Segev, E. (2017). From where does the world look flatter? A comparative analysis of foreign coverage in world news. *Journalism*. DOI: 1464884916688292.

From where does the world look flatter? A comparative analysis of foreign coverage in world news

Elad Segev

Tel Aviv University

Abstract

How does world news coverage differ across countries and source types? This study compares the extent of foreign coverage and the level of inequality in world news from 16 countries in five regions: Africa, America, Asia, Europe, and the Middle East, among four types of news websites: International news agencies, national newspapers, broadcast channels, and news aggregators over a period of two years between 2013 and 2014. Findings show that western news sites were among the least unequal, while Asian news sites among the most unequal. International news agencies displayed the highest extent of foreign coverage, while news aggregators displayed the lowest. As news aggregators collect and customize news from a variety of local sources they further perpetuate and even intensify the narrow representation of the world.

Keywords: world news, country mentions, frequency distribution, international news agencies, news aggregators, inequality

From where is the world flatter? A comparative analysis of foreign coverage in world news

Over the last decades numerous studies have pointed to the unequal representation of the world in international news (Kim & Barnett, 1996; Mowlana, 1985; Wu, 2000, 2007; Segev, 2015, 2016; UNESCO, 1954). Very few dominant and powerful western countries are positioned at the center of the world news coverage, while most other countries are largely ignored. The problem of unequal world news has been a matter of concern, due to their significant effect on people perceptions (Gerbner & Marvanyi, 1977; Segev & Hills, 2014; Segev, 2016; Wanta, Golan, and Cheolhan, 2004). In other words, unbalanced world coverage not only reflects a certain world order, but also reinforces it.

The literature on international news flow has often focused on what countries are more newsworthy than others and why. Yet there are very few studies up-to-date that attempt to systematically compare how much unequal is the world across different regions and news source types such as news agencies, newspapers, broadcast channels, and news aggregators. A comparative analysis of this kind could help us further understand the reasons behind the different representations of the world in international news, and consequently the ways people from different nationalities using different sources perceive the outside world.

In the following paper the extent of foreign coverage and the distributions of country mentions were studied across news sites from around the world in five regions: Africa, America, Asia, Europe, and the Middle East over a period of two years between 2013 and 2014. Apart from the regional factor, the different types of

news source were considered in order to explain the differences in foreign news coverage around the world.

The unequal representation of the world in the news

The importance of a story, including a news story, is related to its relevance to the reader and its community. According to the international news flow literature, the news worthiness of foreign countries has been attributed to three possible explanations: Their size and power (national trait factors), their relevance to the reporting countries (relatedness factors), and the magnitude and relevance of the event itself (event factors) (Golan & Wanta, 2003; Robinson & Sparkes, 1976; Rosengren, 1970; Shoemaker, Danielian, & Brendlinger, 1991; Segev, 2015, 2016; Segev, Sheafer, & Shenhav, 2013; Sheafer, Ben Nun, Shenhav, & Segev, 2013; Wu, 2000). For example, the prominence of the US in world news is certainly related to its international influence and power (Segev & Blondheim, 2013a). The very high prominence of Israel in Egyptian news, on the other hand, can be attributed to its geographic proximity and political relevance (Segev & Blondheim, 2013b). Finally, the very high prominence of the Arab Spring events in the news around the world demonstrates that there is also importance to the magnitude and relevance of the events themselves.

One of the most prevailing findings of international news flow studies is the unequal representation of countries in world news. This problem was observed already during the 1950s, following the end of WWII and the emergence of a new world order (International Press Institute, 1953; UNESCO, 1954). The picture presented in world news has remained largely unequal over the years (Kim & Barnett, 1996; Mowlana, 1985; Schiller, 1974). More recently, Wu's (2004) comparative

analysis of newspapers from 44 countries showed that the US remained by far the most mentioned country, followed by the UK, France, Russia and China. This inequality has been similarly observed on world news of television channels around the world (Cohen, 2013), and on the internet (Segev, 2015, 2016).

In fact the foreign coverage in news sites seems to accurately reflect the newspapers and broadcast channels they represent. Wu (2007) compared the prominence of countries in online news to their prominence in broadcast and print outlets of the *CNN* and the *New York Times* respectively. His study indicated that there were no significant differences between online and traditional media in the relative scope of coverage allotted to different countries. Other recent studies that focused on news websites of newspapers and broadcast channels around the world (Cohen, 2013; Himelboim, Chang, & McCreery, 2010; Segev and Blondheim, 2013a; Wilke, Heimprecht, & Cohen, 2012), and even on online news aggregators such as *Google News* and *Yahoo! News* (Poor, 2007; Watanabe, 2013) clearly confirmed the central position of the US and western countries, as well as the largely unequal distribution of the international news flow online.

The main reason for this unequal distribution is related to the national trait group of explanation, and particularly the economic power of a country. This principle corresponds to Galtung and Ruge (1965) concept of "elite nations". World news reflects the power and global standing of economically and politically influential countries. In particular, many studies found a significant correlation between the Gross Domestic Product (GDP) of a country and its frequency of mentions in world news (Ishii, 1996; Kim & Barnett, 1996; Segev, 2015, 2016; Robinson & Sparkes, 1976; Wu, 2000, 2003, 2007).

It is difficult to ignore the fact that the news prominence of economically leading countries is also related to their historical (MacBride, 1980; Mowlana, 1985; Nordenstreng, 1974; Schiller, 1974), and current (MacGregor, 2013; Tunstall, 2008) dominance in the production and spread of media, including international news. International news agencies, such as Associated Press (AP), Reuters, and Agence France-Presse (AFP), are originated in the US, the UK, and France respectively, and supply world news to smaller countries (Paterson, 2005, 2007; Shrivastava, 2007). In this way they perpetuate the unequal representation and the unbalanced focus on economically leading countries in the news from around the world.

Since the distribution of country GDP closely follows a power law (Pueyo, 2013), in which there are few very rich countries and many poor ones, and since the GDP and the news prominence of countries are so closely related (Segev, 2015, 2016), it is certainly possible that the frequency of country mentions in the news around the world would follow a similarly unequal pattern (Himelboim, Chang, McCreery, 2010). The distribution of country mentions in world news, however, has not been systematically compared across regions and news sources. Yet Segev et al. (2013) measured the changes in distribution of country mentions in world news across time. Comparing two leading newspapers, the *New York Times* and *Der Spiegel* over a period of 50 years, they found that the unequal representation of the world has not changed much over the years. The US remained at the center, while African countries at its very peripheries. They found, however, that the news prominence of some Asian countries has increased, while the prominence of some European countries has decreased over the years.

Factors affecting the unequal representation of the world

Due to the unequal distribution of economic and political power it is certainly not a surprise that countries are represented unequally in the news from around the world. At the same time, it is possible that the extent of foreign coverage would differ across *regions*. This is mainly due to the relatedness factors, or the different economic, political, social, and cultural proximity between a reporting and a reported country. This principle corresponds to Galtung and Ruge's (1965) concept of "meaningfulness" or Harcup and O'Neill's (2001) "relevance". Thus, for example, Geographic proximity (Dupree, 1971; Galtung & Ruge, 1965), cultural or ethnic similarity (Shoemaker et al., 1991), immigration, travel, and shared languages (Chang, Shoemaker, & Brendlinger, 1987; Kariel & Rosenvall, 1984), might increase the regionalization of international news coverage.

Indeed, the scope of international news was found to be essentially different across regions. Kayser (1953) and later Gerbner and Marvanyi (1977) found that although the US and Western European countries were generally prominent in world news, countries in Africa, Asia, and Oceania were mentioned mostly locally. More recently, in a large scale study of 33 television stations in 17 countries Cohen (2013) found much less presence of foreign news comparing to domestic news. As expected, the US was the most prominent country in the news from around the world, followed by western European countries. Together with similarities, however, there were major differences in the international focus of countries, reflecting local and regional interests, bilateral relationships, and various journalistic considerations.

More specifically, when analyzing news sites of newspapers, broadcast channels, and online news aggregators around the world, Segev (2010a, 2016) found that American and European news presented a more global scope, while Asian, and

particularly Middle Eastern news, focused more on regional foreign affair. Looking at the networks of country co-mentions, he revealed that the networks of Asian and Middle Eastern news were relatively flat, representing equally the various countries of those regions. In American and European news, on the other hand, the US and the reporting countries were positioned at the center of the networks, displaying greater hierarchies, and western-centric views.

Apart from the regional aspect, international news were found to differ depending on the *type* of news source. Hester (1971), for instance, compared the extent of foreign coverage in the international news agency AP with that of daily newspapers in the US. He found that although the extent of foreign coverage was slightly lower in newspapers, they largely reflected the unequal foreign coverage of AP, in which developed countries were over-represented, while developing countries were largely ignored. In support of this trend, Boyd-Barrett (1980) explained that only a few national newspapers have an international news gathering capacity, and thus most of them heavily depend on the western news agencies in their coverage of world news.

Similarly, Moisy (1996) argued that the main international news agencies, AFP, AP, and Reuters have remained by far the most important producers of world news. Television broadcasting channels, in comparison, employed a much lower share of international correspondents, and further decreased their share of international news coverage following the end of the cold war. As television networks today have reduced their own news production since the 1980s, they increasingly rely on international agencies (Paterson, 2011).

When it comes to online news, Paterson (2005, 2007) found that global new agencies, and particularly Reuters, AP, and AFP, remained by far the most dominant

sources for world news. They set the agenda for other national news sites and their readership. In fact, Paterson believes that the dominance of western news agencies has been intensified on the internet, as there is less control over the flow of news among an increasing variety of channels, and the role of human editors is limited. Shrivastava (2007) similarly argues that international news agencies strive on the internet as they have been rapidly adopting online technologies and new marketing models.

In short, both the region and the type of news sources could potentially explain differences in foreign coverage. Following Segev's (2010a, 2016) findings regarding the regional outlook displayed in the news from Asia and the Middle East, comparing to the more global outlook displayed in American and European news, the first hypothesis is:

H1: The extent of foreign coverage in world news would be significantly higher in American and European news sites than in news sites of other regions

It is further expected that since American and European news would present more foreign countries than news from other regions (such as Asia), its frequency distribution of country mentions would be less unequal. The second hypothesis is therefore that:

H2: The distribution of country mentions in American and European news sites would be less unequal than the distribution of country mentions in other regions

Similarly, international news agencies provide a large portion of world news to other news sources (Moisy, 1996; Shrivastava, 2007; Paterson, 2005, 2007). It is

therefore assumed that they would display the greatest extent of foreign country coverage in line with previous claims (Boyd-Barrett, 1980; Hester, 1971; Paterson, 2011). Since previous studies did not specifically compare the distribution of foreign coverage across different types of news sites (online newspaper, broadcast channels, and news aggregators), and since they might differ in the extent of foreign news coverage depending on their size and market share, there were no previous assumptions regarding the differences between them. Hence, the third hypothesis is that:

H3: The extent of foreign coverage would be significantly larger in international news agencies than in other types of news sources

While international news agencies are likely to display more foreign coverage, it is also expected that in order to increase their market share and appeal to greater international audiences, their foreign news would be more diverse and the distribution of countries would be less unequal than that of other news sources. The last hypothesis is therefore that:

H4: International news agencies would display less unequal distribution of country mentions than other types of news sources

Method

News data were obtained from 43 news websites varied by their geographic origin and type of news source. News from 16 countries in 11 languages were gathered including Arabic news, news from China, Egypt, France, Germany, India,

Israel, Italy, Japan, Mexico, Russia, South Africa, South Korea, Spain, Switzerland, the United Kingdom, and the United States as well as international news agencies and the Integrated Regional Information Networks (IRIN) of the United Nations. The sample of countries and news sites was chosen to reflect some of the major media hubs, the number and proportion of internet users in each country, and the variety of cultural backgrounds and ideologies.

Countries with a large number of online users were chosen, since they often act as cultural and media centers for the smaller countries in the peripheries (Tunstall, 2008). Applied to the internet, this factor reflects the popularity of the language used in different regions. Thus, the most popular online languages such as Arabic, Chinese, English, French, German, Japanese, Russian, and Spanish were preferred. International news agencies, covering the world news in English, French and Chinese, were also included due to their dominant role in disseminating news around the world (Moisy, 1996).

Together with studying influential media hubs around the world, news sites from India, Mexico and South Africa, were chosen in order to study more peripheral hubs representing other world regions (Tunstall, 2008). Similarly, news sites from Egypt and Israel were included, as they represent prominent geopolitical centers in the Middle East (Segev & Blondheim, 2010, 2013b).

In each of the countries selected for analysis, three major news sites were chosen for tracking. Typically, the first two sources were news sites of well-established newspapers and broadcast channels, such as the *New York Times* and the *CNN* in the US, or the *Guardian* and the *BBC* in the UK. The third news source was *Google News* site of each country, a news aggregator of several hundreds and sometimes thousands of news sources.[1] When selecting news sources it was required

to consider several issues. Typically, they had to be among the major national news sources in terms of audiences, to include print and, if possible, a broadcast channel in each nation, to have a relatively dominant online presence (in terms of online users and traffic), and finally, to have a specific RSS channel for world news to be automatically harvested (see below).

The World Association of Newspapers and News Publishers, which publishes annual reports on the World Press Trends was one of the main lists to consult. Other lists and reports (such as national statistic in specific countries,[2] and general web usage statistics provided by *Alexa* and *Google Trends*) were also consulted for cross-checking and validation purposes. The final list of news sources in the sample did not always include the most visited online news sites. Instead, news sources in the sample were among the major national online news sites, representing a mixture of national print and broadcast channels in each region.

Google News as a news aggregator is particularly interesting to study, since it combines a great variety of news sources, and employs secretive automatic algorithms when selecting and prioritizing news items. Although its national channels are language based rather than strictly country based, previous studies found that its international focus is significantly similar to that of print and broadcast news sources of the same nation (Segev, 2015, 2016). In fact, the ranking of foreign countries in any national *Google News* site was strongly correlated with that of other news sites of the same county, and only moderately correlated with the country ranking in the news sites of other countries. Additionally, to increase the validity of the study, some of the analyses (see below) were conducting once with and once without *Google News*.

As the current analysis focused on international news, only the "world news" section in each of these news sites was observed. The data was automatically mined

based on its RSS feeds every other day over a period of two years between January 1, 2013 and December 31, 2014 at 12:00 UTC. Since news sources varied in terms of their total number of news items, it was decided to sample 1,000 news items from each source spread equally over the two year period, in order to allow more accurate comparison between sources. For example, if an online source displayed 2,000 news items during the two year sample, items were ordered chronologically, and every second item was chosen for the analysis. Some news sites that displayed less than 1,000 news items in the world news section during that period (such as *SABC* and *Google News* of South Africa, *Google News* of India, Mexico and Japan, *YNet* of Israel, and *Al Ahram* of Egypt) were not included in the final sample. In total, 43,000 news items were collected and analyzed. Table 1 summarizes the list of countries and news sites used for the analysis.

[Table 1 about here]

For each news item the date, title, content, and source were automatically identified and documented. The title of each news item and its content were used to extract the countries mentioned in it. For this purpose, a database of 195 country names in 11 different languages was built. This was based on the most complete list of country names available from ISO (International Organization for Standardization). The English list was then translated into the following languages: Arabic, Chinese (Mandarin), English, French, German, Hebrew, Italian, Japanese, Korean, Russian, and Spanish. Several native-speaker research assistants were employed to translate country names into these languages. For each country name, the research assistants were asked to provide all the common names and alternative names (for example, “United States”, “USA”, and so on). Then they were asked to omit all alternative country names that might be ambiguous, and therefore yield irrelevant search results.

On the basis of this list, the software could automatically identify what countries are mentioned in each news item. A validation process was carried out by randomly choosing 100 news items and manually coding the mentioned countries. There was 78% of agreement between the human coder and the software. This was mainly since the software counts only nouns (such as "USA"), while human coders also include adjectives (such as "American"). The decision to strictly focus on country names and not include nationalities was based on the fact that it would complicate the translation process due to divergent grammatical rules in different languages. Including also adjective might therefore decrease the validity of cross-national comparison. Previous studies (Segev, 2015, 2016), however, found that focusing on country names in a high volume of news items provides a very accurate estimate for the actual attention a country gives to another in its news outlets.

In order to study and compare world news across source types and regions two aspects of the foreign coverage were operationalized: The *extent* of foreign coverage and the *distribution* of countries mentioned. The extent of foreign coverage was measured by (1) counting the number of different foreign countries (FC) mentioned in order to explore the variety and span of international coverage in each news source; and (2) calculating the percentage foreign items (%FI), that is the percentage of news items mentioning any foreign country names out of the 1,000 news items in the sample of each news source. Although world news generally focuses on the outside world, previous studies found that some countries (such as Israel and Russia) tend to report on themselves in the world news section (Segev, 2010a). Hence, this variable measures another aspect of the extent of foreign coverage in world news.

Similarly, the distribution of country mentions in each news source was operationalized by two measurements: The Gini coefficient and the Coefficient of

Variation (CV). Gini coefficient is commonly used to compare the inequality in income distribution between countries. It has been found, however, as a very instrumental measurement to study inequalities in the global communication flow (Barnett & Park, 2005; Park, Barnett, & Chung, 2011), and particularly inequalities in the distribution of country mentions in the news (Segev et al., 2013, Watanabe, 2013). Gini coefficient ranges from 0, which expresses total equality, to 1, which expresses maximum inequality. The CV is another standardized measure of frequency distribution based on the ratio of the standard deviation to the mean.

The independent variables in this study were: (1) The region of the news source (Africa, America, Asia, Europe, or the Middle East); and (2) the type of news site (a website of a news agency, a print newspaper, a broadcast channel, or an online aggregator or portal).

Results

The extent of foreign coverage was measured by two variables: The number of different foreign countries mentioned, and the percentage of news items that mentioned countries. Table 2 summarizes the mean and standard deviation of those variables by region and news source type. In total, 63% of world news items mentioned about 93 different foreign countries, ranging from the world news section in the Korean *Google News* that mentioned 61 different countries, to the world news section of the *Guardian* in Britain that mentioned 149 different countries. In average, although only 58% of the news items in European news site mentioned foreign countries, they displayed the highest number ($\mu = 99$) of foreign countries. Among the source types category, news aggregators presented the least number of foreign countries ($\mu = 87$).

[Table 2 about here]

In terms of country distribution, all news sources displayed a closed to power law curve with an average R^2 fit of 93%, ranging from 78% fit for the country distribution in *IRIN* news agency of the UN, to 97% fit for the country distribution in the Korean news agency *Yonhap*. This indicates that all news sources, regardless of their region and type, presented a highly unequal distribution of country mentions, with very few countries that were mentioned a lot, and very many countries that were hardly mentioned. Correspondingly, the average Gini coefficient level was .67, ranging from .54 for the country distribution in *IRIN* news agency of the UN, to .79 for the country distribution in the Korean *Google News*. Asian news sources in general, displayed the highest value of Gini coefficient (.719), which indicates the greatest inequality in the representation of foreign countries. The Coefficient of Variation (CV) was measured as well, and was highly correlated with the Gini coefficient (Pearson $r = .84$, $p < .001$). Both the Gini coefficient and the CV measurements displayed a normal distribution across the different news sources (W = .98 in a Shapiro-Wilk Normality Test), allowing a further comparison of their mean values.

It is worth noting, that in most cases, the standard deviation values of all measurements were smaller within each region and news types than within the entire sample of news sources. In other words, news sources in each region and source type were generally more homogenous in terms of the extent of foreign news coverage and the frequency distribution of country names. Two prominent exceptions were the frequency distribution of country names among international news agencies and among broadcast channels, which displayed much higher variance than the average (marked in bold).

A closer look on those exceptions reveals that the Chinese news agency Xinhua displayed a much more concentrated distribution than that of Reuters of the UK and IRIN of the UN (Gini values were 0.743, 0.689, and 0.535 respectively). Similarly, NHK of Japan and NDTV of India displayed a much more concentrated distribution than that of the BBC of the UK and the CNN of the US (Gini values were 0.752, 0.716, 0.637, and 0.582 respectively). As will be demonstrated below, in those exceptional cases, the regional aspect was more important than the source type in explaining the different distribution of country name mentions.

Table 3 displays a one-way ANOVA in order to test the first two hypotheses concerning the regional effect on foreign news coverage. Due to the variety of news sources included in news aggregators, this analysis was done once with and once without *Google News*. Since both methods yielded identical results, Table 3 presents only the findings that include *Google News* in each of the regions. In contrast to H1, the region of the news did not affect the extent of foreign coverage. Both the mean number of different foreign countries mentioned and the mean percentage of foreign items did not differ significantly across regions.

[Table 3 about here]

The second hypothesis, however, was confirmed, as Table 3 indicates significant differences in the distribution across regions. For the Gini coefficient the effect of the region significantly differed at the $p < 0.01$ level [$F(5, 37) = 8.20$, $p < .01$, $\eta_p^2 = 0.53$]. Similarly, for the CV its effect significantly differed at the $p < 0.01$ level [$F(5, 37) = 7.82$, $p < .01$, $\eta_p^2 = 0.51$]. Figure 1 summarizes the mean Gini coefficient in each region in order to highlight those differences.

[Figure 1 about here]

In line with H2, Figure 1 shows that Asian news displayed the most unequal distribution of countries (Gini = .72), followed by South African (Gini = .71), and Middle Eastern news (Gini = .68). European and American news, on the other hand, displayed relatively less unequal distribution of countries (Gini = .64 and .63 respectively). Figure 2 further illustrates those differences based on the distribution of country mentions in two online newspapers: *Chosun* in South Korea and *Le Figaro* in France. It shows that the Korean news site mentioned very few countries significantly more than other countries, while the French news site represented foreign countries less unequally. During the two-year period *Chosun* mentioned the US in 31.5% of the news items, followed by China that was mentioned in 18% of news items and Japan that was mentioned in 16.3% of the news items. The *Le Figaro*, on the other hand, mentioned the US in only 12% of its news items, closely followed by Syria and Ukraine that were mentioned in 10.3% and 6.2% of the news items respectively.

[Figure 2 about here]

Table 4 displays a one-way ANOVA in order to test the third hypothesis concerning the type of news source effect on foreign news coverage. In partial agreement with H3, Table 4 confirms that the extent of foreign coverage differs across the types of news sources. Particularly, the percentage of news items that mentioned foreign countries was significantly different across the type of news source at the $p <$ 0.01 level [$F(5, 39) = 5.26$, $p < .01$, $\eta_p^2 = 0.29$]. The number of different countries, on the other hand, was not significantly different across the types of news sources.

[Table 4 about here]

Figure 3 summarizes the mean percentage of foreign news items in each type of news source in order to highlight those differences. As expected, international news agencies displayed significantly higher percentage of foreign news items (87.55%)

comparing to broadcast channels (72.28%), newspapers (63.34), and news aggregator (56.93%).

[Figure 3 about here]

Finally, in contrast with H4, as indicated in Table 4, both the Gini coefficient and the CV were not associated with the type of news source. In other words, international news agencies did not display significantly more equal distribution of countries than other types of news sites. As earlier suggested, this was a result of the heterogeneity of news sources in the news agency group (see also Table 2), where *Xinhua* displayed a much more unequal distribution of country names than *Reuters* and *IRIN*.

Discussion

The unbalanced coverage of the world in the news has been subject for concerns at least for a century, instigating various empirical studies and relevant theories (Chang et al., 1987; Cohen, 2013; Galtung & Ruge, 1965; International Press Institute, 1953; Rosengren, 1970; Segev, 2015, 2016; Wilke et al., 2012; Wu, 2000). The narrow view presented in the world news is particularly alarming, as it is replicated in peoples' memory, and thus influences our perception of the world (Segev, 2016; Segev & Hills, 2014). While most previous studies focused on what countries are more newsworthy and why, the current study addresses the question of how the level of inequality differs across different regions and news source types on the internet.

The regional variable has been significant in explaining differences in foreign coverage at least for two reasons. First, most international news are still produced in and for western countries (MacGregor, 2013; Paterson, 2005, 2007; Tunstall, 2008),

suggesting that there might be differences in the foreign coverage between western and non-western regions. Second, news is still predominantly national and the foreign coverage in each country is typically based on local considerations and priorities (Cohen, 2013; Segev, 2016).

In line with previous observations regarding the more regional outlook of online news from the Middle East and Asia (Segev, 2010a, 2016), it was expected that the extent of foreign coverage in those regions would be significantly lower than the extent of foreign coverage in American and European news sites. Yet, although European news sources mentioned more foreign countries than news sources of other regions, there was no significant regional difference in the extent of foreign coverage. News sites from all regions displayed more or less a similar variety (about 93) of foreign countries over the two-year period, and a similar percentage (about 63%) of foreign coverage.

A possible reason for this discrepancy is the fact that Segev (2010a) studied news links of country co-mentions in the news, while the current study examined the actual extent of foreign coverage. Middle Eastern and Asian news might focus on regional interactions between countries, such as the Israeli-Palestinian conflict in the Middle East context, or the North-South Korean conflict in the Asian context. Overall, however, it seems that the extent of foreign coverage is more or less similar across news sites from regions.

Unlike the extent of foreign coverage, the distribution of countries or the level of inequality was found to be significantly different across regions. In line with the expectations, Asian, Middle Eastern and South African news sites represented the world relatively more unequally than American and European news sites. The particularly unequal distribution of countries found in Asian news sites could reflect

the geopolitical isolation of Asian countries, and their very prominent focus on the US and regional foreign affairs in line with earlier observations (Segev, 2010a, 2016). For example, South Korean news sites, which represented the world most unequally, focused mainly on the US-China-Japan nexus and its prominent opponent North Korea.

Israel is similarly geo-politically isolated, and consequently its world news focused mainly on its allies and opponents—the US and Iran respectively (Segev & Blondheim, 2013b). Interestingly, world news from South Africa did not focus mainly on the African region. Its relatively unequal representation of the world was due to the very high prominence of the US (about 20% of the foreign news), followed by the coverage of international conflicts in Asia and the Middle East (about 7% of the foreign news).

On the other hand, the representation of countries in American world news was relatively less unequal. This reflects the wide range of American international interests and affairs (Segev & Blondheim, 2013a). Similarly, the relatively less unequal representation of the world in European news sites reflects the broader international interests and affairs of European countries, as well as their historical colonial ties and current geopolitical and economic influence, particularly in the Middle East and Africa (Segev, 2016). Additionally, Europe includes many economically leading countries such as the UK, Germany, France and Italy, which increase the likelihood of their being mentioned in European news for their regional as well as global relevance.

Following the literature on international news flow, the relatedness factors, that is the political, economic, cultural and historical ties between countries (Chang et al., 1987; Cohen, 2013; Dupree, 1971; Galtung & Ruge, 1965; Kariel & Rosenvall,

1984; Shoemaker et al., 1991) could further explain the relatively more diverse and therefore less unequal representation of the world as was found in the American and European news sites. Asian, Middle Eastern and South African news sites, on the other hand, have generally fewer international ties to reflect, and thus tend to focus more heavily on the US as the center of world news (Segev & Blondheim, 2013a), and in most cases, the countries of their own region.

In terms of type of news sources, it was expected that international news agencies would display more diverse, and thus also less unequal, foreign coverage than other types of news sources. Indeed, in line with previous observations (Paterson, 2005, 2007; Shrivastava, 2007), it was found that international news agencies displayed a significantly larger percentage of foreign items (87%) than other types of news source. Yet in contrast with the expectation, they did not present a less unequal world. This could be explained by the relatively heterogeneous news sources included in the sample. While the regional groups were relatively more homogenous in terms of their foreign coverage and country mention distribution, the variance among the news agency and broadcast groups was relatively higher. A closer investigation of this revealed that Asian news agencies and broadcasters displayed significantly more unequal distribution of country mentions than their western counterparts. This is in line with Horvit's (2006) findings regarding the largest international span of *Reuters* and therefore also its wider international market and coverage comparing to *Xinhua*.

Still, even after considering the variance among the international news agencies in the sample, it is hard to ignore that they all presented a largely unequal distribution of country mentions. In fact, even *IRIN*, a UN news agency that was established to bridge the information gap, eventually displayed an unequal distribution curve with the US as its most prominent country, although more

peripheral African countries followed immediately after. Bearing in mind that international news agencies are major source for foreign news around the world (Moisy, 1996; Paterson, 2005, 2007, 2011; Shrivastava, 2007), it seems that this unequal representation of countries has been similarly perpetuated among newspaper, broadcast channels, and news site aggregators.

Apart from the technical guidelines provided by *Google News* and its publicly registered patent on the ranking of news items (Segev, 2010b), there is little known about the list of news sources included. This poses a great challenge for researchers attempting to explain the differences between commercial news aggregators and more traditional news outlets. Moreover, together with copyright considerations and agreements between Google and larger international news agencies, some smaller news sites and web blogs are included in its index. The latter, at least potentially, could increase the international scope of *Google News*. Yet the findings revealed that the international scope of *Google News* around the world was the narrowest, as it reported on significantly less number of foreign countries.

The narrow international focus of *Google News* supports previous observations. Comparing the international focus of *Yahoo! News* and *Google News* in the US and India, Watanabe (2013) found that *Google News* offered much more concentrated coverage of the world than *Yahoo! News*. While *Yahoo! News* relied heavily on international news agencies, *Google News* included a much greater variety of smaller website. Yet a greater variety of sources does not necessarily lead to a broader representation of world. In fact, Watanabe explains, as Google relies on its PageRank algorithm, it prioritizes more popular and well-known news sites that mirror each other's narrow view and together produce an even narrower focus.

This bias of *Google News* coverage (Segev, 2010b) and Google PageRank in general calls future studies to further examine the effect of other news aggregators and their automatic algorithms on the variety of foreign news and its possible implications. Similarly, due to technical limitations the current study analyzed a relatively small and diverse sample of international news agencies. Future studies should expand this investigation to examine whether the regional orientation of international news agencies indeed affect the extent of their news coverage and the distribution of the countries they mention.

Finally, it is worth noting that it is often impossible to track the flow of international news between sources. While it is clear that many world news items originate from international news agencies, news items are not always attributed systematically and clearly to those agencies. Moreover, the fact that the same story could be told in many different words make the process of attributing a story to a single distinctive source challenging and sometimes impossible. This opaque flow of news between sources should be therefore considered as a precondition for most big data analyses. Still, it would certainly make sense to differentiate between those source types, as each offer a different news selection criteria and priorities, which have different implications on the representation of the world.

To conclude, although the overall distribution of country mentions was considerably unequal, in line with previous observations (Cohen, 2013; Gerbner and Marvanyi, 1977; Ishii, 1996; Kayser, 1953; Kim & Barnett, 1996; Robinson & Sparkes, 1976; Segev, 2015, 2016; Wu, 2000, 2003, 2007), there were also important differences across regions and news source types. Western news sites were among the least unequal, while Asian news sites among the most unequal. International news agencies displayed the highest extent of foreign coverage, while news aggregators

displayed the lowest. As western news agencies remain dominant in the production of world news also on the internet (Shrivastava, 2007), they enjoy a global market, and therefore offer a much broader international coverage. National newspapers and broadcast channels, particularly in non-western countries, are limited in their capacity and markets, and therefore focus on the economically leading countries and regional affairs. Finally, news aggregators that collect and customize news from a variety of local sources further perpetuate and even intensify the narrow representation of the world. In turn, the outside world we are exposed to using those services is far more limited.

References

Barnett GA and Park HW (2005) The structure of international Internet hyperlinks and bilateral bandwidth. *Annales des Telecommunications* 60: 1115-1132.

Boyd-Barrett O (1980) *The International News Agencies*. London: Sage.

Chang TK, Shoemaker P and Brendlinger N (1987) Determinants of international news coverage in the US media. *Communication Research* 14: 396–414. DOI: 10.1177/009365087014004002.

Cohen AA (Ed.) (2013) *Foreign News on Television: Where in the World is the Global Village?* New York, NY: Peter Lang.

Dupree JD (1971) International communication: View from 'a window on the world'. *International Communication Gazzette* 17: 224–235. DOI: 10.1177/001654927101700403.

Galtung J and Ruge M (1965) The structure of foreign news. *Journal of Peace Research* 2(1): 64–90. DOI: 10.1177/002234336500200104.

Gerbner G and Marvanyi G (1977) The many worlds of the world's press. *Journal of Communication* 27(1): 52–66. DOI: 10.1111/j.1460-2466.1977.tb01797.x.

Golan G and Wanta W (2003) International elections on the US network news: An examination of factors affecting newsworthiness. *Gazette* 65(1): 25–40. DOI: 10.1177/0016549203065001135

Hester A (1971) An analysis of news flow from developed and developing nations. *International Communication Gazette* 17: 29–43.

Himelboim I, Chang TK and McCreery S (2010) International network of foreign news coverage: Old global hierarchies in a new online world. *Journalism & Mass Communication Quarterly* 87(2): 297–314. DOI: 10.1177/107769901008700205

Horvit B (2006) International news agencies and the war debate of 2003. *The International Communication Gazette* 68(5–6): 427–447. DOI: 10.1177/1748048506068722

International Press Institute (1953) *The Flow of News*. Zurich: International Press Institute.

Ishii K (1996) Is the US over-reported in the Japanese press? Factors accounting for international news in the Asahi. *Gazette* 57: 134–144. DOI: 10.1177/001654929605700205

Kariel HG and Rosenvall LA (1984) Factors influencing international news flow. *Journalism Quaterly* 60: 434–436. DOI: 10.1177/107769908406100305.

Kayser J (1953) *One Week's News: Comparative Study of 17 Major Dailies for a Seven-Day Period*. Paris: UNESCO.

Kim K and Barnett GA (1996) The determinants of international news flow: A network analysis. *Communication Research* 23(3): 323–352. DOI: 10.1177/009365096023003004.

MacBride S (1980) *Many Voices One World: Communication and Society Today and Tomorrow*. New York: Unipub (UNESCO).

MacGregor P (2013) International news agencies: Global eyes that never blink. In: K Fowler-Watt and S Allan (eds) *Journalism: New Challenges*. Bournemouth, UK: Centre for Journalism & Communication Research, Bournemouth University, pp. 35–63.

Moisy C (1996) *The Foreign News Flow in the Information Age*. Discussion Paper D-23. Harvard University, The Joan Shorenstein Center for Press-Politics.

Mowlana H (1985) *International Flows of Information: A Global Report and Analysis*. Paris: UNESCO.

Nordenstreng K and Varis T (1974) Television traffic: A one way street? *Reports and Papers no*. 70. Paris: UNESCO.

Park HW, Barnett GA and Chung CJ (2011) Structural changes in the 2003– 2009 global hyperlink network. *Global Networks* 11(4): 522–542.

Paterson CA (2005) News agency dominance in international news on the internet. In: D Skinner, JR Compton and M Gasher (eds) *Converging media, diverging politics: A political economy of news media in the United States and Canada*. Rowman and Littlefield: Lexington Books, pp. 145–164.

Paterson CA (2007) International news on the Internet: Why more is less. *Ethical space: The International Journal of Communication Ethics* 4(1): 57–66.

Paterson C (2011) *The International Television News Agencies: The World from London*. New York: Peter Lang.

Poor N D (2007) *A cross-national study of computer news sites: Global news, local sites*. The Information Society, 23 (2), 73-83. DOI: 10.1080/01972240701224135.

Pueyo S (2013) Is it a power law distribution? The case of economic contractions. *arXiv:1310.2567*. Available at: http://arxiv.org/pdf/1310.2567v1.pdf.

Robinson GJ and Sparkes VM (1976) International news in the Canadian and American press: A comparative news flow study. *International Communication Gazette* 22(4): 203–218. DOI: 10.1177/001654927602200401.

Rosengren KE (1970) International news: Intra and extra media data. *Acta Sociologica* 8(2): 96–109.

Schiller HI (1974) Freedom from the "free flow". *Journal of Communication* 24(1): 110–117. DOI: 10.1111/j.1460-2466.1974.tb00361.x.

Shrivastava KM (2007) *News Agencies: From Pigeon to Internet*. New Delhi: New Dawn Press Group.

Shoemaker PJ Danielian LH and Brendlinger N (1991) Deviant acts, risky business and US interests: The newsworthiness of world events. *Journalism Quarterly* 68: 781–795. DOI: 10.1177/107769909106800419.

Tunstall J (2008) *The Media Were American: US Mass Media in Decline*. Oxford: Oxford University Press.

UNESCO (1954) *How Nations See Each Other? Paris: UNESCO Publications*.

Wanta W, Golan G and Cheolhan L (2004) Agenda setting and international news: Media influence on public perceptions of foreign nations. *Journalism and Mass Communication* 81(2): 364–377. DOI: 10.1177/107769900408100209.

Watanabe K (2013) The western perspective in Yahoo! News and Google News: Quantitative analysis of geographic coverage of online news. *International Communication Gazette* 75(2): 141–156. DOI: 10.1177/1748048512465546.

Wilke J, Heimprecht C and Cohen A (2012) The geography of foreign news on television: A comparative study of 17 countries. *International Communication Gazette* 74(4): 301–322. DOI: 10.1177/1748048512439812.

Wu DH (2000) Systematic determinants of international news coverage. *Journal of Communication* 50(2): 113–130. DOI: 10.1111/j.1460-2466.2000.tb02844.x.

Wu DH (2003) Homogeneity around the world? Comparing the systemic determinants of international news flow between developed and developing

countries. *International Communication Gazette* 65(1): 9–24. DOI: 10.1177/0016549203065001134

Wu DH (2004) The world's windows to the world: An overview of 44 nations' international news coverage. In: C Paterson and A Sreberny (eds) *International News in the Twenty-First Century*. New Barnet, Herts: John Libbey Publishing, pp. 95–108.

Wu DH (2007) A brave new world for international news? Exploring the determinants of the coverage of foreign news on US websites. *International Communication Gazette* 69: 539–551. DOI: 10.1177/1748048507082841

Table 1
Countries and News Sources in the Study

Country	**Website**	**Country**	**Website**
Arabic	*Google News*	Mexico	El Universal
China	*Google News*		La Jornada
	People Daily	Russia	Gazeta
	Sina		Google News
	Xinhua		Pravda
Egypt	*Al Masry Alyoum*	South Africa	News24
France	*Google News*	Spain	El Mundo
	Le Figaro		El Pais
	Le Monde		Google News
Germany	*Google News*	Switzerland	Google News
	Spiegel Online		NZZ
India	*India Times*		Tagesanzeiger
	NDTV	UK	BBC
Israel	*Google News*		Google News
	Haaretz		Guardian
Italy	*Corriere*		Reuters
	Google News	UN	IRIN
	Repubblica	USA	CNN
Japan	*NHK*		Google News
	Yahoo		New York Times
Korea	*Chosun*		
	Google News		
	Yonhap		

* *Note*. The sample includes N = 43,000 news items, 1,000 items from each source, randomly selected and spread equally over a period of two years between 2013 and 2014. Some news sources did not present enough data for the two year period, and therefore were not included in the final sample. Two international news agencies, Xinhua in China and Reuters in the UK, were also included. AP and AFP were not included in the current analysis, as they did not introduce sufficient RSS feeds on their websites during the sampling period. Although *Der Spiegel* is originally a weekly newspaper, its online edition is one of the most visited news sites. It has an independent team and its content is updated daily.

Table 2
Mean and standard deviation of foreign coverage and frequency distribution of country mentions by region and news source type

Region		Foreign Countries	Per Foreign Items	CV	Gini
America	Mean	93.60	61.88	1.502	.633
	N	5	5	5	5
	Std. Deviation	13.48	11.67	.119	.032
Asia	Mean	88	70.16	2.205	.719
	N	13	13	13	13
	Std. Deviation	15.96	18.94	.266	.048
Europe	Mean	98.68	58.48	1.767	.638
	N	19	19	19	19
	Std. Deviation	16.54	15.5	.325	.045
Middle East	Mean	96.25	66.1	1.855	.682
	N	4	4	4	4
	Std. Deviation	10.97	11.1	.079	.014
South Africa	Mean	86	83	1.88	.705
	N	1	1	1	1
	Std. Deviation	.	.	.	.
UN	Mean	88	80	1.06	.535
	N	1	1	1	1
	Std. Deviation	.	.	.	.
Source Type					
Agency	Mean	101	87.55	1.983	.684
	N	4	4	4	4
	Std. Deviation	16.83	5.49	**.684**	**.104**
Aggregator	Mean	86.87	56.93	1.847	.664
	N	15	15	15	15
	Std. Deviation	13.38	14.79	.352	.057
Broadcast	Mean	100	72.28	1.943	.672
	N	4	4	4	4
	Std. Deviation	14.45	15.99	**.389**	**.077**
Newspaper	Mean	96.95	63.34	1.835	.661
	N	20	20	20	20
	Std. Deviation	15.92	14.72	.334	.049
Total	Mean	92.57	63	1.88	.67
	N	44	44	44	44
	Std. Deviation	18.35	18.02	.38	.068

Note. The standard deviation of news sources among the news agency and broadcast groups were higher than the standard deviation of all news sources (marked in bold). This indicates that the news sources among the news agency and broadcast groups were relatively heterogeneous in terms of their frequency distribution of country names.

Table 3
One-Way Analysis of Variance of Foreign Coverage and Country Distribution by Region

Region		*df*	SS	MS	F	*p*	Eta Sqr.
Foreign Countries	Between Groups	5	1005.57	201.12	0.82	0.54	0.10
	Within Groups	37	9070.06	245.14			
	Total	42	10075.63				
% Foreign Items	Between Groups	5	1728.32	345.66	1.34	0.27	0.15
	Within Groups	37	9547.87	258.05			
	Total	42	11276.19				
CV	Between Groups	5	2.99	0.60	**7.82**	**0.00**	**0.51**
	Within Groups	37	2.83	0.08			
	Total	42	5.82				
Gini	Between Groups	5	0.08	0.02	**8.20**	**0.00**	**0.53**
	Within Groups	37	0.07	0.00			
	Total	42	0.14				

Note. Significant effect at the 0.01 level is marked in bold. In contrast to H1 and in support of H2 the regional aspect has no significant effect on the extent of foreign coverage, but on the frequency distribution of country mentions. A greater variation between groups than within groups, as indicated by the Sum of Squares (SS) and Mean of Squares (MS), means that the groups significantly differ from each other. This was the case for the CV and Gini measurements, indicating that the frequency distribution of country names differ across regions.

Table 4
One-Way Analysis of Variance of Foreign Coverage and Country Distribution by Type of News Source

News Source Type		*df*	SS	MS	F	*p*	Eta Sqr.
Foreign Countries	Between Groups	3	1276.94	425.65	1.89	0.15	0.13
	Within Groups	39	8798.68	225.61			
	Total	42	10075.63				
% Foreign Items	Between Groups	3	3250.02	1083.34	**5.26**	**0.00**	**0.29**
	Within Groups	39	8026.17	205.80			
	Total	42	11276.19				
CV	Between Groups	3	0.10	0.03	0.23	0.87	0.02
	Within Groups	39	5.71	0.15			
	Total	42	5.82				
Gini	Between Groups	3	0.00	0.00	0.17	0.92	0.01
	Within Groups	39	0.14	0.00			
	Total	42	0.14				

Note. Significant effect at the 0.01 level is marked in bold. In support of H3 and in contrast to H4 the type of news source has significant effect on the extent of foreign coverage, but not on the frequency distribution of country mentions. This was, however, partly a result of the heterogeneous group of news agencies as indicated in Table 2. A greater variation between groups than within groups, as indicated by the Sum of Squares (SS) and Mean of Squares (MS), means that the groups significantly differ from each other. This was the case for the percentage of foreign items, indicating that the extent of foreign coverage differs across source types.

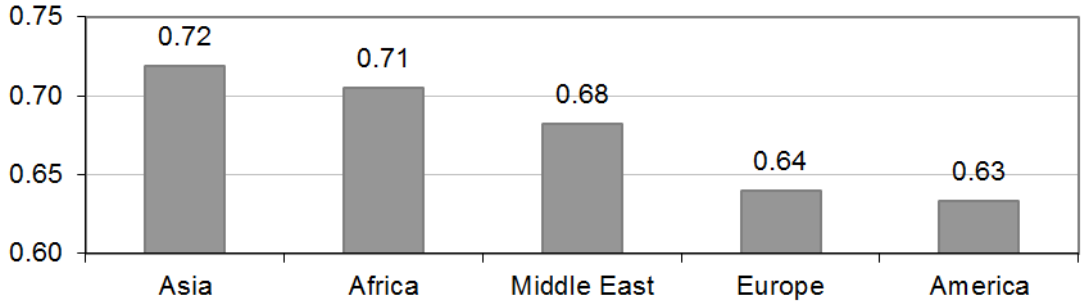
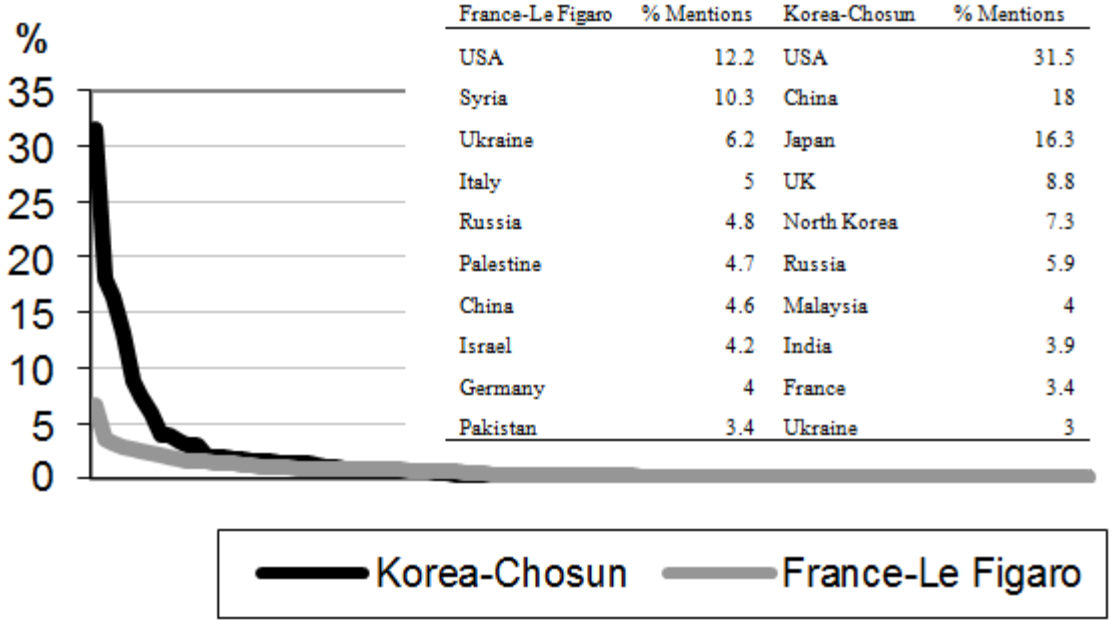


Figure 1. Mean Gini coefficient by region



France-Le Figaro	% Mentions	Korea-Chosun	% Mentions
USA	12.2	USA	31.5
Syria	10.3	China	18
Ukraine	6.2	Japan	16.3
Italy	5	UK	8.8
Russia	4.8	North Korea	7.3
Palestine	4.7	Russia	5.9
China	4.6	Malaysia	4
Israel	4.2	India	3.9
Germany	4	France	3.4
Pakistan	3.4	Ukraine	3

Figure 2. Foreign country distribution in world news of Korean and French newspapers

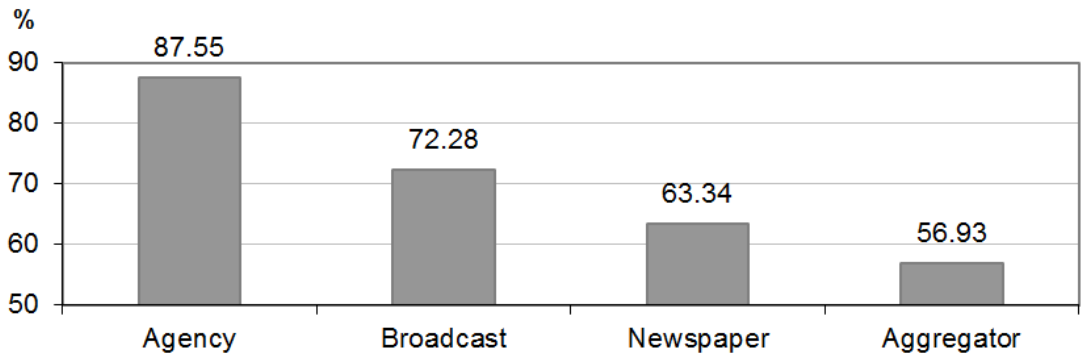


Figure 3. Mean percentage of news items that mentioned foreign countries by type of news source

End Notes

[1] *Google News* did not include a special Egyptian edition in the course of this study, but its Arabic edition and the Arabic website of *Al Jazeera* were used as more general news sources in the Middle East.

[2] Other lists of news sources that were consulted for cross-checking and validation purposes were available from the State of the News Media (http://www.stateofthenewsmedia.org), Nielsen Online (http://www.nielsen-online.com), and the Informationsgemeinschaft zur Feststellung der Verbreitung von Werbeträgern e.V. (IVW).