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Mapping the International: Global and Local Salience and News-Links Between Countries in Popular News Sites Worldwide

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Abstract: What countries get more online news attention around the world? The following paper compares 35 popular news sites in 10 different languages in order to assess the salience of countries in different news topic, their level of self-occupation, their news-links with other countries and their network configuration during a period of six months between February and July 2009. Based on special text-mining tools developed by the author for this purposes, it offers new indices, measurements, and techniques to portray the world perceived by news sites in different countries. Supporting previous observations on newspapers and traditional media, findings indicate that there is a strong correlation between the economic power of a country and its online news salience. The U.S. is by far the most salient country in popular news sites around the world. Middle-Eastern countries receive particularly high attention in world news, Asian countries in business and technology news and European countries in cultural news. Countries with higher political, economic, or social instabilities tend to be more self-occupied in their news. The networks of news-links within different countries display three different structures: centralized networks presented by American and French news sites, two-hub networks presented by most European and Asian news sites, and decentralized networks presented by Middle-Eastern news sites. The implications of these findings are discussed.

Keywords: News, international, countries, salience, global, local, text-mining, network analysis

Introduction

News Web sites have recently become a major way of acquiring news. A report by Pew Research Center for People and the Press (2008) reveals that 40% of the Americans get their national and international news from the Internet. Similarly, Wurff and Lauf (2005) and Schifferes, Lusoli, & Ward (2009) have indicated a continuous growth in the online news readership in Europe. The increasing use of online networks and their global diffusion raise questions regarding their biases that could affect our perceptions of the world. Together with better abilities to express local and national views, popular news Web sites may reinforce, for example, dominant American or western views.

Tunstall (2008) demonstrates how American media have been systematically loosing their power and influence around the world. Indeed, during the 1950s the U.S. led in the production and international dissemination of news as well as TV and radio programs and films. However, there are various indications that ever since the international media power of the U.S. is in decline. A body of literature supports this view, showing the

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strengthening of local and regional centers of media production and dissemination (Bicket, 2005; Boyd-Barrett & Thussu, 1992; During, 1997; Straubhaar, 1997, 2002; Thussu, 2000; Tomlinson, 1997; UNESCO, 2000).

In contrast, as will be elaborated bellow, there are also consistent empirical indications to support Wallerstein's (1974) World System Theory (WST) that argues for the presence of an asymmetrical international system of core-, semi-peripheral-, and peripheral-countries. Several communication scholars have suggested similar views (Galtung & Ruge, 1965; Mowlana, 1985; Schramm, 1964), and these were substantially examined and found to play a significant role in international news flows (Chang, Lau, & Hao, 2000; Chang & Lee, 1992; Chang, Shoemaker, & Brendlinger, 1987; Chang et al., 2005; Golan & Wanta, 2003; Peng, 2004; Riffe, 1996; Wu, 2000). Most importantly, these studies show that media in general and international news in particular are still predominantly U.S. centered, focusing mainly on countries with political or economic ties to the U.S. It is interesting to note, however, that studies employing network analysis to examine the relationships between countries and the international communication flows (e.g., Barnett, 2001; Barnett & Park, 2005; Segev, 2008, 2010; see also the discussion below) tend to reveal a more complex picture. They show that together with the increasing centrality of some core-countries there are also indications for the strengthening of some countries in the semi-peripheries such as China and Russia.

The main purpose of this study is therefore to outline the most salient countries and the relationships between them as perceived by popular news sites around the world. This study follows a previous investigation done between 2005 and 2006 to examine similar trends in *Google News* (Segev, 2008, 2010). However, it uses a much wider sample of news sites in various different languages, and differentiates news items by their topics.

International news flows

The bias of international news and the dominance of certain actors are often related to the political economy of news production, i.e. the strong influence of certain international news agencies and the one-directional news flow, reflecting mostly the interests of large news producing countries (Galtung & Ruge, 1965; Schramm, 1964). The model of international communication presented by Mowlana (1985) differentiates between the news sources, messages, distribution, and destination on the one hand, and the communication hardware and software on the other. Thus, in order to grasp the complexity of international news flows and their biases, he suggests looking at the international *network* of actors that involve in the process of news production, dissemination, and consumption, as well as the technological means employed. In this international network there are few dominant and central news producing countries and many other peripheral recipient countries. Mowlana suggests that there is little news flow, if any, between the peripheries themselves. As a result, the content of international news is heavily biased, where certain countries are totally neglected from the imaginary world constructed by the news.

Chang, Himelboim, and Dong (2009) found support for the core-periphery model when studying the structure of hyperlinks in news Web sites. In line with the WST, their study indicates that core countries (such as the U.S. and the U.K.) get much more incoming links from news sites than peripheral countries. Other studies that examined the core-periphery structure of nations in communication terms (Barnett, 2001; Barnett, Jacobson, Choi, and Sun-Millers, 1996; Chase-Dunn & Hall, 1994; see below) provide empirical support for the significance of the economic dimension. In other words, the economic power of countries can predict their network centrality more than any other cultural and political predictors.

Yet, the core-periphery structure that is common to the WST and to Mowlana's model of international communication presents some drawbacks as well. While it focuses on one single center, it fails to explain regional trends of news flow. Subsequently, an emerging body of research helps extending this model by providing more accurate outlook. Tunstall (2008) pointed out the rise of new international actors and the relative decline of the U.S., particularly when looking at the international dissemination of media. Since the 1980s European news agencies have taken the lead in the production and dissemination of international news. Similarly, European TV and radio channels reached much larger international audiences than American channels, especially in the Middle East, Africa, and South Asia. Consequently, when it comes to mass media, and particularly the press, radio, and TV, it is expected that media attention in many countries will not be focused only on the U.S., but will also mention frequently other western countries.

Although European and American countries are still the main exporters of media content, Tunstall (2008) argues that in many countries content becomes predominantly local. He differentiates between big and small population countries, indicating that the latter produce less local content than the former, and import relatively more from the U.S., the U.K., and France, and from their larger neighbors. Subsequently, he divides the centers of media production and dissemination into several self-sufficient regions, based on geography, religion, culture, and language (or group of languages). In most highly populated countries (i.e., China, India, Russia, Brazil, and

Mexico) the overall level of imports is smaller than 10% of all TV content including news. The decline in share of American media in many countries is also a result of the continuous development in local and regional media channels as well as national regulations and censorship. Over the years China has successfully resisted the penetration and dissemination of western media in its territories. Today China produces much of its media content and imports increasingly from other Asian countries rather than from Europe or the U.S.

Absolute and relative salience of countries on the news

While understanding news reporting as an increasingly concentrated and dense international network of information, it is useful to make a distinction between the absolute and the relative salience of countries on the news. The absolute salience of countries is about its general dominance in international media, whereas its relative salience is about its salience in the media of each country separately. The former is related to independent characteristics of a country such as population, size, and its economic and political power. The latter is related to the specific relations between countries, their economic and political ties, and their cultural proximity.

Very often studies looking at the bias of the news reveal and attempt to explain the absolute salience of certain countries. Using frequency analysis, Wu (2000) examined news items mentioning different countries in the international news section of newspapers from 38 countries. His study indicates a strong bias toward the larger western countries. The U.S. was found to be dominant in almost every country, capturing around 18% of the world news. Other central countries included France (8.5%), the U.K. (6.2%), Russia (5.4%), Bosnia (4.4%), China (4.0%), Germany (3.6%), Italy (3.1%), and Japan (2.4%). Wu believes that while China and Russia were subject for criticism by the western dominated media, Bosnisa's salience could be explained as a result of the war during the sampling period. All the other countries' salience was, in his opinion, a result of their economic power. Following the moves of the bigger and more powerful players can help a country to protect its own national interests. The focus on those countries, as Wu suggests, transforms the old bipolar perspective of the Cold-War era into the discourse of global economic interests.

Various authors agree on the economic impact on the salience of countries in the news, however, they offer also other reasons such as the political power of a country (Kim & Barnett, 1996), its position in the world system (Chang et al. 2000, 2005), the deviance of a country, i.e. its involvements in conflicts (Golan & Wanta, 2003), and its recent political, economic and cultural changes (Chang et al., 1987). Together with the absolute salience, several studies found some explanations for the relative salience of countries, such as political and economic ties between countries (Riffe 1996; Chang & Lee, 1992) and their cultural proximity, which often refers to ethnic similarity (Shoemaker, Danielian, & Brendlinger, 1991), immigration, travel, and shared languages (Chang et al. 1987; Kariel & Rosenvall, 1984).

In a more recent study, Wu (2007) looked at the salience of countries in online news comparing to their salience in broadcast and print versions (of the CNN and the New York Times respectively). Although his study was limited to the U.S. and was based on two weeks survey, it could already indicate that there were no significant differences between online and traditional media in their scope of coverage. Both the volume of trade and the presence of news agencies in a country were found to significantly influence its online salience.

Similar to these studies, the main research question being addressed here is what countries get more news attention and how the world is perceived by news in different countries. While most previous studies examined the salience of countries in the news of traditional media and focused on their absolute salience, this study continues Wu's observation of online news worldwide. It offers a much broader period of analysis (six months) and focuses also on the relative salience of a large number of countries, namely comparing the frequencies with which countries are mentioned by news sites of other countries. Based on software developed by the author specifically for this study, this method allows a large-scale real-time comparison of online news around the world. As will be detailed in the methodology section below four different aspects of salience are examined: the aggregated salience of a country in news sites of other countries, the aggregated salience of countries in different news topics, the locality of countries (i.e., its level of self-occupation), and the network structure of each country (i.e., how the world is perceived by each country).

Following the findings of Wu (2000; 2007), Kim and Barnett (1996), and Chang et al. (2000, 2005), it is expected that the relative salience of countries in online news will correspond to their economic and political proximity with the reporting country (e.g. South Korea will be more salient in Japanese news). Several economically and politically leaders, however, such as the U.S., will reach very high salience in news sites of all countries. Since the economic power of a country was found to be the most significant indicator of its salience in the newspaper (Wu, 2000), it is expected to find similar results on the Internet:

H1A. Economically leading countries (i.e., the U.S. and West European countries) will display the highest salience in news sites around the world.

Yet, it is also believed that the Internet opens new opportunities for producing and distributing local and regional views (see, for example, Águila-Obra, Padilla-Meléndez, & Serarols-Tarrés, 2007; Althaus & Tewksbury, 2000; Danet & Herring, 2007; Nguyen & Western, 2006; Steele, 2009; Wilson, 2008). The relative ease in which content producers and retrievers can communicate news online, through links between Web sites, blogs, talkbacks, emails, feeds, and twitters, may challenge the dominance of political and economic centers. Hence, it is expected that the salience of the U.S. and other economically leading countries will be lower than their salience in traditional media (e.g., the U.S. will not reach the 18% salience found by Wu, 2000, in newspapers):

H1B. The salience level of the economically leading countries will be lower than that found in traditional media.

It is also expected that the salience of countries will differ in different news topic. Given the American global dominance and influence in various fields it is expected that the U.S. would maintain a very high salience level in all topics (e.g., politics, economics, technology, and entertainment). It is also expected that due to the rapid economic growth in Asia, several Asian countries and particularly China will display high salience in economic and business related news. Finally, due to the intensity and global coverage of the Israeli-Palestine conflict (see also Segev, 2008), it is expected that Middle-Eastern countries will display high salience in world news:

H2. The salience of countries will differ in different news topics: while the U.S. will maintain its high salience in all fields, Asian countries will display high salience in economic and business related news, and Middle-Eastern countries in world news.

Locality of a country is defined in this paper as the frequency of self-reporting. For example, the share of American news that mentioned the U.S., the share of British news that mentioned the U.K., and so on (see the methodology section below). Various factors can influence news locality of a country such as its political structure, its level of nationalism and patriotism, its level of political, economic, and social stability, and its media culture. It is reasonable to expect that countries experiencing political or economic instabilities, such as Israel and Iran, will be more self-occupied in their news than other countries. The Fund for Peace (http://www.fundforpeace.org) issues an annual report, which evaluates the deviance of countries, namely their level of political, economic, and social instabilities. It is expected that the deviance of countries will be related to their level of news locality:

H3. Countries with higher deviance will display higher locality in their news sites than other countries.

Finally, as will be elaborated in the methodology section below, network analysis was employed to study the centrality level of countries as perceived by news sites worldwide. Some studies (Barnett et al., 1996; Chase-Dunn & Grimes, 1995; Kim, Barnett, & Park, 2010; Maoz, 2010; Maoz, Terris, Kuperman, & Talmud, 2007; Nemeth & Smith, 1985; Snyder & Kick, 1979) realized the benefits of network analysis in understanding the world's political and economic systems, the position of countries, and transnational interactions as indicators of economic growth. Network analysis was also employed to examine and display the ownership, structure, and flow of international and intercultural communication (Barnett, Danowski, & Richards, 1993; Barnett, Kim & Lim, in press; Barnett & Lee, 2002; Barnett & Sung, 2005; Barnett & Park, 2005; Chon, Choi, Barnett, Danowski, & Joo, 2003; Kim & Barnett, 1996, 2000, 2007; Monge & Contractor, 2003; Park, 2003; Segev, 2008; Smith, 1999; Weimann, 1989; Yum, 1984, 1988). In line with the WST, these studies point on the centrality of North America and Western Europe in the production and dissemination of information and particularly of international news. Asia, Middle East, and Africa, on the other hand, found to be located in the peripheries. The main advantage of using network analysis rather than frequency analysis of country names is the ability take into account the complex Web of relations between countries, and therefore apart from the center-periphery dichotomy, some studies could further reveal trends of regionalization in terms of international communication based on language, culture, and geography (Barnett, 2001; Barnett & Park, 2005).

Unlike previous studies that focus on the *flow* of international news, the novelty of this study is in its focus on the actual *content* of news, i.e., linking together countries that were mentioned in the same news item. Since a country tends to focus on itself and on its relations with other countries in its news sites, it is expected that the network of a country will follow a star-shape structure with itself being at the center. In other words, it is expected that for news sites in each country there will be only one single country with a very high centrality score, whereas all other countries will have much lower centrality scores. For example, it is expected that in British news the U.K. will have the highest centrality whereas other countries will have significantly lower centrality.

H4. News-link networks of a country will follow a star-shape structure with itself being at the center.

Methodology

The data analyzed in this study was collected from a variety of news sites in different countries. The countries included in the sample were selected based on several considerations. The main focus was on the core-countries. There was no intention to examine news flows or content in and between peripheral countries. It was rather assumed, based on the studies mentioned above, that core-countries are responsible for the production and dissemination of most international news to the rest of the world. In other words, the aim was mainly to examine and portray the world perceived by dominant and central rather than peripheral countries (see also the discussion on the limitations of this study). Hence, when it comes to news on the Internet, it was important to look at countries with a large number of online users as well as at the most popular online languages (such as English, Chinese, Spanish, and Japanese).

Similarly, as previous studies suggested, apart from physical dimensions there are significant economic, political, and cultural factors that influence the salience of countries in the news. Hence, analysis of this kind should also include countries with higher GDP such as Japan, China, Germany, the U.K., and France. Finally, while recognizing the dominance of the U.S. and Europe in the production and dissemination of international news, it is important to examine some alternatives. Iran, Egypt, and Israel were chosen since they represent three important political, economic, and cultural centers in the Middle East. While Iran is considered as less U.S. friendly, Egypt is considered as more U.S. friendly, yet an important cultural hub in the Arab world; and Israel, which is a strong U.S. ally, attracts a particularly high media attention around the world (see Table A1 in the Appendix for the full list of countries and news sites included in this study).

In each of those countries three popular news sites were chosen, two of which are based on well-established news agencies. *Google News*, a news aggregator, was chosen as a third source to be analyzed. The popularity of news sites was determined by cross referencing of several indicators and sources, including the recent statistics provided by the World Association of Newspapers, the State of the News Media in 2008, Nielsen online, IVW (Informationsgemeinschaft zur Feststellung der Verbreitung von Werbeträgern e.V.), news rating surveys in Russia, BBC News, and direct surveys among media scholars from different countries. The list of popular news site was further supported and validated by online tools such as Alexa, Google Trends and Google Insights for search.

In each of these popular news sites all daily textual news items from five main topical categories were observed, including *top news*, *world news*, *business and economy*, *technology*, and *entertainments and culture*. These categories were chosen particularly since they were common to all news sites and thus enabled a cross-national comparison. The data of each of the chosen news sites was sampled each other day over a period of six months between 1st of February 2009 and 31st of July 2009 at 12:00 UTC, using text-mining software, which was specifically designed for this research. In total 271,130 news items from 35 news sites were collected and analyzed.

The software identified and documented for each news item its date, title, and content, the topical category, the countries mentioned, and its news source. The date of a news item was used mainly to examine trends in the salience of certain countries. The item's title and content were used to extract the country names mentioned as well as to understand the context in which they are mentioned (see below). The countries mentioned in each news item were derived automatically by the software. For this purpose, a database of 195 country names in 10 different languages was built based on the most complete list of country names available from ISO (International Organization for Standardization). This list was translated into the following languages: English, French, German, Spanish, Russian, Chinese (Mandarin), Japanese, Persian, Arabic, and Hebrew. Several native-speaker research assistants were employed to translate country names into all languages. For each country name, the research assistants were asked to provide all the common names and alternative names (e.g., USA and United States of America). Then they were asked to omit all alternative country names that might be ambiguous and therefore may yield irrelevant search results (e.g., US which can refer both to the United States of America and to us, the objective case of we). In this way, it was possible to summarize and compare the frequency of appearance of each country in several national news sites, limit the comparison to specific countries, news sources or categories, and ultimately develop the following indices.

The Global Salience Index (GSI) was designed to examine how salient a country is in the news sites of other countries. The GSI of a country is defined as the percentage of news items that mentioned it (not including items from its own news sites) out of all news items that mentioned any country name (e.g., the percentage of non-American news items mentioning the U.S. out of all non-American news items that mentioned countries). The GSI can range from 0 to 100, where 0 indicates that the country was not mentioned at all by news items of other countries (i.e. indicating low salience), and 100 means that all news items of other countries mentioned the

country (i.e. indicating high salience). Definition 1 provides a simple formula for calculating the GSI of a country:

$$GSI_i = \frac{number\ of\ news\ items\ mentioning\ country\ i\ (excluding\ news\ in\ country\ i)}{number\ of\ news\ items\ mentioning\ any\ country\ (excluding\ news\ in\ country\ i)}$$

where *i* is the country indicator. The GSI of a county accounts only news items from news sites of other countries (that mentioned any country name) and not news items from its own news sites.

The Local Salience Index (LSI) was designed to examine how salient a country is (comparing to other countries) in its own news sites. This index enables looking at the degree of self-interest of a country on the one hand, and its degree of global interest on the other. The LSI of a country is defined as the percentage of news items that mentioned it (in its own news sites only) out of all news items that mentioned any country name (e.g. the percentage of news items mentioning the U.S. in American news sites out of all American news items that mentioned countries). The LSI can range from 0 to 100, where 0 indicates that the country was not mentioned at all by its news sites (i.e., only other countries were mentioned), and 100 means that all news items in the country mentioned it (i.e., indicating high level of news locality). Definition 2 provides a simple formula for calculating the LSI of a country:

$$LSI_i = \frac{number\ of\ news\ items\ in\ country\ i\ mentioning\ country\ i}{number\ of\ news\ items\ in\ country\ i\ mentioning\ any\ country}$$

where *i* is the country indicator. The LSI of a county accounts only news items from its own news sites (that mentioned any country name).

The GSI and the LSI display the salience of a country in the news (of other countries' Web sites and of its own Web sites respectively). However, they cannot reveal the *context* in which those countries are mentioned. In order to understand the meaning behind those measurements (e.g., in what context Iran is mentioned in American news), the content of a random sample of 100 news items was examined for each news-site in each country. This content was not coded and analyzed in the traditional qualitative fashion, but rather gathered, translated and used to support and shed more light on the results, by providing better understanding of the settings and the political, economic and cultural contexts in which country names are mentioned. In order to do so, the researchers employed online translation tools, which, in most cases, enabled getting the general content of news items, the countries involved and the context in which they are mentioned. In some particular cases where the automatic translation was of poor quality, native-speaker research assistants were employed to translate the content of the sampled news items.

Apart from extracting the general meanings, this sampled news items were used for index validity purposes. This was especially important when measuring the LSI, since local news may not mention country names. The content of news can therefore help to confirm whether the LSI accurately represents the percentage of local news. While examining the content of a random sample of 100 news items in each country, it was found that indeed between 15% and 20% of local news did not mention the country name. This gap remained similar for each country. In other words, the actual percentage of local news items were constantly between 15 and 20 percentage points higher than the LSI for each county. The validity of the LSI as a comparative measurement in this particular dataset was therefore assured.

Network analysis of news-links between countries

Network analysis was employed to display the news links between countries and envision the world perceived by online news. This analysis was based on looking at news items that mentioned two countries or more together in the same item. For example, the title of a news item: "Pointing to a New Era, U.S. Pulls Back as Iraqis Vote" from the New York Times, mentioned the U.S. and Iraq in the same item (Rubin, 2009). An international network emerges when countries are considered as nodes, and news items about them provide a descriptive map of the links between them (hereafter: *news-links*, see also Segev, 2008). Hence, the analysis of the relations between countries as an international network may reveal which countries are more mutually engaged and what is the overall structure of the international network. Network analysis enables also to examine which countries serve as central and dominant hubs in the network, and which countries are less connected and play a more marginal role. It should be noted that the following analysis is not necessarily a presentation of the actual political relations between countries, but rather a representation of the international network as reflected by popular news sites.

While the GSI and LSI measurements provide a more *directed* analysis of the news attention that a country gets by other countries, the *co-membership* analysis can display also the relationship between countries and the international network structures (Wasserman & Faust, 1994). It shows not only which countries get more news attention, but also with which other countries they are frequently engaged, and what is their overall position in relation to other countries. It is very possible that countries that were mentioned more often (i.e., with high GSI scores) will also be at the center of the news-link network. However, it can also be that some countries are often mentioned independently without relations to other countries, and therefore will become more peripheral in the network analysis. Similarly, countries and organizations that are less salient as independent actors and appear more with relations to other countries will become more central in the co-membership network analysis (e.g. the UN or the EU). To this end, network analysis enables looking more specifically at the international political, economic, and cultural relations and links of a country with other countries as an important factor of its news presence.

UCINET 6 (Borgatti, Everett, & Freeman, 2002) is used to produce visual networks of news-links between countries and report the centrality measurements of countries in the network. Bonacich eigenvector was chosen to measure the centrality level of a country, since it takes into account not only the number of nodes with which it is connected, but also its general position in the network (Barnett & Sung, 2005; Bonacich, 1972). For example, if the U.S. and China are both mentioned with three other countries, but the U.S. has also more central position in general (i.e., has the shortest path to all other nodes in average), the U.S. and the countries linking to it would get relatively higher Bonacich eigenvector values than China and the countries linking to it. The centrality level of a country was based on the number of countries with which it is mentioned and its overall position in the network. However, the number of links a country has with other countries was not weighted into this measurement, since the frequency a country is mentioned was already taken into account, to some extent, in the GSI and LSI scores. Thus, the Bonacich eigenvector value enabled examining more specifically the role and position of each country in relation to other countries and testing *H4* regarding the network structure in news sites of each country. Three possible network structures are defined: centralized network, two-hub network, and distributed network. A centralized or star-shape network indicates that there is only one single country with a very high centrality score whereas all other countries have much lower scores. A two-hub structure indicates that there are only two countries with a very high centrality scores whereas all other countries have much lower scores. Finally, a distributed network indicates that there are three or more countries with high centrality scores.

Results

Global salience of countries

Figure 1 summarizes the results of the GSI of each country as measured during the six months between February and July 2009. After removing duplicate news items, the results of the GSI are based on a sample of 3000 news items from each country, apart from Egypt that displayed only 354 news items. The news in Arabic, taken from Al Jazeera and Google News in Arabic, could fill this gap. In total, 33,072 news items were used to calculate the GSI.

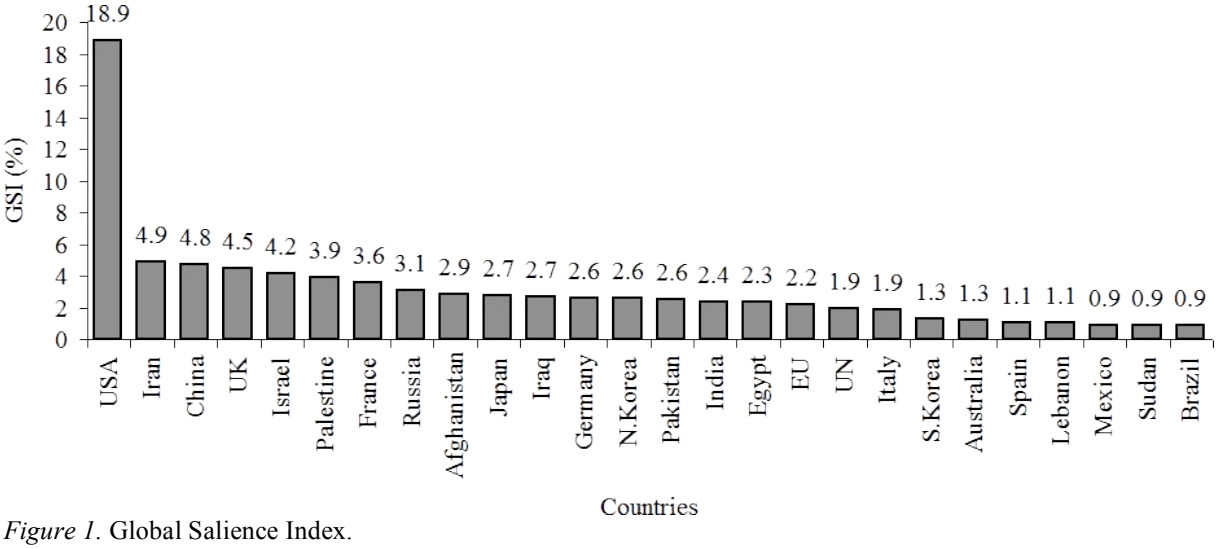


Figure 1. Global Salience Index.

Figure 1 indicates that the U.S. is the most salient country in popular news sites, as 18.9% of news items from non-American news sites mentioned it. The difference between the GSI of the U.S. and other countries is highly

significant (z = 53.0, p < .001 for the difference between the GSI of the U.S. and Iran, the second most salient country). In fact, most non-American news sites mentioned the U.S. in the second place after their own country of origin. Interestingly, the U.S. is the first in German and Japanese news sites, i.e. it is more salient than Germany in popular German news sites (z = 12.9, p < .001) and more salient than Japan in popular Japanese news sites (z = 3.0, p = .001). Even in Iranian news sites the U.S. is mentioned the second after Iran. The only exceptions are Arabic and French news sites, where the U.S. gets a lower ranking (see also Table 5 in the Appendix for country-specific data).

Several Middle-Eastern countries, in particular Iran, Israel, and Palestine, are very popular in news sites around the world. Iran gets high attention in Israeli news sites (9.0% of the Israeli news items), as well as in French and German news sites (7.1% and 5.7% of the French and German news items respectively). Israel and Palestine are very salient in Arabic, French, and German news sites. While most countries focus on their conflict, Arabic news also reports on Israel in various other political contexts in relation to many other Middle-Eastern countries such as Syria, Lebanon, Egypt, and Jordan (see also the results of the network analysis). Interestingly, while Iran is the third most salient country in Israeli news, Israel is much less salient in Iranian news (z = 8.1, p < .001). In fact, Palestine is mentioned even more than Israel in Iranian news sites. One of the main reasons for this is that in 25% of the Iranian news items Israel is not mentioned explicitly but rather using the term "the Zionist entity" (صهیونیستی رژیم in Farsi), which was almost not in use in other news sites in Arabic.

China is ranked the third in the GSI, mentioned in 4.8% of the news items from non-Chinese news sites. It has particularly high salience in Japanese and American news sites (13.0% and 7.2% of the Japanese and American news items respectively). Similarly, but to a lesser extent, China gets high attention in British and French news sites (5.8% and 3.8% of the British and French news items respectively). Other Asian countries get medium to low GSI scores.

Finally, most European countries get medium to low attention in news sites around the world. Only the U.K., scored fourth in the GSI, gets relatively higher news attention.[1] It gets higher news attention in American, Spanish, and Russian news sites, medium attention in Japanese, German, and French news sites and low attention in news sites in Arabic.[2]

In order to test *H1A*, i.e., whether economically leading countries indeed get higher online news attention, a correlation test between the countries' GSI and their GDP was conducted.[3] The ratio scale of the two measurements allows conducting a Pearson test, however, the much higher GSI score of the U.S. may introduce an influential deviation that biases the correlation test. Thus, both Pearson and Spearman one-tailed correlation tests were conducted to test the hypothesis. In both tests the correlation was found highly significant (N = 85; Pearson r^2 = .74, p < .001; Spearman r_s = .59, p < .001), and thus *H1A* was confirmed.

Table 1
Online Versus Offline Findings

Country	Offline Salience (%) Wu's (2000)	Online Salience (%) GSI	Difference
USA	17.7	22.1	4.4 *
China	4.0	5.3	1.4
UK	6.2	4.3	−2.0 *
Israel	2.1	5.8	3.7 *
France	8.5	4.0	−4.5 *
Russia	5.3	4.6	−0.7
Japan	2.4	2.6	0.2
Iraq	1.0	3.2	2.2 *
Germany	3.6	2.2	−1.4 *
India	1.4	2.8	1.4
Italy	3.1	2.1	−1.1
Australia	1.2	1.2	0.0
Spain	1.9	1.2	−0.7

*p < .05, z test.

[1]The difference between the GSI of the U.K. and China is not significant. However, the difference between the GSI of the U.K. and Israel, the next higher in the GSI, is significant with z = 2.1, p < .018.
[2]For country-specific data see also Table A2 in the Appendix.
[3]The UN Data from 2008 was used for the GDP values, see also http://data.un.org/Data.aspx?q=gdp&d=WDI&f=Indicator_Code%3aNY.GDP.MKTP.CD

Table 1 summarizes the GSI scores of countries mentioned in the world news category and the equivalent countries' salience found by Wu (2000) in his international news analysis of newspapers in 38 different countries worldwide. Based on the original data of his study a *z* test was performed to examine whether there were significant changes in the last decade between online and offline outlets. *H1B* suggested that economically leading countries (and particularly the U.S. and Europe) would decrease their salience online. Yet, findings clearly show in contrast with *H1B* that the U.S. rather increased its salience on the Internet in the last decade. European countries, however, decreased their salience on the Internet in the last decade and Middle-Eastern countries increased their salience. There was no significant change in the salience of China and Japan. *H1B* was therefore found support only with respect to European countries.

The salience of countries can differ across news topics and some countries may play more significant role in specific topics. In order to test *H2*, Table 2 summarizes the GSI of the top ten countries by the different news topics.

Table 2
Top Ten GSI by Topic (Percent)

All Fields		Top News[a]		World News[b]		Business[c]		Technology		Entertainment[d]	
U.S.	18.9	U.S.	15.6	U.S.	22.1	U.S.	21.4	U.S.	22.2	U.S.	16.5
Iran	4.9	Palestine*	6.1	Iran**	8.4	China	6.0	China**	9.4	UK*	6.7
China	4.8	Israel	5.9	Israel*	5.8	UK	4.5	UK	5.1	France	4.9
UK	4.5	Iran	4.8	China	5.3	Germany	4.1	Japan*	4.8	Germany	2.5
Israel	4.2	UK	4.0	Afghanistan	4.8	Japan	3.6	France	3.1	Japan	2.3
Palestine	3.9	France	3.4	North Korea	4.8	Russia	3.5	Egypt	3.0	Palestine	2.3
France	3.6	China	3.3	Pakistan	4.6	EU	3.0	India	2.8	Israel	2.2
Russia	3.1	Iraq	3.0	Russia	4.6	France	2.7	EU	2.5	India	2.2
Afghanistan	2.9	Pakistan	2.9	Palestine	4.4	Egypt	2.6	Germany	2.2	Egypt	2.0
Japan	2.7	Afghanistan	2.7	UK	4.3	India	2.0	Russia	2.0	China	2.0

[a]Based on a random sample of 500 news items in each country, excluding Japanese and Egyptian news sites that displayed 227 and 229 news items in the top-news category respectively. [b]Based on a random sample of 1500 news items in each country, excluding Iranian and Egyptian news sites that displayed relatively low number of world news. [c]Based on a random sample of 500 news items in each country, excluding Iranian news sites that displayed relatively low number of business-related news items. [d]Based on a random sample of 500 news items in each country, excluding Japanese, Iranian and Egyptian news sites that displayed relatively low number of entertainment-related news items.
*Increase in the salience of this country in this category with $p < .05$. **Increase in the salience of this country in this category with $p < .01$.

When limiting the analysis to news items from the top news category, the U.S. is still the most salient country (GSI = 15.6%). Palestine and Israel become more salient in the top news (GSI = 6.1% and GSI = 5.9% respectively), following Iran (GSI = 4.8%).[4] When limiting the analysis to news items from the world news category, the U.S. reaches a very high salience among non-American news sites (GSI = 22.1%). In line with H_2, most Middle-Eastern countries significantly increased their salience in the world news category. Iran and Israel significantly increased their salience in world news (GSI = 8.4%, $z = 4.7$, $p < .001$ and GSI = 5.8%, $z = 2.3$, $p = .011$ respectively). Similarly, Afghanistan, Pakistan, and North Korea significantly increased their salience in world news (GSI = 4.6%, $z = 7.6$, $p < .001$; GSI = 4.8%, $z = 8.3$, $p < .001$ and GSI = 4.8%, $z = 17.5$, $p < .001$ respectively). The difference in the salience of Palestine in all news and its salience in world news was not significant. However, interestingly the significant increase in the salience of Palestine was measured in the top news category.

When limiting the analysis to news items from the business category, China is the second most salient country, mentioned in 6.0% of the news items of non-Chinese news sites.[5] Other Asian countries, namely Japan and India, increase their salience in the business category as well. Yet, in contrast with *H2*, none of these changes was found to be statistically significant. In the technology category, however, China and Japan significantly increased their salience (GSI = 9.4%, $z = 4.2$, $p < .001$ and GSI = 4.8%, $z = 2.4$, $p = .008$ respectively).

When limiting the analysis to news items from the culture and entertainment category, the U.K. and France are the second and third most salient countries, mentioned in 6.7% and 4.9% of the news items of non-British and

[4]There is a significant difference between the GSI of Palestine in all news and its salience in top news with $z = 2.3$, $p = .011$. However, there are no significant differences between the GSI of Israel and Iran in all news and their salience in top news.
[5]The difference between the GSI of China and the U.K., the next lower in the GSI in the business category, is significant with $z = 3.5$, $p < .001$.

non-French sites respectively.[6] In all cases, the U.S. remains the most salient country in all categories with significant difference. Particularly, it displays very high salience in the world news, the business, and the technology categories, and slightly lower in the top-news and the entertainment categories, in which there is more world attention toward the Israeli-Palestinian conflict and the cultural events in the U.K. and France respectively. In short, *H2* was only partially confirmed – the U.S. maintained its high salience, however, Asian countries did not get significantly higher salience in economic- and business-related news, but rather in technology-related news. Finally, Middle-Eastern countries, with the exception of Palestine, got significantly higher salience in world news.

Local salience of countries

Figure 2 summarizes the results of the Local Salience Index of each country as measured during the sampling period. It displays the 11 countries from which the news site were examined (see also the methodology section and Table A1 in the Appendix), and summarizes for each country the percentage of news items mentioning it out of the total number of news items mentioning any country name.

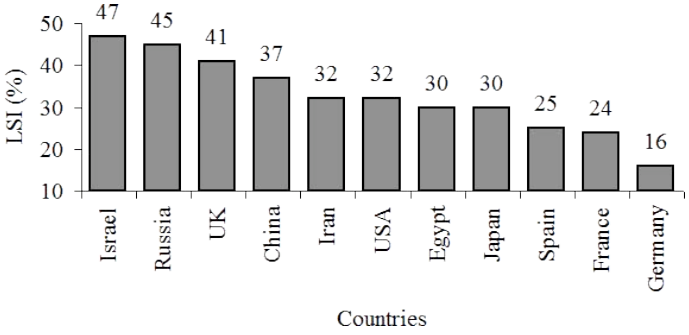


Figure 2. Local Salience Index.

Figure 2 indicates that Israel and Russia have the most local news items, where around 45% of them mentioned their countries.[7] Likewise, popular news sites from the U.K. and China display high LSI, where their countries are mentioned in more than 35% of their news items.[8] Germany has the lowest LSI, indicating that it was mentioned in only 16% of its news items. In other words, around 84% of news items in Germany mentioned other countries.[9]

While some countries such as the U.S. may be mentioned more in American news sites simply because the U.S. is generally more salient in news sites worldwide, other countries such as Russia are less salient in news sites worldwide, and there is a greater gap between the *outer* and *inner* salience of those countries. Table 3 displays the difference between the LSI and the GSI for the observed countries. When looking at this difference, the U.S. was the only country that changed its ranking as a result of its high GSI. Other countries remained in the same position as a result of their relatively low GSI scores comparing to their LSI scores. Table 3 also shows that Israel and Russia display the highest LSI, and Germany and France the lowest LSI.

In order to test *H3* regarding the relation between the locality of a country and its level of deviance, data from the Funds for Peace on the Failed States Index Scores (FSI) in 2009 was used.[10] This data is presented for the relevant countries in Table 3, and is based on social, economic and political indicators that measure the level of instability in each country. A one-tailed Pearson correlation test shows that the correlation between the FSI and the LSI is not significant ($N = 11$; $r^2 = .50$, $p = .061$). However, there is a significant positive correlation between the FSI and the *difference* between the LSI and the GSI ($N = 11$; $r^2 = .59$, $p = .028$). This is mainly because the U.S. scored high in the LSI and low in the FSI, and thus biases the correlation. The difference between the LSI and the GSI corrects this bias and provides an indication for a possible link between self-occupation in the media and national instabilities. Due to the small size of the sample ($N = 11$), it is not possible to find evidence for the third hypothesis with a Type I error level below 5%.

[6]The difference between the GSI of France and Germany, the next lower in the GSI in the entertainment category, is significant with $z = 6.8$, $p < .001$. There is also a significant difference between the GSI of the U.K. in all news and its salience in entertainment news with $z = 2.1$, $p = .018$. However, there is no significant difference between the GSI of France in all news and its salience in entertainment news.

[7]There is no significant difference between the LSI of Israel and Russia. However, the difference between the LSI of Russia and the U.K., the next lower in the LSI, is significant with $z = 3.1$, $p = .001$.

[8]The difference between the LSI of China and Iran, the next lower in the LSI, is significant with $z = 4.1$, $p < .001$.

[9]The difference between the LSI of Germany and France, the next higher in the LSI, is significant with $z = 7.75$, $p < .001$.

[10]See also http://www.fundforpeace.org/web/index.php?option=com_content&task=view&id=452&Itemid=900

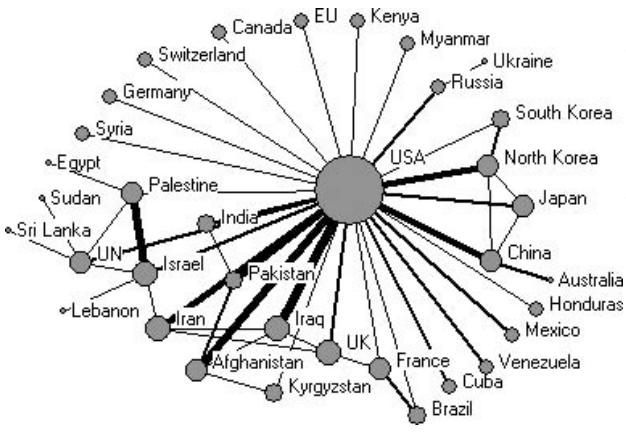
Table 3
The Gap Between LSI and GSI

Country	LSI (%)	GSI (%)	Difference (%)	FSI Scores
Israel	47.0	4.2	42.8	84.6
Russia	45.0	3.1	41.9	80.8
UK	41.0	4.5	36.5	33.6
China	37.0	4.8	32.2	84.6
Iran	32.0	2.7	29.3	90.0
Egypt	30.0	2.3	27.7	89.0
Japan	30.0	2.7	27.3	31.2
Spain	25.0	1.1	23.9	43.3
France	24.0	3.6	20.4	35.3
Germany	16.0	2.6	13.4	36.6
U.S.	32.0	18.9	13.1	34.0

Three network configurations

When looking at news-link networks produced by news sites of each country separately, it is possible to learn about their different perceptions of the world (i.e. the relative salience of countries), and particularly their perceived position within the international network. *H4* suggested that country-specific networks would follow a star-shape structure, in which only one country would have a very high centrality score whereas the other countries would have much lower centrality scores. Findings, however, contradict the hypothesis, indicating the emergence of three different types of network configurations: a centralized network structure, a two-hub network structure, and a decentralized network structure. As summarized in Table A4, only American and French news sites have one single country (the U.S. and France respectively) that has by far a higher centrality score than the centrality scores of other countries. In the networks of news sites of other countries there are two or more centers that usually include also the U.S. In the following section the three different network structures are presented (for news-link data of other countries that do not appear in this section see Tables A3 and A4 in the Appendix).

Figure 3 displays the *centralized* or the star-shape structure based on the 50 most popular news-links out of all news-links in American news sites. The size of the nodes indicates their centrality level based on their Bonacich eigenvector. The width of the links indicates their strength, namely the number of news items mentioning each pair of countries.



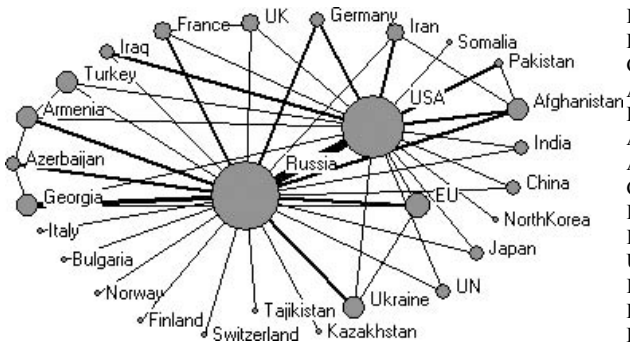
Countries mentioned	Items	Countries mentioned	Items
Iraq – U.S.	100	Myanmar – U.S.	11
Afghanistan – U.S.	90	India – Pakistan	11
Israel – Palestine	80	France – UK	10
Iran – U.S.	72	Sri Lanka – UN	10
China – U.S.	63	China – Japan	10
N. Korea – U.S.	61	Russia – Ukraine	10
Pakistan – U.S.	60	Afghanistan – Kyrgyzstan	10
Russia – U.S.	34	EU – U.S.	10
UK – U.S.	32	Iran – UK	10
Mexico – U.S.	32	Japan – N. Korea	10
Cuba – U.S.	25	Canada – U.S.	10
N. Korea – S. Korea	21	Egypt – Palestine	10
UN – U.S.	21	Israel – UN	9
Israel – U.S.	20	Afghanistan – Iraq	9
Japan – U.S.	20	China – N. Korea	9
Afghanistan – Pakistan	20	Palestine – U.S.	9
U.S. – Venezuela	19	Brazil – U.S.	9
Brazil – France	18	Germany – U.S.	8
Australia – China	17	Iraq – UK	8
India – U.S.	17	Kenya – U.S.	8
Iran – Israel	14	Syria – U.S.	8
S. Korea – U.S.	13	Sudan – UN	8
Honduras – U.S.	13	Iran – Iraq	8
France – U.S.	12	Iraq – UK	98
Kyrgyzstan – U.S.	12	Egypt – Iran	94

Figure 3. A centralized network of news-links in the U.S.

It demonstrates a highly centralized network in which the U.S. is the only hub, and other actors play a relatively minor role. Obviously, the most frequent U.S. news-links are with Iraq and Afghanistan, reflecting the American military involvement there. Other strong U.S. news-links are with Iran and North Korea, reflecting the American concern over their rising nuclear power. Israel and Palestine have also a relatively high number of news-links

with each other, reflecting the high interest of American news in this conflict. As shown in Tables A3 and A4 the network of French news has also a centralized structure, in which France is the only hub. Israel and Palestine get the highest number of news-links, indicating the similarly high interest of French news in this conflict.

Another type of network configuration is the *two-hub network*. As Table A4 indicates most European and Asian countries follow this shape, since they present two distinctive countries with much higher centrality scores than the rests. In the network of news-links based on Chinese news site, the U.S. is the biggest hub and China is the second biggest hub. In other words, the role of the U.S. in Chinese news is much more significant and central than the role of China in American news. When looking at the centrality level of countries in Chinese news site, Table A4 shows that China and the U.S. are also the only hubs with a much higher centrality scores than other countries. The U.K. and Japan have particularly more news-links with both China and the U.S., indicating their relative importance in that network. Finally, the news-links between the U.S. and Iran are very salient in Chinese news sites.

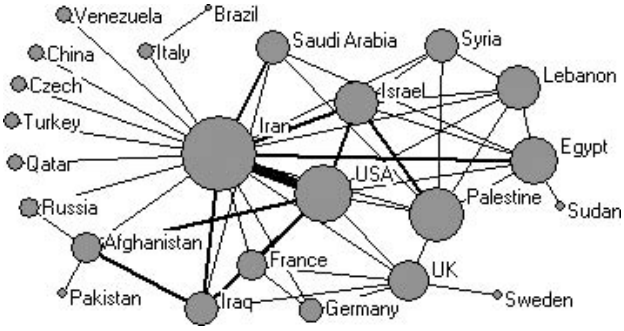


Countries mentioned	Items	Countries mentioned	Items
Russia – U.S.	266	Armenia – Turkey	31
Georgia – Russia	123	China – U.S.	31
Russia – Ukraine	89	EU – Georgia	29
EU – Russia	87	Finland – Russia	29
Afghanistan – U.S.	86	Turkey – U.S.	28
Iran – U.S.	73	Somalia – U.S.	28
France – Russia	65	UN – U.S.	26
Germany – Russia	57	EU – U.S.	25
Azerbaijan – Russia	54	Armenia – Azerbaijan	25
Pakistan – U.S.	52	Azerbaijan – Georgia	25
Afghanistan – Russia	50	India – U.S.	23
Armenia – Russia	49	Georgia – U.S.	23
Germany – U.S.	48	U.S. – Ukraine	22
Iraq – U.S.	43	Japan – Russia	22
India – Russia	40	Bulgaria – Russia	21
UK – U.S.	39	Armenia – U.S.	21
Israel – Palestine	39	Kazakhstan – Russia	20
France – U.S.	37	Afghanistan – Iran	20
Russia – Turkey	36	France – UK	20
Japan – U.S.	36	EU – Ukraine	19
Afghanistan – Pakistan	35	Norway – Russia	18
Russia – UK	35	Italy – Russia	18
Russia – UN	34	N. Korea – U.S.	18
China – Russia	33	Iraq – Russia	17
Iran – Russia	31	Russia – Switzerland	17

Figure 4. A two-hub network of news-links in Russia.

Similarly, Table A4 shows that Russian news sites present a two-hub network, in which Russia and the U.S. are the only significant hubs. Georgia, Ukraine, and the EU have relatively more news-links with Russia, indicating the relatively high political involvement between these actors. Another frequent news-links are between the U.S. and Afghanistan, a war with historical roots that has a very central role in Russian news-sites. The many news-links between the U.S. and Iran indicate their importance in Russian news sites. Figure 4 portrays the 50 most popular news-links out of all news-links in Russian news sites as measured during the sampling period.

Finally, Figure 5 portrays the *decentralized* network structure of Iranian news sites based on the 50 most popular news-links out of all news-links in Iranian news sites as measured during the sampling period. This network indicates that Iran is the biggest hub with many news-links to the U.S. Similar to China, Iran is much more interested in the U.S. than vice versa. Thus, Iranian news-links between the two countries deal with various topics, and particularly with their political relations and the way Iran is perceived by U.S. officials. As Table A4 indicates, together with the U.S. many Middle-Eastern countries, to include Palestine, Egypt, Israel, and Lebanon, get very high eigenvector values as well, and thus serve as highly connected hubs and form a regional cluster of news-links. The U.K. is the biggest European hub. Other countries (such as Russia and China) and regions (such as Asia, South America, and Africa) get far less attention in Iranian news sites. Interestingly, a network analysis of Israeli news sites revealed a very similar network configuration (compare Table A4). While Israel is located at the center as the biggest hub with many news-links to the U.S., there are also very significant Middle-Eastern and European hubs. This suggests that both Israeli and Iranian news sites focus on similar actors and portrays similar international maps, in which actors are obviously represented in very different (and local) ways. Similar but even more decentralized networks are presented by news-links of Egyptian news sites and news sites in Arabic.



Countries mentioned	Items	Countries mentioned	Items
Iran – U.S.	203	Palestine – UK	10
Iran – Israel	59	Egypt – Israel	10
Iran – Iraq	49	Iraq – Saudi Arabia	10
Israel – U.S.	48	Egypt – Sudan	9
Egypt – Iran	43	Iran – Palestine	9
Israel – Palestine	42	Brazil – Italy	9
Iran – Saudi Arabia	41	Egypt – Lebanon	9
Iraq – U.S.	37	Afghanistan – Russia	8
Afghanistan – U.S.	34	Palestine – U.S.	8
Afghanistan – Iraq	27	Israel – Lebanon	8
Egypt – Palestine	22	UK – U.S.	8
Afghanistan – Iran	21	Palestine – Saudi Arabia	8
Iran – Lebanon	20	China – Iran	8
Iran – Syria	19	France – U.S.	8
Iraq – UK	17	Iran – Russia	8
Germany – Iran	17	Iran – Italy	8
Iran – UK	16	Palestine – Syria	7
France – Iran	15	Niger – Nigeria	7
Germany – UK	15	Egypt – U.S.	7
Israel – Syria	14	Iran – Venezuela	7
France – Germany	13	Iran – Turkey	7
Egypt – Saudi Arabia	13	Sweden – UK	7
Afghanistan – Pakistan	12	Iran – Qatar	7
France – UK	12	Czech – Iran	7
Lebanon – Palestine	11	Egypt – Iran	94

Figure 5. A decentralized network of news-links in Iran.

To summarize, the most common structure of news-links is the two-hub network, presented by most European and Asian countries. This includes the country of the news sites' origin and the U.S. as its main hubs. Middle-Eastern countries tended to have a more decentralized structure where regional countries were highly connected to each other and formed a cluster of news-links. Finally, American and French news sites presented a very centralized network with the U.S. and France respectively as its main hub.

Discussion

This paper presents several new measurements, indices, and techniques to identify the main actors and their relations as represented by popular news sites in different countries and languages. Following previous studies (e.g., Barnett, 2001; Barnett et al., 1996; Chang et al., 1987, 2005, 2009; Kim & Barnett, 1996, 2000, 2007; Mowlana, 1985; Segev, 2008; Tunstall, 2008; Wu, 2000, 2007), it attempts to assess the salience of countries in news sites comparing to their salience in traditional media (*H1A* and *H1B*), to highlight differences in the salience of countries across news topics (*H2*), to compare the level of self-occupation of countries in their news sites (*H3*), and to outline the overall network structure that emerges in news sites of each country (*H4*).

The Global Salience Index (GSI) was constructed in order to test the first hypothesis that economically leading countries will get the highest attention in news sites worldwide (*H1A*). It was also expected that their salience level would be lower on the Internet than in newspapers as was found by previous studies (*H1B*). Indeed, findings confirmed that countries with higher GDP significantly correlate with higher GSI scores. In other words, large and powerful countries such as the U.S., China, the U.K., and France get much more attention in news sites around the world than other countries. These findings are in line with previous studies (Chang & Lee, 1992; Chang et al. 2000, 2005; Golan, 2008; Kim & Barnett, 1996; Tunstall, 2008; Wu, 2000). Apart from their economic power, the dominance of international news agencies such as AP, Reuters, and AFP, which supply news to many other countries, can explain the very high scores of the U.S., the U.K., and France.

The exceptionally high salience of the U.S. in the world news category (GSI = 22.1%) was found to be significantly higher than its salience found a decade earlier by Wu (2000) in his analysis of international news in newspaper. European countries decreased significantly their salience, Middle-Eastern countries increased their salience, and Asian countries did not change their salience significantly. To this end, *H1B* only partially found support, namely for most European countries that got less attention on the Internet than in newspapers. However, the strongest and most salient one, the U.S., rather increased its position in online news from around the world.

There are several possible reasons for the significant decrease in the salience of European countries and the increase in the salience of the U.S. Wu (2000) admitted that his sample over represented European countries (17 out of 38), a fact that can explain, to some extent, their relatively high salience in his study. The increase in the salience of the U.S., however, could be a result of the 2009 economic crisis that affected mostly the U.S. and

attracted much international attention. Since the study is limited in time, findings often depend on the period of observation. Still, a previous study (Segev, 2008) that examined the world news category in *Google News* during 2005 displayed very similar results, where the U.S. was by far the most popular country. Moreover, although the U.S. got very high attention in business-related news in the present study, it got similar GSI scores in the world news and technology categories, and to a lesser extent but still high in the top news and entertainment categories.

It is important to note that the relatively lower economic power of Middle-Eastern countries does not come in line with their high news salience. This is to suggest that apart from size and economic influence there are several other factors that could potentially predict the global salience of a country. Obviously, countries like Iran attract international attention because of a temporal international conflict or tension as much as Iraq (Segev, 2008, 2010) and Bosnia (Wu, 2000) did in previous studies. However, the relatively long lasting salience of certain Middle-Eastern actors, to include Israel, could be related to their religious and cultural affiliation. It has been argued that the world stability depends, among others, on the ability to solve the Arab-Israeli conflict (Kapitan, 1996; Teitelbaum, 2009). Similarly, there are several historical reasons such as colonialism and the holocaust that increase the current political, economic, and cultural involvements of Europe and the U.S. in the region. Hence, news about Israel and Palestine constantly appeared not only in American and Arabic news sites, but also and even more so in German and French news sites.

The second hypothesis *H2* predicted that the U.S. would maintain its salience across different news categories, Asian countries would increase their salience in economic-related news and Middle-Eastern countries would increase their salience in world news. Here findings only partially supported the predictions. Indeed, Iran and Israel significantly increased their GSI scores in the world news category. Among the Asian countries, Afghanistan, Pakistan, and North Korea significantly increased their salience in world news as well. The increase in the salience of the latter clearly reflects the dominance of American priorities and agendas in international news around the world. However, the increase in salience of China, Japan, and India in the business category was not significant. For China and Japan the increase was rather significant in the technology category, suggesting that they are viewed by other countries as important technological players. In other words, *H2* is supported with respect to the maintained high salience of the U.S, and with respect to the higher salience of Middle-Eastern countries in world news. It finds no support with respect to a higher salience of Asian countries in business news.

Although the GSI levels of the U.S. remained the highest in all categories, its relatively lower GSI score in the entertainment category was counterintuitive. While it is commonly believed that the U.S. has a strong cultural influence worldwide (see, for example, Schiller, 1992), findings revealed that there was a significant difference ($z = 2.7$, $p = .004$) between its GSI score in the world news category (22.1%) and the entertainment category (16.5%). At the same time, the U.K. and France scored relatively higher in the GSI of the entertainment category. This finding goes in line with Tunstall's (2008) observations on the dominant media influence of European countries.

A possible reason for the high GSI of the U.K. (and to a lower extent of France) in the entertainment category could be the cultural traces of their colonial past, and their still dominant cultural influence around the world. The relatively high governmental support and public investments in the production and dissemination of British and French cultural products could be another possible reason. The relatively lower GSI score of the U.S. in the entertainment category is also a result of its very low ranking in news sites in Arabic. It was mentioned only in 3.4% of entertainment-related news items in Arabic in general, and was not mentioned at all in Egyptian and Iranian news sites. This can imply that American culture still does not play a significant role in Arabic news sites, and perhaps also in the Arab world in general.

Hypothesis *H3* predicted that countries with higher deviance would score higher in the LSI. In line with this hypothesis, findings revealed that countries scored higher in the Failed States Index, and particularly Israel and Russia, also displayed the highest LSI (about 45% of their news items mentioned themselves). However, the correlation between the LSI and the FSI was not found to be highly significant, mainly due to the small size of the sample and the bias of the U.S. Still, the content of news items in Israel and Russia supported this tendency, indicating that much of Israeli news on Israel focused on its conflict with Palestine and the Iranian threat. Russian news on Russia dealt with the government efforts to control the economic recession in Russia and its conflicts with neighboring countries. Although news content in both countries largely discussed problems of social, economic or political instabilities, it also implies the presence of other potential indicators such as the media culture of a country, or the governmental control over its media channels that might increase its self-occupation in the news, and are worth to be addressed in future studies.

Finally, network analysis was found to be an extremely useful method to unveil the complex Web of relations between countries based on their news-links. The fourth and last hypothesis was about the particular structure of

those news-link networks. In contrast with the expectation to find a star-shape network in each country, findings revealed three possible network configurations: the centralized structure, the decentralized structure and the two-hub network structure. Only the U.S. and France displayed a highly centralized network configuration with a star-shape. Most European and Asian countries, displayed a two-hub network including themselves and the U.S. as the biggest hubs. Middle-Eastern countries displayed a decentralized configuration with several hubs (including themselves, the U.S., and some other neighboring countries). This provides a strong indication for the still important role of the U.S. in online news reporting and therefore also in the imagined world they represent.

Thus, in contrast with Tunstall's (2008) observations regarding the weakening presence of the U.S. in world media, this longitudinal study of news sites in different languages and across various topics provides a strong support for the WST (see also Chang et al., 2000; 2005; Kim & Barnett, 1996; Wu, 2000, 2007), and the still dominant role that the U.S. plays in online news worldwide. However, there are certain fields, such as entertainment, in which the American dominance is slightly weaker and there are arguably still traces of the British and French colonial past. Likewise, there are certain countries, notably France and Middle-Eastern countries that manage to some extent to resist the global American influence. While France still shows a very self-centered network, Middle-Eastern countries show in their news sites a less centralized world with stronger regional influences. It is important to note that the focus of this study was mainly on news from core-countries written in the most dominant online languages (such as English, Chinese, Spanish, and Arabic). Although core-countries dominate the production and dissemination of news, it is possible that a similar news analysis of more peripheral countries may yield different results. Apart from offering new methods to automatically organize and create meanings in the increasing volume of news sites, this study hopes to encourage further investigation of the diversity of views and perceptions of the world.

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References

Águila-Obra, A. R., Padilla-Meléndez, A., & Serarols-Tarrés, C. (2007). Value creation and new intermediaries on Internet: An exploratory analysis of the online news industry and the Web content aggregators. *International Journal of Information Management, 27,* 187–199.

Althaus S. L., & Tewksbury D. (2000). Patterns of Internet and traditional news media use in a networked community. *Political Communication, 17,* 21–45.

Barnett, G. A. (2001). A longitudinal analysis of the international telecommunications network: 1978–1996. *American Behavioral Scientist, 44,* 1638–1655.

Barnett, G. A., Danowski, J. A., & Richards, W. D. (1993). Communication networks and network analysis: A current assessment. In W. D. Richards & G. A. Barnett (Eds.), *Progress in communication science* (Vol. 12, pp. 1–19). Norwood, NJ: Ablex.

Barnett, G. A., Jacobson, T. L., Choi, Y., & Sun-Miller, S. L. (1996). An examination of the international telecommunication network. *The Journal of International Communication, 3,* 19–43.

Barnett, G. A., Kim, J. H., & Lim, Y. (in press). The nation-state and the global telecommunication network. In J. van Dijk & K. Hacker (Eds.), *Democracy in a Network Society*. Cresskill, NJ: Hampton Press.

Barnett, G. A., & Lee, M. (2002). Issues in intercultural communication. In W. B. Gudykunst & B. Mody (Eds.), *Handbook of International and Intercultural Communication* (pp. 275–290). Thousand Oaks, CA: Sage.

Barnett, G. A., & Sung, E. (2005). Culture and the structure of the international hyperlink network. *Journal of Computer-Mediated Communication, 11*(1). Retrieved from http://jcmc.indiana.edu/vol11/issue1/barnett.html

Barnett, G. A., & Park, H. W. (2005). The structure of international Internet hyperlinks and bilateral bandwidth. *Annals of Telecommunication, 60,* 1115–1132.

Bicket, D. (2005). Reconsidering geocultural contraflow: Intercultural information flows through trends in global audiovisual trade. *Global Media Journal*, 4(6). Retrieved from http://lass.calumet.purdue.edu/cca/gmj/sp05/gmj-sp05-bicket.htm

Bonacich, P. (1972). Factoring and weighting approaches to clique identification. *Journal of Mathematical Sociology, 2,* 113–120.

Borgatti, S., Everett, M., & Freeman, L. (2002). *UCINET 6 for Windows*. Harvard: Analytic Technologies.

Boyd-Barrett, O., & Thussu, D. K. (1992). *Contra-flow in global news*. London: John Libbey.

Chang, T. K., Himelboim, I., & Dong, D. (2009). Open global networks, closed international flows: World system and political economy of hyperlinks in cyberspace. *International Communication Gazette, 71,* 137–160.

Chang, T. K., Himelboim, I. Schneeweis, A. Elmasry, A. Anghelcev, G., Dong, D., Kim, S., Murty, M., Sar, S., & Yimbo, W. (2005, August). Open global networks, closed international flows: World system and political economy of links in cyberspace. Paper presented at the *AEJMC Conference*, San Antonio, TX.

Chang, T. K., Lau, T. Y., & Hao, X. (2000). From the united states with news and more: International flow, television coverage and the world system. *Gazette, 62,* 505–522.

Chang, T., & Lee, J. (1992). Factors affecting gatekeepers' selection of foreign news: A national survey of newspaper editors. *Journalism Quarterly, 69,* 554–561.

Chang, T. K., Shoemaker, P., & Brendlinger, N. (1987). Determinants of international news coverage in the U.S. media. *Communication Research, 14,* 396–414.

Chase-Dunn, C., & Grimes, P. (1995). World systems analysis. *Annual Review of Sociology, 21,* 387–417.

Chase-Dunn, C., & Hall, T. D. (1994). The historical evolution of world system. *Sociological Inquiry, 64,* 257–280.

Chon, B. S., Choi, J. H., Barnett, G. A., Danowski, J. A., & Joo, S. J. (2003). A structural analysis of media convergence: Cross-industry mergers and acquisitions in the information industries. *Journal of Media Economics, 16,* 141–157.

Danet B., & Herring, S. C. (2007). *The multilingual Internet: Language, culture, and communication online*. Oxford: Oxford University Press.

During, S. (1997) Popular culture on a global scale: A challenge for cultural studies? *Critical Inquiry, 23,* 808–821.

Galtung, J., & Ruge, M. (1965). The structure of foreign news. *Journal of Peace Research*, *1,* 64–90.

Golan, G. (2008). Where in the world is Africa? Predicting coverage of Africa by U.S. television networks. *International Communication Gazette, 70,* 43–59.

Golan, G., & Wanta, W. (2001). Second-level agenda setting in the New Hampshire primary: A comparison of coverage in three newspapers and public perceptions of candidates. *Journalism and Mass Communication Quarterly, 78,* 247–259.

Kapitan, T. (1996). Arab-Israeli wars. In D. A. Wells (Ed.), *Encyclopedia of war and ethics* (pp. 19–23). Westport, CT: Greenwood Press.

Kariel, H. G., & Rosenvall, L. A. (1984). Factors influencing international news flow. *Journalism Quarterly, 60,* 434–436.

Kim, K., & Barnett, G. A. (1996). The determinants of international news flow: A network analysis. *Communication Research, 23,* 323–352.

Kim, K., & Barnett, G. A. (2000). The structure of the international telecommunications regime in transition: A network analysis of international organizations. *International Interactions, 26,* 91–127.

Kim, J. H., & Barnett, G. A. (2007). The effect of global communication on international conflict: A network analysis. *International Interactions, 33,* 135–165.

Kim, J. H., Barnett, G. A., & Park, H. W. (2010). A hyperlink and issue network analysis of the United States senate: A rediscovery of Web as a relational and topical medium. *Journal of American Society for Information Science & Technology, 61,* 1598–1611.

Maoz, Z. (2010). *Networks of nations: The evolution, structure, and impact of international networks, 1816–2001*. New York: Cambridge University Press.

Maoz, Z., Terris, L. G., Kuperman, R. D., & Talmud, I. (2007). Network centrality and international conflict: Does it pay to be important? In T. N. Friemel (Ed.), *Applications of Social Networks Analysis* (pp. 121–151). Konstanz: Universitätsverlag.

Monge, P. R., & Contractor, N. (2003). *Theories of communication networks*. New York: Oxford University Press.

Mowlana, H. (1985). *International flows of information: A global report and analysis*. Paris: Unesco.

Nemeth, R. J., & Smith, D. A. (1985). International trade and world-system structure: A multiple network analysis. *Review A Journal of the Fernand Braudel Center, 8,* 517–560.

Nguyen, A., & Western, M. (2006). The complementary relationship between the Internet and traditional mass media: The case of online news and information. *Information Research, 11*(3). Retrieved from http://informationr.net/ir/11-3/paper259.html

Park, H. W. (2003). Hyperlink network analysis: A new method for the study of social structure on the Web. *Connections, 25,* 49–61.

Peng, Z. (2004). Representation of China: An across time analysis of coverage in the New York Times and Los Angeles Times. *Asian Journal of Communication, 14,* 53–67.

Pew Research Center for People and the Press. (2008). *Internet overtakes newspapers as news outlet*. Retrieved from http://people-press.org/report/479/internet-overtakes-newspapers-as-news-source

Riffe, D. (1996). Linking International News to US Interests: A Content Analysis. *International Communication Bulletin, 31*(1–2), 14–18.

Rubin, A. J. (2009, January 31). Pointing to a new era, U.S. pulls back as Iraqis vote. *The New York Times*. Retrieved from http://www.nytimes.com/2009/02/01/world/middleeast/01withdraw.html

Schifferes, S., Lusoli, W., & Ward, S. (2009). What's the story…? Online news consumption in the 2005 UK election. *Northern Lights, 7,* 51–71.

Schiller, H. I. (1992). *Mass communications and American empire* (2nd ed.). Boulder, CO: Westview Press.

Schramm, W. (1964). *Mass media and international development*. Stanford, CA: Stanford University Press.

Segev, E. (2008). The imagined international community: Dominant American priorities and agendas in Google News. *Global Media Journal, 7*(13). Retrieved from http://lass.calumet.purdue.edu/cca/gmj/fa08/graduate/gmj-fa08-grad-segev.htm

Segev, E. (2010). *Google and the digital divide: The bias of online knowledge*. Cambridge: Woodhead Publishing.

Shoemaker, P. J, Danielian, L. H., & Brendlinger, N. (1991). Deviant acts, risky business and US interests: The newsworthiness of world events. *Journalism Quarterly, 68,* 781–795.

Smith, L. R. (1999). Intercultural network theory: A cross-paradigmatic approach to acculturation. *International Journal of Intercultural Relations, 23,* 629–658.

Snyder, D., & Kick, E. (1979). Structural position in the world system and economic growth. 1955–70: A multiple network analysis of transnational interactions. *American Journal of Society, 84,* 1096–1126.

Steele, B. (2009). Tracking the life and death of news. *Chronicle Online*, 13 July, 2009. Retrieved from http://www.news.cornell.edu/stories/July09/NewsTracking.html

Straubhaar, J. D. (1997). Distinguishing the global, regional and national levels of world television. In O. Boyd-Barrett et al. (Eds.), *Media in a global context* (pp. 284–298). London: Edward Arnold.

Straubhaar, J. D. (2002). (Re)asserting national media and national identity against the global, regional and local levels of world television. In J. M. Chan & B. T. McIntyre (Eds.), *In search of boundaries: Communication, nation-states, and cultural identities* (pp. 181–206). Westport, Conn.: Ablex Publishing.

Teitelbaum, J. (2009). *The Arab peace initiative: A primer and future prospects*. Jerusalem: Jerusalem Center for Public Affairs.

Thussu, D. (2000). *International communication: Continuity and change*. London: New York: Arnold.

Tomlinson, J. (1997). Internationalism, globalization, and cultural imperialism. In K. Thompson (Ed.), *Media and cultural regulation* (pp. 117–162). London: Sage.

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

UNESCO. (2000). *World Culture Report: Culture, Creativity and Markets*. Paris: UNESCO Publishing.

Wallerstein, I. (1974). *The modern world-system*. New York: Academic Press.

Wasserman, S. & Faust, K. (1994). *Social network analysis: Methods and applications*. Cambridge: Cambridge University Press.

Weimann, G. (1989). Social networks and communication. In M. K. Asante & W. B. Gudykunst (Eds.), *Handbook of international and intercultural communication* (pp. 186–203). Newbury Park, CA: Sage.

Wilson, M. D. (2008). *Pre-Internet versus post-Internet news content: The case of the Chattanooga Times and Times Free Press* (unpublished doctoral dissertation). University of Maryland.

Wu, D. H. (2000). Systematic determinants of international news coverage. *Journal of Communication, 50,* 113–130.

Wu, D. H. (2007). A brave new world for international news? Exploring the determinants of the coverage of foreign news on US Websites. *International Communication Gazette, 69,* 539–552.

Wurff, R., & Lauf, E. (Eds.). (2005). *Print and online newspapers in Europe: A comparative analysis in 16 countries*. Amsterdam: Het Spinhuis.

Yum, J. O. (1984). Network analysis. In W. B. Gudykunst & Y. Y. Kim (Eds.), *Methods for Intercultural Communication Research* (pp. 95–116). Beverly Hills, CA: Sage.

Yum, J. O. (1988). Network theory in intercultural communication. In Y. Y. Kim & W. B. Gudykunst (Eds.), *Theories in intercultural communication* (pp. 239–258). Newbury Park, CA: Sage.

Appendix

Table A1
Countries, News Sites and Categories Observed

Country	News site	Categories	Country	News site	Categories
U.S.	Google News	top, world, business, technology, entertainment	Russia	Google News	top, world, business, technology, entertainment
	CNN	top, world, business, technology, entertainment		Gazeta	top, world, business, technology, entertainment
	NYTimes	top, world, business, technology, entertainment		Pravda	top, world, business, technology, entertainment
U.K.	Google News	top, world, business, technology, entertainment	Arabic	Google News	top, world, business, technology, entertainment
	BBC	top, world, business, technology, entertainment		Al Jazeera	top, business
	Guardian	top, world, business, technology, entertainment	Egypt	Al Ahram	top
				Al Masry Alyoum	top, world, business, entertainment
Israel	Google News	top, world, business, technology, entertainment	Iran	PressTV	top, technology
	Ynet	top, business, technology, entertainment		Tabnak	all categories (no distiction provided)
	Haaretz	top, world, business		Aftab	top, world, business, technology, entertainment
Germany	Google News	top, world, business, technology, entertainment	China	Google News	top, world, business, technology, entertainment
	Bild	top, all, technology, entertainment		Sina	top, world, business, technology, entertainment
	Spiegel	top, world, business, technology, entertainment		People Daily	top, world, business, entertainment
France	Google News	top, world, business, technology, entertainment	Japan	Google News	top, world, business, technology, entertainment
	Le Monde	top, world, business, technology, entertainment		NHK	top, world, business, technology
	Le Figaro	top, world, business, technology, entertainment		Yomiuri	top
				Yahoo	top, world, business, technology, entertainment
Spain	Google News	top, world, business, technology, entertainment			
	El Mundo	top, world, business, entertainment			
	El Pais	top, world, business, technology, entertainment			

Table A2

Frequency of Country Name Occurrence by Country (Number of News Items)

U.S		UK		Spain		Russia		Japan		Israel	
Country	News items	Country	News items	Country	News items	Country	News items	Country	News items	Country	News items
U.S.	958	UK	1244	Spain	745	Russia	1363	U.S.	918	Israel	1419
China	215	U.S.	986	U.S.	359	U.S.	510	Japan	814	U.S.	634
UK	196	France	225	EU	151	Georgia	148	China	389	Iran	271
Pakistan	141	China	175	UK	135	UK	123	North Korea	262	Palestine	259
Iraq	138	Germany	150	France	131	Ukraine	100	UN	188	UK	218
Iran	134	India	145	China	97	Afghanistan	84	South Korea	157	France	132
France	117	Pakistan	138	Afghanistan	96	France	79	Iran	129	Russia	101
Israel	113	EU	131	Germany	92	EU	79	Russia	121	Egypt	92
India	112	Japan	121	Iran	91	UN	69	Thailand	94	Germany	91
Russia	111	Australia	112	Cuba	90	Iran	62	India	78	China	81
Afghanistan	110	Iraq	100	Italy	88	Germany	60	Iraq	77	Lebanon	81
Japan	88	Iran	99	Israel	83	China	59	Italy	73	India	68
Palestine	86	Russia	96	Colombia	76	India	56	UK	73	Spain	60
North Korea	73	Afghanistan	92	Venezuela	73	Armenia	54	Germany	60	Italy	56
Australia	63	UN	87	Russia	71	Iraq	50	Mexico	58	Syria	53
UN	63	Ireland	84	Brazil	69	Japan	50	France	56	Japan	52
Sri Lanka	56	Italy	82	Pakistan	68	Turkey	48	Afghanistan	56	North Korea	44
Germany	54	Israel	74	Argentina	65	Italy	40	Israel	46	Jordan	33
Mexico	46	South Africa	71	Peru	57	Azerbaijan	37	Pakistan	40	Canada	32
EU	46	Spain	62	Honduras	50	Kazakhstan	33	Somalia	39	Turkey	30
Zimbabwe	38	Palestine	58	Bolivia	48	Israel	32	Palestine	33	EU	30
South Korea	31	Mexico	45	Japan	47	Pakistan	30	Taiwan	31	Australia	27
Sudan	29	Sri Lanka	42	India	46	Latvia	29	Indonesia	31	Iraq	26
South Africa	28	Canada	40	North Korea	45	Somalia	27	Australia	27	UN	26
Venezuela	28	North Korea	39	Palestine	42	Spain	26	Canada	26	Afghanistan	25
Cuba	28	Netherlands	37	Chile	39	Australia	25	Honduras	22	Pakistan	24
Canada	28	Switzerland	37	Ireland	39	Estonia	22	Brazil	21	Sudan	23
Indonesia	28	Brazil	33	Ecuador	36	Austria	22	Vietnam	17	Netherlands	20
Switzerland	27	Zimbabwe	31	Sri Lanka	29	Sweden	21	Philippines	15	Romania	17

Iran		Germany		France		Egypt		China		Arabic	
Country	News items	Country	News items	Country	News items	Country	News items	Country	News items	Country	News items
Iran	966	U.S.	886	France	716	Egypt	107	China	1123	Israel	421
U.S.	336	Germany	468	Iran	213	Israel	79	U.S.	657	Palestine	417
Iraq	222	Iran	172	U.S.	165	U.S.	67	Japan	224	Egypt	337
Egypt	191	EU	168	Israel	131	Palestine	64	North Korea	197	Iran	182
UK	175	Afghanistan	135	China	113	Iran	30	UK	177	Iraq	174
Saudi Arabia	126	China	119	Afghanistan	106	Iraq	23	Russia	129	U.S.	156
Palestine	126	Israel	106	UK	96	Sudan	20	South Korea	124	Kuwait	122
Israel	117	UK	88	Pakistan	92	Syria	12	France	92	Pakistan	115
France	111	France	88	Italy	90	Pakistan	10	Iran	82	China	106
Germany	111	Italy	87	Palestine	89	Lebanon	9	India	77	Qatar	101
Afghanistan	110	Switzerland	77	Germany	87	Turkey	9	Germany	67	Lebanon	92
Russia	77	Russia	75	Russia	69	UN	6	UN	64	Jordan	89
Pakistan	72	Pakistan	67	Madagascar	63	South Africa	6	Taiwan	63	Sudan	88
Lebanon	72	Palestine	63	UN	58	France	5	Pakistan	53	Syria	84
India	66	North Korea	59	North Korea	58	Afghanistan	5	Australia	50	Japan	80
Japan	66	Japan	49	Japan	56	India	5	Afghanistan	50	Afghanistan	77
Czech	64	Australia	42	EU	52	Jordan	4	EU	47	UK	63
China	62	Iraq	41	Mexico	52	Kuwait	4	Brazil	43	Somalia	58
Italy	50	Austria	34	Spain	48	Russia	4	Israel	43	Russia	58
Spain	47	Turkey	33	India	46	China	3	Mexico	40	Yemen	57
Qatar	47	Spain	32	Somalia	45	UK	3	Italy	39	India	55
North Korea	42	Sweden	28	Sri Lanka	37	Algeria	2	Canada	36	Bahrain	54
Brazil	36	Somalia	28	Turkey	32	Zambia	2	Thailand	33	France	44
Venezuela	34	India	27	Cuba	32	Qatar	2	Palestine	31	Morocco	41
South Korea	31	Vatican	23	Switzerland	31	Bahrain	2	Iraq	31	Algeria	40
Netherlands	29	Kenya	21	Niger	30	Libya	2	Egypt	26	Turkey	39
EU	27	Cuba	21	Vatican	29	EU	2	Somalia	24	North Korea	38
Syria	25	Sri Lanka	20	Lebanon	29	Mauritania	2	Singapore	23	Tunisia	37
UN	24	UN	20	Honduras	28	Germany	2	Mongolia	23	Oman	33

Note. This table presents the 30 most frequently occurring country names, as measured between February and July 2009, based on a random sample of 3000 news items per country apart from Egypt that displayed only 354 news items.

Table A3
Frequency of News-Links by Country (Number of News Items Mentioning Two Countries or More)

Arabic		China		Egypt		France		Germany	
Israel – Palestine	151	China – U.S.	301	Egypt – Palestine	276	Israel – Palestine	32	Germany – U.S.	55
Egypt – Israel	27	China – UK	97	Israel – Palestine	216	Afghanistan – Iran	19	Afghanistan – U.S.	47
Egypt – Palestine	23	UK – U.S.	94	Egypt – Israel	83	Afghanistan – Pakistan	16	Israel – Palestine	44
Kuwait – Palestine	23	Iran – U.S.	89	Egypt – Sudan	50	France – UK	14	Iran – U.S.	39
Israel – Syria	22	China – Japan	86	Palestine – Sudan	45	Afghanistan – France	13	Pakistan – U.S.	23
Iran – Israel	14	Japan – U.S.	82	Egypt – Lebanon	43	France – Germany	13	Israel – U.S.	21
Israel – Lebanon	14	Afghanistan – U.S.	61	Egypt – Iraq	43	Iran – Russia	10	Afghanistan – Pakistan	21
China – India	13	China – Russia	58	Lebanon – Syria	40	Russia – Turkey	9	North Korea – U.S.	18
Israel – Kuwait	12	Israel – Palestine	55	Iran – Iraq	39	France – U.S.	9	Russia – U.S.	18
Israel – Jordan	11	China – France	53	Palestine – Syria	38	North Korea – UN	9	Iraq – U.S.	15
Israel – U.S.	10	China – India	47	France – Israel	38	France – Somalia	8	France – Germany	13
Iran – U.S.	10	Russia – U.S.	42	Egypt – Iran	38	China – France	8	EU – Germany	13
North Korea – U.S.	9	Iraq – U.S.	41	Egypt – Syria	38	France – Monaco	7	China – U.S.	12
Afghanistan – Pakistan	8	Pakistan – U.S.	39	France – Palestine	38	Chad – UN	7	Cuba – U.S.	12
Lebanon – Syria	8	China – Taiwan	35	Russia – Ukraine	38	Niger – Nigeria	7	Germany – Switzerland	12
Israel – Turkey	7	Cuba – U.S.	35	Egypt – Germany	38	France – UN	7	EU – Switzerland	11
India – Pakistan	7	Mexico – U.S.	34	Germany – Palestine	38	Andorra – France	7	Luxembourg – Switzerland	10
Pakistan – U.S.	6	India – Indonesia	33	Egypt – Jordan	38	Andorra – Monaco	7	EU – U.S.	9
Egypt – Qatar	6	China – Thailand	33	Egypt – Turkey	38	North Korea – South Korea	6	Somalia – U.S.	9
Iran – Russia	6	China – UN	32	Jordan – Turkey	38	France – Ireland	6	Switzerland – U.S.	8
Japan – North Korea	6	Canada – U.S.	30	Jordan – Palestine	38	Japan – North Korea	6	France – U.S.	8
Russia – U.S.	5	UN – U.S.	30	Palestine – Turkey	38	Egypt – Palestine	6	Austria – Switzerland	8
Jordan – Palestine	5	Israel – U.S.	29	Lebanon – Palestine	38	Cuba – U.S.	6	EU – Romania	7
Israel – Sudan	5	Afghanistan – Pakistan	29	Israel – U.S.	28	France – Mexico	6	EU – France	7
Lebanon – Palestine	5	China – Germany	29	Palestine – U.S.	23	Israel – UN	6	UK – U.S.	7
Egypt – Kuwait	5	France – U.S.	28	Iran – Israel	16	France – Israel	6	Austria – Luxembourg	7
Iran – Syria	5	Somalia – U.S.	26	Egypt – U.S.	15	Algeria – France	6	Japan – North Korea	7
Egypt – Iran	5	Egypt – Palestine	25	Iraq – U.S.	13	Iran – Pakistan	6	Palestine – U.S.	6
Sri Lanka – UK	5	Australia – China	24	Turkey – U.S.	12	Japan – U.S.	5	EU – Luxembourg	6
Chad – Sudan	5	Taiwan – U.S.	24	Iran – Turkey	12	Dominica – France	5	Iran – Russia	6
Israel – Palestine	151	China – U.S.	301	Egypt – Palestine	276	Israel – Palestine	32	Germany – U.S.	55

(continued)

Table A3
Frequency of News-Links by Country (Number of News Items Mentioning Two Countries or More) (Continued)

Israel		Japan		Spain		UK	
Israel – Palestine	155	Japan – U.S.	115	EU – Spain	35	UK – U.S.	980
Israel – U.S.	137	Japan – UN	35	Israel – Palestine	23	France – UK	291
Iran – Israel	91	Afghanistan – U.S.	33	Spain – U.S.	22	Germany – UK	238
Iran – U.S.	90	China – U.S.	30	Germany – Spain	18	France – U.S.	216
Egypt – Israel	60	China – Japan	25	Spain – UK	18	China – U.S.	205
Egypt – Palestine	46	UN – U.S.	22	Cuba – U.S.	16	Germany – U.S.	203
Israel – UK	44	Iran – U.S.	21	France – Spain	14	India – UK	176
Israel – Syria	44	Iraq – U.S.	21	Germany – UK	13	China – UK	166
Palestine – U.S.	42	Japan – Thailand	19	France – Germany	13	Japan – U.S.	142
France – Israel	37	Israel – Palestine	18	Italy – Spain	13	India – U.S.	140
Iran – Russia	32	Japan – Russia	15	Georgia – Russia	11	EU – UK	139
Israel – Russia	31	India – Indonesia	15	U.S. – Venezuela	11	Russia – U.S.	136
Israel – Lebanon	30	India – Japan	13	China – U.S.	11	Afghanistan – U.S.	126
Iran – Palestine	27	Thailand – UN	13	Russia – U.S.	11	Iraq – U.S.	123
China – U.S.	26	Russia – U.S.	13	Afghanistan – Pakistan	11	France – Germany	122
UK – U.S.	25	Somalia – U.S.	11	Brazil – U.S.	10	Japan – UK	119
Russia – U.S.	24	Mexico – U.S.	11	Colombia – U.S.	9	Ireland – UK	118
Syria – U.S.	24	Germany – U.S.	10	UK – U.S.	9	Israel – Palestine	105
Iran – Syria	22	Pakistan – U.S.	10	France – UK	9	Russia – UK	104
Germany – Israel	22	China – UN	10	Spain – Trinidad	9	Pakistan – U.S.	97
Germany – U.S.	22	Japan – Somalia	9	Ireland – UK	9	EU – U.S.	96
Palestine – Syria	21	Afghanistan – Pakistan	9	Pakistan – U.S.	9	Australia – UK	95
Israel – Spain	20	Germany – Japan	8	Argentina – Brazil	8	UN – U.S.	89
Afghanistan – U.S.	20	Indonesia – Japan	8	EU – U.S.	8	Iraq – UK	86
France – UK	20	Italy – Japan	8	France – U.S.	8	Italy – UK	83
Israel – Turkey	19	Japan – Mexico	8	Afghanistan – U.S.	8	Spain – UK	79
Iraq – U.S.	19	Italy – U.S.	7	North Korea – South Korea	7	Iran – U.S.	75
Egypt – Iran	18	Japan – UK	7	Iran – U.S.	7	Afghanistan – UK	73
North Korea – South Korea	17	Israel – U.S.	7	Ecuador – Venezuela	7	Australia – U.S.	71
France – Germany	17	France – Japan	6	Nicaragua – U.S.	7	Switzerland – U.S.	70
Israel – Palestine	155	Japan – U.S.	115	EU – Spain	35	UK – U.S.	980

Note. This table presents the 30 most frequently occurring news-links out of all news-links in the news sites of a country, as measured between February and July 2009. Only news items that mentioned two countries or more where counted.

Table A4
Centrality Level of Countries

Centralized networks				Two-hub networks							
U.S		France		UK		Spain		Russia		China	
Eigen	Country	Eigen	Country	Eigen	Country	Eigen	Country	Eigen	Country	Eigen	Country
.640	**U.S.**	**.640**	**France**	**.489**	**U.S.**	**.532**	**U.S.**	**.528**	**Russia**	**.561**	**U.S.**
.201	Iran	.267	Israel	**.461**	**UK**	**.416**	**Spain**	**.473**	**U.S.**	**.427**	**China**
.199	Iraq	.235	UN	.281	France	.277	UK	.199	EU	.223	France
.199	Israel	.219	UK	.248	China	.258	France	.193	Georgia	.223	Germany
.195	UK	.186	Russia	.236	Russia	.229	Venezuela	.190	Armenia	.223	UK
.184	Afghanistan	.169	Turkey	.230	Germany	.209	EU	.184	Afghanistan	.201	Japan
.179	North Korea	.167	U.S.	.202	EU	.204	Colombia	.174	Ukraine	.185	Taiwan
.174	UN	.157	Afghanistan	.170	Italy	.193	Germany	.173	Turkey	.157	India
.170	Palestine	.154	China	.165	India	.175	Ecuador	.172	Iran	.154	EU
.164	China	.151	Andorra	.165	Japan	.163	Russia	.170	France	.154	Mexico
.160	Japan	.151	Monaco	.152	Afghanistan	.141	Afghanistan	.170	UK	.154	Russia
.158	France	.139	Germany	.152	Iraq	.138	Cuba	.145	China	.154	UN
.156	Pakistan	.127	Iran	.131	Australia	.127	Argentina	.145	Germany	.154	Venezuela
.134	Kyrgyzstan	.127	Spain	.131	Ireland	.126	China	.145	India	.127	Israel
.134	South Korea	.122	Algeria	.131	Pakistan	.126	Ireland	.145	Iraq	.119	Somalia
.130	Brazil	.122	Brazil	.131	Spain	.122	Iran	.145	Japan	.113	Palestine
.130	India	.122	Dominica	.131	Switzerland	.122	Pakistan	.145	UN	.107	Iran
.107	Russia	.122	Ireland	.131	UN	.120	Brazil	.132	Azerbaijan	.103	Afghanistan
.104	Canada	.122	Italy	.078	Israel	.111	Italy	.095	Pakistan	.103	Pakistan
.104	Cuba	.122	Lithuania	.078	Palestine	.097	Nicaragua	.077	Bulgaria	.087	Canada
.104	EU	.122	Madagascar	.067	Iran	.076	Serbia	.077	Finland	.087	Cuba
.104	Germany	.122	Mexico	.067	Mexico	.076	Trinidad	.077	Italy	.087	Iraq
.104	Honduras	.122	Somalia	.064	South Africa	.038	Hungary	.077	Kazakhstan	.087	Singapore
.104	Kenya	.122	Switzerland			.03	Georgia	.077	Norway	.087	Spain
.104	Mexico	.063	Egypt			.025	Bolivia	.077	Switzerland	.087	Switzerland
.104	Myanmar	.063	Palestine			.023	Uruguay	.077	Tajikistan	.066	Australia
.104	Switzerland	.059	EU			.006	Chile	.069	North Korea	.066	Brazil
.104	Syria	.058	North Korea			.006	Peru	.069	Somalia	.066	Thailand
.104	Venezuela	.054	Pakistan							.037	Egypt
.032	Lebanon	.051	Sudan							.025	Indonesia
.028	Egypt	.047	Japan								
.028	Sri Lanka	.045	Chad								
.028	Sudan	.036	Georgia								
.027	Australia	.032	Cuba								
.018	Ukraine	.027	Sweden								
		.024	Kosovo								
		.020	South Korea								

(continued)

Table A4
Centrality Level of Countries (Continued)

Centralized networks		Distributed networks									
Japan		Germany		Israel		Iran		Arabic		Egypt	
Eigen	Country	Eigen	Country	Eigen	Country	Eigen	Country	Eigen	Country	Eigen	Country
.495	**Japan**	**.557**	**U.S.**	**.464**	**Israel**	**.483**	**Iran**	**.473**	**Israel**	**.421**	**Egypt**
.470	**U.S.**	**.334**	**EU**	**.397**	**U.S.**	**.354**	**U.S.**	**.364**	**Egypt**	**.391**	**Palestine**
.245	China	**.321**	**Germany**	**.352**	**Iran**	**.333**	**Palestine**	**.360**	**Iran**	**.365**	**U.S.**
.222	UN	.256	Switzerland	.274	France	.282	Egypt	**.323**	**Palestine**	**.310**	**Israel**
.201	Germany	.195	France	.270	Palestine	.278	Israel	.262	Lebanon	.261	Turkey
.201	Somalia	.189	Israel	.265	UK	.278	Lebanon	.261	Syria	.253	Iraq
.201	UK	.166	Austria	.241	Germany	.248	UK	.246	Kuwait	.237	Iran
.193	India	.163	Iran	.237	Egypt	.208	Iraq	.241	U.S.	.235	Lebanon
.182	Russia	.162	Japan	.237	Syria	.198	Syria	.179	Qatar	.217	Sudan
.178	Israel	.153	UK	.167	Russia	.188	Saudi Arabia	.147	Jordan	.201	Syria
.173	Afghanistan	.152	Afghanistan	.155	China	.175	France	.133	Bahrain	.182	Afghanistan
.142	France	.133	NorthKorea	.064	Australia	.168	Afghanistan	.124	Afghanistan	.150	Jordan
.142	Iraq	.123	Palestine	.064	EU	.131	Germany	.115	Russia	.113	Germany
.142	Italy	.121	Luxembourg	.064	Greece	.094	Russia	.102	UK	.098	France
.142	Mexico	.116	Russia	.064	India	.071	Italy	.090	Sudan	.092	UK
.128	Palestine	.114	Iraq	.064	Italy	.070	China	.087	Mauritania	.078	Pakistan
.121	Iran	.114	Pakistan	.064	Japan	.070	Czech	.087	Turkey	.068	South Africa
.109	Taiwan	.111	South Korea	.064	Jordan	.070	Qatar	.074	Pakistan	.068	Zambia
.105	Thailand	.107	Canada	.064	Lebanon	.070	Turkey	.066	Iraq	.059	Qatar
.101	Indonesia	.107	Mexico	.064	Netherlands	.070	Venezuela	.063	Sri Lanka	.051	Trinidad
.095	Pakistan	.095	Liechtenstein	.064	Spain	.041	Sudan	.051	China	.029	Kuwait
.073	Egypt	.089	China	.064	Sudan	.036	Sweden	.047	North Korea	.011	India
.073	Philippines	.089	Cuba	.064	Turkey	.024	Pakistan	.026	India	.004	Bahrain
.073	Vietnam	.089	Somalia	.056	North Korea	.010	Brazil	.021	Georgia		
.033	Sudan	.089	Turkey	.055	Afghanistan			.019	Libya		
.033	UAE	.089	Ukraine	.055	Iraq			.017	Chad		
.027	Georgia	.089	Venezuela	.055	UN			.014	UN		
		.089	Vietnam	.036	Ireland			.013	Japan		
		.076	Italy	.008	South Korea			.009	South Korea		
		.064	Moldova								
		.064	Romania								
		.054	Czech								
		.052	Egypt								
		.052	Spain								
		.020	UN								
		.003	Sudan								

Note. This table presents the 50 most frequently occurring news-links out of all news-links in the news sites of a country. Network centrality is measured with Bonacich eigenvector values. Countries shown in bold have a much higher centrality value from that of the rest of the countries.