused on survey data collected in Italy during the first months of the pandemic, we used Twitter communication to assess the debate within the target audience, that is, foreign public opinion.

We acknowledge that tweets may not be the most representative sample of Italian public opinion, because Twitter users are typically a younger, more educated and wealthier sample (Blank 2016; Combei and Giannetti 2020). Nevertheless, the potential of tweets for opinion-mining remains unquestioned (Barberá *et al.* 2015). Thus, this article proposes a multi-method analysis to unveil the attitudes and perceptions of the Italian Twitter community regarding the PRC and the US during the first wave of COVID-19.

### Data

To obtain a representative image of the Italian Twitter community, we based our text analyses on a corpus of over 115,000 tweets published from 1 April to 3 May 2020, collected using the Standard Search API and the rtweet package for R (Kearney 2019; R Core Team 2021).[1]

Our time frame includes the core moments of the first pandemic wave of COVID-19, such as US President Donald Trump's decision to aid Italy (for example, by making US military personnel in Italy available for medical support or setting up field hospitals; *Reuters* 2022), the official lifting of the lockdown in Wuhan, the World Health Organization's (hereafter WHO) warning of a "second wave" of infections and the upward revision of the total number of COVID-19 deaths by the Wuhan authorities. These events coincided with the praise of the PRC's management of the pandemic expressed by a former key figure in the Five Star Movement, Alessandro Di Battista,[2] who claimed that China was Italy's essential ally in this crisis (*la Repubblica* 2020b).

We downloaded Italian tweets containing relevant hashtags (for example, *#Cina*, *#USA*, *#China*, *#America*, *#cinese*, *#americano*), as we felt they could provide a valid sample for understanding the Italian public's perceptions of the PRC and the US at

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[1]All subsequent mentions of the R software refer to the 2021 release.
[2]Alessandro Di Battista was amongst of the most popular leaders of the Five Star Movements (5SM) and a member of the House of Deputies between 2013 and 2018. He was known for his critical stance on the 5SM's agreements with established political parties and his support for direct democracy inside the 5SM. This led him to leave the Movement in 2021 after the party's leadership decided to join the government led by Mario Draghi.

the time. The selection criteria also allowed us to specifically look at the pandemic's foreign dimension, which is in line with the scope of this study. Raw data were preprocessed: functional words (for example, prepositions, conjunctions, determiners, etc.), numbers and one-character tokens were removed. Consistently with previous studies, we decided not to stem words because stemming had proved unsatisfactory in a highly inflected language such as Italian (Busso *et al.* 2020). The tweets were lemmatised for sentiment and emotion analysis with the udpipe package for R (Wijffels 2023).

## Methods

To analyse the Italian Twitter community's opinion of the PRC and the US during the analysed time frame, we applied a lexicon-based sentiment and emotion analysis technique in R to the plain text (Combei and Reggi 2024). This facilitated the task of finding the underlying sentiment and emotion mechanism. The 13,875-word lexicon that we used is the Italian version of Saif Mohammad and Peter Turney's NRC dictionary (2013), made available by the syuzhet package in R (Jockers 2017). The dictionary is instrumental in extracting sentiment polarity (operationalised here on a scale of –1 to 1) and emotional valence: surprise, joy, anticipation, trust, sadness, fear, anger and disgust. The get_sentiment function iterated over the vector of tweets and assigned sentiment scores. We applied scaling, time normalisation and shape smoothing functions to guarantee comparability between the PRC-based and US-based sub-corpora. We used the following smoothing techniques from the syuzhet package (Jockers 2017): rolling average, Loess (local polynomial regression fitting) and discrete cosine transformation. We drew on the same Italian NRC lexicon for the emotion analysis and calculated relative percentage-based values to compare the data regarding the two countries. Ten human annotators evaluated the performance of the automatic emotion classification by manually coding the dominant emotional valence from a random sample of 80 tweets. The emotion valence of this sample was also classified via the automatic tool, whereas inter-rater reliability was calculated using the Fleiss kappa test (Fleiss *et al.* 1969).

We relied on a Structural Topic Model (STM) to explore the content of the corpus inductively (Roberts *et al.* 2014; 2016). This is an unsupervised learning method that uses modelling assumptions and text properties to estimate general semantic themes (topics) and organise textual data based on word co-occurrences. Since topic models perform better with larger chunks of data, tweets were aggregated by day, resulting in 33 documents (each corresponding to the days in the time frame considered). We employed temporal and country-related covariates for the STM model to examine relationships among variables in a regression-like scheme and uncover covariation for topical prevalence (Roberts *et al.* 2016). Finally, the automatic extraction, distribution and organisation of topics were enriched by qualitative interpretation and contextualisation (time- and country-wise).

## Analysis and results

The next two subsections present the results of sentiment and emotion analyses and topic modelling. The results of our analyses and the performance of the multi-method approach proposed here are discussed in the final part of this section.

**Table 1.** Summary of sentiment scores.

| Sub-corpus of tweets | Lexicon | Mean | Median |
|---|---|---|---|
| China | NRC | -0.07 | 0 |
| US | NRC | 0.04 | 0 |

### Lexicon-based sentiment and emotion analyses

The results of the lexicon-based sentiment analysis are shown in Table 1. The mean values of sentiment are irrelevant because the scores of corpora like the one used in this study are frequently close to zero, namely a neutral score (Bianco *et al.* 2023). This trend is further illustrated by the median values of both sub-corpora.

Hence, we analysed the temporal variation of sentiment in the two sub-corpora. Sentiment in the Chinese dataset was neutral (around zero) during the first week of April 2020. It then showed some small peaks of positivity (for example, on 9 April, when the Chinese government announced that the lockdown in Wuhan had been lifted). From 17 April onwards, sentiment fell and remained negative for ten days. This could be explained by the simultaneous publication of negative information about the PRC in Italy's national media. Italian newspapers (Rampini 2020a) discussed the possibility of a deliberate release of the COVID-19 virus, while Wuhan's local authorities confirmed that the number of deaths was higher than initially reported (Santelli 2020). At the same time, Di Battista provoked strong reactions on Twitter; during an interview, he stated that the PRC was a valuable ally for Italy in the fight against the pandemic and praised the country's domestic management of COVID-19. In response to these statements, the PRC's aid was described by some as a "gift" connected with Beijing's soft power. Sentiment returned to neutral and, eventually, became positive in the last week of April, presumably as a reaction to the news from Wuhan that COVID-19 patients were being discharged from hospitals and local schools were reopening (see, for example, *la Repubblica* 2020c).

With regard to the distribution of sentiment in the American sub-corpus, it seems that tweets were characterised by either strongly positive or strongly negative sentiment, showing considerable variation. We spotted three negative and three positive peaks in the time frame considered. The first positive peak, on 10 April, can be explained by the announcement of US aid to Italy (Rampini 2020b). On 14 April, the sentiment of US-related tweets showed negative scores. Not only do these results coincide with Trump's announcement that the US would stop funding the WHO because of alleged funds mismanagement (*BBC* 2020a), but national media also questioned the extent to which US promises of providing aid were maintained (Nigro and Rampini 2020). On 20 and 21 April, many negative sentiment tweets were posted in response to US oil prices falling below USD 0 because COVID-19 restrictions had reduced global demand.

Sentiment turned positive from 23 April onwards. However, most tweets were humorous reactions to Trump's suggestions to respond to COVID-19 by self-injecting disinfectant or exposing the sick to ultraviolet light (*BBC* 2020b). Italian Twitter users were visibly perplexed by the unconventional nature of these proposals, leading to a critical reaction regarding the way the US President handled this intricate public health issue.

The most prevalent emotion in tweets about the PRC was *fear* (around 20 per cent), followed by *trust/mistrust* (over 18 per cent), *anger*, *anticipation* and *sadness* (about 13

per cent), *disgust* (9 per cent), *surprise* (7 per cent) and *joy* (6 per cent). In contrast, the emotional content of tweets about the US showed that the primary emotions were *trust/ mistrust* (around 27 per cent), *fear* (18 per cent), *anger* (13 per cent), *sadness* (12 per cent), *anticipation* (around 11 per cent), *disgust* (7 per cent), *joy* (6 per cent) and *surprise* (5 per cent).[3]

Another notable finding is the prevalence of *fear* and *anger* in both datasets. Comparing these findings with the COVID-19 timeline helps us to contextualise the prominence of the two emotions: in the month under consideration, the pandemic's progress was problematic at the global level, with the US and Italy being under strain.

We selected a random sample of 80 tweets to manually validate the results of the emotion analysis. This number was chosen to avoid overburdening the human annotators, while still ensuring that each of the emotions assigned by our lexicon-based system was equally represented by ten tweets. Ten annotators coded the dominant emotion of tweets using the same categories in the system. Inter-rater reliability was calculated using the Fleiss kappa test, suggesting a good level of agreement between the raters (kappa = .616; z = 95.7; p-value < 0.05). Inter-rater reliability was also measured between annotators and the automatic classification. The result again suggests a good level of agreement (number of raters = 11; kappa = .642; z = 111; p-value < 0.05).

Based on these results and the subsequent qualitative assessment, the analysis of sentiment and emotion in tweets can be considered satisfactory. However, a tool that also considers semantic shifters, negation or, more generally, sentence- and tweet-level semantics would have given a more fine-grained picture of sentiments and emotions among the Italian Twitter community. Future research, endowed with more sophisticated deep learning tools, will be able to achieve this.

### STM findings

Following the results of the lexicon-based sentiment and emotion analyses, we performed topic modelling on the same corpus of tweets. In this subsection, we will first present the results of a comparative analysis of the different topics detected by the STM, thus qualitatively grouping topics into clusters. Next, we will assess the most common topics and the covariates' effect on topic prevalence.

### Comparative analysis and clusters

Figure 1 shows the 13 most relevant words characterising the ten topics detected through the STM.[4] We primarily identified five topic clusters; the first three (topics 1, 2 and 9) relate to Trump's statements and actions. Topics 1 and 2 focus on Trump's decision to cease funding to the WHO because of suspected collusion with the PRC and the president's invitation to refocus COVID-19 research on disinfectants and ultraviolet lights. These two topics evoke negative sentiments towards Trump or American voters, who are

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[3]In the US case, trust seems to be the most prevalent emotion. However, the data show that tweets conveying the opposite emotion (for example, "mistrust" or "scepticism") were also labelled as "trust". This mislabelling highlights one of the major limitations of lexicon-based emotion analysis, which only considers the lexical-semantic level of a word, and thus the need to triangulate findings.

[4]See the Appendix – available upon request from the authors – for a detailed summary of each topic, including sentiment, context and examples.
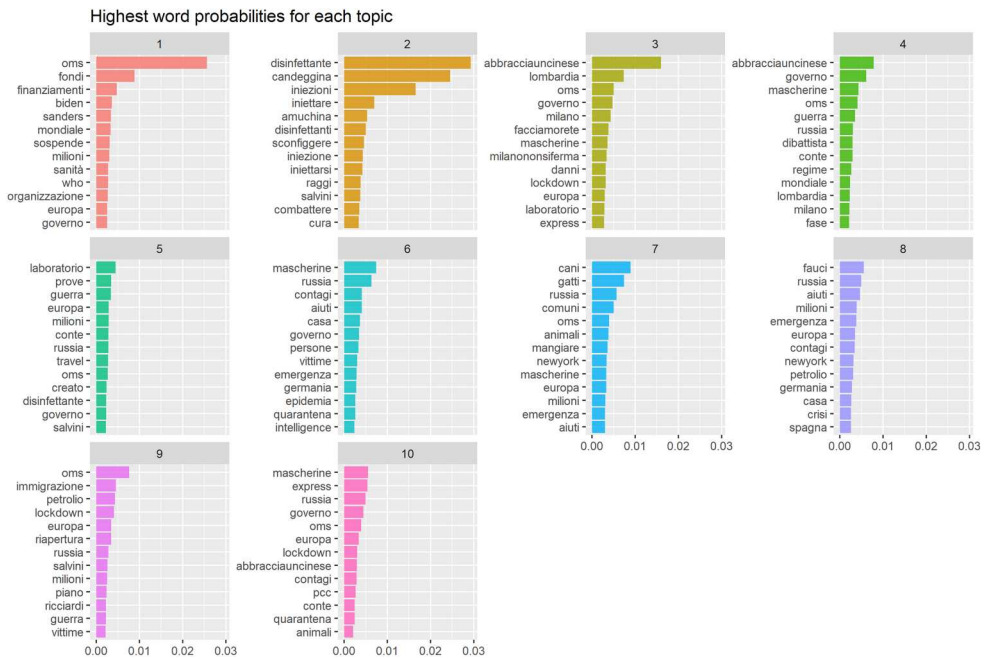
**Figure 1.** Word probabilities for detected topics.

criticised for having voted for the then US president. In contrast, topic 9 is mainly linked to Trump's decision to stop immigration and shows positive sentiment.

The second cluster deals with the management of domestic pandemics in the US (topic 5) and the country's economic and health situation (topic 8). Both topics elicit highly negative reactions, with only a few positive comments in topic 5, expressing appreciation for the relaxation of lockdown measures. Overall, this topic highlights the possibility that Trump was trying to avoid responsibility for the internal mismanagement of COVID-19 by blaming the PRC. For instance, it was suggested that Trump continued to blame China for the coronavirus in an attempt to divert attention from his shortcomings and the loss of lives in the US. Topic 8 follows Trump's dispute with Anthony Fauci over the future US strategy for dealing with the pandemic. This cluster gives a negative image of the US as a country facing deep economic and health crises, where healthcare professionals are sidelined by Trump. The US is also depicted as being dependent on Russian medical aid. Italian Twitter users expressed confusion about the provision of assistance by Russia to the US, with the latter also being referred to as the quintessential rascal state. Doubts were raised about the dispatch of ventilators from Russia, with an emphasis on the fact that these ventilators were manufactured by a Russian company currently under sanctions imposed by the US. The second cluster is the most useful one for explaining the results of the opinion surveys on the PRC and the US in Italy. Specifically, since public opinion on Trump and the US was negative, it was easier for the PRC to appear in a more positive light by comparison.

The third cluster (topics 3 and 7) regards the PRC and contains highly negative remarks about Chinese citizens, which appear to be based on cultural xenophobia.

By criticising the Italian Democratic Party's campaign *#abbracciauncinese* ("hug a Chinese person"), topic 3 implies that people of Asian ethnicity are responsible for spreading the virus. On the other hand, topic 7 draws from the news that a partial ban on using cat and dog meat for human consumption was introduced in the PRC (*TGCOM24* 2020). By exploiting regional food habits, Chinese people are described as "barbarians" and "troglodytes", and human consumption of domestic and wild animal meat crystallises as the origin story of the pandemic.

The fourth cluster (topics 6 and 10) concerns the PRC's successful domestic management of COVID-19 and its global position. Topic 6 focuses on the country's anti-pandemic fight, while topic 10 looks at the PRC's primary role in selling medical equipment to Italy. Counter-intuitively, this cluster also carries positive connotations of the PRC. Although most tweets offer an image that is far from that of a selfless benefactor, the data also suggest that the country is portrayed as successfully managing the national pandemic and using it to its benefit *vis-à-vis* Europe or the US.

The final cluster (topics 3, 4 and 10) covers the PRC's relations with Italy. It includes topic 3 (the *#abbracciauncinese* campaign), topic 10 (the PRC selling medical equipment to Italy) and topic 4 on the relations between the PRC and the Five Star Movement and the all-round friendly rhetoric that Italy reserved for the country. Although the comments on the PRC are unanimously negative, the focus is on the Italian government's perceived inability to deal with Beijing on an equal footing. Frustration was vented against China, which was blamed by some for the global pandemic and accused of over-charging for masks.

Our findings suggest that the results of the aforementioned survey by SWG on the PRC and the US have been determined by the historical moment. However, many of the clusters we identified reveal that Twitter users had a counter-intuitively positive connotations of the PRC (as an "efficient scheming mastermind") as opposed to Western countries, particularly Italy and the US, which were deemed naïve. The data show that the PRC's image in the Italian Twitter community mostly benefited from a general decline in trust in Western governments.

### Major topics and the effects of covariates

Figure 2 summarises the findings on topic prevalence. Topics related to specific events are less prevalent in the corpus (for example, the PRC's ban on animal meat consumption or Trump's comments on ultraviolet lights). The first and fourth most prevalent topics (3 and 10, respectively) concern Italy and its government. The second and third most prevalent topics (8 and 5, respectively) criticise the US management of the pandemic. Interestingly, topics on Italy or the US are more relevant than topics on the PRC.

In short, the effect of the time (*created_at*) and country (*target_country*) covariates shows the likelihood of a topic becoming relevant on a specific day and its chance of referring to either the PRC or the US.

With regard to the time covariate, topics 1, 2, 5, 6, 7 and 9 are linked to single events, as indicated by a single peak in the expected topic proportion (Figure 3). Topics 1 and 2 regard Trump's actions, while topics 6 and 7 refer to the PRC's enforcement of a lockdown in Henan Province (Rui and Xie 2020) and the Ministry of Agriculture's dog meat ban after the 2020 Yulin Festival (*TGCOM24* 2020). The remaining topics recur throughout the analysed timeline. Topics 3, 4 and 10 relate to the PRC's role in the

**Top Topics**



Topic 3: abbracciauncinese, lombardia, oms, governo

Topic 8: fauci, russia, aiuti, milioni

Topic 5: laboratorio, prove, guerra, europa

Topic 10: mascherine, express, russia, governo

Topic 1: oms, fondi, finanziamenti, biden

Topic 4: abbracciauncinese, governo, mascherine, oms

Topic 9: oms, immigrazione, petrolio, lockdown

Topic 6: mascherine, russia, contagi, aiuti

Topic 7: cani, gatti, russia, comuni

Topic 2: disinfettante, candeggina, iniezioni, iniettare
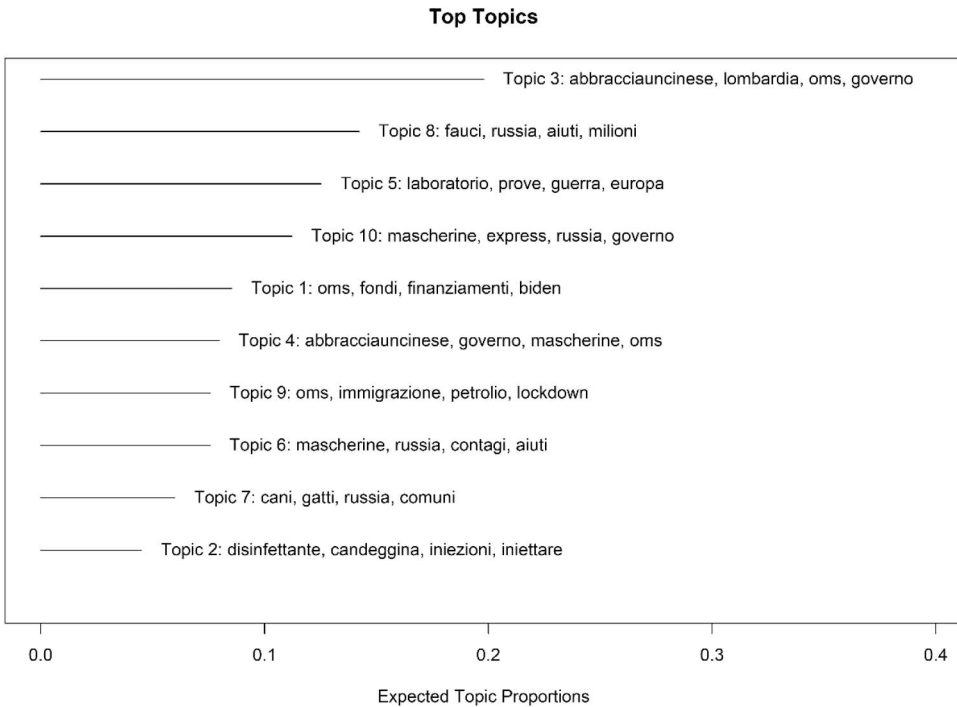
Expected Topic Proportions

**Figure 2.** Most common topics and words.

pandemic. Topic prevalence is boosted by specific events, such as the lawsuit filed against the PRC by the State of Missouri (*ABC News* 2020), Di Battista's endorsement of the nation as Italy's most important ally in the fight against the pandemic (*la Repubblica* 2020b) or the exchange of equipment between the PRC and Italy. Topic 8 – on the relationship between Trump and Fauci – recurs in the first half of April. This topic was more prevalent when tensions arose, as when Fauci was placed under security surveillance after receiving death threats (*la Repubblica* 2020d).

As for the country covariate, Figure 4 shows that topics 1, 2, 5, 8 and 9 can be found in tweets about the US, while topics 3, 4, 6 and 10 recur in tweets about the PRC. In contrast, topic 7 is shared by both US- and PRC-oriented tweets. Most tweets in topic 7 negatively comment on the Chinese consumption of wild animal meat and its role in transmitting COVID-19. However, comparisons are also made between the PRC's management of the pandemic and that of the West, especially when the former quickly declared zero daily new cases as opposed to the high infection rates in the US. In those moments, tweets related to both countries.

## Discussion

The sentiment and emotion analyses and the topic modelling show that the Italian Twitter community had negative sentiments towards the PRC and the US. On the one hand, tweets expressing mistrust of the PRC, and the Italian community seemed to blame the Asian country for the pandemic. Negative feelings about the PRC were also highlighted in the corpus, mainly stemming from a sense of unease with Chinese
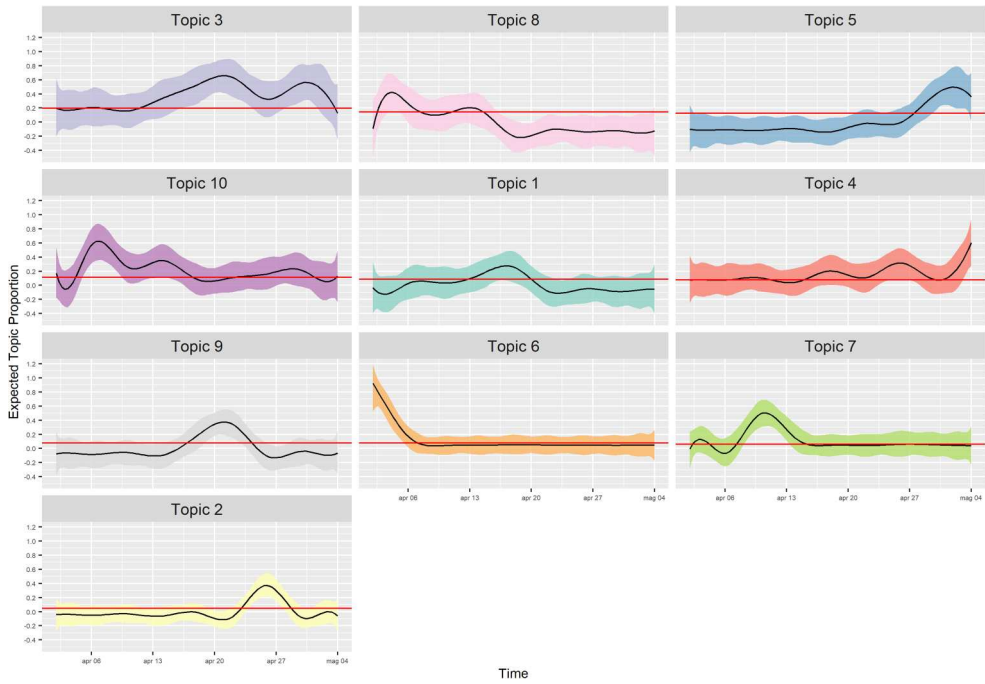
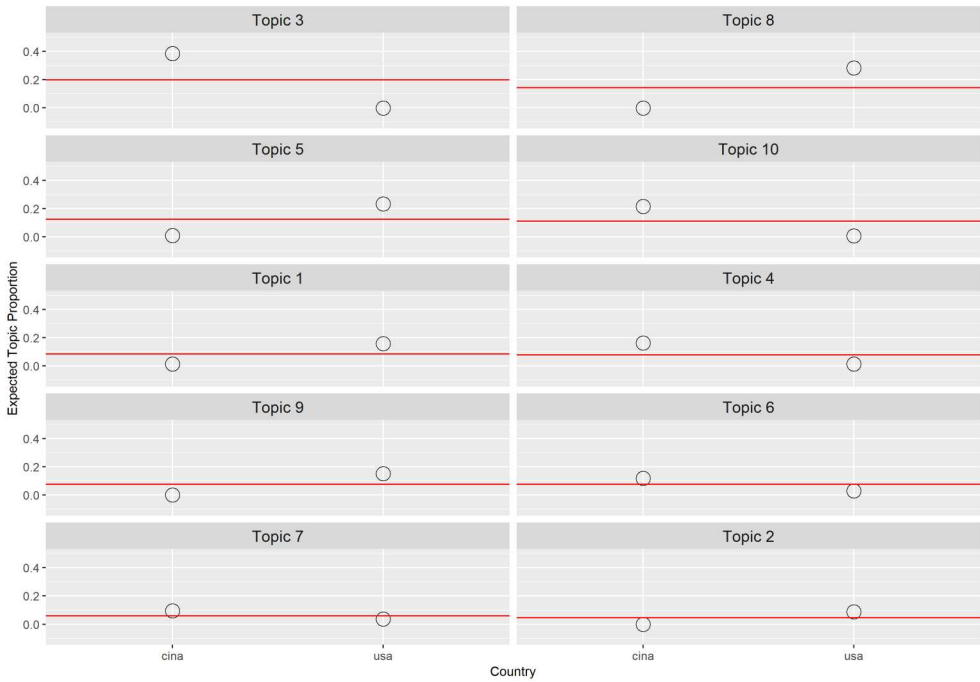**Figure 3.** Effect of covariate time (created_at).



**Figure 4.** Effect of covariate country (target_country).

culture, society and political system rather than Beijing's policy choices. Conversely, the US and Trump's actions, in particular, were ridiculed. Positive comments about the US were rare, largely reflecting the support of Italy's far-right parties and sympathy for Trump's policies, particularly the immigration block (*The Guardian* 2020), while criticism focused on a discouraging image of the US that clashed with the country's traditional idea of a global superpower.

This contrast in perceptions of the US and the PRC could be one of the main reasons for the findings of the surveys mentioned above: namely, identifying the PRC as a close ally of Italy during the pandemic was driven by distrust of traditional allies, especially the US. A survey conducted by the Italian Institute for International Political Studies (ISPI) and Institut Public de Sondage d'Opinion Secteur (IPSOS) (2021) at the end of the same year shows that perceptions of the PRC changed over time, as the country was identified as the world's most threatening country. In contrast, most respondents considered the US to be Italy's ally at the global level compared with the European Union, the PRC and Russia.

In light of our findings, we argue that positive opinions of the PRC are primarily due to the diminishing trust in Western – and, particularly, American – institutions more than to the PRC's ability to build consensus among Western audiences through aid-based public diplomacy initiatives. This is consistent with the hypotheses of Rhee *et al.* (2023). Our data show that users hardly considered the activities of Chinese political institutions, basing their opinion of the country on a comparison with what other actors in Italy or the West were saying or doing. This approach problematises the role of Chinese aid as a major factor in the country's image-building strategy during the pandemic. Therefore, the debate on the PRC in the Italian Twitter community during the period under consideration cannot be detached from discussions on the US in a trilateral interpretive framework, providing empirical evidence to sustain our argument for the importance of comparative counter-images in changing the image of states.

Our results problematise previous empirical findings on the positive effects of public diplomacy in other contexts, highlighting that the Italian Twitter community shows great susceptibility to competing images of the PRC and the US, using one as an important reference *vis-à-vis* the other.

## Conclusion

Using a mixed methods approach, we have investigated how the Italian Twitter community perceived the PRC and the US during the first wave of COVID-19 infection (1 April– 3 May 2020). Our analysis revealed adverse reactions and feelings towards the PRC and the US. Sentiment changed throughout the 33-day time frame, presumably as a result of real-time reactions to news about the PRC and the US.

Our findings suggest that Italian Twitter users did not trust the PRC and held it responsible for the COVID-19 pandemic. At the same time, Trump's handling of the outbreak in the US was also criticised and mocked. The key finding of this study is that a positive image of China was mostly linked not to an evaluation of its policy *per se* but rather to a comparison with the naïve and harmless West (especially the US); overall, China was perceived as pursuing its national interest, thus far from being a selfless benefactor. This perspective explains why the surveys examined at the beginning of the

article show a skewed confidence in the PRC and a negative perception of the US. The analysis contributes to the existing literature on the impact of public diplomacy on foreign public opinion by highlighting the importance of the images of competitor states in constructing a country's public narrative. It has also provided empirical evidence that supports the idea proposed by Rhee *et al.* (2023), highlighting the importance of foreign audiences' perceptions of states' goodwill in image change.

Finally, thanks to the methodology proposed in this study, which integrates content and discourse analysis with NLP, we have been able to gather useful information. While we believe it has potential for similar applications in this field, future research should strive to use more advanced approaches, such as deep learning tools that consider higher-level semantics.

## Disclosure statement

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

## Data availability statement

The data supporting the results of this study was scraped from Twitter and is available upon request.

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## Appendix

The Appendix containing the main tweets per each of the estimated STM topics is available upon request.