A Systematic Procedure for Detecting News Biases: The Case of Israel in European News Sites

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In this article, we present a systematic and structured procedure for sentiment analysis in the news, as well as a database of keywords that incorporate positive and negative opinions toward Israel in different languages. We then mine 14 large newspapers in five countries—the UK, France, Germany, Italy, and Switzerland—over a period of six months and rate their respective orientations. Unlike those of previous studies, our findings clearly show that news reports are largely critical and negative toward Israel, with British news being the most critical, Italian news the most sensational, and German, French and Swiss news relatively more neutral. Opinions featured in the news are not in line with public opinion as presented in annual surveys of each country. We conclude with a discussion of the implications of these findings.

The Arab-Israeli conflict is one of the most debated and most frequently covered issues in European and American news. It often has been referred to as the clash between the West and East, and the ability to solve it as the key for regional stability and prosperity (Kapitan, 1996; Teitelbaum, 2009). There are also historical reasons that may explain the intensive news attention to this conflict—for example, colonialism and the Holocaust—that increase the current political, economic, and cultural involvement of European countries and the United States in the region (Segev, 2010; Segev & Blondheim,

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2010). For us to mediate and resolve certain issues, it is necessary that we understand the Arab-Israeli conflict in a global context and one of the significant questions to address is how this conflict and its actors are represented and perceived in the world.

It is important to note, however, that our basic premise is that the coverage of the Arab-Israeli conflict, like the coverage of any other conflict, inevitably incorporates various types of biases (Cohen, Adoni, & Nossek, 1993; Hackett, 1984). In news reporting, it is impossible to avoid those biases: They start with media owners' views and interests, then continue with the backgrounds, views, and value judgments of the journalists; their depiction of sources, locations, stories, and vocabulary; the positioning of the camera; the medium in which the story is told; the dissemination channels; and finally the different perceptions and views of the audiences (Gitlin, 1980; Williams, 1975; Zelizer, Park, & Gudelunas, 2002). Wolfsfeld (1997, 2001), who closely studied the Arab-Israeli conflict for many years, points out that both sides have understood the key role played by media and constantly attempt to influence and manipulate news reports by emphasizing the damage created to their side or criticizing media believed to be advocates of the other side. In other words, media are perceived as a crucial war zone themselves, and their biases are actually an essential part of modern conflicts.

In this article, we propose a new structured procedure to examine the direction of bias in news content and apply this method to study the views and opinions on Israel expressed in different European news sites. In particular, we compare their depiction of positive and negative words and phrases in the context of the Arab-Israeli conflict. We believe that unveiling biases in news content is a crucial stage toward understanding and mediating the different international views and interests.

An annual survey conducted by GlobeScan/PIPA ("Global Views," 2010) among more than 29,000 adults in 28 countries from around the world suggests that Israel, after Pakistan and Iran, is perceived to have the most negative influence on the world. In the United States and in some African countries, people are more sympathetic toward Israel, but in the rest of the world, particularly in the Middle East and Europe, people are more critical toward Israel and believe that it has a more negative influence on the world.

In many ways, as previous studies indicate, these trends reflect the views and opinions appearing in the media. Most previous studies, however, focused on the representation of the conflict by the Israeli media (Dor, 2004; Korn, 2004; Neiger & Zandberg, 2004; Ross, 2003) and by the American media (Daniel, 1995; Viser, 2003; Zaharna, 1995). In line with opinion polls, some of these studies found that positive views toward Israel outweighed negative views. In the 1970s, a longitudinal content analysis of three leading American newspapers over 20 years (Terry & Mendelhall, 1974) indicated consistent pro-Israeli and anti-Arab views. Likewise, a more recent study by Werder and Golan (2002) examined the news coverage and framing of the 2001 Israeli elections in 10 countries and found that American newspapers presented relatively more positive views toward the Israeli elections compared to the highly negative views expressed by French newspapers. These biases, they believed, reflect the longstanding, friendly relationship between the United States and Israel on the one hand and the pro-Arab position of France on the other (see also Nouschi, 1994; Suleiman, 1989).

There are far fewer studies, however, that focus on the representation of Israel in the European media. Obviously, when taking into consideration the GlobeScan/PIPA survey, European news is expected to be more critical toward Israel. Yet, findings are not so conclusive and very often depend on the interests and views of those who conduct the study. Following heavy criticism of news biases from both pro-Israeli and pro-Palestinian organizations, the BBC has conducted an internal investigation of its own content. Although the full report was never revealed to the public, it maintained that news about the Middle East does not contain deliberate biases (Dyer, 2007). Downey, Deacon, Golding, Oldfield, and Wring (2006) conducted another report, this one commissioned by the BBC's board of governors. The authors looked at the frequency of term use, among other issues, and found the presence of biased terms such as "occupation" (6% of news items) that criticize Israel and "terrorist" (7% of news items) that criticize Palestinians. They also found that Israeli sources get more attention than do Palestinian sources in news reporting. Their findings, however, were not decisive regarding the existence of a clear pro-Israeli bias in the BBC.

Likewise, Glasgow University Media Group conducted an independent and comprehensive study of the content and audiences for the main TV news channels BBC and ITV (Philo & Berry, 2004). Unlike the findings of the BBC's internal investigations, the results of this study found strong empirical evidence for pro-Israeli bias in those TV channels. The Media Group maintained that this bias is due to the lack of contextual and historical information, the preference of Israeli explanation and terminology, and the use of emotionally charged terms such as "horrific attack" or "savage killing" when referring to Israeli deaths. They attributed their findings to easier and more convenient access journalists have to Israeli sources, their easier ability to identify with Israeli values, their widespread guilt feeling toward Jews, and finally, their use of U.S. experts that favor the Israeli position (see also Barkho, 2008, 2010; Richardson & Barkho, 2009; and the latter duo's findings on the BBC's pro-Israeli bias).

Deprez and Raeymaeckers (2010) studied the representation of the first and the second Palestinian uprising in Flemish newspapers. Their content analysis found systematic negative labeling of the Palestinians (e.g., "terrorists," "fundamentalists") and, to a lesser extent, of the Israelis (e.g., "occupier"). Similarly, the labeling of Palestinian actions tended to be more negative (e.g., "attack," "act of terror"), while Israeli actions were not exclusively negative (e.g., "invasion," "offensive"), but also in many cases neutral (e.g., "operation"). In terms of the disputed land, the two authors showed that the Flemish newspapers mostly use the more negative term "occupied territories." Their study concluded that negatively charged labels tend to be more associated with the Palestinian actors in the Flemish media, particularly during the second uprising.

In fact, similar trends were observed by several studies looking at the Israeli and American media. Between 1987 and 2005, a time span that marks the beginning of the first and the end of the second Palestinian uprising, voices became generally less critical toward Israel and more critical toward the Palestinians (Bar-Tal & Teichman, 2005; Mandelzis, 2003; Ross, 2003). This might also be related to the changing geopolitical and global context of post 9/11, as well as to the shifting strategy of the Palestinians from stone throwing to suicide bombing (Moghadam, 2003).

Zelizer et al. (2002) offers one of the most comprehensive attempts to conceptualize news bias when looking at the representation of Israel during the second uprising in coverage by *The New York Times, The Washington Post* and the *Chicago Tribune*. Their data included headlines, lead paragraphs, photographs, and graphics. Each was examined for various issues such as structure, authorship, size, placement, sourcing, language and tone. Their findings indicated that language was aligned with an Israeli perspective on events. American outlets chose such terms as "terrorists" or "suicide bombers" rather than "martyrs" (the term preferred by the Palestinians), and "disputed lands" or "Israeli neighborhoods" rather than "occupation" and "occupied land." Yet, when looking at the overall factors, the authors concluded that the American press exhibits its own values and preference statements, which follow standards for conventional U.S. journalistic practice that are not always pro-Israeli: for example, the reliance on objectifying devices (such as body counts and maps) and the favoring of high-ranking U.S. or international sources over local voices in the conflict.

In the last five years, however, together with the Second Lebanon War, the Gaza War, and the settlement expansion, international public opinion seems to be more critical toward Israel. Kalb and Saivetz (2007) carried out content analysis of the 2006 Lebanon War in Arab, British, and American news outlets. Their study shows that Arabic news and, to a lesser extent, British news portrayed Israel as the main aggressor—far more than was Hezbollah. In American news coverage, however, there were still channels, such as Fox cable news, that favored Israel. Looking at similar reports in the German newspapers, Oehmer (2010) found that Israel is not only characterized as the main aggressor but also as the main victim of this war. He suggests that while German newspapers since the 1970s have developed a more critical view toward Israel, overall news reporting attempts to maintain a certain balance, perhaps due to historical reasons (see also Hafez, 2002).

Hence, media reports on Israel over the years are highly heated and charged with positive and negative sentiments. Yet, none of the aforementioned studies attempted to develop a coherent framework to analyze and compare the biases of news content among newspapers in different countries. The easy access to online news archives in different languages and the availability of new technologies make this task more manageable.

Sentiment Mining Research

Sentiment text mining refers to the automatic extraction of positive or negative opinions or sentiments toward a certain target. There are various methods and approaches to conduct automatic sentiment mining (Pang & Lee, 2008; Yi, Nasukawa, Bunescu, & Niblack, 2003). In some cases, studies employ Natural Language Processing (NLP) techniques such as part of speech tagging (Jeonghee, Nasukawa, Bunescu, & Niblack, 2003; Turney, 2002), and co-reference resolution (Nicolov, Salvetti, & Ivanova, 2008) to extract positive or negative sentiments in a given text. However, the enormous grammatical and cultural differences between languages make it very complex for researchers to apply NLP techniques to analyze and compare sentiment across languages.

A more straightforward approach to conduct sentiment mining is the frequency analysis technique in which a set of positive and negative keywords is defined. SentiWordNet (Esuli & Sebastiani,

2006) is an example of a publicly available English lexicon that classifies keywords as positive, negative, or neutral. A large-scale project of the Joint Research Centre of the European Commission (Steinberger, 2010) uses word lists with positive and negative orientations to trace sentiments in online news. Similarly, Sumbaly and Sinha (2009) employed sentiment mining in *The New York Times*, based on a list of positive and negative words. Their study indicated that when applied to a sufficiently large corpus, the keyword-based mining technique could provide very good results without the need for NLP techniques.

Yet, most sentiment analyses, including those just mentioned, make use of English lexicons of keywords with positive or negative orientation. Studies engaging with cross-language sentiment analyses very often use bilingual lexicon or machine translation of the English lexicon (Hiroshi, Tetsuya, & Hideo, 2004; Mihalcea, Banea, & Wiebe, 2007; Yao, Wu, Liu, & Zheng, 2006). In a more recent attempt to analyze sentiments of non-English news and blogs, Bautin, Vijayarenu, and Skiena (2008) first employed automatic machine translation of the vernacular text to English, and then used sentiment analysis tools on the English translation. This method was found to be consistent across languages and news sources. However, Bautin et al. also acknowledged that due to cultural differences, sentiment scores varied between translations, and there was a need to introduce a certain normalization technique for a cross-language comparison.

In terms of scope, many sentiment analyses tend to focus on financial news, film critics, and product reviews, due to their relatively richness of sentimental expressions (Généreux, Poibeau, & Koppel, 2008; Hiroshi et al., 2004). Political-oriented studies of this kind often look at political candidates, people, and organizations in the news (Balahur-Dobrescu et al., 2010; Steinberger, 2010; Sumbaly & Sinha, 2009). Rarely, studies employ sentiment analysis to explore the representation of countries in the news (Bautin et al., 2008). Yet, there is an abundance of valuable qualitative and quantitative studies using human coders to study the role of countries in the news. Specifically, we found the previously discussed studies focusing on the representation of Israel to be useful in setting a framework that combines qualitative principles with quantitative techniques to develop a well-defined list of appropriate keywords with negative and positive sentiments toward Israel.

Method

We chose to look at the representation of Israel in the media due to the high news attention given to that country around the world. As our previous studies (Segev, 2010; Segev & Blondheim, 2010) show, this is particularly apparent in European news. We analyzed newspapers in five countries: the UK, France, Germany, Italy, and Switzerland. The newspapers included in our sample were chosen for their popularity, scope, political orientation, and functionality. We chose newspapers that are among the largest in terms of circulation and diffusion in each country. We excluded tabloids, as they did not display a variety of news items on Israeli politics and thus were not suitable for relevant keyword extraction. To reflect the wide range of political views in a country, we attempted to present liberal and conservative sides. Our final sample included 14 newspapers: *Der Spiegel, Die Zeit, Sueddeutsche Zeitung,* and *Die Welt* in Germany; *NZZ*, and *Tagesanzeiger* in Switzerland; *Corriere della Sera, La Repubblica,* and *Il Sole 24 Ore* in Italy; *Le Monde, Le Figaro,* and *Libération* in France; and the *Guardian* and the *Daily Telegraph* in the UK.

Our evaluation of news sites' orientations toward Israel is based on several stages as detailed below. This includes, among others, constructing and organizing a list of positive and negative keywords, validating the list, and applying this list to study and compare the negative and positive opinions in the news sites just cited over a six-month period between January 1, 2010 and June 30, 2010. Extending the outlook to a longer period is not desirable, because the stories and the contexts in which a country is mentioned in the news tend to change over time as does (consequently) the list of keywords. Yet, we attempted to choose keywords that are more broadly related to the Arab-Israeli conflict, rather than those that refer to specific events. During the period of sampling, two specific events directed relatively more news attention toward Israel—the assassination of a Hamas operative in Dubai and the Gaza flotilla raid. To make our list useful for future studies that may exceed this six-month period, we did not choose keywords directly related to these events.

Stage 1. Obtaining Lists of Positive and Negative Keywords

To construct a specific list of positive and negative keywords related to Israel, we extracted from the archives of the 14 news sites all news items that contained the word "Israel" during the six-month period. Although this focus limits the sample, it guarantees a higher level of contextualization. In fact, some sentiment analyses provide keywords with an additional positive or negative weight, based on their distance from the target. When applied to a large enough corpus, this guarantees a higher level of accuracy in automatic sentiment procedures (see, for example, Balahur-Dobrescu et al., 2010; O'Neill, 2009; Steinberger, 2010). We then mined only the text appearing in the body of news items and omitted comments generated by users (talkbacks).

Out of this main corpus, we chose 20 news articles from each news site spread equally along the six-month period. Based on this, we constructed a list of all words mentioned in the same sentence with the word "Israel." This list was given to a coder who is a trained terminologist for German, English, French, and Italian. The coder had to rate the expressions as positive (1) or negative (-1), based on the following guidelines:

- (a) The expression clearly incorporates either a positive or negative sentiment toward Israel (e.g., "occupation" incorporates a negative sentiment, "security interests" a positive sentiment toward Israel).
- (b) There are alternative ways to express the same concept. For example, instead of "military attack," connoting a negative opinion toward Israel, some newspapers would prefer "military operation."
- (c) The expression incorporates a specific context and therefore is most likely to indicate a positive or a negative opinion, even without further examining its role in the sentence and applying semantic analysis (e.g., the phrase "collective punishment" refers to Israeli actions aiming at a broader Palestinian population in response to individual attacks. This phrase therefore clearly incorporates a specific context and a negative criticism of those actions).
- (d) The expression should typically not be a stand-alone adjective or adverb (e.g., "good" vs. "bad"), as they require further semantic analysis to determine their specific orientation. We used mostly nouns, combinations of adjectives and nouns, or adjectives and verbs.

Although we acknowledge that every word is eventually used in a specific context, our ultimate goal was—when limiting the focus to international news about Israel—to develop a list of expressions that already embody within themselves a certain context and a specific sentiment. Where the negative or positive attribute of a keyword was not entirely clear (for example, "war crimes" could relate to both the Israeli army and to Hamas), we more closely examined all news items mentioning this keyword. We coded keywords as positive or negative only if they constantly appeared in an either negative or positive context toward Israel.

Most news reports tend to have a negative undertone in general. We hardly hear of positive initiations by either Israel or Palestine to promote peace. Positive keywords would therefore be those that encompass opinions and views that are in favor of Israel and to justify its actions (such as "self defense," "security") or that criticize the actions of the Palestinians (such as "terrorists," "extreme Islamism"). Finally, since German, French, and Italian use "pre-" or suffixes to indicate inflections, we used the word stem of a term and all its variations to capture as many variants as possible.

Stage 2. Grouping Keywords into Categories

After all relevant keywords were coded as positive or negative toward Israel, we followed a similar procedure common to the grounded theory content analysis. We grouped keywords with similar meanings and created categories related to the Arab-Israel conflict. One example of such a category would be "naming the Palestinian actors," with such associated keywords as "extremists" or "terrorists" that are positive toward Israel and such keywords as "freedom fighters" or "oppressed people" that are negative toward Israel.

The construction of categories stage is very important to understanding the deeper context and meaning of the coding, as well as the specific aspects of bias appearing in different news sources. Thus, we found that in line with previous studies (Deprez & Raeymaeckers, 2010), keywords could be associated either with Israel or with the Palestinians (in both cases, labeling the actors and their actions) or with a different category altogether such as resources in dispute, activists, or media. This classification could be relevant for any conflict and any context of news sentiment analysis.

Stage 3. Finding Opinion Antonyms

We define "opinion antonym" as a term that incorporates an opposite opinion toward the target. For example, the Israeli army was described in some news items as an "occupation army" and in others as "Israeli security forces." While the former incorporates a negative view toward Israel, the latter incorporates a positive view. Note that opinion antonyms do not have to have exactly the opposite meaning. For example, a possible opinion antonym for "occupation" could be "security reasons," which also describes an Israeli action, but does so in a more positive light. Hence, the division of expressions into categories makes it easier to search for appropriate opinion antonyms. This stage ensures that each category and theme related to Israel in the context of the conflict could be described by the media in two opposing ways.

In most cases, we found opinion antonyms in the actual sample of news items. If an expression with the opposite sentiment did not appear in the text, we researched an equivalent. For example, "terroristen" ("terrorists" in German) appeared in the German news when referring to Palestinian fighters and was coded as a positive toward Israel. We added the equivalent negative word "freiheitskämpfer" ("freedom fighters" in German) as an alternative way to term the Palestinian fighters. We did not artificially create opinion antonyms that are rarely used; instead, we searched for terms that are commonly used in news sources (see also stage 5). In this way, the depiction of one term over its opinion antonym could indicate more obviously the existence of biases in news reporting toward the target.

Stage 4. Adding Missing Keywords in All Languages

Acknowledging that our sample of news is limited, we used the terms in one language to fill in missing equivalents in the other languages. For example, the word "sicherheitszaun" ("security fence" in German) appeared in German news, as well as in French news ("barrière de sécurité"), but not in Italian and English news items in our corpus. Here, too, we researched for frequently used positive and negative equivalents in the news of other languages outside of our corpus (in this case, "barriera di sicurezza" and "security fence/barrier," respectively). This process resulted in a complete list of positive and negative keywords in the four languages.

Stage 5. Frequency of Use

It is very possible that a keyword or phrase generally appears more frequently in one language than it does in others. Our final list consisted of 60 positive and 60 negative keywords in each language. However, the negative keywords appeared to be slightly more frequently used in the language in general. If we use this list to examine news bias, we may reach the conclusion that our sample has a negative bias toward Israel simply because the negative keywords that we chose are more frequently used in the language in general. To address this, we considered the frequency of general use of each keyword, based on its number of search results available in Google (see also Janetzko, 2008). Our final list of keywords included a similar number of positive and negative words or phrases, with a similar accumulative number of search results, meaning that the keywords had a similar frequency of general language use.

In total, out of 13,719 keywords that were initially screened, our final list included 437 positive and negative "opinion antonyms" toward Israel, with a similar general frequency of occurrence in the language.

Stage 6. Validating the System

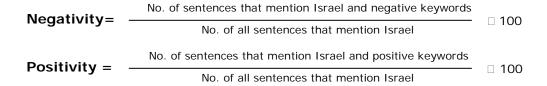
We randomly chose 100 sentences that mentioned the word "Israel" from our sample, with 50 containing positive keywords and the other 50 containing negative keywords from the list. We employed two coders (in addition to the one employed in stages 1–4) to assess whether each sentence embodies negative or positive sentiments toward Israel. Finally, we compared the coders' evaluations between each other and with the system evaluation that automatically counts positive and negative keywords in the sentences. We conducted an inter-coder reliability test with a high satisfactory agreement of 84% (Kappa

= .68, p < .001) between coders and 79% and 86% between each coder and the system (Kappa₁ = .62, p < .001; Kappa₂ = .72, p < .001, respectively).

Additionally, we applied the list of positive and negative keywords to examine the differences in the news about Israel during two other periods—the pullout from Gaza between August and September 2005, and the Gaza War between December 2008 and January 2009. We expected that during the pullout from Gaza, news about Israel would be significantly more positive or less negative than it was during the Gaza War. To carry out this validation process, we chose the 25 most frequently used positive and negative terms in English from our list. We looked at news archives available from the *Guardian* and the *Daily Telegraph* during those opposing periods; indeed, we found significantly more positive keywords about Israel during the disengagement from Gaza than there were during the Gaza War in the *Guardian* (p = .017). Similarly, in the *Daily Telegraph*, there were significantly more negative keywords about Israel during the Gaza War than there were during the Gaza disengagement (p < .001). These findings further confirm the validity of the list and its applicability to different periods.

Stage 7. Rating the News Sites Sentiments Toward Israel

Using the news archives of each news site, we extracted all sentences that mentioned the word "Israel" during the six-month period. We then rated the level of positive and negative sentiments of each news site based on the following formulas:



Definition 1. Negative and Positive Levels

Hypotheses

Following the opinion poll mentioned previously ("Global Views," 2010), it is clear that people around the world generally believe that Israel has a negative rather than positive influence on the world. Obviously, public opinion is very often aligned with news reports, and therefore it is expected that:

H1. Israel will get more negative than positive sentiments by all news sites.

We also expect to find differences in the sentiments toward Israel in different countries. Previous studies (Nouschi, 1994; Suleiman, 1989; Werder & Golan, 2002) showed that French news has become more critical toward Israel in the last two decades and more positive in their views toward the Arab world. On the other hand, the sensitive attitude that Germany holds for Israel since WWII could decrease the level of negativity in their news. It is therefore expected that:

H2. French news sites will be rated as the most negative, German news as the least negative, and British, Italian and Swiss news will figure in the middle.

Finally, we expect that the bias of the news will be aligned with public opinion in each country. In other words, countries with a more critical public toward Israel will produce also more negative news. This is mainly because the media are very often the main channel for people to learn about other countries, perhaps influencing how they shape their perceptions and views. For data on public opinion toward Israel, we use the annual survey conducted by GlobeScan/PIPA ("Global Views," 2010). Therefore:

H3. The positive and negative level of news in each country will be aligned with its public opinion toward Israel.

Results

Table 1 identifies the number of sentences containing positive and negative keywords in each of the five countries. It shows that the number of sentences containing negative keywords is at least twice the number of sentences containing positive keywords in Swiss newspapers and more than 4 times larger in British newspapers. In total, 16.64% of the sentences containing the word "Israel" also contain one or more negative keywords, while only 5.77% contain one or more positive keywords. A z-test indicates that the differences between the portions of negative and positive sentences are statistically significant, and thus the first hypothesis was confirmed: News about Israel is more negative than positive in general and in each of the European countries of our sample in particular.

Country	Negative	Positive	Total	% Neg.	% Pos.	z-score	p-value
UK	1,095	259	5,135	21.32%	5.04%	24.38	<.001
IT	217	94	1,114	19.48%	8.44%	7.52	<.001
DE	1,144	443	6,935	16.50%	6.39%	18.7	<.001
FR	685	255	5,075	13.50%	5.02%	14.74	<.001
СН	295	140	2,389	12.35%	5.86%	7.8	<.001
Total	3,436	1,191	20,648	16.64%	5.77%	35.01	<.001

Table 1. Number of Positive and Negative Sentences by Country.

Note. Table 1 also presents the results of z-tests for the statistical difference between the proportions of negative and positive sentences in the news of each country.

It is interesting to note, however, that when looking at the division of positive and negative sentences within the categories, keywords related to the naming of the Israeli actors are both negative and positive, while keywords related to the Israeli actions are significantly and by far more negative. On the other hand, keywords related to the naming of the Palestinian actors are significantly and by far more positive toward Israel (or negative toward the Palestinians), while keywords related to the Palestinian actions are both positive and negative. Table 2 exhibits this difference, suggesting that the bias of news in Europe is more toward the Israeli actions and the naming of the Palestinian actors.

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Category	Negative	Positive	Total	% Neg.	% Pos.	z-score	p-value
Naming the Israeli actors	40	32	72	55.56%	44.44%		not sig.
Israeli actions	2,674	468	3,142	85.11%	14.89%	55.67	<.001
Naming the Palestinian actors	131	481	612	21.41%	78.59%	20.00	<.001
Palestinian actions	187	272	459	40.74%	59.26%	5.61	<.001

Table 2. Number of Positive and Negative Sentences by Category.

Figure 1 presents the differences between countries in terms of negative and positive news, showing that British news is the most negative toward Israel and among the least positive. Italian news is highly negative, but also the most positive toward Israel. German news exhibits a relatively medium level of negativity and positivity. Finally, French and Swiss news are the least negative, but also among the least positive toward Israel. These findings are not in line with our second hypothesis. Contrary to our expectation, French news is the least critical toward Israel, while German news is positioned in the middle relative to other countries. British news was found to be the most critical toward Israel. A z-test confirms that the differences between the positive and negative news in most of the countries are significant (and are marked in different gradients of gray in Figure 1). Thus, we rejected our second hypothesis.

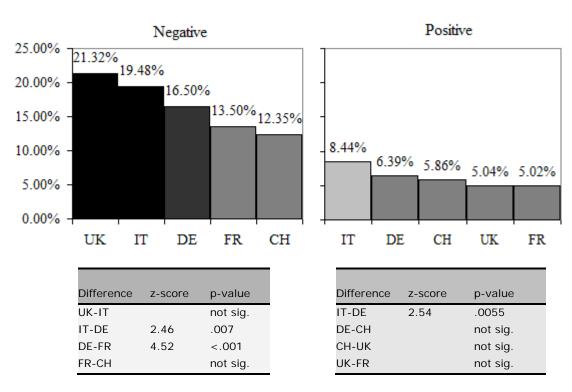


Figure 1. Significant Differences of Negative and Positive Sentences Between Countries.

Note: Significant differences between countries are marked with different gradations of gray and also shown in the tables adjacent to the figure.

Since our first intuition regarding the ranking of opinions toward Israel was not confirmed, it is interesting to further examine the third hypothesis, that is, whether the ranking of negativity and positivity will follow public opinion toward Israel in each country. Table 3 presents the results of the annual survey conducted by GlobeScan/PIPA ("Global Views," 2010) among 1,000 individuals in four countries—UK, France, Germany, and Italy—who were asked whether Israel has a positive or negative influence on the world in general. While the public opinion in Germany is the most critical toward Israel (the most negative and the least positive), the public opinion in Italy is the least critical (the least negative and the most positive). Public opinion in the UK and France maintains a middle ranking. Yet, in all countries, the number of people who believe that Israel has a negative influence is more than twice as high as the number of those who think that Israel has a positive influence.

Table 3. Public and News Opinions Toward Israel.

Negative		Positive	
Public	News	Public	News
Germany (68%)	UK (21.3%)	Italy (26%)	Italy (8.4%)
France (57%)	Italy (19.5%)	France (20%)	Germany (6.4%)
UK (50%)	Germany (16.5%)	UK (17%)	UK (5%)
Italy (46%)	France (13.5%)	Germany (13%)	France (5%)

Table 3 also shows the level of positivity and negativity in the news of each country based on our own findings. Indeed, there is a great similarity between the general difference between highly negative and moderately positive public and news opinions, reflecting the largely critical voice of Europe toward Israel. However, the ranking of countries based on their public opinion is not in line with the ranking of those countries based on their news (no statistical correlation was found). The German public is the most critical and least sympathetic toward Israel, while its news expresses a relatively lower negativity and higher positivity compared to the other countries. The Italian public, on the other hand, is the least critical and most sympathetic, but its news coverage is among the most critical, albeit also the most positive toward Israel. France maintains a middle ranking in terms of public opinion, but in the news it is the least critical and least sympathetic toward Israel. Similarly, the UK displays a middle ranking in terms of public opinion, yet its news is the most critical toward Israel. Hence, the third hypothesis is rejected as well.

Discussion

In this article, we offered a new structured procedure to obtain positive and negative pairs of keywords or phrases—namely, "opinion antonyms"—to analyze news biases toward a defined target. We believe that similar methods could be used to analyze media opinions toward other targets in a state of conflict. This is mainly because the suggested procedure can be adjusted to various contents and contexts following six preliminary stages: (a) identifying positive and negative keywords, (b) grouping them into categories, (c) finding opinion antonyms, (d) adding missing entries in other languages, (e) assuring the balance between positive and negative categories in terms of their general frequency of use, and (f) validating the system via human coders. Since most news is negative in general, we operationalized positive opinions also as negative opinions toward the target's "enemy."

Based on the BBC (2010) international opinion polls, we first hypothesized that European news would display more negative than positive opinions toward Israel. This hypothesis was confirmed when looking at the total number of positive and negative sentences, as well as at the number of positive and negative sentences in each country independently. In contrast with previous studies, our study exhibited the dominance of critical voices toward Israel. We suggest four main reasons to explain why previous studies failed to systematically observe this trend: What content is analyzed, when, by whom, and how?

In terms of what content is analyzed, most previous studies looked at Israeli and American news, which exhibit less critical voices toward Israel than does European news. This is also in line with the BBC's opinion polls showing that the American public is much less critical toward Israel than is the European public, and it confirms findings of other studies looking at the American and European news coverage of Israel (Kalb & Saivetz, 2007; Werder & Golan, 2002).

In terms of when the content is analyzed, some authors suggested that critical voices toward Israel have intensified since the 1970s (Hafez, 2002; Koschwitz, 1984; Oehmer, 2010). Our findings clearly show that the shift from uncritical to critical voices toward Israel is directly related to the changing reality in the Middle East and particularly to the Israeli actions. Hence, apart from journalistic practices, news biases have a strong link to the actual events being covered, as well as to the cultural and historical contexts in which they are viewed. Perhaps it reflects even a broader criticism of Europe toward the bigger and more powerful actors in a conflict, such as the United States in Iraq, Russia in Chechnya, or China in Tibet. These three major powers could be perceived, in the post-WWII context, as colonial aggressors (Lazarus, 2006), particularly when the major power is an established state with a trained army fighting against a smaller and less organized group that is believed to be struggling for independence. It could also be suggested that by publicly criticizing and opposing what can be perceived as colonial actions, the European media reflects a common narrative in which Europe nowadays sees itself as being more ethical and is further detached from its own colonial past. As previously noted, there is also a strong proximity between Israel and the United States that has been indicated by the relatively uncritical and supportive American public opinion ("Global Views," 2010) and by its news about Israel. Hence, the dominant negative voices toward Israel in Europe could also be construed as a form of resistance and criticism toward trends of Americanization and its manifestation in the Middle East.

Perhaps one of the most interesting aspects in the study of bias is the link between who conducts the analysis and its results. While a study conducted by the BBC found its coverage of the Israeli-Palestinian conflict to be relatively neutral (Downey et al., 2006; Dyer, 2007), various studies conducted by independent and public European research institutes found the BBC to exhibit pro-Israeli bias (Barkho, 2008, 2010; Philo & Berry, 2004; Richardson & Barkho, 2009). Other studies of German (Oehmer, 2010) and Flemish news (Deprez & Raeymaeckers, 2010) found them to be relatively neutral toward Israel. For historical reasons, the study of Israel is heavily charged and sensitive in Europe. Both the Holocaust and the colonial history of Europe can serve as a contextual reference for supporting or criticizing Israeli actions. Journalists attempting to cover the Israeli-Palestinian conflict and researchers analyzing their biases might find it difficult to avoid making personal judgments. The risk that researchers will resort to subjective judgments based on their own ideologies, beliefs, and background is much higher when the classification is not carefully structured and controlled. For example, some researchers may regard the

word "occupation" as a neutral fact when referring to the presence of Jewish settlements in the West Bank.

Our main goal in this article is to help researchers detach themselves from prejudgments. The method we tested reduces the subjective prejudgments and further proves to be very instrumental when comparing news bias across languages and time. This leads to the last reason why our findings differ from those of previous studies—the question of how content is analyzed. While previous studies made use of discourse analysis and qualitative methods to examine news bias, our study is perhaps the first to attempt to construct a comprehensive list of more than 400 frequently used keywords and opinion antonyms and then examine their presence in a very large corpus of text. A careful quantitative analysis clearly reveals the largely critical voice of Europe toward Israel, a trend that was not systematically observed before.

Our second hypothesis postulated that France would display the most critical news (see also Nouschi, 1994; Suleiman, 1989; Werder & Golan, 2002), while German news would be the least critical toward Israel, given its historical responsibility (Hafez, 2002). Our findings, however, reject this hypothesis, showing that German news was positioned toward the middle. British news was the most critical toward Israel, while French and Swiss news was the least critical. One explanation, as previously noted, could be that news in the UK, being the most dominant former colonial power, reflects Britain's unease with its own colonial past. Having been one of the main actors in the process of creating a Jewish state in the Middle East might leave Britain with a certain sense of responsibility for the complex situation in Israel/Palestine. Criticizing Israel in the media could be a sign of the intention to detach itself from this responsibility. The loud criticism expressed by the British public following the release of Channel Four's "Empire," a documentary about the British Empire, further supports this claim (Fleming, 2010).

News in Italy was found to be the second most negative toward Israel, but also the most positive (and therefore most negative toward Palestine). Italy's position as the main criticizer of both sides could therefore be a result of a general tendency of the Italian news for political sensationalism (Mancini, 2000), as well as its greater focus on scandals, conflicts, and attacks (Poletti & Brants, 2010). Germany's news and, to a greater extent, that of France and Switzerland displayed a relatively lower level of criticism. This could imply an attempt to maintain more restrained—and perhaps also less sensational—news reporting.

The third hypothesis attempted to further explain the differences between the news positions toward Israel in different countries as a result of the general public opinion in each country. This hypothesis, however, was rejected as well, as there were many discrepancies between the rankings of the countries' public and news opinions. Indeed, similar to the highly critical news, the measure of negative public opinion toward Israel in most European countries was more than twice as large as that of the positive public opinion. Yet, the ranking order of countries based on their news and public opinion largely differed. While German public opinion was the most critical toward Israel, its news opinion displayed a medium level of criticism. In contrast, the public opinion in Britain was positioned in the middle, but its news was the most critical toward Israel. Finally, public opinion in Italy was the least critical toward Israel, although its news was highly negative and highly positive toward Israel.

Certainly, gaps between public and news opinion could be generally a result of the small share of newsreaders in some countries. For example, Italy has a relatively lower share of newsreaders and a slower Internet adoption rate compared to other European countries (Giomi, 2010). The time-lag effect can also explain this gap; in other words, the influence of news today could be reflected in public opinion only a few months later. Yet, when looking specifically at those gaps in each country, it is possible to identify certain relationships and cultural traditions. While Italian news tends to criticize both the Israeli and the Palestinian, the Italian public, which perhaps has gotten used to the sensational tone of its own media, and shares a similar political system and a closer Mediterranean mentality, may display more sympathetic opinions in general. The German public, which since WWII has perhaps become more leftist and more critical toward violence within its border and beyond, may project its criticism toward Israel more strongly than do other countries. However, in the official media outlets, German journalists are more cautious, sensitive, and perhaps even self-censoring of their criticism toward Israel for historical reasons. To this end, taking into account the very negative public opinion in Germany toward Israel, our expectation to find the German news to be more restrained is actually confirmed.

News in the UK, on the other hand, is free from such constraints. The gap between public and news opinion in Britain is reversed: While British public opinion is positioned in the middle, its news is clearly the most critical toward Israel. Taking into account the relative decline of Britain's economic and geopolitical power in the last decades, it could be suggested that the British media attempt to overcompensate for this loss. By criticizing what could be perceived as colonial actions and by supporting oppressed minorities, British news sites might suggest that the country maintains higher ethical and humanitarian values than do others.

These are, of course, our preliminary attempts to explain the gaps between media and public opinion, and as such they require substantiation with deeper longitudinal examinations. Yet, our findings clearly indicate that those gaps between public and news opinion, especially in Germany and the UK—two European opponents in WWII that also played a key role in the establishment of Israel—might have historical and cultural roots as well. In this article, we hope to set some initial guidelines for cross-national sentiment analysis and instigate further research on the different news opinions in different countries, as well as the invisible tension between media and public and the role played by each in filling the gaps.

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