

Africa in the News: Is News Coverage by Chinese Media Any Different?

by Dani Madrid-Morales, University of Houston

In recent years, Chinese media have been challenging European and North American dominance of African news. While Chinese journalists claim their coverage of Africa is quantitatively and qualitatively different, previous research has challenged this claim. Based on a content analysis of 1.1 million news from two Chinese and two non-Chinese media (2015-2015), this paper shows that, overall, Chinese reporting on the continent is more abundant, positive and diverse. However, for most countries, coverage is rare, episodic and monothematic.

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At a time when news organizations worldwide are scaling down their operations overseas, both in the number of journalists deployed abroad (Jenner & Hamilton, 2004) and in the amount of foreign news (Utley, 1997), China's media organizations are moving in the opposite direction (S. I. Zhang & Zhang, 2017). In the strengthening of activities overseas, Chinese media outlets have been looking for niche markets where mass media structures have not yet reached saturation, such as Africa and, to some extent, South East Asia (Banda, 2009; Cheng, 2006). In Africa, China's media presence is not a new phenomenon. There are numerous instances of mediated Sino-African exchanges dating back to the 1950s. However, since the mid 2000s, China has noticeably "returned" to Africa (Alden, Large, & Oliveira, 2008), first in sectors such as agriculture, mining, telecommunications and infrastructure, and more recently in the creative industries, including the media. Starting in 2004, Chinese State- and privately-owned media companies have invested in the African mediascape like no other country had in decades (Madrid-Morales, 2016). These include well-established outlets like the Xinhua News Agency and China Radio International (CRI), and lesser-known players such as StarTimes, one of Africa's largest pay TV operators.

The arrival of Chinese media in the continent has been presented by some as an attempt to challenge the dominance of European and North American media in news discourses about Africa (Y. Zhang & Matingwina, 2016b). Existing literature on media representations of the continent suggest that four elements have been assumed to characterize news about Africa in the past: scarcity of news, lack of thematic diversity, predominance of negative stories and prevalence of Western news sources. While Scott (2017) has questioned the validity of these assumptions, these are still regularly cited by Chinese scholars, journalists and politicians to claim that global Chinese media are approaching news about Africa differently (for a discussion

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on some of these claims, see Thussu, Burgh, & Shi, 2018). However, the few studies that compare Chinese media's reporting on Africa to that of other countries' have rendered inconclusive results.

This paper contributes to this debate by presenting evidence derived from a computational content analysis of over 1.1 million news items published and/or broadcast between 2012 and 2015 by Chinese (Xinhua and CGTN) and non-Chinese (Reuters and *The Guardian*) news media. As opposed to previous studies about the news coverage of Africa, analyses for this paper were not performed on a sample, but on the entire population of news items published/broadcast during the period of interest in all six news outlets. Using a combination of computational text analysis tools (supervised, semi-supervised and unsupervised machine learning, and sentiment analysis), the overall objective of this paper is to provide a systematic description of news about Africa, and to assess the impact of Chinese reporting on representations of the continent. The paper starts with a review of academic literature on media representations of Africa in general, followed by a summary of existing studies on Chinese media's representation of the continent. This is followed by a summary of research methods and three sections outlining the results.

Media Representations of Africa

Media representations of Africa during the twentieth century were dominated by Anglo-American perspectives and, to a lesser extent, by those from former colonial powers (Malaolu, 2014; Paterson, 1994, 2016). Academic literature on mediated imagery of Africa during this period is extensive, but notably convergent on a number of topics. Previous research has suggested that Africa's presence in the media tends to be scarce when compared to other world regions (Kalyango Jr. & Onyebadi, 2012; Terrell, 1989; Wilke, Heimprecht, & Cohen, 2012),

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narrow in the topics covered and frames used (de Beer, 2010; Fair, 1993; Hawk, 1992; Mellese & Müller, 2012) and predominantly negative (El Zein & Cooper, 1992; Golan, 2008; Schraeder & Endless, 1998). These characteristics have been identified across media types and genres, in both news and entertainment. From a discourse analysis of British newspapers, Brookes (1995) concluded that Africa is portrayed as “uncivilized, barbaric, irretrievably savage, superstitious, corrupt, underdeveloped and generally chaotic” (p. 461). After examining 30 years of TV news about Africa in US networks, Kalyango and Onyebadi (2012) resolved that coverage was focused on “crises such as coup d’états, civil wars, terrorism, and health pandemics” (p. 685). And, a study of five US blockbuster films set in Africa in the early 2000s, revealed new sets of stereotypes: “the emblematic child soldier, the corrupt official, the meddling multinational, and the sacrificial white do-gooder,” which resulted in “an Afropessimistic outlook” (Evans & Glenn, 2010, p. 32).

The validity of these findings-turned-assumptions about how Africa is represented in the media has been recently called into question by Scott (2016, 2017), who, after a scoping review of academic literature in the US and the UK, described our current knowledge about media representations of Africa as a myth. Scott’s analysis reveals at least three flaws. First, studies on media representations of Africa generally discuss only a small number of African countries, and rarely cover extended periods of time. Second, in the selection of sources to study, scholars recurrently sample similar publications and news stations. In the US, for example, *The New York Times* appears in 88 per cent of the analyses (M. Scott, 2017). Third, findings in studies referring to a single country or event are often understood as representative of the entire continent.

Supporting Scott’s argument, Nothias (2016) used data from news stories about Africa published in British and French broadsheet newspapers to claim that the practices of

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racialization, homogenization and selectivity, which are largely assumed to be widespread, are less prevalent in these two countries than expected. In recent years, evidence has also emerged suggesting that Afro-pessimism in Anglo-American media (Nothias, 2012; Wasserman and De Beer, 2009) has been substituted by an emerging Afro-optimism (Bunce, 2016; Bunce et al., 2016; Nothias, 2014), which would challenge the belief that coverage of Africa is still today predominantly negative. However, in an analysis of magazine covers, Nothias (2014) found that representations in which “Africa was hopeless, in despair, starving [and] lagging,” were being substituted by a narrative of a “hopeful and rising” Africa that, far from being discursively disruptive, was caught between “colonial imagination and neoliberalism” (p. 335).

Since the turn of the century, these debates have been complicated with the fast-paced changes in the geopolitics of information and entertainment that have been taking place outside the traditionally dominant content production and distribution centres in Europe and North America (Wasserman, 2015). These changes are best exemplified by the rise of news outlets like Al Jazeera English (Figenschou, 2013; Seib, 2005), based in Qatar, and the increased influence that members of new power blocs, such as the BRICS nations (Brazil, Russia, India, China and South Africa) are having through the internationalisation of their media activities (Nordenstreng & Thussu, 2015). Studies that look at how global media players outside the United States and Europe cover Africa are limited in number and scope. In the next section, I review the ones focusing on global Chinese media.

Africa in Global Chinese Media

In 2009, the Chinese government planned to spend 45 billion RMB on the expansion of overseas activities by State-owned media such as Xinhua, CRI, and China’s Central Television (Barboza, 2009; A. Chen & Wu, 2009; Ford, 2009). Since then, Beijing has been bidding on the

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assumption that the more internationalised its media organisations are, the more it will be able to shape global narratives on current affairs (B. Li & Huo, 2016). While these efforts expand multiple continents, it is in Africa where they appear to be most visible (Kurlantzick, 2006; Thussu et al., 2018). In the span of less than a decade, the continent has witnessed, among others, the opening of the first multilingual Chinese FM radio station overseas (X. Chen, 2006); the transfer of Xinhua's Africa regional bureau from Paris to Nairobi; the creation of CCTV Africa (later renamed CGTN Africa), the first TV broadcasting and production centre outside of China (AFP, 2012); and, the launch of an African weekly edition of the English-language newspaper *China Daily* (BBC World, 2012).

The proliferation of Chinese media across Africa has been criticized by some who fear that alongside Chinese content will come values and norms that could eventually challenge the precarious state of media freedom in the continent (Wasserman & Madrid-Morales, 2018). Countering that argument, Chinese diplomats and journalists have insisted on the benefits of enhanced Sino-African relations (G. Liu, 2012). One claim that is often repeated is that Chinese media's representations of Africa, particularly in news reports, are radically different from those found on 'Western' media. Even though this issue has attracted quite a lot of attention from scholars of Sino-African media relations, the degree to which Chinese and non-Chinese media representations of Africa differ remains unclear. While some scholars have looked at representations of Africa in fiction, documentaries and similar genres (see, for example, Madrid-Morales & Gorfinkel, 2018; Puppini, 2016), the discussion that follows is restricted to news content, as it is most relevant to this study.

Previous research agrees that global Chinese media reporting on Africa is mostly event-driven and, thematically, there is a predominance of hard news, with stories related to security,

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war and politics dominating the agenda (Madrid-Morales, 2016; Marsh, 2016; Y. Zhang & Matingwina, 2016b). Geographically, Chinese media, like their counterparts elsewhere, have blind spots, with coverage focusing mostly on three of the largest economies in the continent (Egypt, Kenya and South Africa) while forgetting some of the smallest nations (Wekesa, 2014). There appears to be a preponderance of stories about East Africa, which is explained in the literature because most media are headquartered in Nairobi (Wekesa & Zhang, 2014), and a significantly lower number of stories from West Africa (Marsh, 2016), even though the region is host to the most populated country in the continent, Nigeria. A third agreed upon characteristic is the preference of global Chinese media for government and elite sources (Marsh, 2016, 2018; Wekesa, 2014).

All existing studies address the notion of “positive news”, a phrase that is widely used to describe global Chinese media’s coverage of Africa in academia and in the press (Gagliardone, 2013). However, all evidence seems to debunk the idea: neither Xinhua, nor CGTN nor *China Daily* exhibit a bias for “positive news” (James & Boukes, 2017; Madrid-Morales, 2016; X. Zhang, 2013; Y. Zhang & Matingwina, 2016a). Going even further, looking at the first few months of CGTN Africa, Zhang Xiaoling (2013) concluded that “on many days, negative reporting outweighed positive reporting on Africa” (p. 83). A problem across studies is the way “positive news”, “positive reporting”, “tone” or “valence”—different authors employ different names—is operationalized and measured. No paper provides a clear description of the criteria used to code items, and the measures used differ significantly between studies. For example, while James and Boukes (2017) use a five-point scale to compute what they term “valence”, Zhang (2013) opts for a categorical variable with three values: positive, neutral and negative. Adding an extra layer of confusion to the discussion, Zhang and Matingwina (2016a, 2016b)

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suggest that the debate about “positive news” in Chinese media be substituted by a discussion on constructive journalism, and the extent to which this is being practiced in Africa. In separate analyses of *China Daily* and CGTN Africa, Zhang and Matingwina find evidence of a “constructive slant”, which they operationalize as the opposite of “negative slant”.

Only a handful of studies compare news content on Chinese and non-Chinese media, and their conclusions are far from cohesive. James and Boukes (2017) analyse ten years of economic news about the East African Community (EAC) in four news agencies and conclude that the evidence in hand diminishes “the assumption that stark differences exist between the perceptions of the EAC” in Xinhua and non-Chinese agencies (p. 526). This contrasts sharply with the works of Zhang and Matingwina (2016b), who claim—without providing supporting data—that “rather than simply rebutting the Western media’s overly critical and biased reporting of Sino-African relations, China’s led media are making efforts to produce their own content for African consumption” (p. 93). Somewhere in between these two positions are the findings of a study comparing the coverage of the 2014-2015 Ebola outbreak in CGTN and Al Jazeera English. Li (2017) concludes that, whilst talking about Ebola CGTN “seems to adopt a stabilizing role that tends to pacify its audience, through pitting development against disease, providing successful examples, and showing the direction for the future” (p. 127), AJE’s coverage is “more or less problem-centred,” with discussions “organized around severe issues and challenges, leading to straightforward technical explanations and factual or individual observations, leaving little room to mould any ideological opposition” (p. 126).

From the preceding discussion, three issues regarding current scholarship on global Chinese media’s coverage of Africa can be identified. First, in the selection of media, CGTN is overrepresented: it is included in 70% of the analyses. This contrasts with China Radio

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International (CRI) and *Chinafrica*, the content of which has not been examined a single time. Second, there is a tendency to draw conclusions about the whole of Africa or about the media in general from studies with small sample sizes and/or focused on single-events. And third, most studies are cross-sectional—only two studies are longitudinal—thus making it difficult to account for contextual and exogenous factors in the analysis of results. The direct consequence of these shortcomings is that we only have a fragmented description of global Chinese media’s coverage of Africa with many blanks to fill in and questions to answer. This paper provides data-grounded responses to the following questions:

RQ1: How frequently do Chinese and non-Chinese media cover Africa?

RQ2: How geographically diverse is Chinese and non-Chinese media’s coverage of Africa?

RQ3: What topics do Chinese and non-Chinese cover when reporting on Africa?

RQ4: How does news valence differ on Chinese and non-Chinese media’s coverage of Africa?

RQ5: What do word frequencies reveal about the news coverage of Africa?

Methods

Answers to the questions above are based on data extracted from a large corpus of news by employing a combination of computational text analysis methods. More specifically, this paper uses dictionary-based and supervised machine learning models in the analysis of $N = 1,162,373$ news items published by two global Chinese media with a strong presence in Africa (Xinhua and CGTN), and two Anglo-American news media with a global projection and extensive coverage of the continent (Reuters and *The Guardian*).

Sampling and Data Collection

All content published or broadcast between 2012 and 2015 by CGTN, Xinhua, *The Guardian* and Reuters was collected and used in the analysis. CGTN and Xinhua were chosen because they

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are the two largest State-owned media in China, they have the most extensive presence in Africa, and their content is available online as text (Gagliardone, 2013; Xin, 2009). In selecting *The Guardian* and Reuters, the main guiding criterion was the possibility to obtain full text of all their output online. On top of that, Reuters is amongst the top three news agencies in the world and has, for a long time, held a dominant position in English-speaking African countries (Bunce, 2010). As for *The Guardian*, while the newspaper does not enjoy particularly high circulation figures (Mayhew, 2018), it is amongst the most visited news-related websites in the world.¹ Other Anglo-American media, such as Associated Press, CNN, the BBC or the *New York Times*, were initially considered in the sampling of sources, but they were excluded because of the difficulties involved in gathering a comprehensive full-text dataset. Data was collected between May and August 2016, using the techniques described below. Only news items with a word count of 50 or more were retained.

Transcripts for CCTV/CGTN (n = 102,657) were retrieved through CCTV+, a reseller of CCTV content overseas. The platform aggregates all news output by CCTV (including CGTN) and allows any media company to use it for a fee. Scripts, however, are accessible for free. Using Python's Scrapy library, a crawler was built to scrape every webpage under CCTV+'s domain, and R was used to filter non-English data. Xinhua content (n = 380,104) was scraped from its English language website. Using R's XML package, a script was written to parse through a list of URLs, retrieve metadata, textual information, and extract all URLs to other webpages in the same domain. This new list of links was then scraped and new links collected. The process was repeated until no new links were found. The retrieval of Reuters data was done using the rvest (Wickham, 2016), xml2 (Wickham, Hester, & Ooms, 2017) and XML (Lang & R Core Team,

¹ According to Alexa (<https://www.alexa.com>), at the end of 2017, www.theguardian.com was the fourth most visited website in the News category, only behind www.reddit.com, www.cnn.com and www.nytimes.com.

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2018) R packages. First, a list of all categories and tags (e.g. “Health”, “Politics”, “Africa”, “Eurozone” ...) available on the Reuters website was compiled manually. From this, URLs that mirrored the structure of the Reuters archive were generated. Each generated URL would point to a webpage with ten links, and each of these links would include one news story. Once all links were collected, a scraper was built to retrieve text and metadata for each webpage ($n = 501,645$). Content from *The Guardian* ($n = 177,967$) was retrieved using the GuardianR R package (Bastos, 2015), which, simultaneously queries the newspaper’s API for metadata and extracts full text from each article’s URL. Using a list of countries and territories in the world, I searched for occurrences of keywords in the database and retrieved all the articles available for each country and region.

Operationalization of variables

The geography of news for each news item was computed using two methods. First, mentions of a *country (counts)* and *continent (counts)* were computed by searching for occurrences of each country’s name. For this, I relied on R’s *quanteda* package (Benoit, 2018). Second, *country (main)*, refers to the country most likely to be the main actor in a news story. To associate each news item to a single country, a semi-supervised machine learning approach was followed, using R’s *newsmap* package (Watanabe, 2017, 2018), which includes a multinomial Bayesian model for geographical classification of texts, particularly news. Of the two models fitted using *newsmap*, the second one accurately predicted 88 per cent (Krippendorff’s α , .87) of a subset of 300 randomly-selected documents that were hand coded. This was considered an acceptable reliability score. The values predicted by the second model for each news item were retained for subsequent analyses.

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Supervised machine learning was used to determine the *topic* of each news item. Using a dataset of news about Africa ($n = 1,099$) that two coders had manually classified into one of four topics (politics, economy, sports, and social issues & others) with a reliability score of $\alpha = .89$, a naive Bayes Classifier was trained using R's *quanteda* package (Benoit, 2018). In a naive Bayes classifier, the probability of each word in a corpus belonging to a previously determined category is computed and, given this set of probabilities, documents are classified into categories (Jurafsky & Martin, 2018). After ten iterations, the trained model accurately predicted 86.5 per cent of documents in the training set ($\kappa = .81$; $p < .001$). This model was then used to predict the topic of all documents in the corpus. To validate the measure, as is standard practice (Grimmer & Stewart, 2013), a random sample of texts was manually coded ($n = 300$) and compared to the classification of the model. With a Krippendorff's α value of .91, data was deemed reliable.

The this variable extracted computationally, *sentiment*, refers to the number of positive and negative sentiment words (B. Liu, 2015) associated to one of three geopolitical actors relevant to the study (Africa, China and the "West"). *Sentiment* works as proxy for valence, the measure to use how favourable or unfavourable a text is to a given geopolitical actor. Using a keyword-in-context (KWIC) approach, in which each instance of a target term (i.e. "Africa" or "China" or "the West") is recorded alongside a window of n words before and after ($n = 10$, for this study), sentiment analysis was performed on each of the three actors and for each news organisation. The implementation of the sentiment analysis was done on R's *quanteda* package (Benoit, 2018), which incorporates the sentiment analysis dictionary developed by Young and Soroka (2012), specifically designed for the analysis of sentiment in political news.

Findings and Discussion

The results of the content analysis are presented in the next three sections. First, I describe content at a general level, focusing on three measures: total output by continent (RQ₁), geographic diversity (RQ₁) and topics (RQ₃). Then I explore news valence across outlets (RQ₄), and conclude by comparing word frequencies in the coverage of Africa to offer a more fine-grained description of news content (RQ₅).

An overview of African news in Chinese and non-Chinese media

CCTV+ and Xinhua mentioned Africa most often relative to their overall output, even though other continents are mentioned more frequently in both cases (RQ₁). If ranked by overall number of mentions, Africa is the third most often mentioned continent on Xinhua, the fourth on Reuters and CCTV+, and the fifth (and last) on *The Guardian*. Figure 1 presents the monthly percent of mentions of each continent over total mentions for each news organisation. Mentions of Africa account for 11.45 per cent of all mentions on both CGTN and Xinhua, compared to 7.04 on Reuters and 6.53 on *The Guardian*. News about Asia—mostly China—are much more predominant on CCTV+ (62.37) than on Xinhua (51.72). Asia is also the most frequently mentioned continent on Reuters (42.65), followed by Europe (30.36) and the Americas (18.50). *The Guardian* is the news organisation that mentions Africa the least often (6.53). The continent of focus for the London-based newspaper is Europe (43.83), followed by the Americas (20.91).

In RQ₂, the geographic diversity of CCTV+ and the other three news organisations was further explored, with a focus on African countries. Differences were found to be statistically significant across media ($\chi^2 = 132290$; $df = 159$; $p = 0.001$; Cramér's $V = 0.21$). Figure 2 presents the frequency in which each of Africa's 54 countries gets mentioned on CCTV+, Reuters, *The Guardian* and Xinhua. Continental imbalances stand out immediately in all four

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outlets. For example, the coverage of the Central African sub-region is much lower across media, ranging from CCTV+'s 5.37 per cent to *The Guardian*'s 6.97, than the coverage of North Africa (Reuters: 46.4; Xinhua: 30.7; *The Guardian*: 28.14; CCTV+: 24.3), even though there are more countries in Central Africa (9 to 6), the total population is approximately the same (188 million in North African and 168 million in Central Africa), and despite the fact that between 2012 and 2015 there were political tensions, some violent, in a few countries in the Central African region (e.g. Central African Republic, Congo DRC, Chad...). For CCTV+ and Xinhua, coverage concentrates around East Africa (CCTV+: 34.55; Xinhua: 33.94). Comparatively, CCTV+ mentions countries in Southern Africa (20.59), mostly South Africa, much more often than Xinhua (10.94) and Reuters (10.46). At the same time, CCTV+ mentions West African countries less than the other three outlets (*The Guardian*: 22.13; Reuters: 20.59; Xinhua 17.95; CCTV+: 15.18). *The Guardian*, which has syndication agreements with media in English-speaking countries across the continent, which allows cross-publication of content, has the most "balanced" distribution of mentions across Africa's five sub-regions. And, yet, at a country level, the same countries that are predominant elsewhere are also the most prevalent on *The Guardian*, as I discuss next.

The main drivers of news coverage on the continent are Egypt, Kenya and South Africa, although some differences can be found when comparing data from the four news organizations. A very noticeable one is the much larger relative amount of mentions of Libya on Reuters (13.61) and *The Guardian* (6.39), compared to CCTV+ (2.77) and Xinhua (4.60). During the period of 2012-2015, Libya went through a time of instability, which included protracted military conflict and political unrest following the overthrow of long-time ruler Muammar Gaddafi in 2011. As can be inferred from Figure 3, which displays monthly mentions of Libya

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over total mentions for each news organisation, CCTV+'s coverage of Libya is mostly event-driven with three episodes standing out (and corresponding to the dotted vertical lines): the October 2013 coup d'état attempt to overthrow Primer Minister Ali Zeidan; the fall of Tripoli's International Airport in August 2014 to the hands of rebel groups; and, to a lesser extent, the September 2012 Benghazi attack against two US government facilities in Libya, which CCTV+ seems to have missed at the time, but covered extensively during the following month. While Reuters and Xinhua have bureaus in Tripoli, and *The Guardian* has a roaming correspondent in Libya and Tunisia, CGTN does not have an office in Libya and covers the country from Nairobi or by sending in a Cairo-based crew or, sometimes, a Nairobi-based one. Not having a permanent correspondent results in periods of minimal or null coverage. The opposite holds for Reuters, that covers Libya on a regular basis. The orange line for Reuters on Figure 3 stays most of the time close to the monthly mean number of mentions, marked by the horizontal grey line. On CCTV+, the orange line is very close to zero on multiple occasions.

All African countries are mentioned at least twice in each news organisation, with the small archipelago of Saõ Tomé and Príncipe being the least talked about country in the continent (59 mentions in total, most of which are found in Xinhua news items). There are two important takeaways from the analysis of mentions at a country level in Africa. First, Xinhua and CGTN do not share one set of editorial guidelines and this is reflected on content. Second, for all four news organisations, two thirds of the coverage can be traced to a dozen countries. For CCTV+, mentions to nine countries (South Africa, Egypt, Somalia, Kenya, Sudan, Ethiopia, Uganda, Nigeria and Zimbabwe) account for 67 percent of all mentions. For Xinhua, it is eleven (Egypt, Kenya, South Africa, Sudan, Somalia, Nigeria, Libya, Mali, South Sudan, Ethiopia and Algeria); for Reuters, it is nine (Egypt, Libya, South Africa, Nigeria, Kenya, Tunisia, Mali, Sudan and

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Somalia) and for *The Guardian*, twelve (South Africa, Egypt, Libya, Kenya, Nigeria, Somalia, Sudan, Mali, Ghana, Algeria, Ethiopia and Tunisia). While not all, many countries are in the four lists.

Taking all four news organisations together, the most frequent topic in news about African countries is politics (51.66 per cent), followed by social issues and others (25.60), and economic matters (14.55). The least frequent topic is sports (8.19). Politics is also the most frequent topic for stories about Asian countries (41.28), but not for any other continent. In news about the Americas, the predominant topic is social issues and others (36.10) and so it is in news about Oceania (31.99), while in Europe, it is economic matters (31.71). The differences in the frequency of topics by continent at an aggregate level were found statistically significant ($\chi^2 = 97,901$; $df = 12$; $p < .001$). At a country level, not all African nations are covered in the same way across outlets (RQ₃). For instance, on Xinhua, CCTV+ and *The Guardian*, the most common topic for stories about South Africa are social issues and others (45.19, 47.45 and 60.64 per cent respectively), while on Reuters, it is news about the economy (33.26). This contrasts significantly with Somalia, where news related to political affairs are overwhelmingly predominant, particularly on Reuters (90.66) and Xinhua (85.93), but also on CCTV+ (23.80) and *The Guardian* (37.63). Figure 4. shows the most common topic for each African country across news outlets. In the maps for Xinhua and Reuters, the blue colour, representing news about political affairs, is predominant across the continent. For Reuters, however, in those countries with a strong extractive sector (Ghana, gold; Angola, crude oil; South Africa, gold, platinum and diamond) the predominant topics is economic matters. On CCTV+, news about North Africa appear to be mostly about political affairs, while news about countries in West and

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East Africa seem to be focused on social issues and other topics, such as culture, religion, tourism...

Measuring Sentiment on Chinese and Anglo-American Media

Of all four news outlets, CCTV+ is the one that uses the most positive sentiment words around mentions of Africa and African people (RQ₄). On average, each month, there are 58.09 per cent of positive sentiment words and 41.91 per cent of negative ones. At the other end of the scale, Reuters, which has the highest proportion of negative words, has a monthly average of 61.60 per cent of negative terms for 38.40 per cent of positive ones.² Differences between CCTV+ and Reuters were statistically significant ($\chi^2 = 11,606$; $df = 1$; $p = 0.001$). In *The Guardian*, where negative sentiment words around Africa and African countries are also more predominant, the gap between positive (46.11) and negative (53.89) words is much smaller. The same applies to Xinhua content, where, overall, positive sentiment words (50.29) are marginally more common than negative ones (49.71), although there are some months in which the negative terms surpass the positive (i.e. July and December 2013). On CCTV+, the five most frequently occurring sentiment terms associated with Africa (ranked by tf-idf relative frequency scores and reduced to stems) are: “unit”, “like”, “cooper”, “help” and “hope”. On Reuters, the top ten includes “kill”, “unit”, “attack”, “help”, “support”, “protest”, “well”, “like”, “rebel” and “fight”. The clear prevalence of conflict-related terms explains the large gap between positive and negative sentiment words for the news agency. The most-often occurring terms on *The Guardian* and Xinhua include a mix of positive and negative terms, such as “like”, “well”, “support”, “help”, “right”, “attack”, “war”, “open”, “kill” or “win”.

² The percentage is computed by dividing positive or negative words in a month by the sum of all sentiment words in a month (positive and negative).

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When comparing figures 5 and 6, in which I plot the results of sentiment analyses of news items about Africa and China, some noticeable differences can be identified. First, as one would expect, both CCTV+ and Xinhua use a much larger proportion of positive sentiment words to refer to China than they use negative ones. On CCTV+, the average is 74.19 per cent of positive sentiment words per month for 25.81 negative ones; and, on Xinhua, it is 71.16 per cent of positive terms for 28.84 per cent of negative terms. Second, the percentages on *The Guardian* (52.25 positive; 47.75 negative) and Reuters (50.62 positive; 49.38 negative) are much closer to each other, indicating a more neutral coverage—or, at least, not so markedly skewed towards the positive, or the negative as it is often suggested when describing foreign media’s coverage of China. Words such as “weak”, “disput”, “risk” or “worri” appear amongst the top twenty on *The Guardian* and/or Reuters, but they are absent on Xinhua’s or CCTV+’s list. Instead, the top five words for Xinhua are “unit”, “open”, “gold”, “cooper” and “well”, all of which are classified as positive sentiment terms. The third feature worth discussing is the presence of similar peaks in the use of sentiment words across news organisations. For example, in the case of Africa, a clearly identifiable peak occurs on January 2013. In the graphics for Reuters, *The Guardian* and Xinhua, the spike of the red line (negative sentiment) is more pronounced than the green/blue one.

On CCTV+, the peak is also for both positive and negative sentiment terms, although the increase in positive terms (green/blue line) is substantially more pronounced. This sudden increase coincided with multiple newsworthy events clustered around the first few weeks of 2013: the two-year anniversary of the popular uprising in Egypt that led to the fall of long-time President Hosni Mubarak (January 28); the launch of Operation Serval by French troops in Northern Mali (January 11); the kidnapping of hundreds of Algerians and foreigners at a gas

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facility in Algeria (January 16); and, the beginning of peace talks in the Central African Republic, after months of clashes between the army and Séléka rebels (January 2).

As the example of the Libyan crisis that I used earlier illustrates, the prevalence of event-driven coverage on certain parts of the continent is a common feature of all news organisations, but particularly of CCTV+. This is particularly acute in places where the station does not have a regular correspondent. The surge in the use of sentiment words caused by the co-occurrence in time of newsworthy events on January 2013, can be used to explain qualitatively some of the differences in news coverage of Africa between CCTV+ (and by extension CGTN Africa) and the other news outlets. Figures 7a to 7d present semantic networks of sentiment terms that co-occur in news items about Africa on January 2013. There are four separate networks, one for each news outlet. The nodes (words) represent the top 100 (top 200 for CCTV+) most frequently occurring sentiment terms in news items published/broadcast on January 2013. The edges of the network indicate the strength of the association between words: the thickest edges are for the words that co-occur with the highest frequency. On CCTV+ (Figure 4.9a), the words “rebel”, “conflict” and “fight”, occupy a central position in the network, but they co-occur frequently with words such as “help”, “cooper”, “peac”, “support”, “humanitarian”, which are positive sentiment terms.

Another characteristic of the network is the isolation of words such as “war” and “protest”. The frequent co-occurrence of positive sentiment terms with war and conflict related words is much more pronounced on CCTV+ than any of the other three news outlets. For instance, at the core of the Xinhua network (Figure 4.8d), there are five words: “attack”, “hostag”, “terrorist”, “kill” and “crisi”. These co-occur frequently with other negative sentiment terms such as “death”, “dead”, “bomb” or “fight”. Similarly, the network for *The Guardian*

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(Figure 4.8c), shows that words like “help”, “support” and “effort”, which are rather central, do not co-occur frequently with words clustered around “hostag”, “kill”, “terrorist” or “attack”. The edges between these words are much thicker, indicating a higher frequency of occurring together in the same document. The semantic network for Reuters (Figures 4.8b) is the densest at the core, with a clear presence of negative sentiment words. The proportion for January 2013 on Reuters is 39.26 per cent of positive sentiment terms for 60.74 of negative ones.

In making sense of the differences between the results for CGTN Africa, where news about Africa were mostly categorized as having a negative valence, and the ones for the comparative dataset, which reveal a prevalence of positive sentiment terms on CCTV+ content, it is important to note that one cannot draw a direct causal-connection between using more positive sentiment words, and audiences “immediately” decoding texts as positive or negative. There is enough scholarly evidence that demonstrates that the decoding process is far more complex (see, for example, Hall, 1973; Morley, 1980). What the abundance of positive sentiment terms might be telling us is the conscious effort by those at CCTV to recalibrate the framing of Africa. The frequent use of terms like “cooperation”, “unity”, “support” and “aid” would seem to hint that this recalibration is aimed at downplaying the more conflictive aspects of events, such as the ones that clustered around January 2013, and placing a spotlight on solutions. In doing so, not only is CGTN Africa calling for a change on how stories are told, but, implicitly, it is pursuing a less critical form of journalism, that tends to prefer not dwelling on the roots of a problem or crisis, but on the solutions—even if these are not rendering much results.

Describing News Coverage of Africa Across Media

In this final section, I explore in more detail the coverage of Africa across news outlets by means of word frequencies (RQ5), and, specifically, I use keyness as a measure of importance of a word

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to a given set of documents (Bondi & Scott, 2010). To set the stage, and before I examine how different news outlets report on similar topics in news about Africa, it will be useful to describe the way the four media, taken together and in general, cover the continent *vis-à-vis* other continents. For this, the content of all news items about Africa in the dataset were compared to each of the other four continents (Africa and the Americas, Africa and Asia, Africa and Europe, and, Africa and Oceania). The results of the relative frequency analysis using keyness as a measure are presented in Table 1. The first ten words on each column, with a positive chi-squared value, are words that occur much more predominantly in the target corpus (i.e. news about Africa) than the reference corpus (i.e. each of the other continents). Conversely, the words at the bottom of each column, with a negative value, are terms that occur much less frequently in the target corpus than they do in the reference corpus. All p values for these associations were significant, indicating that, indeed, words such as “ebola” or “islamist” are much more defining of news items about Africa than any other continent.

The description of news content that comes out from an analysis of relative word frequencies across continents is that words related to violence (e.g. “kill”, “attack”, “violenc”...), terrorism (“milit”, “boko_haram”, “islamist”...) and Ebola define Africa in the news media, much more than any other world region. If any of these words were predominantly featured in news about other continents, their keyness in texts about Africa would be lower, and they would not have such high chi-squared values. But, do these differences hold across news outlets? And, how does coverage differ when broken down by topic? These are the two questions that I will address next.

Earlier, I showed several examples of how, in some instances, CCTV+'s coverage of Africa and elsewhere differs from that of Xinhua, Reuters and *The Guardian*. These differences

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are also reflected in the prevalence of certain words over others in each news outlet. On Reuters and Xinhua, where news items about politics are prevalent, the words “kill”, “govern” and “attack” are amongst the top five occurring terms. The most frequent words on *The Guardian* and CCTV+ are the same, “people”, “govern”, “work” and “time”, with a slightly different order. On CCTV+, news about politics were the most common—around one third—but news about social issues and others, which constituted also one third approximately, followed closely. Social issues were also the most common topic on *The Guardian*, but the two news outlets focus on different aspects of this topic. While in none of the two news outlets words related to political violence stand out, the stronger presence of terms related to the economy (“dollar”, “percent”, “economy”...) on CCTV+ contrasts with the presence of sports-related words, and particularly football, in *The Guardian* (“ball”, “goal”, “defence”...). Another equally interesting difference between the London-based paper and CCTV+ is the relative prevalence of culture-related terms (“film”, “book”, “read”) and items that might hint towards a higher presence of gender-related news items in *The Guardian* (“girl” and “women”).

The comparison between Reuters and CCTV+ reveals the much larger presence of sports-related news items on CCTV+, and, compared to Xinhua, CCTV+ seems to discuss economic matters significantly more than the Chinese news agency. On the other side, the words that are less used on CCTV+ news items, the two news agencies are quite similar. For both Reuters and Xinhua, the most defining terms are in the realm of politics, such as “statement”, “mursi”, “brotherhood” or “un”, and military/political violence, such as “attack”, “kill”, “injure”... There is a conspicuous absence of stemmed words like “islamist”, “islamic_st”, “islamist_milit” or “islamist_group” on CCTV+. For example, the term “islamist”, which occurs 12,916 times in news from Reuters about Africa, only occurs 219 times on CCTV+ ($\chi^2 = -2474.10; p < 0.001$).

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The analysis includes 10,483 news items on Africa from CCTV+ for 35,613 from Reuters. The much lower frequency of the word “islamist” appears to be an exclusive characteristic of CCTV+, since relative frequency analyses with Xinhua ($\chi^2 = -241.20$; $p < 0.001$) and *The Guardian* ($\chi^2 = -120.65$; $p < 0.001$) also return significant differences. In keyness scores, negative chi-squared values indicate the higher frequency of a term in the reference group compared to the target group, in this case CCTV+.

More differences between the content in English on these two Chinese media organizations arise when news about politics and news about social issues are compared. Aside from the prevalence of words such as “attack” and “kill” on Xinhua, which have already been described, CCTV+ tends to use terms such as “cooper”, “hope” and “peac” more often. The difference was confirmed as significant in a keyness analysis (“cooper”: $\chi^2 = 1286.09$; $p < 0.001$; “hope”: $\chi^2 = 1,159.09$; $p < 0.001$; “peac”: $\chi^2 = 628.54$; $p < 0.001$). The keyness analysis also revealed that when it comes to news about social issues and others, including, for instance culture, tourism, human interest and crime, CCTV+ mentions the term “chines” ($n = 1,187$) a lot more than Xinhua does ($n = 3836$; $\chi^2 = 1717.94$; $p < 0.001$), relative to the overall number of words.³ This holds true for comparisons with the other two news organisations. On social issues, amongst the most frequent terms for Reuters are “ebola”, “case”, “kill”, “diseas”, “hospit” and “virus”, which should give a clear idea of the prevalence of Ebola related stories during the period covered. However, the use of the term “ebola” and other terms related to the disease is also quite high on CCTV+, which does not mean that CCTV+ did not cover Ebola, but that Reuters did it much more, compared to the overall output of content on social issues. To show this, one could take the words “festiv” ($n = 404$; $\chi^2 = 2,921.31$; $p < 0.001$) and “art” ($n = 495$; χ^2

³ In analyses of word frequencies, the names of all countries were removed, so frequencies of China are not counted.

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= 3,528.57; $p < 0.001$) which, not only score much higher on keyness for CCTV+, but they are alarmingly low on Reuters (404 and 308, respectively) reports on Africa. Culture might have a significant space on CCTV+, compared to Reuters, but not so much compared to *The Guardian*, where terms such as “book” and “movie” score much higher in keyness. An example of a social topic that features much less on CCTV+ than on the other news outlets is religion.

Conclusion

Using data from a large dataset of news items and relying on a systematic and reproducible method of analysis, this paper has demonstrated that in certain metrics, CCTV+/CGTN’s coverage of Africa differs from that of other global media, including Xinhua, in at least three ways. First, CCTV+/CGTN’s coverage of Africa appears to be more thematically diverse than on the three other global media organisations analysed, although certain topics are absent on CGTN (i.e. religion), but present elsewhere. Second, global Chinese media’s self-declared goal of telling a “positive story” of Africa, often translates in the prevalence of positive sentiment words over negative sentiment words. The difference with the three other news outlets examined is quite pronounced. The emphasis on using positive sentiment words might reveal an underlying effort to tell the continent differently, which is yet to sink in. And, third, compared to the two news agencies analysed here, Reuters and Xinhua, CGTN/CCTV+ content is, overall, less focused on political conflict and, when conflict is discussed, it is framed around issues of cooperation and problem-solving.

At the same time, this paper has provided evidence that depictions in the literature and in the press about Chinese media’s potentially transformative impact on media representations of Africa should be examined carefully. In the four news outlets that I studied, coverage privileges the main regional powers (Kenya in East Africa, Egypt in North Africa, Nigeria in West Africa

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and South Africa in Southern Africa). On both Chinese and non-Chinese media, news about the majority of African countries is often monothematic and event-driven. This is most clearly seen in the fact that all four outlets tend to favour areas in which political violence has been recurrent during the period of analysis (2012-2015). In other words, while there's evidence that, at least superficially, Chinese and non-Chinese media differ in the way they talk about Africa, structurally all four news outlets contribute to perpetuating most of the geographical imbalances that have existed in news flows to, from and around the continent. Coverage is disproportionately skewed towards economic centres, it is diversified thematically in a limited number of cases and, for the rest, reporting often reproduces the same clichés that the literature on media representations of Africa has denounced over and over (Bunce, Franks, & Paterson, 2016; Hawk, 1992; D. Scott, 2007).

As all studies, this one has several limitations. The corpus of news that I used, includes items from just for news organisations (CCTV+, Reuters, *The Guardian* and Xinhua) and is limited to a period of four years (2012 to 2015). By excluding other very relevant news organisations such as the BBC, the *New York Times* or CNN, the generalizability of the results is limited. Advances in computational power in recent years have enabled complex analyses to be implemented by using a single personal computer. Moreover, with the multiplication of textual data available online, mass media scholars can now amass very large datasets from which they can attempt to answer questions that were too costly to address in the past. While these two phenomena have profoundly changed the way content analysis is implemented, they also present new challenges. Escalating a computational text analysis like the one I conducted here can become costly very quickly. Future studies should strive to construct a more diverse corpus of texts that can help revisit some of the debates around media representations of Africa.

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Tables and Figures

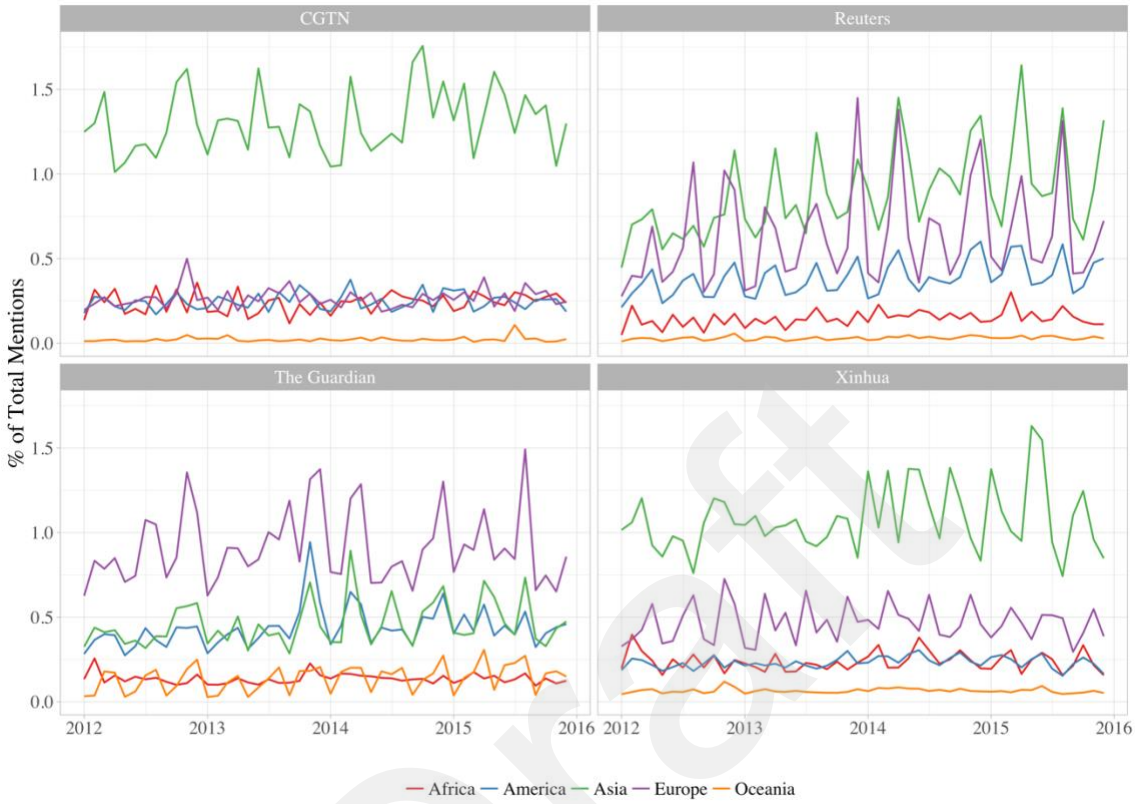


Figure 1. *Frequency of Mentions per Continent by News Outlet (2012-2015)*

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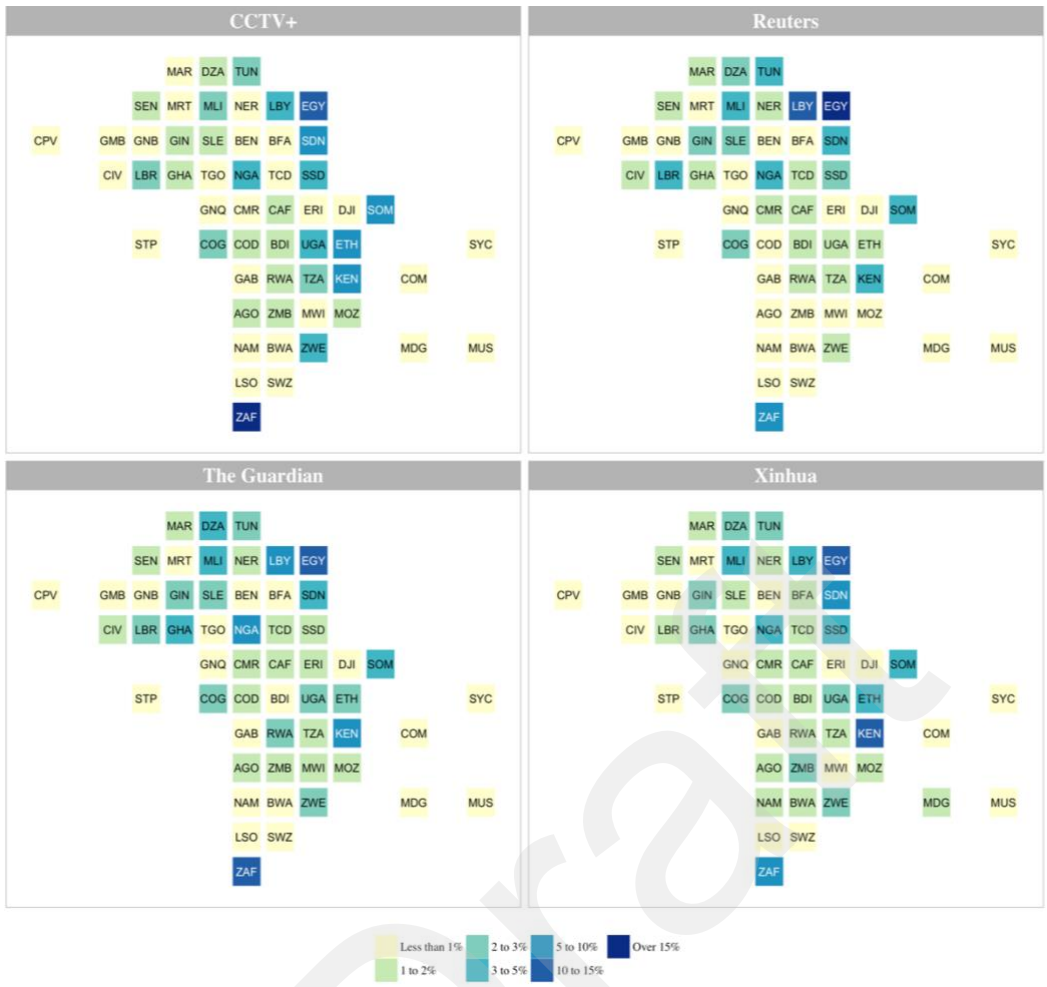


Figure 2. Mentions of African Countries by News Outlet (2012-2015)

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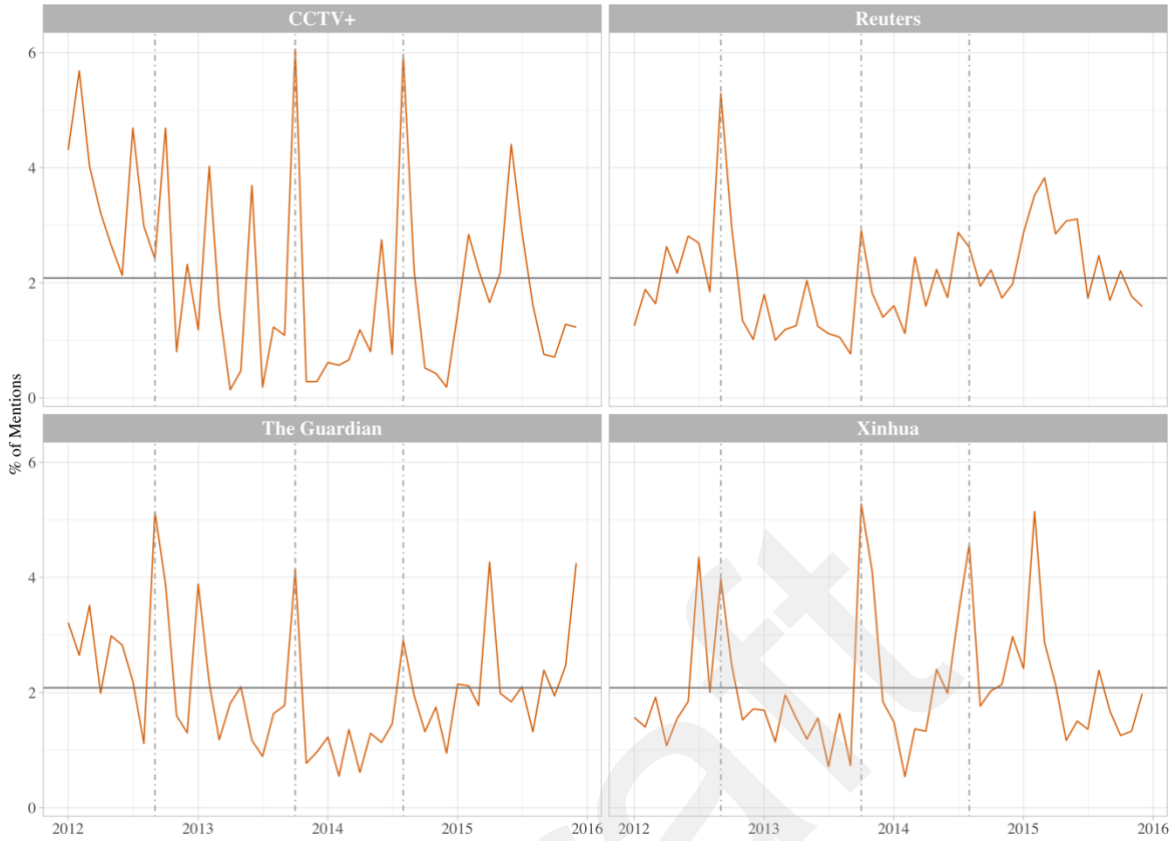


Figure 3. Mentions of Libya by News Outlet (2012-2015)

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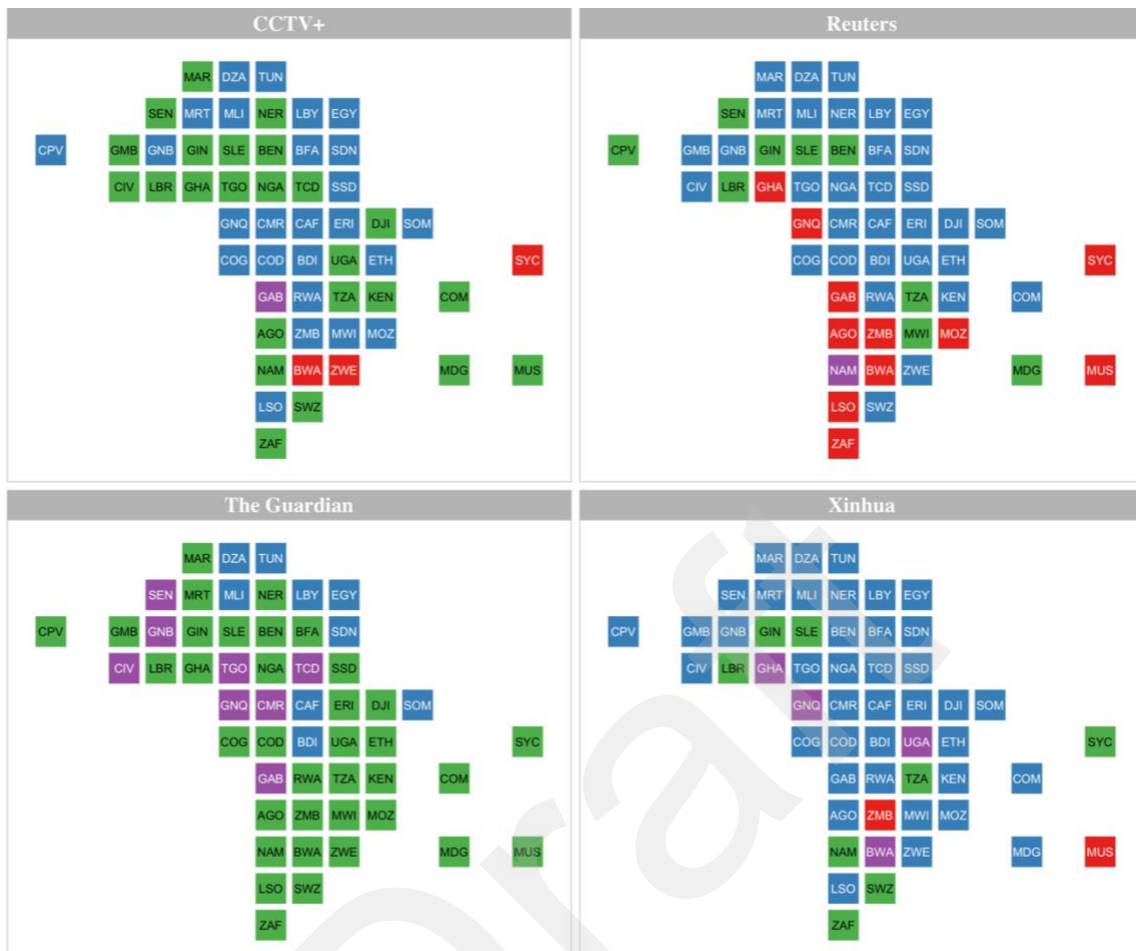


Figure 4. Most Frequent Topic per African Country by News Outlet (2012-2015)

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Figure 5. *Sentiment Analysis of News Items Related to Africa (2012-2015)*

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Figure 6. *Sentiment Analysis of News Items Related to China (2012-2015)*

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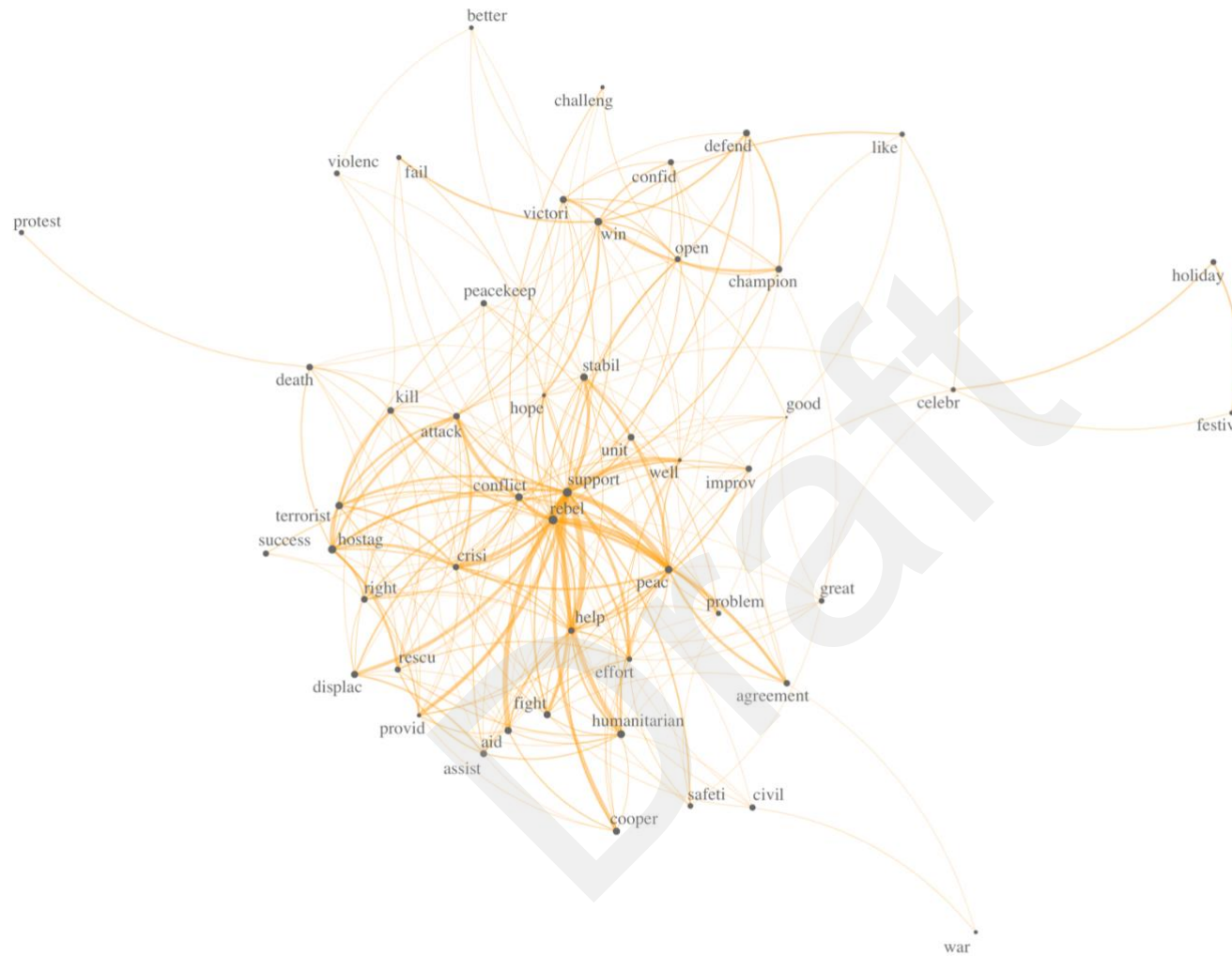


Figure 7a *Semantic Network of Sentiment Words Associated with Africa on CCTV+, January 2013*

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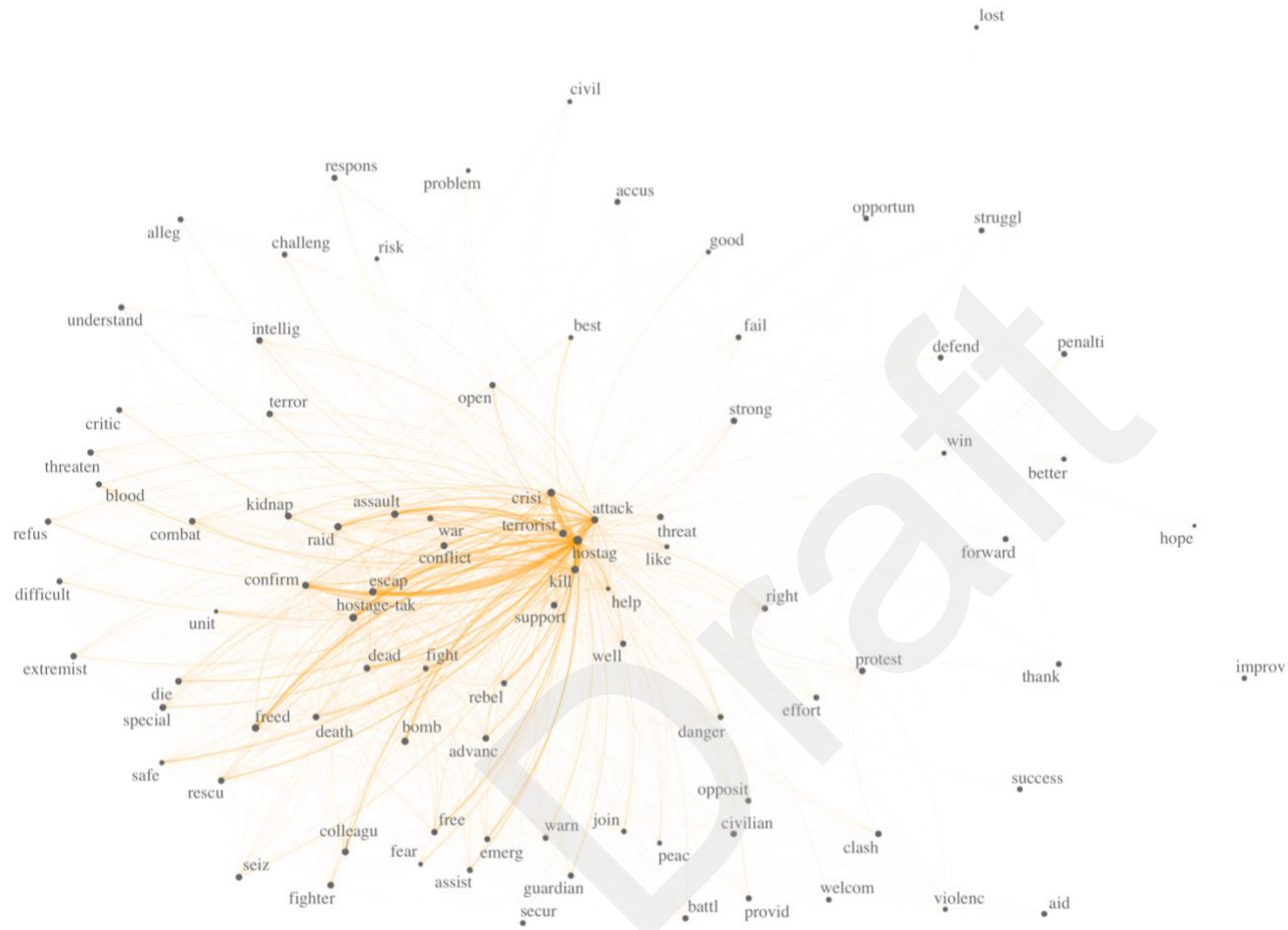


Figure 7cd *Semantic Network of Sentiment Words Associated with Africa on Xinhua, January 2013*

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Table 1. *Keyness Scores Comparing Frequency of Features in Texts about Africa and Four Other Continents (2012-2015)*

Africa & the Americas		Africa & Asia		Africa & Europe		Africa & Cceania	
Features	χ^2^*	feature	χ^2^*	feature	χ^2^*	feature	χ^2^*
ebola	61914.19	ebola	85146.05	ebola	93211.16	kill	17745.79
countri	59611.28	kill	77232.90	mursi	43032.25	presid	15822.55
islamist	58380.07	islamist	6441900	boko_haram	40923.39	attack	12877.34
attack	52606.04	attack	57316.63	brotherhood	39563.01	ebola	10741.96
kill	46592.10	armi	46606.33	islamist	37064.03	protest	10665.28
govern	40238.94	mursi	43627.23	mandela	32469.62	countri	10444.01
armi	38260.65	brotherhood	42725.12	muslim_brotherhood	31888.70	islamist	9713.24
milit	34225.77	violenc	41861.51	african_countri	30602.04	armi	8754.58
region	33798.72	presid	40750.90	morsi	30486.51	violenc	7331.80
rebel	33334.20	muslim_brotherhood	39899.74	african_union	29234.03	militari	7083.57
percent	-24464.62	chines	-23747.40	bank	-20435.64	labor	-21986.95
compani	-21987.39	percent	-19198.05	european	-18092.23	abbott	-20736.37
republican	-21494.15	bank	-13950.26	euro	-16398.18	melbourn	-19730.05
senat	-14839.44	korea	-11856.19	bst	-14778.74	ball	-17204.21
obama	-13095.67	assad	- 9741.78	eu	-14733.49	senat	-15936.31
inc	-12237.36	yuan	- 9069.91	europ	-14333.88	queensland	-13128.26
sale	-11446.16	taliban	- 8361.61	labour	- 8844.53	play	-11941.56
billion	- 9327.84	sale	- 6923.17	euro_zon	- 8734.78	cricket	-10638.25
congress	- 9317.76	market	- 6759.01	billion_euro	- 8414.59	tony_abbott	-10518.80
data	- 8925.57	compani	- 652545	sale	- 8199.03	nsw	-10476.59

* All values were significant at $p < .0001$.