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# Who set the narrative? Assessing the influence of Chinese global media on news coverage of COVID-19 in 30 African countries

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## Abstract

The size of China's State-owned media's operations in Africa has grown significantly since the early 2000s. Previous research on the impact of increased Sino-African mediated engagements has been inconclusive. Some researchers hold that public opinion toward China in African nations has been improving because of the increased media presence. Others argue that the impact is rather limited, particularly when it comes to affecting how African media cover China-related stories. This article contributes to this debate by exploring the extent to which news media in 30 African countries relied on Chinese news sources to cover China and the COVID-19 outbreak during the first-half of 2020. By computationally analyzing a corpus of 500,000 written news stories, this paper shows that, compared to other major global players (e.g. Reuters, AFP), content distributed by Chinese media (e.g. Xinhua, *China Daily*) is much less likely to be used by African news organizations, both in English and French speaking countries. The analysis also reveals a gap in the prevailing themes in Chinese and African media's coverage of the pandemic. The implications of these findings for the sub-field of Sino-African media relations, and the study of global news flows are discussed.

## Keywords

Big data, China-Africa, computational text analysis, intermedia agenda setting, news agencies, Xinhua

Starting in the mid 2010s, State-owned Chinese media began to increase their presence in many African countries as part of China's "going out strategy" which spanned across multiple economic sectors, including audiovisual entertainment, telecommunications, and news content (Keane,

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2016). In a way, this was a “return” to the continent (Alden et al., 2008), as Chinese media used to have a meaningful footprint in Africa during the 1950s and 1960s. The widespread reach of Chinese media in most African countries today, from State-controlled news organizations such as CGTN (China Global Television Network) and Xinhua, a news agency, to StarTimes, a privately owned pay TV operator, is difficult to ignore by those residing on or visiting the continent and has thus received a fair share of scholarly attention (Zhang et al., 2016). Nonetheless, there is limited quantitative evidence about the actual impact that this increased presence is having on local audiences’ news consumption habits (Gorfinkel et al., 2014; Guyo & Yu, 2019; Wasserman & Madrid-Morales, 2018), on the content of local news media (Madrid-Morales & Wasserman, 2018; Wasserman, 2016), and, more generally, on domestic narratives about China, and Africa–China relations (Skjerdal & Gusu, 2016; Yeboah-Banin et al., 2019). This article represents the first attempt at quantifying the last two at scale.

Previous research has shown that coverage of Sino-African relations tends to be somewhat episodic (Madrid-Morales & Gorfinkel, 2018), mostly presented through domestic lenses (Wasserman, 2015), and often framed in terms of uncertainty regarding the actual benefit or possible harm of closer engagement between China and African countries (Řehák, 2016; Yeboah-Banin et al., 2019). While some events and news stories, such as those related to loans, infrastructure, and debt, or those about multilateral exchanges within the Forum on China–Africa Cooperation or FOCAC, do generate some interest across the continent at certain points in time, the volume of news coverage about China by African media on a day-to-day basis tends to be somewhat limited. Precisely, because of the episodic nature of news coverage about China’s engagement with Africa, the outbreak in late-2019 of COVID-19, the coronavirus disease caused by SARS-CoV-2, presents an excellent case study for a paper, like this one, aimed at measuring news coverage of a single event across multiple Sub-Saharan African countries. The COVID-19 “news event” had a global impact (including all African countries), it was prolonged in time, it included multiple sub news events, and it showcased many dimensions of China’s engagement with the continent (Gabore, 2020).

Using COVID-19 as a case study, this article (a) quantifies the amount of textual news content generated by Chinese news organizations that makes its way to African media and (b) measures the extent to which Chinese narratives about China’s handling of the COVID-19 crisis shaped those published on digital African media. To achieve these goals, in this study, I employ two computational text analysis tools (a text similarity detection algorithm and structural topic modeling or STM) on a bilingual corpus (English and French) of approximately half a million written news items published online between January and May 2020. The corpus includes content published by hundreds of news organizations in 30 African countries, and by Chinese, French, British, and US global media. The analysis and discussion are anchored on academic literature about global news flows, intermedia agenda setting theory, as well as in previous studies on Sino-African mediated engagements.

## **Global news flows and intermedia agenda setting**

The impact that global news agencies from the Global North have on the news content of media in the Global South, including those in Africa, has long been a preoccupation of scholars of global communication (Boyd-Barrett, 1980; Paterson, 2011). The quasi-monopoly that some news agencies had in the production and distribution of information, and the negative consequences of a unidirectional flow of information from the North to the South became contentious issues in the

1970s and 1980s, not only in academia but also in political discourse (Hamelink, 2015; Padovani & Nordenstreng, 2005). These discussions led to the publication of the McBride report, a set of policy recommendations for a more just flow of information globally, as opposed to the free flow that was in place during most of the Cold War (Hannah, 2018). Since then, empirical academic studies on global news flows have declined, but the interest in global news agencies, and their impact on the news agendas of countries on the periphery of the world system has remained (Boyd-Barrett, 2000; Paterson, 2013).

The ability of well-established news organizations, such as global news agencies, to have an impact on the content of smaller or less-established news organizations is what McCombs (2004) described as the “intermedia agenda setting” function of the media. The most direct form of influence is on the salience of themes and issues, but some scholars (Kim et al., 2016) have suggested that, in some instances, established media might also influence the way these issues are discussed (second-level intermedia agenda setting). Studies on the intermedia agenda setting function have mostly focused on domestic media (Guo, 2019; Heim, 2013), but some have begun to look at global cases. For example, Guo and Vargo (2020) use the term “transnational intermedia agenda setting” to refer to (a) the ability of news media in a given country to “transfer the salience of issues associated with their own country to foreign media, thus influencing how foreign media portray the country” (p. 3) and (b) “the capability of a country’s news media to push their perspectives on international politics outside of their own country to the world” (p. 3). This article focuses on quantifying the first of these two types of influence: the ability of Chinese media to transfer the salience of issues associated with China (and its handling of COVID-19) to the media in Africa.

For most of the 20th century, scholars of global news flows were mainly interested in the impact that privately owned transnational corporations might have on the media industries in the South (Robinson, 2002; Tomlinson, 2002). Since the mid 2000s, however, interest in the private sector has shifted toward the possible impact of State-owned media on global news narratives (Cushion & Lewis, 2010). This interest was spurred by the arrival of Qatar’s Al Jazeera English and has been increasing as other (partly or fully) State-funded television networks and news agencies have become more prominent globally. Many of the “new actors” are sponsored by authoritarian regimes, such as Russia, Iran, or China, which are now competing for influence with long-established players like French, German, and British global media (Hernández & Madrid-Morales, 2020). One characteristic shared by all State-backed media organizations is their willingness to increase their intermedia agenda setting capabilities regionally or globally. In the case of China, efforts have had a global reach, but it is probably in Africa where their impact is thought to be most noticeable. Headlines such as “Chinese media make inroads into Africa” (McKenzie, 2012) and “Live From Nairobi, China Puts Its Stamp on News in Africa” (Jacobs, 2012) are representative of how journalists, and also some academics, have described the alleged influence of Chinese media activities in Africa. In the next section, however, I suggest a more cautious interpretation of existing evidence on the impact that China’s increased presence in Africa is having on the content of local media.

## **China–Africa mediated relations**

In 2006, China’s State-owned news agency, Xinhua, moved all of its editorial offices for Sub-Saharan Africa from Paris, where they had been for decades, to Nairobi (Xin, 2009). China’s Central Television had been expanding its operations in Sub-Saharan Africa for some time

when, in 2012, it launched a production and broadcasting center in Kenya's capital (Zhang, 2013). China Radio International (CRI), which has been broadcasting on the continent since the 1960s, now operates a multilingual FM station in Kenya, and has a significant presence in other parts of the continent, including French-speaking West Africa (Mihoubi, 2019). *China Daily*, a newspaper, and *Chinafrica*, a magazine, also launched African operations in 2012 (Wasserman & Madrid-Morales, 2018). All these efforts were the culmination of a broader strategy by then Chinese President Hu Jintao to give China a louder voice in global discussions around China's development, its engagement with the world and, more specifically, the nature of Sino-African relations.

While the presence of Chinese media in Africa has never been larger than it is now, the extent of their impact on African audiences and on the content of African news organizations remains a rather elusive question. Bailard (2016) has suggested that in countries where Chinese media have the largest presence, attitudes toward China improved over time, which can be interpreted as a form of influence. However, Madrid-Morales and Wasserman (2018) have shown that few media professionals, policy makers, and journalism students in Kenya and South Africa, the two markets where Chinese media's presence is most felt, would agree with the assertion that Chinese media are having an impact on their country's news agendas. An analysis of focus group data and in-depth interviews revealed that very few are exposed to Chinese content, and that those who are, make a very critical reading of said content (Madrid-Morales & Wasserman, 2018). Their findings concur with other audience studies in Africa (Gorfinkel et al., 2014; Guyo & Yu, 2019; Xiang, 2018). The most recent and comprehensive of these quantitative audience studies by Madrid-Morales and Wasserman (2020) revealed that less than 2% of Kenyans and South Africans listen to CRI or read *China Daily*, and only 7% of Kenyans and 3% of South Africans watch CGTN.

While direct influence by means of watching, reading, or listening to Chinese media might be limited, Wasserman and Madrid-Morales (2018) have suggested that Chinese media might be most effective when using "indirect means" of influence. In other words, instead of reaching audiences directly, they reach them through the content of local African media. For example, Madrid-Morales (2018) has presented evidence that Kenyan print journalists often use content from the Xinhua news agency, particularly feature stories. An uptick in the use of content from Xinhua has also been seen on Ghanaian (Serwornoo, 2019b) and Malawian (Nyirongo, 2020) media. This is partly explained because of content exchanges and syndication agreements that the news agency has signed with partner African organizations. Many of these partnerships are widely publicized by the news agency itself (Li, 2017).

Despite all this qualitative evidence in the literature, no study has attempted to measure quantitatively the extent of Chinese media's influence across the continent, particularly vis-à-vis other international news agencies. If Chinese media organizations operating in Africa like Xinhua have, in fact, been successful in their efforts to maximize their transnational intermedia agenda setting function, an exploration of the content of local media (whether it is textual or audiovisual) should reveal the extent of said influence. Academic studies that suggest an intermedia agenda setting function of American and European news organizations on the content of African media are abundant and describe some degree of influence on issue salience and issue characteristics (Paterson, 2013). Similar results should be expected when analyzing the content of Chinese media, given that scholars of Sino-African mediated exchanges have documented an expansive effort by Beijing to maximize its "discursive power" (Lee, 2016) on the continent. This should be most apparent in the coverage of COVID-19, given that Chinese media were very proactive in their messaging of China's responses to the outbreak domestically and abroad (Gabore, 2020).

Following this argument, in this article, I propose to explore Chinese media's transnational intermedia agenda setting (Guo & Vargo, 2020) capabilities in Africa in three steps. The first step involves quantifying the overall coverage of (a) China-related stories, (b) COVID-19-related stories, and (c) COVID-19 and China stories on African media (RQ1). Then, to evaluate the intermedia agenda setting function of Chinese media, I propose two approaches that tackle different levels of influence. One approach is to consider the content published by Chinese and other global media that is used—word by word—by African media through text reuse (RQ2 and RQ3). The other approach considers the possibility that broader Chinese efforts to shape news narratives (e.g. press conferences by government officials, use of social media, influence on opinion leaders, indirect exposure of journalists to content from China . . . ) are having an indirect impact on the way these topics are discussed by African media (RQ4). In formal terms, this article seeks to provide answers to the following research questions, using the COVID-19 outbreak in late-2019 (which extended well into 2020) as a case study:

*RQ1.* How prevalent were news stories about China and COVID-19 in African media between January and May 2020?

*RQ2.* How much content from global media did African news organizations reuse in their reporting of the COVID-19 outbreak?

*RQ3.* To what extent was the reuse of Chinese media's content different in Francophone and Anglophone Africa?

*RQ4.* How much of China's narrative during the crisis was reflected on African media's coverage of the pandemic?

## Methods

To answer the questions presented earlier, this article uses computational content analysis techniques. With computational tools, as opposed to manual content analysis, researchers can uncover general patterns, sometimes in large volumes of textual data (De Grove et al., 2020; Lewis et al., 2013), and tackle questions that might have been difficult to address with manual content analysis (Trilling & Jonkman, 2018). The approaches employed in this article, (a) using document similarity algorithms to identify text reuse (Nicholls, 2019; Vogler et al., 2020) and (b) fitting STMs to identify themes in news texts (Barberá et al., 2020; Kananovich, 2018) have been shown to produce reliable data to answer similar questions in the past. These approaches are only applicable to written text, which is the focus of this article, and do not consider non-written content. In non-computational intermedia agenda setting research, written news items are manually coded (Heim, 2013) and issue salience is compared across sources. When computational tools are used (Guo, 2019), researchers often use automated (or quasi-automated) topic classification algorithms to identify issues in news content.

## Data collection

For this study, I compiled a bilingual (English and French) corpus of more than 500,000 written news articles about China and/or about COVID-19 published by African, Chinese, French, British, and US media organizations. The corpus covers the period from 1 January 2020 to 31 May 2020. To build the corpus, data were retrieved from three sources. First, using Nexis Uni, a database that



includes full-text news content in multiple languages, 207,227 items were retrieved from 142 sources in 34 countries (30 African nations plus China, France, the United States and the United Kingdom). To retrieve the data, the search string “Chin\* OR COVID OR coronavirus” was used to include all articles mentioning China (including those published before the terms “COVID-19” and “coronavirus” became commonly used), and those referring to the virus at the early stages of the outbreak in China. Because African countries are severely underrepresented in commercial databases such as Nexis Uni (Madrid-Morales, 2020), I retrieved additional content through two more sources, NewsAPI, a commercial product that provides access to stories published online in 54 countries (eight of which are included in the study), and the Global Database of Events, Language, and Tone (GDELT) project database, an initiative that monitors and analyzes content published online, mostly from news organizations (Leetaru, 2013). To retrieve full-text data with NewsAPI, I used the same search string used with Nexis Uni.

GDELT does not provide unlimited backward keyword search, and therefore, a different approach was employed. Using the project’s Global Knowledge Graph database and Google BigQuery, I selected all items that included the location China in the V2Locations variable in the dataset, and all items labeled in the database as having “PANDEMIC” or “VIRUS” as a theme (V2Themes). These themes include articles featuring words such as “virus,” “health crisis,” “pandemic,” “epidemic,” or “influenza.” A comparison of keyword occurrences across the three sources of data is presented in Online Supplemental Appendix 1. I then restricted the list of 20 million URLs found in the database to include only those published by selected global Chinese media (Xinhua, *China Daily*, CGTN, *Global Times*, and *People’s Daily*), international news agencies (AFP, Associated Press (AP), Reuters), other influential non-Chinese international media (CNN, BBC, *Le Monde*, *Libération*, *La Croix*), and those included in a personally curated list comprising 2000 African news websites in French and English (out of which around 400 had a match in the GDELT database). To retrieve content from each URL (GDELT does not provide access to the full-text of items it analyzes), a web scraper was built on Python, using a combination of three libraries—justtext, trafilatura, and goose3—that are able to remove non-relevant text content (e.g. boilerplates) from scraped webpages. The scripts used for data collection, as well as those employed in the analysis are available at [https://github.com/danimadrid/africa\\_china\\_covid19](https://github.com/danimadrid/africa_china_covid19).

In selecting the sources for this study, a few criteria were followed. First, because the aim of this article is to measure the transnational intermedia agenda setting function of global media on digital news content in Africa, only news organization with a substantial presence online were considered. In addition, because the computational tools used in this article can only analyze text, I limited the selection to media that publish textual content online. This, for instance, excludes CRI, which is present in Africa, but has very limited text output on its website. In addition, while it would be important to consider video and photo material as well, this was not included in this study. Future studies might address this aspect of intermedia agenda setting research, which remains largely understudied. Finally, and even though some Chinese media publish some content in Swahili, Hausa, and Portuguese, these languages were excluded given that no comparison would be possible with other global media.

## Analysis

This article uses both country and linguistic region as levels of analysis. The corpus includes 30 African countries, comprising two linguistic regions: 16 are in English-speaking countries, or in countries with a relatively well-established English-language media landscape (Botswana, Cameroon, Egypt, The Gambia, Ghana, Kenya, Liberia, Malawi, Namibia, Nigeria, Sierra Leone,

South Africa, Tanzania, Uganda, Zambia, and Zimbabwe) and 15 are in French speaking Africa, or in countries with a significant amount of media outlets in French (Algeria, Benin, Burkina Faso, Cameroon, Congo, Democratic Republic of Congo, Gabon, Guinea, Côte d'Ivoire, Madagascar, Mali, Morocco, Senegal, Togo, and Tunisia). One country, Cameroon, is included in both groups. These countries represent a wide geographic spread, as well as diverse stages of development of their domestic media markets and have experienced different levels of influence from Chinese media organizations.

Three computational text analysis techniques are used in this article. To answer RQ1, a *keyword search* was performed to identify news stories about China (using search terms, in either French or English, such as “Chin\*,” “Beijing,” or “Pékin”), stories about COVID-19 (using terms like “COVID,” “coronavirus,” or “pneumoni\*”), and stories about China and COVID-19. To answer RQ2 and RQ3, which seeks to quantify *text reuse*, I measured the number of stories published in the news media of the countries listed earlier that were first published by news organizations in the United States, the United Kingdom, France, and China. These countries are home to the world's four largest news agencies, and their media organizations have had a sustained influence or presence in Africa for decades (Paterson, 2016). The influence of France and the United Kingdom is a legacy of their colonial past, while the presence of media from the United States and China goes back to the early days of the Cold War, when both countries—alongside the former Union of Soviet Socialist Republics (USSR)—were involved in global propaganda efforts, including in Africa (Pradet, 1963).

To measure the volume of *text reuse*, I rely on R's RNewsflow package (Welbers & van Atteveldt, 2021). Each article published by an African news organization was compared to articles published in one of the four non-African countries using a 48-hour sliding window. In other words, each article published by Reuters on 1 January was compared to all articles published between 1 January and 3 January, to account for possible delays in re-publication. RNewsflow relies on R's quanteda (Benoit et al., 2018) package's text similarity functions, which, for any two given documents, uses matrices of word frequencies to compute pairwise cosine similarity values ranging from 0 (completely different articles) to 1 (identical articles). In this article, articles with a score above 0.97 are considered as text reuse. To determine this threshold, a human coder inspected a random sample of 100 articles from one single day (18 January), and determined whether each pairwise comparison included identical or very similar articles or not. The results of the human coder were compared to those of the algorithm at different values of cosine similarity. The best match was 0.970, which rendered an F1 score of 0.98, indicating very high precision and recall for the model.

With RQ4, instead of estimating direct text reuse, the goal is to compare the *prevalence of themes*. In other words, it is possible that African journalists paraphrase and repurpose content from foreign sources (as is standard practice in newsrooms), but retain some of the key narratives that come with them. To extract themes, I fit two STMs, one for each language (French and English). The STM algorithm allows researchers to estimate the probability of each news item belonging to  $k$  number of topics (or themes), while accounting for document-level metadata (e.g. news source, country of publication, and date). Details about the steps taken in fitting the STM model are presented in the “Findings” section.

## Findings

Coverage of COVID-19 in most of the African countries included in the corpus was very limited at the beginning of 2020, it began to increase in March, and peaked around April (RQ1). The only two exceptions to this trend are Tanzania, where the peak came in May, and South Africa, which reached



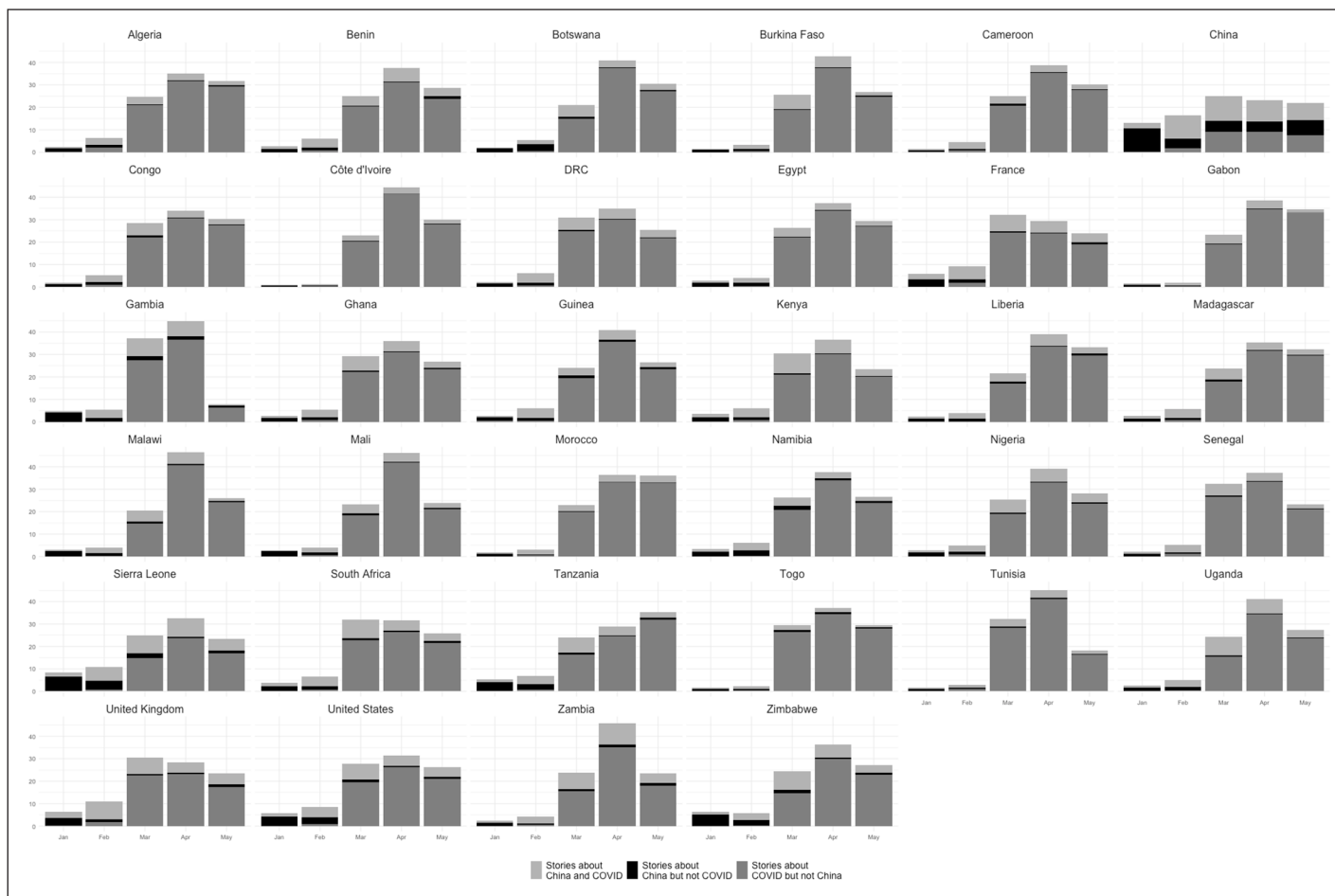
its highest level in March. The evolution of the amount of news coverage in South Africa, the country most affected by COVID-19 in Sub-Saharan Africa during the first-half of 2020, is similar to that of two of the non-African countries in the corpus: France and the United Kingdom. Figure 1 presents a break down by country of the number of stories published each month. Overall, the corpus includes 346,924 news stories that refer to the virus but do not mention China (65% of all news items); 132,819 that discuss COVID-19 and China (25%); and 55,909 stories about China that are not related to the outbreak (10%). Most of these stories unrelated to the pandemic (the darkest shade in Figure 1) were published during the month of January when, particularly Chinese media, were not widely discussing the situation in Wuhan. Starting in February 2020, news coverage about China across the African continent was focused, almost exclusively on coronavirus-related stories.

If we take the month of January as an example of “normal” news coverage of China in most African countries (i.e. a benchmark of how often China is featured in the news when there is no unusual newsworthy event), we can conclude that, during the peak of the COVID-19 crisis, most countries in Africa were talking about China more frequently than usual. For example, in January, 467 stories published in Kenya mentioned China, the number increased to 732 in February, and peaked in March (1271). Similar patterns are observable elsewhere, particularly in countries where China is rarely on the news. In Cameroon, for instance, there were 81 stories about China in January, the number increased to 220 in February, it went up to 246 in March, and was still at 189 in April. Of these, 81% in February, 85% in March, and 93% in April were news stories about China and COVID-19.

The main drivers of news coverage of China in Francophone Africa were two online-based media, *seneweb.com* in Senegal (639), and Mali’s *mali-web.org* (697), and Benin’s newspaper *La nouvelle tribune* (452). In English-speaking Africa, we find two online portals, South Africa’s *iol.co.za* (3456) and *onlinenigeria.com* (2307) on top of the list, as well as the website of one of Nigeria’s most read newspapers, *Vanguard* (2321). It is worth noting, however, that in both linguistic contexts, there is a very significant gap in the amount of content about China generated by global news players, and the amount published by local media. In French-speaking Africa, seven of the top 10 news outlets ranked by number of published news items about China are not based on the continent (e.g. Xinhua, AFP, *People’s Daily*, Reuters, *Libération*). These media account for 64% of total news coverage about China. In Anglophone Africa, the top seven news content producers on China (all of which are non-African) represent 62% of the total coverage. On average, Xinhua’s English-language service filed 225 news stories about China a day during the period under study. Reuters, which comes second on the list, filed an average of 135 per day. During the same period, news organizations outside the top 10 averaged 1.2 stories about China per day.

### *Global news agencies’ text reuse by African media*

Once established that the COVID-19 outbreak monopolized news coverage about China in Africa for several months, we can now proceed to determining the extent to which African media relied on foreign media to cover the evolution of the pandemic. The results of these analyses are presented in this section and the next. First, I report the number of stories originally published by foreign media that were republished on African news websites (almost) word-by-word. After that, in the next section, I identify the most common themes in news coverage about COVID-19 and China on African and foreign media to assess the transnational intermedia agenda setting function of Chinese media.



**Figure I.** Percentage of news stories related to China and/or COVID-19 by type of content in 34 countries (January to May 2020).

**Table 1.** African news media's text reuse by news source and type of content.

Source country	Stories about COVID but not China	Stories about COVID and China	Stories about China but not COVID
China	735 (6.5%)	559 (6.6%)	131 (9.4%)
France	7542 (66.4%)	5436 (64.5%)	766 (54.9%)
The United Kingdom	2617 (23%)	2110 (25%)	346 (24.8%)
The United States	467 (4.1%)	320 (3.8%)	152 (10.9%)

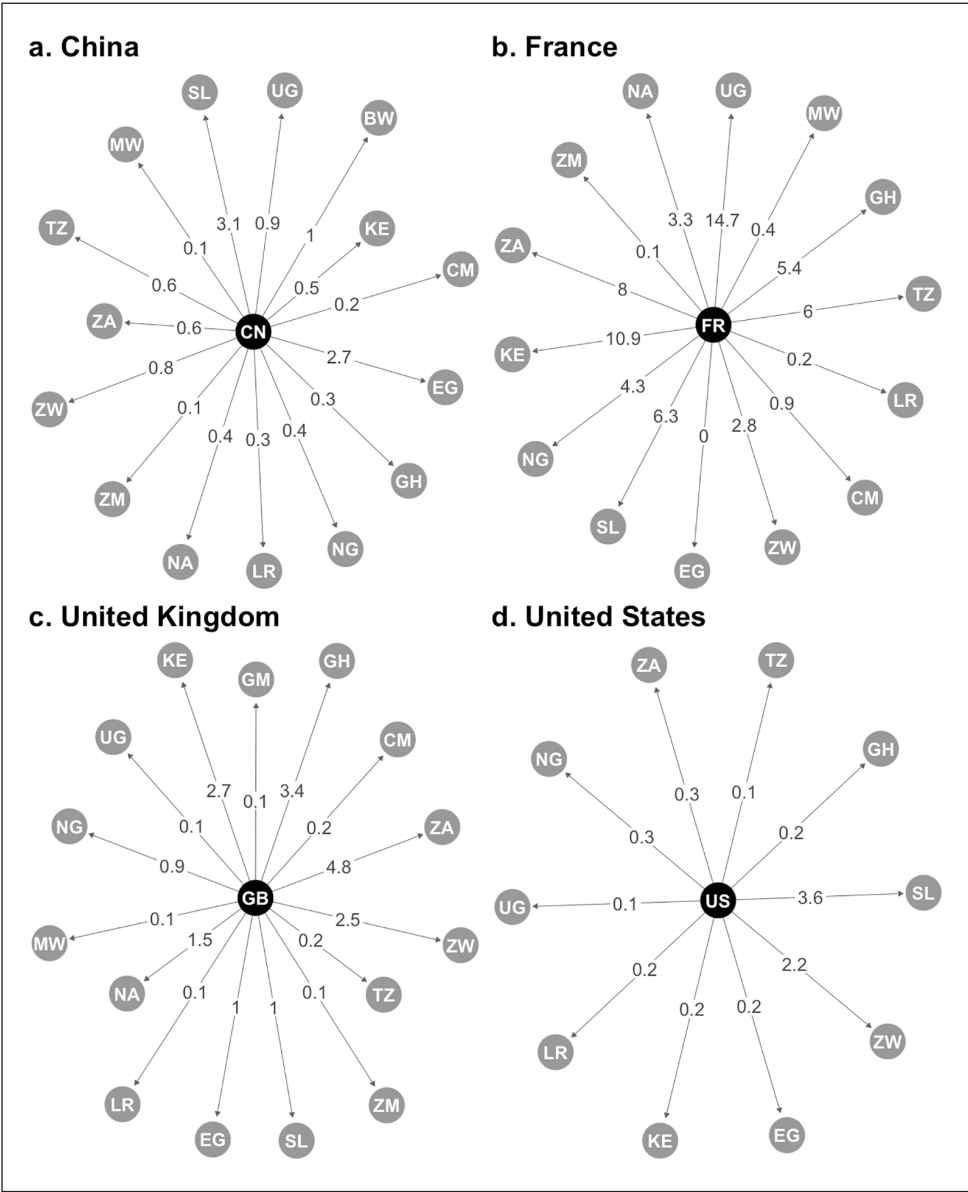
COVID: coronavirus disease.

$\chi^2 = 11,344$ ,  $df = 3$ ,  $p < .001$ .

There are 21,853 (4.1%) news stories in the corpus that were published by media in Africa that were very similar or identical (with a cosine similarity score of 0.97 and above) to those published by non-African media (RQ2). Most of these stories were originally published by French news outlets (63.8%), followed by British (23.6%), Chinese (7.9%), and US media (4.7%). When these data are disaggregated by news organization, France's AFP is revealed as the most influential foreign news source when measured in literal or quasi literal text reuse. Around 4% of all items in the corpus come from the French agency. Next comes Reuters with 1.6%, and then, at a significant distance, Xinhua 0.3%. The overall dominance of British and French sources was confirmed with an analysis of the number of articles that mention each news source by name (Reuters 1.6%, AFP 1.5%, Xinhua 0.4%). This is less of an accurate metric, given that not all media credit the source by name, and some articles might mention the name of a news source, but not be in fact derived from a story published by it. For reference, a detailed breakdown by country and source is provided in Online Supplemental Appendix 3.

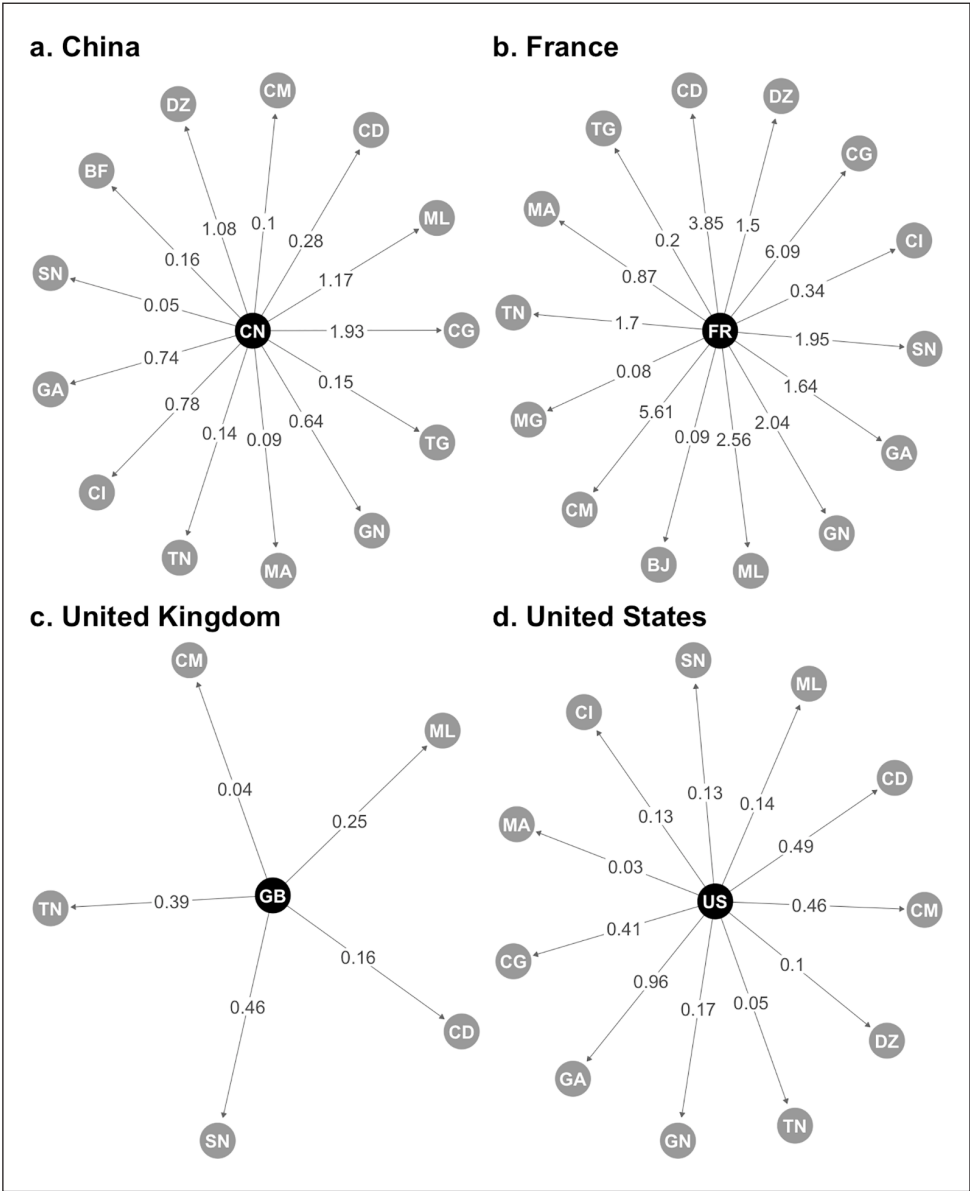
In Table 1, I present a summary of text reuse by type of content. Overall, content from Chinese media is significantly less likely to be used by African media than content published by Reuters, AFP, or the BBC ( $\chi^2 = 11,344$ ,  $df = 3$ ,  $p < .001$ ). This is very clear in the amount of news stories about COVID-19 that mention China. There were 8425 such stories that were identified as instances of text reuse in the corpus. Of these, 64.5% had a French news organization as the original source, 25% had a British origin, and just 6.6% came from a Chinese source. The percentages are very similar for stories about COVID-19 that do not mention China ( $n = 11,361$ ). The rank of influential sources shifts slightly when we look at the much smaller category of reused news about China that do not address COVID-19 ( $n = 1395$ ). In this case, Chinese sources' share (9.4%) increases, but it is still smaller than the United States (10.9%), British (24.8%), and French sources (54.9 %).

Next, let us examine RQ3, which is interested in differences between English (Figure 2) and French speaking countries (Figure 3). Text reuse appears to be more common in the former than the latter. Approximately, 4.6% of news stories in the English corpus were flagged as text reuse, as opposed to 1.6% in the French corpus. In both Anglophone and Francophone media, out of the 14 non-African media organizations included in the corpus, France's AFP is the most often used source of news content. As shown in Figure 2(b), over 10% of news stories published by Kenyan and Ugandan media could be traced back to French sources (AFP to be precise). Chinese sources appear to be much less influential across the board. Overall, text reuse from Chinese media stood around 0.5% in the French and English corpora. These percentages are much lower than those of French



**Figure 2.** Percentage of news text reuse in English-speaking African countries.

media (2.1%, 5.7%), but much better than US sources (0.2%, 0.4%). British sources outperformed Chinese ones in English (2.27%) and underperformed in French (0.2%). Chinese media influence operations in English-speaking African media appear to be most “impactful” in Sierra Leone (Figure 2(a)) and in the Republic of Congo (Figure 3(a)) in Francophone Africa. In both contexts, Xinhua is overwhelmingly the primary source of text content (100% in the French corpus and 82% in the English corpus).



**Figure 3.** Percentage of news text reuse in French-speaking African countries.

*Theme salience in African media's coverage of China and COVID-19*

To address RQ4, concerned with the prevailing themes in the news coverage of China and COVID-19, I worked with a subset of the sample that included news stories that mentioned, at least three times, words such as China (Chine in French), Chinese (Chinois or Chinoise), Beijing (or Pékin), or Wuhan, and featured at least three mentions of coronavirus, COVID-19, pneumonia (pneumonic), or

influenza (grippe). With these restrictions, I was able to capture stories that discuss China and COVID-19 more than just in passing. I used the two smaller corpora ( $N_{French}=6044$ ,  $N_{English}=31,560$ ) to train two structural topic models using R's *stm* package (Roberts et al., 2019), with the date and the country of origin of the news sources as covariates. The French model was fitted with  $k=35$  topics, and the English model with  $k=45$ . Prior to fitting the model, features were lemmatized and, using R's *udpipe* package (Wijffels, 2020) for part-of-speech tagging, only adjectives, adverbs, nouns, and verbs were retained. To validate the accuracy of the models, I used R's *oolong* package (Chan & Sältzer, 2020), to perform word and topic intrusion tests using two coders. The French model's average precision for each test was 0.77 and 0.79, respectively, while the scores for the English model were 0.86 and 0.82.

Among French speaking countries in Africa, Chinese global media appear to have had limited influence in shaping media narratives (i.e. transnational intermedia agenda setting function), measured in terms of the most salient issues in news coverage. Table 2 provides a summary of the top seven most frequent themes by country in the French corpus, ranked by the value of  $\theta$ , which represents the country aggregate mean proportion of each document belonging to a topic. The gap in narratives occurs at two levels. First, several of the most frequent themes in China's coverage, such as "Chinese Global Cooperation" ( $\theta=0.181$ ) or "Xi Jinping Messages" ( $\theta=0.068$ ) seem to be marginal in the news agenda of the countries in the region. Second, key themes that Chinese media seemed to have tried to ignore or downplay, given the potential negative impact on the country's image (e.g. accusations of racism against Africans in Guangzhou, debates around Africa's debt with China . . .), are quite prominent in several French-speaking countries, but absent in China's news coverage. There is, nonetheless, one theme that appears often in Chinese media, which is also among the top 7 in seven French speaking countries: China's donations of medical and personal protection equipment.

The gap in media narratives is also evident in English-speaking media (Table 3), where pairwise comparisons between the top ranked themes in China and 16 African countries revealed no significant similarities in issue salience. While the two language corpora are not comparable side by side, given that each model was estimated independently, it seems that there is some overlap, as could be expected, in content published by Chinese media in both languages. As was the case in the French dataset, "Chinese Global Cooperation" is the most frequent theme in English-language Chinese media ( $\theta=0.078$ ), but this theme is not found in the top 7 of any English-language African media. We do find, again, that issues like the cases of discrimination against Africans in the Southern Chinese city of Guangzhou are very prominent in some countries ( $\theta_{Gambia}=0.217$ ,  $\theta_{Kenya}=0.154$ ,  $\theta_{Cameroon}=0.215$ ), but much less common in Chinese media ( $\theta=0.024$ ). Neither the media in Egypt nor in Sierra Leone, the two countries where most text reuse from Chinese sources was observed in RQ3, appears to be adapting the most common themes in Chinese media, suggesting that editors and journalists are selective in determining the type of content from Chinese media they publish.

## Discussion

This article used a large sample of news stories (ca. 500,000) by African and global media to reveal that (a) news coverage of China in most African countries tends to be relatively modest when no significantly newsworthy "news event" (e.g. FOCAC, COVID-19 . . .) is taking place; (b) the direct use of content published originally by Chinese sources (e.g. Xinhua, *China Daily* . . .) is very marginal in both English and French-speaking Africa, particularly when compared with the reuse of content created by France's Agence France Presse and, to a lesser extent, Reuters and the



**Table 2.** Most prevalent themes in news about China and COVID-19 by country in French-speaking media.

Algeria		Benin		Burkina Faso	
Topic	$\theta$	Topic	$\theta$	Topic	$\theta$
China's donations to Africa	0.145	China-US tensions	0.139	Situation in North/West Africa	0.320
Testing and detection in Africa	0.083	Situation in North/West Africa	0.079	China's donations to Africa	0.099
Emergency in Europe	0.072	Origins of COVID-19	0.065	Testing and detection in Africa	0.061
Airline industry	0.066	International response	0.057	China's multilateral cooperation	0.046
Stock exchange	0.062	Overview of cases	0.050	Situation in West/Central Africa	0.045
Overview of cases	0.059	Daily life in Wuhan	0.045	Situation in French Hospitals	0.040
International response	0.059	Airline industry	0.040	International response	0.036
Cameroon		China		Côte d'Ivoire	
Situation in early affected areas	0.089	Chinese global cooperation	0.181	Chinese medical support	0.119
African debt relief	0.077	China's global responses	0.137	Overview of cases	0.089
Testing and detection in Africa	0.073	Chinese medical support	0.085	Airline industry	0.089
Origins of COVID-19	0.068	China's multilateral cooperation	0.084	Situation in West/Central Africa	0.087
China-US tensions	0.060	China, Russia, ASEAN	0.074	Testing and detection in Africa	0.062
Discrimination against Africans	0.060	China's support for WHO	0.073	Discrimination against Africans	0.058
Cruise ships in Asia	0.057	Xi Jinping messages	0.068	African debt relief	0.047
Republic of Congo		Democratic Republic of Congo		France	
Situation in early affected areas	0.088	Situation in West/Central Africa	0.091	Emergency in Europe	0.078
Testing and detection in Africa	0.060	Testing and detection in Africa	0.066	Situation in Europe/Middle East	0.077
Daily life in Wuhan	0.059	Treatments and vaccines	0.065	Cruise ships in Asia	0.065
Situation in West/Central Africa	0.057	Daily life in Wuhan	0.061	Stock exchange	0.063
China's support for WHO	0.056	Stock exchange	0.053	Daily life in Wuhan	0.061
Cruise ships in Asia	0.055	Explaining COVID	0.052	Situation in French hospitals	0.054
Overview of cases	0.052	Chinese medical support	0.043	Situation in early affected areas	0.050

(Continued)

**Table 2.** (Continued)

Gabon		Guinea		Madagascar	
Situation in West/Central Africa	0.121	China's support for WHO	0.091	Situation in Madagascar	0.389
China's support for WHO	0.090	China-US tensions	0.077	Testing and detection in Africa	0.110
Chinese medical support	0.075	Explaining COVID	0.056	Airline industry	0.060
Overview of cases	0.072	China's multilateral cooperation	0.050	International response	0.038
Testing and detection in Africa	0.067	Xi Jinping messages	0.049	Chinese medical support	0.034
China's multilateral cooperation	0.054	Discrimination against Africans	0.048	Treatments and vaccines	0.032
African debt relief	0.049	Overview of cases	0.045	Situation in French hospitals	0.031
Mali		Senegal		Togo	
Situation in West/Central Africa	0.097	Testing and detection in Africa	0.076	Situation in West Africa	0.136
Testing and detection in Africa	0.070	Situation in North/West Africa	0.062	Testing and detection in Africa	0.112
China's support for WHO	0.065	International response	0.060	Situation in North/West Africa	0.084
International response	0.062	Daily life in Wuhan	0.058	Chinese medical support	0.071
China-US tensions	0.059	Overview of cases	0.057	COVID as zoonotic virus	0.065
China's multilateral cooperation	0.054	Explaining COVID	0.056	African debt relief	0.057
African debt relief	0.045	Discrimination against Africans	0.048	US attacks WHO	0.049
Tunisia		The United Kingdom		The United States	
International response	0.123	Stock exchange	0.382	Situation in the United States	0.308
G20 and COVID	0.068	Daily life in Wuhan	0.059	Stock exchange	0.073
Airline industry	0.060	Explaining COVID	0.057	Testing and detection in Africa	0.067
Testing and detection in Africa	0.059	Overview of cases	0.045	Situation in early affected areas	0.056
African debt relief	0.057	China's support for WHO	0.041	Cruise ships in Asia	0.044
Stock exchange	0.055	Situation in French hospitals	0.036	China-US tensions	0.042
Situation in North/West Africa	0.050	Cruise ships in Asia	0.033	Hong Kong and Taiwan politics	0.036

COVID: coronavirus disease; WHO: World Health Organization.

**Table 3.** Most prevalent themes in news about China and COVID-19 by country in English-speaking media

Botswana		Cameroon		China	
Topic	$\theta$	Topic	$\theta$	Topic	$\theta$
Situation in Southern Africa	0.097	Discrimination against Africans	0.215	Chinese global cooperation	0.078
Impact on economic growth	0.078	Situation in West Africa	0.097	Situation Wuhan, Hubei	0.076
Situation in West Africa	0.072	Negative impact on Africa	0.063	China is in control	0.067
Geopolitics	0.054	Drug clinical trials	0.058	Chinese medical support	0.061
Early days of outbreak	0.048	Commodity prices	0.056	China's reopening	0.052
People most affected	0.046	COVID Zoonotic Virus	0.047	Traditional Chinese medicine	0.051
Life under lockdown	0.044	Impact on economic growth	0.040	Xi and CCP's response	0.050
Egypt		France		The Gambia	
Situation in Iran and Middle East	0.181	Reopening worldwide	0.119	Discrimination against Africans	0.217
Impact on economic growth	0.075	Situation in East Asia	0.099	China is in control	0.172
Early days of outbreak	0.074	Stock exchange	0.092	Situation in West Africa	0.077
Situation in West Africa	0.060	Situation in Europe	0.078	Chinese medical support	0.063
COVID and supply chains	0.058	Disinformation and the United States	0.062	Geopolitics	0.048
Situation in East Asia	0.049	Impact on economic growth	0.046	WHO and multilateralism	0.046
Situation in Europe	0.047	Early days of outbreak	0.040	Negative impact on Africa	0.044
Ghana		Kenya		Liberia	
Discrimination against Africans	0.150	Discrimination against Africans	0.154	Negative impact on Africa	0.158
Situation in West Africa	0.077	Situation in East Asia	0.069	Situation in West Africa	0.138
Situation in East Asia	0.060	Sports	0.064	Early days of outbreak	0.083
Reopening worldwide	0.049	Situation in West Africa	0.062	Geopolitics	0.051
Negative impact on Africa	0.047	Airlines and COVID-19	0.054	Discrimination against Africans	0.037
Early days of outbreak	0.044	People most affected	0.044	Life under lockdown	0.037
People most affected	0.041	Early days of outbreak	0.044	Chinese medical support	0.036

(Continued)

**Table 3.** (Continued)

Malawi		Namibia		Nigeria	
Situation in Southern Africa	0.176	Situation in South Africa	0.124	Nigeria's Federal Response	0.130
Situation in West Africa	0.138	Situation in West Africa	0.116	Situation in West Africa	0.111
Discrimination against Africans	0.079	Early days of outbreak	0.090	Nigerian politics and COVID	0.070
Religion	0.071	COVID and supply chains	0.066	Situation in East Asia	0.048
Situation in Europe	0.042	Discrimination against Africans	0.058	Situation worldwide	0.044
Chinese medical support	0.040	Impact on economic growth	0.052	Religion	0.034
Early days of outbreak	0.040	Situation in Europe	0.044	Early days of outbreak	0.032
Sierra Leone		South Africa		Tanzania	
Negative impact on Africa	0.089	Situation in South Africa	0.159	Situation in West Africa	0.098
US domestic situation	0.059	Situation in East Asia	0.074	Negative impact on Africa	0.091
Geopolitics	0.048	Impact on economic growth	0.055	Discrimination against Africans	0.077
Reopening worldwide	0.046	People most affected	0.053	China is in control	0.070
Life under lockdown	0.042	Early days of outbreak	0.048	Impact on economic growth	0.064
Disinformation and the United States	0.042	Situation in Europe	0.039	Situation in East Asia	0.056
Situation in West Africa	0.041	Stock exchange	0.039	Early days of outbreak	0.041
Uganda		Zambia		Zimbabwe	
Discrimination against Africans	0.091	Situation in Southern Africa	0.256	Situation in Southern Africa	0.182
Reopening worldwide	0.082	Life under lockdown	0.135	Situation in West Africa	0.088
Situation in West Africa	0.069	Religion	0.076	Negative impact on Africa	0.045
Situation in East Asia	0.062	Situation in West Africa	0.065	Situation in East Asia	0.043
Situation in Europe	0.059	Impact on economic growth	0.044	Impact on economic growth	0.041
Life under lockdown	0.045	Negative impact on Africa	0.037	Situation in Europe	0.039
People most affected	0.042	Early days of outbreak	0.035	Reopening worldwide	0.034

COVID: coronavirus disease.

BBC; and (c) there is a very significant gap between the prevailing themes found in news coverage about China and COVID-19 in Chinese media, and the most common themes in African media. On the one side, Chinese media were, at first, largely focused on highlighting Beijing's response to the virus domestically, and then shifted their attention to China's efforts to aid other countries. On the other side, coverage of COVID-19 related stories on African media was focused on domestic and regional responses, and on discussing topics that affected its citizens residing in China, such as discriminatory treatment by some Chinese businesses and officials.

Some plausible explanations for this gap in narratives have already been identified in qualitative studies in the past. Previous research has found that many African journalists hold a very critical view of the Chinese media system (Diakon & Röschenhaler, 2016; Madrid-Morales & Wasserman, 2018) that might make them reluctant to use content and narratives from Chinese State media in general. This mistrust might have been particularly acute during the COVID-19 outbreak, given Beijing's relatively slow response to the first signs of the virus in Wuhan, that some saw as a form of coverup. Similarly, when trying to report on events that affected African residents in China, Chinese media might have been perceived by African journalists as an untrustworthy source. This might have been accentuated by the fact that Chinese media were accused repeatedly of spreading inaccurate information by foreign governments on issues such as the origin of the virus or the quality of personal protective equipment made in China. Previous research has also suggested that many African journalists see themselves closer to "Western" journalistic practices (Serwornoo, 2019a; Umejei, 2018), and might prefer sourcing their stories with content from the BBC, Reuters, or AP. This perceived "cultural proximity" is rooted in decades of colonial control of the media sector in many of the countries included in this study (Domatob, 1988), which limited media content created in non-European languages.

Taken together, the findings presented here would seem to suggest that Chinese media have limited transnational intermedia agenda setting capabilities in Africa, as they are not able to "transfer the salience of issues associated with their own country to foreign media, thus influencing how foreign media portray the country" (Guo & Vargo, 2020, p. 3). This is shown rather clearly in the data used to address RQ4. While Chinese media's stories around COVID-19 often featured themes such as "Xi and CCP's Response" and "Traditional Chinese Medicine," these themes are largely absent from those found in the 300+ African media organizations included in the corpus. This noticeable gap in prevailing themes cannot be attributed to a lack of accessibility to Chinese narratives by African journalists. After all, Xinhua content is available at no cost—or at a reduced price—to many newsrooms, and it is distributed through syndication agreements by African news agencies such as Ghana's News Agency (GNA) and South Africa's African News Agency (ANA). In fact, many of the African news sources in which text reuse was found to be high (e.g. *iol.co.za*, *acqcongo.com*, *ghanaiantimes.com.gh*) have signed such agreements, or source their content from local news agencies that have themselves signed them.

## Conclusion

Increased Sino-African media relations have attracted notable academic interest in recent years (Zhang et al., 2016). Most work on the topic has tended to associate increased presence with increased influence, without there being significant continent-wide empirical evidence of such relationship. This article, the first to quantify the direct and indirect influence of Chinese media on the news content of multiple African countries, provided evidence of the limited impact that

China's ambitious media influence operations are having on the editorial agendas of the news media on the continent. This is seen in the amount of word-by-word text reuse, in the number of times that foreign media sources are referenced too, and, most importantly, in the lack of adoption of Chinese narratives on COVID-19 by African media. The findings presented here provide quantitative empirical support to qualitative data compiled by Wasserman (2016) and Wasserman and Madrid-Morales (2018), and with evidence collected in Ghana (Serwornoo, 2019a, 2019b). While these previous studies have focused on a single country, this article offers evidence from a larger number of countries. The theoretical implications of the findings are threefold. First, this article confirms the existence of transnational intermedia agenda setting function of foreign global media in Africa, but reveals different levels of influence, with former colonial powers holding a higher degree of influence than media from China. Second, it shows significant differences in the intermedia agenda setting function across countries and linguistic regions, thus making a strong case for using units of analysis other than the continent in research that explores foreign influence on media in African countries. Third, it questions the prevailing narrative in the study of Sino-African media relations that the increased investment by Chinese media on the continent in recent years can be equated to high(er) levels of influence in determining news media narratives on China.

As in any study, there are limitations to this article. First, the selection of COVID-19 as a case study might be too unique. Given the high level of media scrutiny of China in the early days of the pandemic, it is possible that regular news sourcing practices might have changed in ways that made Chinese news content less prominent than usual. If that was the case, the results presented here might lack external validity. Replications of the method and approach used in this article in different contexts and around different topics would be needed to further confirm or refute the results of this study. In addition, the findings, while grounded on a large sample of news articles, can only speak to text content published online, and to the reality in 30 African nations. Future studies should consider other forms of media content, and an even wider number of nations. This could include audiovisual materials, which are not covered in this article. Global Chinese media have been growing their product portfolio in recent years to include services like CCTV+, a video news agency that offers raw footage and pre-packaged stories produced by CGTN and CCTV. This video news feed is also available to news organizations that subscribe to Associated Press' (2018) video feed, thus having a significant global reach. Xinhua offers similar services. Work by Paterson (1994) has shown that many news organizations around the world depend on the video content provided by British and French news agencies in their news coverage of Africa and beyond. Similar studies that also consider Chinese news agencies' audiovisual output could help expand the findings presented here. The need for more research that measures the degree of influence of Chinese news content on the agenda of local media is particularly acute in French and Portuguese speaking Africa.

It would also be important that future studies include a longitudinal dimension. While Chinese media might still be used less frequently as a source of information than French and British media, it is important to acknowledge that the latter have a much larger history of engagement with the continent, thus making them more familiar sources to local journalists. The case study presented here, although prolonged in time and heavily focused on China, had in most instances a local angle, which might have made African media less dependent on foreign sources, and more reliant on their own on-the-ground reporting. An analysis comprising a larger period might reveal patterns that could not be uncovered with the dataset used in this study. However, as this article has shown, the use of computational tools for text analysis, which have not been widely used in the study of China's global mediated engagements, can provide insights across countries, and offer nuanced



descriptions of individual countries, thus widening the overall geographic scope of studies on Africa–China mediated relations.

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## Supplemental material

Supplemental material for this article is available online.

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