OPINIÃO PÚBLICA

Traditional written media coverage and cybersecurity events: the NSA case

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This article investigates how three media outlets (the digital written editions of CNN, Fox News, and the BBC), perceived as politically partisan, framed the news on Edward Snowden, who disclosed sensitive cybersecurity issues. As the media is an influential actor in domestic and international politics, how the news coverage on Internet security flaws framed the facts under narrative dispute matters. Sentiment analyses were conducted on hundreds of articles published on the free-access written news websites between 2013-2018. The results show positive or negative sentiments expressed in most headlines, while more neutral texts are found in the news cores.
Keywords: cybersecurity; Edward Snowden; public opinion; sentiment analysis; written media

Introduction

In the last decades, information has come to circulate extremely swiftly through international communication channels due to advances (Karpf, 2012) in Information and Communications Technology (TIC). Some types of information, however, can be sensitive, strategic, or simply private: when concerning a matter of the State, certain communications may not be meant for public disclosure; when concerning the individual, such information should not always be promptly accessible to government officials (Yannakogeorgos, 2012). Determining information access can be politically interesting, as the asymmetry between information holders and seekers gives certain groups some comparative advantages (Milina, 2012). The dispute around this asymmetry gained new shapes when the gateways to such sensitive, strategic, and private content became digital (Shapiro and Varian, 1999). According to Puyvelde, Coulthart, and Hossain (2017), cybersecurity has become a concern of the State and a precious foreign policy tool.

Securing data has become a matter related to national sovereignty and security, especially with the rise of the Internet (Yannakogeorgos, 2012). More than just shielding

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sensitive information, data security practices have mounted up to surveillance as a means to foresee threats and identify potential hazards (Brooke, 2016).

Here we study how digital, written editions of traditional news outlets, published between 2013 and 2018, framed the National Security Agency (NSA) / Edward Snowden case, which involved a massive disclosure of data the United States obtained through espionage – private information regarding civil society, important members of parties, political leaders, and even foreign Presidents and Prime Ministers. The leaked data revealed operational details and the reach and extent of the NSA's access to personal information. The media coverage of the "NSA Files" or "Edward Snowden Leaks" brought government practices to public scrutiny. It sparked debates about mass surveillance, digital privacy, and democracy in the Internet era (Lashmar, 2017).

According to Bauman et al. (2014), the NSA and their counterparts' large-scale surveillance practices should be understood not as a mere scandal stirred by the media that would soon pass but as a significant indicator of a transformation that affects how safety-function limits operate. As the controversy reached the international arena, it revealed the Internet's great power and the need for international regulation (Holt and Malčić, 2015). Winseck (2017) observes that despite national regulation attempts, the Internet is largely unrestrained by national boundaries, and its data flow does not depend on sovereignty. According to the author, however, nationally applied surveillance can outstep its jurisdictional boundaries and become an international issue. As an implemented government policy, surveillance turns into a susceptible matter for an administration in power and affects partisanship dynamics.

Given the global importance of the issue and its impact on domestic and foreign relations, the article investigates how three key traditional written media broadcasters (CNN, Fox News, and the BBC), which provide free access to their online written content, have framed the NSA/Snowden case. Specifically, we study how the portals have expressed their position regarding the act of whistleblowing or disclosing classified information about American government surveillance practices through sentiment analysis of textual content. To that end, 1.879 online articles about the NSA scandal mentioning the whistleblower were collected from these portals and used as input for sentiment analysis.

Credible news outlets are regarded as so because they commit to the truthfulness of the information they carry, as journalists "rigidly follow standard operating procedures" (Entman, 2004). Still, when choosing to employ the words and images that frame a piece of news, they increment their role as carriers/transmitters to help compose a narrative that necessarily highlights some aspects of a fact to the detriment of others. It would be reasonable to assume that news outlets with different political affiliations (or perceived by the public as conservative or, conversely, progressive) would adopt diverging frames while making these choices and take part in broader narrative disputes – which include those of government officials, opposition, non-government elites, international actors, and the general public – around a political event such as the Edward Snowden case. Two of the

chosen outlets are perceived as partisan and posited on opposite sides of the US political spectrum. One would expect that each outlet would frame the case by choosing textual elements with a high degree of positive and negative sentiments since the news could harm the party in power or how the US is viewed by other nations. Our analysis, however, documented neutrality of sentiments for most of the texts, while the headlines spread positive and negative sentiments. The results lead us to a discussion on how the media coverage of a complex issue, with domestic and foreign political implications, might influence public opinion and government responses.

Following this introduction, the background and literature review are presented in section 2. The methodology is discussed in section 3 and the results in section 4. Our analysis is presented in section 5. Lastly, the main conclusions can be found in section 6.

Background and Literature

Cybersecurity is defined by the US Department of Defense as "a global domain within the information environment consisting of the interdependent network of information technology infrastructure and personal data, including the Internet, telecommunications networks, computer systems, processors, and embedded controllers" (Crowther, 2017). As Crowther (2017) points out, cybersecurity, which gained an international dimension as a crucial tool in counterterrorism, is a theme of particular interest to the US military. Kshetri (2013) observes that the growth of cyber warfare is successful in reducing costs related to personnel and military infrastructure by cutting weapons expenditures. Brooke (2016) stresses that the greater the democratization of cyberspace, the lower the numbers of violent wars.

However, issues in cybersecurity have gained international and academic importance (Eriksson and Giacomello, 2006). According to Fountain (2001), cybersecurity matters because of its political implications, where the government's leading role is to be a "supreme security provider" (p. 33). A closer look into the NSA case is illustrative of such importance, having raised international debates on Internet governance and cyber security (Bauman et al., 2014).

The NSA case had Edward Snowden as the main articulator disclosing techniques and continuous espionage actions by the US government on their allies and enemies to obtain strategic information regarding internal and external policies. The surveillance had been based on a federal court's classified ruling on Telecommunications Company Verizon and its users' data traffic during President Barack Obama's administration, when the main argument for espionage was homeland security and terrorism prevention (Weinstein, 2014). The case went public in articles by *The Guardian*[4] in 2013, which reported on the

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[4] Greenwald, G. NSA Collecting Phone Records of Millions of Verizon Customers Daily. Available at: <https://www.theguardian.com/world/2013/jun/06/nsa-phone-records-verizon-court-order>. Accessed on: 11 June 2019.

daily collection of recordings of millions of Verizon users' phone calls. Reports followed about PRISM, an NSA program that indiscriminately collected communications (i.e., across cellular operators and various media) from domestic and foreign citizens. Days later, it was reported that GCHQ (Government Communications Headquarters, the United Kingdom's security agency) collaborated with the NSA, collecting personal data in Europe and other countries. Then news spread about the NSA's X-Keyscore program, which collected complete e-mails, including the subject, date, email status, replies, and other resources from different countries.

Trapani (2014) points to a very intense debate about whether to condemn the whistleblower for treason, because of the classified data he shared, or authorize his exile – since most Senators and House legislators understood that to condemn him would also mean internationally condemning the United States in the face of so much exposed data. Teirilä (2015) observes that the NSA case has impacted on US foreign policy and the distribution of power in the international system. Smaller countries suffer most from espionage since they compete for intrastate resources and cannot keep up to date about ongoing events and security threats in real-time.

From a geopolitical perspective, Clement (2014) observes that physically, much of the Internet's infrastructure, despite the recent cable scattering movement around the world (led especially by China), passes through the United States, which can monitor electronic communications around the world. The author also argues that espionage's high costs melded in the twentieth century with the Internet and broadband cables structured from the Cold War, geographically favoring this technology's leading advocate, the United States.

Evaluating the NSA case, Weinstein (2014) argues that the United States' credibility in the international security and cybersecurity agenda were affected since they used to be a leader in cybersecurity issues. The leaks, although beneficial insofar as they exposed a curtailment of freedom, hindered US intelligence capacities and the possibilities of engineering used in cyberspace, which had been effective in reducing the costs of cyber-attacks – already low compared to more traditional activities, such as military intervention – and other online actions by third and unrecognized parties.

The NSA/Snowden case also greatly affected domestic politics and had legal reverberations in the US. According to Fuchs (2015), Congress and the White House looking at the mass data collection to monitor users gradually institutionalized erosion of the United States' Fourth Amendment: the constitutional provision protecting US citizens against arbitrary investigation without judicial process. Moon (2017) argues that outsourcing strategic US government information services supporting a cost reduction is maleficent, as profit maximization logic leads to quality deterioration and arbitrariness in the enforcement of US strategic actions.

West (2014) focuses on the Internet and its power, finding that, after the leak, governance processes of information organizations and multi-stakeholder discussions had

been weakened, resulting in an international loss for the legal agenda and affording extra space for national legislation. Following the NSA scandal in 2013, the agency announced changes to its domestic and foreign policies. Given the foreign policy debates entailed worldwide, the academic research started to address global governance and international cyberspace regulation (Santoro and Borges, 2017). According to Chang and Grabosky (2017), currently, Internet governance is decentralized and split into four types of institutions that attempt to regulate cyberspace: state regulatory institutions, companies and trade organizations such as the so-called tech giants, non-profit organizations such as ICANN or the World Wide Web Consortium (W3C), and "grassroots bodies", made up of individuals and organizations that use unorthodox methods – such as hacking or data leaks – to protect or challenge the laws and regulations governing cyberspace – much like Edward Snowden.

Media Coverage and Decisive Framing

The implications of the case, and much of how society came to understand it, depended on media coverage. The case was portrayed as a scandal, meeting the criteria, as identified by Entman (2012), that make events involving malfeasance or misbehavior by a public agent eligible for scandal-like reporting. The NSA/Snowden case involved classified, strategic, and sensitive activity that was affected by severe misconduct and a strong societal impact with high agenda-setting capabilities and proved highly consequential in terms of inciting changes in policy or social conduct. Di Salvo (2019) proposes a taxonomy of twenty-first century scandals according to Entman's (2012) classification and, including the NSA/Snowden case among the main instances, argues that having the facts come to light through whistleblowing was an important factor in the event's materialization into a scandal with high social costs. The overall impact can, therefore, be related to how the case was framed.

Di Salvo and Negro (2016) explore the multiple editorial and political decisions underlying the framing of this particular case. The analysis reveals that the main focus was the action of the whistleblower instead of – or on top of – any irregular activity on the part of the government agency. Criticism of the scandalous deed is then diverted to the messenger. Depicting the whistleblower as either a hero or traitor can be, however, a metaphor for the outlet's stance in face of an authority's misconduct. According to the authors, "the definition given to Edward Snowden by the press becomes crucial, as a vast majority of the legitimacy given to whistleblowers comes from the definition given by journalists" (2015, p. 4). Producing a legitimate whistleblower can be read as an endorsement of one's grievances against the government. By comparing US and foreign outlets, researchers explore the international dimension of such a complex editorial decision: a critical position from the local press would mean constructing a reality contrary to the government (2015, p. 2), whereas detracting a "mole" (2015, p. 7) would mean

support for the government. Wu, Ma, and Chan (2015) discuss these framing choices by analyzing keywords in three newspaper sources: The Washington Post, The Guardian, and South China Morning Post. The article shows that keywords are essential to understand the sentiment attributed to the main character of the story, in this case, Edward Snowden. The study finds that the word "whistleblower" was used the most. The authors also find that sentiments can also change according to the development of the story, chronologically.

Sentiments and stances – and, consequently, frames – may also vary according to the political context and outlets' respective affiliations. In that sense, a multifaceted media should neither be understood nor analyzed as a monolith. As outlets in US traditional media are numerous and diverse, a complex ecosystem is formed, one in which information circulates and leading actors compete in economic and narrative disputes. Scholarly literature has shown consistently that partisanship and the perception of political bias differentiate US outlets in the eyes of their audiences. These works support our choice of placing the digital written editions of Fox News and CNN as exponents of partisan affiliation on each side of the political spectrum.

Ackerman (2001) analyzes the creation and operation of Fox News as a conservative network and finds an outspoken republican affiliation – thus, arguing that there is confusion, on the part of the broadcaster, between conservatism and being a member of the Republican Party. Gramlich (2020) shows that Republicans are the ones who trust Fox News the most, while Democrats are most suspicious of the outlet. When seeking to understand the role of selective exposure in the US perception of global warming and climate change, Feldman et al. (2012) pick Fox News as a representative of a more conservative perspective, as it has a powerful voice among conservatives and Republicans. Weatherly et al. (2017) demonstrate that the public perceives CNN as more liberal than Fox News, even though the study showed that participants do not consider Fox News conservative in general. Similarly, Gil de Zúñiga, Correa, and Valenzuela (2012) find a negative correlation between individuals who follow Fox News and support immigrants, in addition to a large convergence between Democrats and CNN, and between Republicans and Fox News: "the results showed that conservative Republicans are more likely to watch Fox News and less likely to watch CNN than liberal Democrats who, in turn, are more likely to watch CNN and less likely to watch Fox News" (Gil de Zúñiga, Correa, and Valenzuela, 2012, p. 610). These studies support an intuitive perception and justify Fox News and CNN's choice as representatives of outlets on different – if not opposing – sides of the US political spectrum.

As for the BBC, a public broadcaster in the United Kingdom, Baumann, Gillespie, and Sreberny (2011) understand that the news channel inserts its own values and worldview in its production and in the work of translating the BBC World Service's international news. Still, not being a direct player in US domestic media and politics, the BBC is taken as a ballast for international media coverage, which diffuses the case from an

international and less-partisan perspective concerning US domestic politics – nonetheless with its own biases. For Wahl-Jorgensen et al. (2017), the BBC tries to be as impartial as possible but fails in its mission as it gives space mostly to political and official views in its stories. Conscious of traditional media's political role, the authors make the point that blogs are betterat debating the surveillance issues because traditional journalism and media try to undermine the debate. According to the authors, traditional outlets normalize surveillance, privileging the views shared by political and economic elites, as a way to silence the overall population.

While the present article does not contemplate the effects of framing on audiences' attitudes, we do consider the outlets' choices analyzed here to be fundamental aspects of public opinion formation, especially regarding sensitive issues for which information asymmetry is crucial; scandals and foreign policy issues are instances of such a configuration, and the NSA/Snowden case populates both "sections".

The literature regarding public opinion about foreign policy and international relations elucidates the mechanisms by which framing elements operate in dynamics of particularly acute information asymmetry between the government, elites, and the public. The significant concentration of information and decision-making power on foreign policy issues was once elaborated as the public's disregard or lack of concern towards foreign policy. Public opinion on the matter was once seen as irrelevant or inconsequential (Holsti, 1992); however, Todorov and Mandisodza (2004) tell us that the most recent studies show that public opinion on foreign policy issues is relatively stable, driven by specific events, usually anti-isolationist and strongly multilateral. Also, contemporary research points not only to consistency but also to consequence: despite information asymmetry and, therefore, higher susceptibility to news frames – as explained by Entman's (2004) cascade model and further explored in the emergence of scandal reporting (2012) – public opinion reflects back on policy to some extent. This responsive, upstream movement makes news media and its framing particularly important in cases of information asymmetry: they are the primary points of contact between exclusive or sensitive information and public perception (Soroka, 2003), which is now believed to constrain policy to a certain degree.

Knecht and Weatherford (2006) argue that the public tends to be less attentive to so-called "noncrises" or "situations in which the option of using military force is extremely unlikely and/or the time horizon for both making a decision and implementing the policy is comparatively long" (Knecht and Weatherford, 2006, p. 709). In a context of information asymmetry, the media not only provides information but also is more likely to exhibit those attention-prone issues: "In sum, the important role that the media play informing Americans about international affairs, coupled with valid concerns about unreliability and bias in surveys, suggests that media coverage is an appropriate indicator of public attentiveness" (Knecht and Weatherford, 2006, p. 715).

In fulfilling those roles, the media employ resources to explain, draw attention to, and frame certain events (these resources, along with how information is consumed and

processed, are influential to people's opinions). Dor (2003) explains that news headlines are created to give a well-contextualized summary of what the news is about. But empirically, it is proven that the headlines have served only to increase and optimize the relevance of the article to the public: the more in touch with the audience's belief system, the more effective the headline. Ifantidou (2009) explains that readers interpret a newspaper headline from concepts and contexts created individually and from a cognitive scale and belief system. Persson (2017) observes that the individual's attention capacity is confined to specific contexts, and newspapers must compete for this attention. In this sense, more appealing headlines attract more readers. This logic explains the high level of sentiment found in titles.

Thus, headlines may tend to be less neutral for several reasons, including business efficiency and relevance to its audience, or even to attract readers' attention given their limited capacity to consume information. These limitations can generate information fragmentation as multiple sources of content rapidly emerge. On this matter, some authors understand that with the recent expansion of media outlets and formats, the public's attention is commoditized, and the relevance of information pieces in a nearly infinite communicational mosaic is heavily disputed. As confirmation bias becomes currency, moderate discourse gives way to polarization. Gil de Zúñiga, Correa, and Valenzuela (2012) argue that people find it less demanding to process mediated information when it is outlined and framed in resonance with their attitudes, since "it is more efficient to select the information that matches one's beliefs and predispositions, as convergent pieces of information also facilitate a smoother cognitive assimilation and information processing" (2012, p. 599).

Webster and Ksiazek (2012) show an interrelationship between television and Internet-based media audience segmentation. Fragmentation creates a complementarity between Internet communication tools and TV; the public behaves differently when accessing multi-sourced content. Along with the aforementioned perception of patisanship, and the representativity of large channels, this interrelationship, exemplary of cross-media access, informed our choices in this article: the outlets selected to be the sources were the digital written editions of all-news television broadcasters, obtained via their online platforms.

Data and Methodological strategy

Considering the leak of the NSA's handling of confidential information obtained by the Agency using indiscriminate surveillance (Weinstein, 2014), its great controversy involving the whistleblower Edward Snowden (Trapani, 2014), and its impacts on discussion and policies about Internet governance and cybersecurity domestically and abroad (Bauman et al., 2014; West, 2014; Fuchs, 2015; Santoro and Borges, 2017), we investigate how channels of information dissemination and public opinion influencers

reverberated the information about the case. Since this is a task with a vast scope, we focused on how three paywall-free traditional broadcaster's websites (Fox News, CNN, and the BBC's respective online news portals) revealed information about the case to society. Yet, we reduce the scope to studying whether these channels framed their information to influence public opinion by spreading sentiments, given their different political views (Entman, 2004; Kreps and Debak, 2017).

To investigate how the NSA/Snowden case was framed, articles from these three outlets were examined. Our choice of using written online sources published by traditional media outlets is based, in part, on the fact that their content is pay-wall free, and that they are intimately connected to popular and relevant all-news broadcasting channels – factors that render them likely to be a textual representation of coherent cross-medium views and beliefs, well-structured enough to provide first-hand coverage and reach a broad public. Also, the traditional media has been successful in using the Internet to reach a wider audience (Karpf, 2012). As previously discussed, the aforementioned literature associates CNN and Fox News with significantly different positions on the US political spectrum: CNN is considered a supporter of the Democratic Party, whereas Fox News is considered a defender of the Republican Party (Ackerman, 2001; Feldman et al., 2012; Gil de Zúñiga, Correa, and Valenzuela, 2012; Weatherly et al., 2017) Odd-one-out in this set, the BBC, provides a sample of mainstream international coverage, less tied to domestic biases but still reflecting the deep concerns this news generated among the international community (Baumann, Gillespie, and Sreberny, 2011).

The underlying hypothesis is that the outlets have conveyed sentiment while disseminating information about the case, since the news could bring some benefits or costs for the party in power. The articles published by those three outlets on the case, identified by the "Edward Snowden" and "Snowden" search parameters (or *strings*) were mined from 2013 (when Snowden first leaked classified information) until June 2019. Substantial data were retrieved, allowing narratives to be identified and studied (see Table 1). Articles that pertain to surveillance but not to the case study itself and videos or interactive pages with multimedia content were excluded from the analysis, thus restricting the object to text only and assuring an articulate, well-structured textual sample, homogenous in its elements. Subsequent sentiment analysis sought to identify the opinion and the attitudes expressed in those articles that may have helped frame the case differently.

To retrieve data from the Internet pages, a program was created in the Python language (Millman and Aivazis, 2011) (see Appendix 1). The program is quite general and able to search titles and linked articles across all webpages selected (see data collection routine in Appendix 2).

Sentiment analysis is "the task of finding the opinions of authors about specific entities" (Feldman, 2013, p. 82). This study works with the hypothesis that differently positioned outlets employ sentiment-filled terms and expressions to convey their particular

– and potentially biased – views on a susceptible subject. This sentiment expression, a specific trait of news framing, is important due to its influence on public opinion. Therefore, sentiment expression can indirectly reflect on the governmental and elites responses to the case in question. When it comes to media framing, this resonates with Di Salvo and Negro's (2016) argument that the specific words journalists choose while describing the NSA case are of fundamental importance, as they may deem Edward Snowden's actions reproachable or heroic, depending on a clear definition and differentiation between terms in the semantic fields of "criminal" or "whistleblower".

To avoid imprinting the researchers' own particular biases, this study adopts the document level to perform sentiment analysis since the texts are news articles and political speeches (Feldman, 2013). We used Microsoft Power BI's 'Azure Text Analysis' tool to analyze sentiments in the texts and headlines of news articles published online. The tool recognizes positive and negative phrases, documents, or articles inserted in the database. The Sentiment Analysis API returned scores between 0 and 1 to classify, at the sentence and archive level, the sentiment expressed in the written excerpts. According to this classification, a score of 0,5 indicates a neutral text (without a predominant display of positive or negative sentiments); scores closer to 0 indicate negative sentiment, and scores closer to 1 express positive sentiment.

Epistemologically, there is still a great debate about what is or is not neutrality, both in the linguistic and journalistic senses. Thereby, to control this concept, which is quite variable and still somewhat abstract, this analysis employed a neutrality threshold. Assuming that academic texts, which are subject to strict rules of detachment and empirical analysis, aim at a neutral expression in writing, we ran sentiment analysis on the scientific studies used as bibliographical references for this very article. The results show approximate neutrality of 75%, which is used as a threshold when "neutral" occurs in the case of results greater than this percentage.

Results

Database

Ending up with three datasets, all articles with their headlines, date, link, and text, were synthesized and analyzed from their date of publication and their texts. The strings returned 289 articles from the BBC, 634 from the CNN, and 925 from Fox News for the period of January 2013 to July 2019.

The small number of articles published by the BBC website is noticeable. Most coverage still accessible on the site (about 360 pieces) about Snowden were created in videos, restricting our ability to perform sentiment analysis. The relatively large number of Fox News publications draws attention, surpassing 900 written articles directly or indirectly related to the subject.

The sentiment analysis was performed on a reduced number of articles since Microsoft Power BI's tools and Azure's artificial intelligence is limited to 5.120 characters with spaces. The resulting 246 articles and headlines were analyzed for the BBC, 511 for CNN, and 720 for Fox News (Table 1). The decrease in the case's repercussion in the last years is natural, but after 2016 the coverage by CNN was greater than by Fox News.

Table 1
Number of newspaper articles and headlines according to the portal and the year of publication

| Year	Total		BBC		CNN		Fox News	
2013	691	100%	113	16%	205	30%	373	54%
2014	298	100%	49	16%	100	34%	149	50%
2015	193	100%	23	12%	78	40%	92	48%
2016	139	100%	33	24%	57	41%	49	35%
2017	105	100%	17	16%	49	47%	39	37%
2018	31	100%	8	26%	15	48%	8	26%
2019	20	100%	3	15%	7	35%	10	50%
Total	1477	100%	246	17%	511	35%	720	49%

Source: Authors based on information from CNN, Fox News, and the BBC outlets.

Sentiment Analysis

The Microsoft Azure sentiment analysis tool generates a variable that describes the sentiment in each article/headline ranging from 0,0 to 1,0. Numbers close to 0 indicate negative sentiment (e.g., anger, criticism, and sadness, among others), numbers close to 1 indicate positive sentiment (e.g., joy and cheer), and 0.5 indicates neutrality.

Figures 1–3 show the percentage of neutral, positive, and negative sentiment for each article/headline according to the news channel investigated.
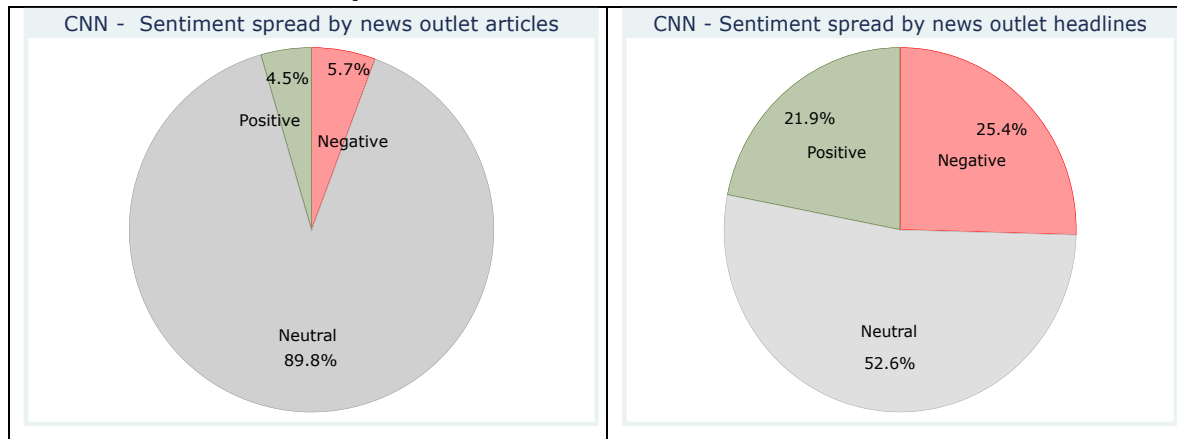
Figure 1
Sentiment analysis of articles and headlines from the BBC: 2013-2019
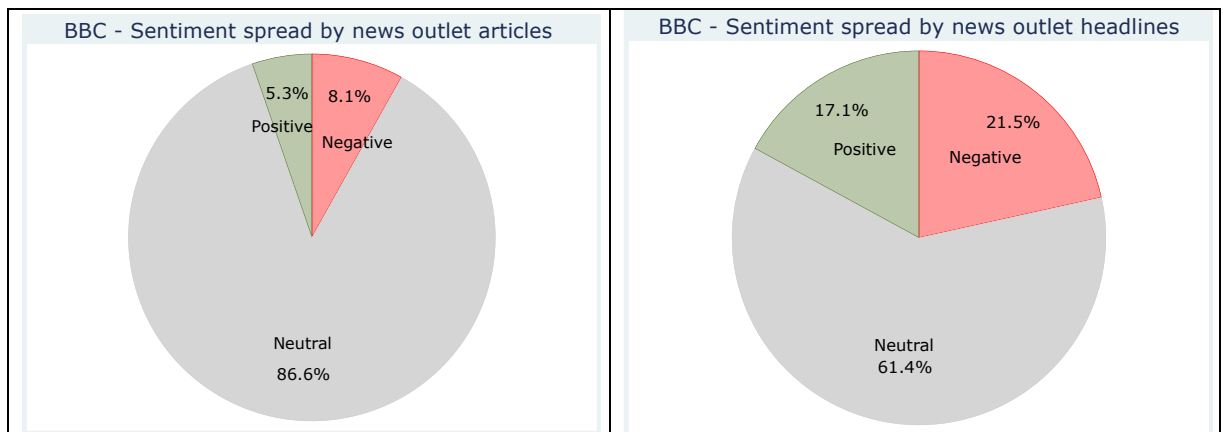
Source: Elaborated by the authors with information from the BBC.

For the BBC, a total of 246 articles and headlines were analyzed (see Figure 1 – left graph), with 86,6% resulting in "neutral" (i.e., they obtained a 0.5 "grade"), while 5,3% resulted positive and 8,1% of the articles had a negative analysis of exposed feelings. The right graph of Figure 1 demonstrates the results for headlines: 61,4% are neutral, while 17,1% are positive and 21,5% negative.
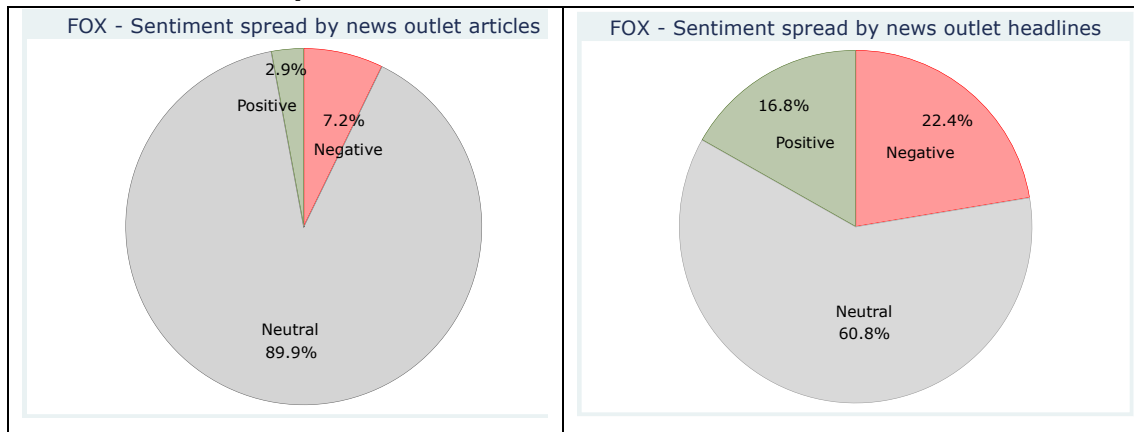
Figure 2
Sentiment analysis of articles and headlines from CNN: 2013-2019

Source: Elaborated by the authors with information from CNN.

Looking at CNN, a total of 511 articles and headlines were analyzed, and in the case of articles, 89,8% were found to be neutral, 4,5% positive, and 5,7% negative. The right graph of Figure 2 shows that 52,6% of the headlines are neutral, 21,9% positive, and 25,4% negative.

Figure 3
Sentiment analysis of articles and headlines from Fox News: 2013-2019

Source: Elaborated by the authors with information from Fox News.

Finally, 720 articles and headlines published by Fox News were analyzed, resulting in the following (Figure 3, left graph): 89,9% of articles were neutral, 2,9% positive, and 7,2% negative. For the headlines, data show 60,8% are neutral, 16,8% positive, and 22,4% negative (Figure 3, right graph).

Overall, there is a preponderance of neutrality in the sentiment analysis for articles. However, the headlines displayed higher levels of positive and negative sentiment than the articles, and for the threshold of 75%, they are considered not neutral.

Discussion

Scheuerman (2014) states that Snowden had thought of bringing NSA practices and the surveillance debate to the public, which could help rethink Internet governance norms and political treatment. Personal surveillance violated the 4th and 5th amendments of the US Constitution, Article 12 in the Universal Declaration of Human Rights. It was in breach of contemporary principles of international law, both public and private. Since the debate could bring governance, policy, and the US federal administration to the spotlight, one would expect to find clear traits of support or rejection in the news, which would be translated into a high level of sentiment in the texts. Results of text mining, however, documented general neutrality of sentiments in texts from CNN (89,8%), Fox News (89,9%), and the BBC (86,5%).

The neutrality found in the articles' cores challenges the general perception and the aforementioned studies that reveal each of the outlets' association with a particular position on the political spectrum. What explains this neutrality and the lack of difference in degree of neutrality between the news outlets?

A first explanation can be the non-neutrality of the headlines. Even this could be understood as the effects of message condensation or the need to draw the reader's attention to the article when accessing a news platform. It may also influence the reader not prone to read the whole article, given the concurrency of the demand for the reader's attention (Webster and Ksiazek, 2012; Persson, 2017). Ultimately, the reader will remember the sentimental headline and form their opinion on these sentiments.

The second explanation can be related to non-textual elements' dependence on the building of a sentiment-loaded frame. Public opinion formation would also rely on selective exposure and information fragmentation throughout multi-media platforms that include images, videos, graphs, and interactive content in digital news.

A third answer may lie in quantity: the number of times a subject is published and its prevalence among other mediatized issues could increase exposure beyond selection and affect the salience of a particular case: outlets would incite a debate by consistently following up on a controversy, increasing its visibility. Thus, the number of times a *bad* news item is broadcasted may reflect the volume of bad news exposure for the affected party. In this sense, during the Obama government, Fox News reported Snowden's case

much more than CNN (respectively, 373 against 205 pieces in 2013, 149 against 100 in 2014, and 92 against 78 in 2015, as shown in Table 1). In fact, the massive coverage of the newspapers and the media (US and international) in general informed readers on the subject. According to the Pew Research group, Obama's approval declined a week later, an overshoot of disapproval (see Figure 4). In 2015, Obama spoke in favor of an "administrative reform" at NSA and subsequently approved and sanctioned the USA Freedom Act, eliminating a foreign policy practice considered negative and demonstrating the theme's sensitivity and the importance of public opinion.

Figure 4
Obama's approval from 2010 to 2014
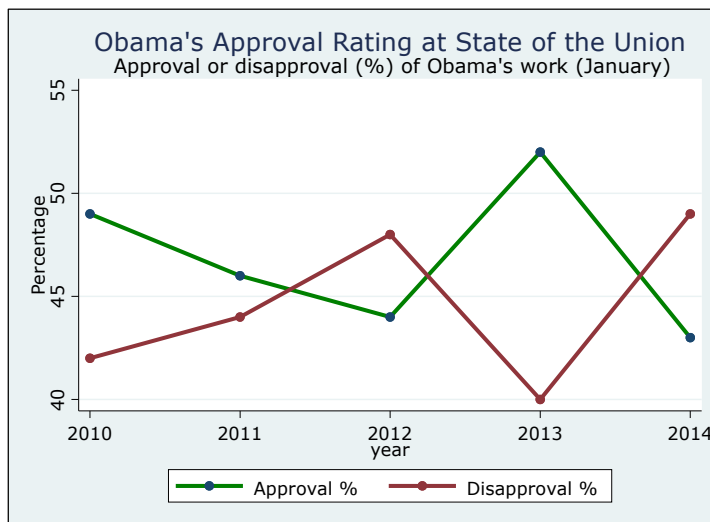
Source: Pew Research Center.

It is interesting to note that after Donald Trump became president of the United States, with suspicion raised by the Internet leaks in the Russian case, the number of articles on the NSA/Snowden case published by CNN became greater than Fox News, as in Table 1.

A fourth answer relying on the texts mined in this study did not include editorials or opinion pieces that could potentially bring more sentiments given their personnel point of view. Aside from any evidence of non-neutrality, future research is necessary to comprehend non-textual elements, focusing on the role that photos, videos, and interactive content in digital news might be playing in forming viewers' opinions.

Overall, the average neutral analysis ranges from 86% to 90% of the three outlets' articles. The fact that the content was neutral can be a sign both of commitment to textual impartiality and of privileging objective information, at least in content intended to be mainly informative. This apparent common-sense coherence is fundamental in the face of

increasingly pervasive disinformation. Despite the general perception of their biases, the outlets, which are large international conglomerates and influence much of the domestic and worldwide population, delivered credible and reliable coverage.

As the NSA case was a major national and international-scale event, the theories of public opinion and foreign policy report that the public cares about the event and tends to influence foreign policy from government approval. With media functioning as the main source of public information and at the same time a "first thermometer" of policy for policymakers, their impartiality becomes essential to contextualize the case realistically and multifacetedly, and at the same time show the obvious negativity regardless of personal feeling put into articles, demonstrating the potential for electoral punishment of leaders. Many other movements influence foreign policymaking, such as other leaders' reactions, economic shocks, and investment flow; however, media and public opinion are doubtless a great factor in democracy.

Also, according to Russell and Waisbord (2017), despite the existence of big blogs and popular media channels, the traditional media still plays a major role in the journalistic sector and sets the standard for other secondary communication channels, as legacy news organizations continue to rely on traditional newspaper norms and practices to produce news.

This could be seen in the immediate reactions to Snowden's destiny under the US institutional framework. According to Motel (2014), US citizens' immediate reaction was pluralistic, and public opinion was still very divided. Consequently, there was no consensus on whether he was a traitor or a loyal servant to the nation, and there was no consensus on whether he should be arrested or not. The conclusion varied by age, with older people expressing less support for Snowden's freedom and their younger peers expressing more support.

It is even possible to draw a correlation between the media, as a two-way channel for information, and NSA administrative reforms, in the case of the scandal studied here. We can correlate the case with Obama's decline in popularity during the early years of his second term. In an article published by *The Hill*, the author writes "polling taken by *The Economist* and YouGov finds a 14-point swing in Obama's approval and disapproval rating among voters aged 18-29 in surveys taken immediately before the NSA revelations and last week" (Sink, 2013). The same newspaper presented the following quote: "Younger voters tend to believe the Internet should be an area of free speech and free communication, and the idea that the government is looking into what you're doing is distasteful – and particularly distasteful if run by a president they voted for" (Sink, 2013).

According to Rainie and Madden (2015), there was a subsequent transformation in users' behavior on the Internet, changing their search methods and use of social networks and e-mail accounts and avoiding specific applications, among other actions. However, the vast majority maintained their normal use because they found it difficult to make and configure such changes. The authors argue that US citizens are more "at ease" with spying

on others and are substantially concerned with espionage directed at them. Therefore, this demonstrates that cybersecurity is prominent in external matters and domestic politics, changing how users relate to online tools.

According to Geiger (2018), a large part of US citizens was torn between approval and disapproval of Edward Snowden's actions, with slightly higher rates of disapproval. Even with reforms to the NSA's data collection and surveillance programs under Barack Obama, there was an increase in disapproval of the Agency and its functions; moreover, its data were deemed less secure in 2016 than in 2011.

The massive coverage of the newspapers and the media in general, US and international media, informed readers on the subject, which in turn reflected poorly on the US President's approval among a portion of the electorate a week later. Soon after, the Pew Research group presented data from a 2014 political survey, which found a decline in Obama's approval and, for the first time, an overshoot of disapproval. In 2015, Obama spoke in favor of "administrative reform" at the NSA and subsequently approved and sanctioned the USA Freedom Act, eliminating a foreign policy practice considered negative and demonstrating the public's sensitivity to the subject and the importance of public opinion.

It should be noted that the results of this study are limited to the effects of traditional written media conveyed by renowned news outlets, whose reputations are affected by the quality of its publications. Thus, the possibility of media influence on public opinion and foreign policy of countries, in general, is not excluded at all, as social network effects and videos have not been investigated in this study and have been reported as biased (Garret, 2019).

Concluding Remarks

The media have a crucial role in disseminating information and influencing public opinion. Countries' foreign and domestic policies in general are essential to maintain democracy in its representative sense, as drawn to compose the modern nation-state of 1789: the establishment of a government that advances the public interest and is aware of due process and the concept of a democratic State. The media's importance rests in informing the public, in the most professional and unbiased manner, of possible threats to their freedom, functioning as a "thermometer" for electoral approval and foreign policy actions.

In this context, the present study has aimed to analyze the sentiments expressed by the written media – on the case of Edward Snowden, who leaked confidential information arguably detrimental to US national security and foreign relations – published online between 2013 and 2019 by CNN, Fox News, and the BBC. The analysis investigated about 1500 articles and news headlines using computational techniques from artificial intelligence (AI). The results indicate the non-neutrality of sentiments in headlines. Still,

the predominant neutrality in the core of the written texts in the news disseminated by these websites shows the consistent implementation of the guidelines above by these news and information outlets.

The results, however, are valid only for the three traditional written media outlets studied. Further investigations are needed to validate any conclusion since we propose here a novel method of investigation. The neutrality at the articles' core may reflect differences in monitoring and controls. While the traditional written media is always under the scrutiny of society, new decentralized social-media technology, for instance, does not yet allow similar monitoring and control.

Analysis of large databases using AI has brought many benefits to researchers in the applied social sciences, such as international relations, as it significantly expands the possibilities of empirical investigations. The present work innovates by using a new methodology in a multidisciplinary study to highlight the role of the written media and its importance for public opinion and foreign policy.

Bibliographical references

ACKERMAN, S. "The most biased name in news: Fox News channel's extraordinary right-wing tilt" (online). *A Special FAIR Report*, 2001. Available at: <https://fair.org/extra/the-most-biased-name-in-news>. Accessed on: 3 Jan. 2019.

BAUMAN, Z., et al. "After snowden: rethinking the impact of surveillance". *International Political Sociology*, vol. 8, nº 2, p. 121-44, 2014.

BAUMANN, G.; GILLESPIE, M.; SREBERNY, A. "Transcultural journalism and the politics of translation: interrogating the BBC World Service". *Journalism*, vol. 12, nº 2, p. 135-42, 2011.

BROOKE, H. "Inside the digital revolution". *Journal of International Affairs*, vol. 70, nº 1, p. 29-53, 2016.

CHANG, L. Y. C.; GRABOSKY, P. The governance of cyberspace. In: DRAHOS, P. (ed.). *Regulatory theory*: foundations and applications. Canberra: ANU Press, p. 533-51, 2017.

CLEMENT, A. "NSA surveillance: exploring the geographies of Internet interception". In: *Proceedings on the iConference2014*, Berlin, p. 4-7, 2014.

CROWTHER, G. A. "The cyber domain". *The cyber defense review*, vol. 2, nº 3, p. 63-78, 2017. Available at: <http://www.jstor.org/stable/26267379>. Accessed on: 21 Jan. 2019.

DI SALVO, P. From Snowden to Cambridge analytica: an overview of whistleblowing cases as scandals. In: TUMBER, H.; WAISBORD, S. (eds.). *The Routledge companion to media and scandal*, Routledge, New York, p. 254-65, 2019.

DI SALVO, P.; NEGRO, G. "Framing Edward Snowden: a comparative analysis of four newspapers in China, United Kingdom, and United States". *Journalism*, vol. 17, nº 7, p. 805-22, 2016.

DOR, D. "On newspaper headlines as relevance optimizers". *Journal of Pragmatics*, vol. 35, nº 5, p. 695-721, 2003.

DURANT, H. "Public opinion, polls, and foreign policy". *The British Journal of Sociology*, vol. 6, nº 2, p. 149-58, 1955.

ENTMAN, R. M. *Projections of power:* framing news, public opinion, and US foreign policy. Chicago: University of Chicago Press, 2004.

_____. *Scandal and Silence.* Media responses to presidential misconduct. Cambridge, UK: Polity Press, 2012.

ERIKSSON, J.; GIACOMELLO, G. "The information revolution, security, and international relations: (ir)relevant theory?". *International Political Science Review*, vol. 27, nº 3, p. 221-44, 2006.

FARRELL, H.; FINNEMORE, M. "The end of hypocrisy: American foreign policy in the age of leaks". *Foreign Affairs*, vol. 92, nº 22, 2013.

FELDMAN, L., et al. "Climate on cable: the nature and impact of global warming coverage on Fox News, CNN, and MSNBC". *The International Journal of Press/Politics*, vol. 17, nº 1, p. 3-31, 2012.

FELDMAN, R. "Techniques and applications for sentiment analysis". *Communications of the ACM*, vol. 56, nº 4, p. 82-89, 2013.

FOUNTAIN, J. *Building the virtual state*: information technology and institutional change. Washington, D.C.: Brookings Institution Press, 2001.

FUCHS, C. "Surveillance and critical theory". *Media and Communication*, vol. 3, nº 2, p. 6-9, 2015.

GARRETT, R. K. "Social media's contribution to political misperceptions in U.S. presidential elections". *PLoS ONE*, vol. 14, n° 3, 2019.

GEIGER, A. W. *How Americans have viewed surveillance and privacy since Snowden leaks* (online). Pew Research Center, 2018. Available at: <https://www.pewresearch.org/fact-tank/2018/06/04/how-americans-have-viewed-government-surveillance-and-privacy-since-snowden-leaks/>. Accessed on: 2 Dec. 2018.

GELLER, T. "In privacy law, it's the US vs. the world". *Communications of the ACM*, vol. 59, nº 2, p. 21-23, 2016.

GIL DE ZÚÑIGA, H.; CORREA, T.; VALENZUELA, S. "Selective exposure to cable news and immigration in the us: the relationship between Fox News, CNN, and attitudes toward Mexican immigrants". *Journal of Broadcasting & Electronic Media*, vol. 56, nº 4, p. 597-615, 2012.

GRAMLICH, J. *5 Facts about Fox News* (online), 2020. Available at: <https://www.pewresearch.org/fact-tank/2020/04/08/five-facts-about-fox-news/>. Accessed on: 23 July 2020.

HINTZ, A.; DENCIK, L.; WAHL-JORGENSEN, K. "Digital citizenship and surveillance: digital citizenship and surveillance society – Introduction". *International Journal of Communication*, vol. 11, nº 9, 2017.

HOLSTI, O. "Public opinion and foreign policy: challenges to the Almond-Lippmann Consensus". *International Studies Quarterly*, vol. 36, p. 439-66, Dec. 1992.

HOLT, J.; MALČIĆ, S. "The privacy ecosystem: regulating digital identity in the United States and European Union". *Journal of Information Policy*, vol. 5, p. 155-78, 2015.

IFANTIDOU, E. "Newspaper headlines and relevance: *ad hoc* concepts in *ad hoc* contexts". *Journal of Pragmatics*, vol. 41, nº 4, p. 699-720, 2009.

KARPF, D. "Social science research methods in Internet time". *Information, Communication & Society*, vol. 15, nº 5, p. 639-61, 2012.

KNECHT, T.; WEATHERFORD, M. S. "Public opinion and foreign policy: the stages of presidential decision making". *International Studies Quarterly*, vol. 50, n° 3, p. 705-27, 2006.

KREPS, S.; DEBAK, D. A. S. "Warring from the virtual to the real: assessing the public's threshold for war over cyber security". *Research & Politics*, vol. 4, nº 2, 2017.

KSHETRI, N. "Cybercrime and cyber-security issues associated with China: some economic and institutional considerations". *Electronic Commerce Research*, vol. 13, nº 1, p. 41-69, 2013.

LASHMAR, P. "No more sources?". *Journalism Practice*, vol. 11, nº 6, p. 665-88, 2017.

MARTIN, S.; RAINIE, L.; MADDEN, M. *Americans' privacy strategies post-snowden*, Pew Research Center, 2015. Available at: <http://www.pewinternet.org/2015/03/16/Americans-Privacy-Strategies-Post-Snowden/>. Accessed on: 23 Sep. 2018.

MILINA, V. "Security in a communications society: opportunities and challenges". *Connections*, vol. 11, n° 2, p. 53-66, 2012.

MILLMAN, K. J.; AIVAZIS, M. "Python for scientists and engineers". *Computing in Science & Engineering*, vol. 13, nº 2, p. 9-12, 2011.

MOON, M. "How America lost its secrets: Edward Snowden, the man and the theft". *Journal of Strategic Security*, vol. 10, p. 143-47, 2017.

MOTEL, S. *NSA coverage wins pulitzer, but Americans divided on leaks* (online). Pew Research Center, 2014. Available at: <https://www.pewresearch.org/fact-tank/2014/04/15/nsa-coverage-wins-pulitzer-but-americans-remain-divided-on-snowden-leaks/>. Accessed on: 23 Sep. 2018.

MUELLER, M. *Networks and states:* the global politics of Internet governance. Cambridge: MIT Press, 2010.

PERSSON, P. "Attention manipulation and information overload". *NBER Working Paper* nº 23823, 2017.

PUYVELDE, D. V.; COULTHART, S.; HOSSAIN, M. S. "Beyond the buzzword: big data and national security decision-making". *International Affairs*, vol. 93, nº 6, p. 1.397-1.416, 2017.

RUSSELL, A.; WAISBORD, S. "Digital citizenship and surveillance: the snowden revelations and the networked Fourth Estate". *International Journal of Communication*, vol. 11, nº 21, 2017.

SANTORO, M.; BORGES, B. "Brazilian foreign policy towards Internet governance". *Revista Brasileira de Política Internacional*, vol. 60, nº 1, p. 1-16, 2017.

SCHEUERMAN, W. E. "Whistleblowing as civil disobedience: the case of Edward Snowden". *Philosophy & Social Criticism*, vol. 40, nº 7, p. 609-28, 2014.

SHAPIRO, C.; VARIAN, H. *Information rules:* a strategic guide. Cambridge: Harvard BusinessPress, 1999.

SINK, J. *NSA surveillance story cuts into Obama's popularity with young voters* (online). *The Hill*, 2013. Available at: <https://thehill.com/homenews/administration/317959-nsa-story-cuts-into-obamas-popularity-with-young-voters>. Accessed on: 21 Jan. 2020.

SOROKA, S. N. "Media, public opinion, and foreign policy". *Harvard International Journal of Press/Politics*, vol. 8, nº 1, p. 27-48, 2003.

Teirilä, O. J. "Small state intelligence dilemmas: struggling between common threat perceptions and national priorities". *International Journal of Intelligence and Counter Intelligence*, vol. 28, nº 2, p. 215-35, 2015.

Todorov, A.; Mandisodza, A. N. "Public opinion on foreign policy: the multilateral public that perceives itself as unilateral". *Public Opinion Quarterly*, vol. 68, nº 3, p. 323-48, 2004.

Trapani, J. "Transnational culture in the Internet age". *Science and Public Policy*, vol. 41, nº 1, p. 134-35, 2014.

Wahl-Jorgensen, K.; Bennett, L.; Taylor, G. "The normalization of surveillance and the invisibility of digital citizenship: media debates after the snowden revelations". *International Journal of Communication*, vol. 11, p. 740-62, 2017.

Wahl-Jorgensen, K., et al. "Rethinking balance and impartiality in journalism? How the BBC attempted and failed to change the paradigm". *Journalism*, vol. 18, nº 7, p. 781-800, 2017.

Weatherly, J. N., et al. "Perceptions of political bias in the headlines of two major news organizations". *Harvard International Journal of Press/Politics*, vol. 12, nº 2, p. 91-104, 2007.

Webster, J. G.; Ksiazek, T. B. "The dynamics of audience fragmentation: public attention in an age of digital media". *Journal of Communication*, vol. 62, nº 1, p. 39-56, 2012.

Weinstein, D. "Snowden and U.S. cyber power". *Georgetown Journal of International Affairs*, vol. 4, nº 11, 2014.

West, S. "Globalizing Internet governance: negotiating cyberspace agreements in the post-snowden era". In: *2014 TPRC Conference Paper*, 2014.

Winseck, D. "The geopolitical economy of the global Internet infrastructure". *Journal of Information Policy*, vol. 7, p. 228-67, 2017.

Wu, A.; Ma, W. W. K.; Chan, W. W. L. Whistleblower or leaker? Examining the portrayal and characterization of Edward Snowden in USA, UK, and HK posts. In: Ma, W. W. K., et al. (eds.). *New Media, Knowledge Practices, and Multiliteracies*, p. 53-66. Singapore: Springer, 2015.

Yannakogeorgos, P. A. "Internet governance and national security". *Strategic Studies Quarterly*, vol. 6, nº 3, p. 102-25, 2012.

Appendixes

Appendix 1 – Programming in Python (Scrapy) for data mining

```
import scrapy
from bbc.items import BbcItems
from scrapy.selector import Selector
from scrapy.selector import HtmlXPathSelector
bbcSpider class (scrapy.Spider):
 name = 'BBC'
 LinkFile = open ( ”C: \ Users \ Prof001 \ Desktop \ IC – Matheus Gregorio \ scraper \ BBC \ spiders \
nks.csv”)
 LinkFileRead LinkFile.read = ()
 LinksList LinkFileRead.split = ( ”\ n”)
 print LinksList
 start_urls = LinksList

 def parse (self, response):
 #SET_SELECTOR = 'ol.search-results.results'
 Selector SEL = (response)
 items = []
 sel.xpath articles = ( 'ol // / // read article / div')
 article for articles in:
 BbcItems item = ()
 #title = article.css ( ”li article.has_image.media-text div h1 :: text”). extract ()
 #link = article.css ( ”li article.has_image.media-text div h1 :: attr (href)”). extract ()
 #date article.css = ( ”read text aside.flags.top article.has_image.media-dl-date dd time.display :: text”).
xtract ()
 # Yield {
 # 'Title': article.css (title) .extract ()
 # 'Link': article.css (link) .extract ()
 # 'Date': article.css (date) .extract ()
 #}
 link = article.xpath ( ”./ h1 / a / @ href”). extract ()
 date = article.xpath ( ”./ footer / dl [1] / dd / time / text ()”). extract ()
 title = article.xpath ( ”./ h1 / a / text ()”). extract ()

 item [ 'date'] = date
 item [ 'link'] = link
 item [ 'title'] = title
 items.append (item)
 return items
```

*Appendix 2 – Routine for obtaining data*

The data (news' articles collected from websites) were obtained implementing the "crawl" method, which allows the user to obtain different results from a website, existing data server, or Internet database. The web crawler used is available in appendix 1.

It uses the search results pages of each portal chosen for the job: <https://www.bbc.co.uk/search?q=Edward+Snowden> for the BBC. <https://edition.cnn.com/search/?size=10&q=Edward%20Snowden> for CNN. <https://www.foxnews.com/search-results/search?q=Edward+Snowden> for Fox News.

A tool coded in Python performed web crawling to obtain data from the news outlets according to the study's criteria. To this end, a complementary platform, namely "Scrapy", which allows the Python language to index Internet sites, was employed. Scrapy is a platform able to scan and index pages in HTML to explore, track, and download the content of the pages. In addition, add-ons, which allow downloading the content of the pages, were used.

The basic flow chart of the activities performed by programs created is in Figure A1:

Figure A1
Flowchart operation of web crawlers built in Python
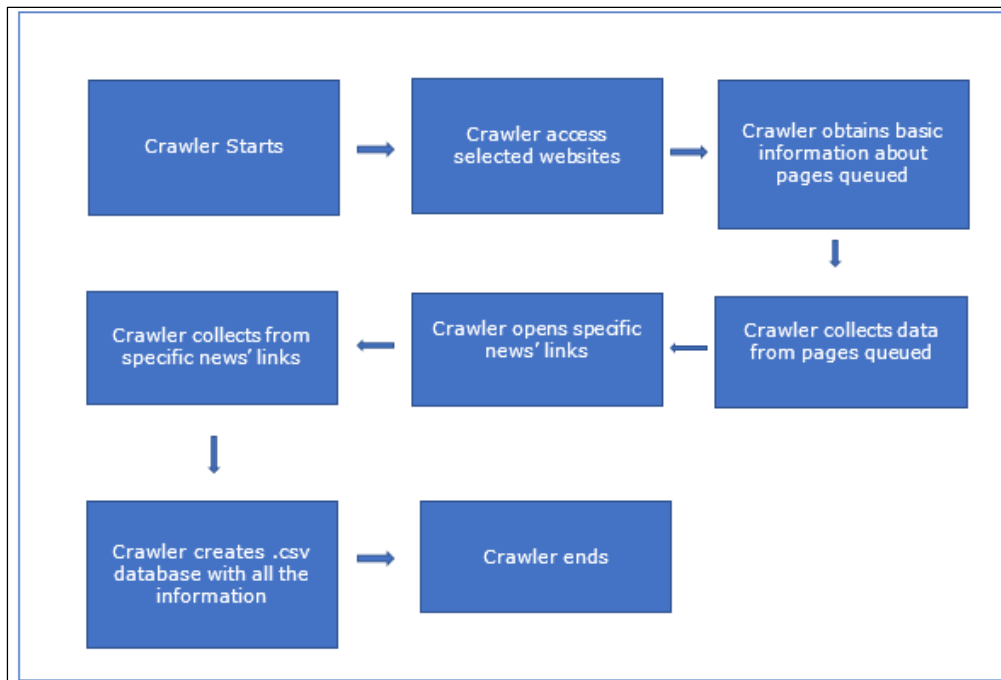
Source: Elaborated by the authors with information from Microsoft Power Bi protocol documentation[5].

The following are the terms used to direct the crawler's data retrieval: Title (referring to the title of the articles written by the selected news outlets, coded as "title" in the Python program); Date (news publication date, written in web crawler as "date"); Link (retrieves the source links from published news); and Article (all written news, coded in the program as "article").

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[5] Available at: Share Power BI dashboards and reports with coworkers and others. Technical documentation, API, and code examples | Microsoft Docs. <https://docs.microsoft.com/en-us/power-bi/service-share-dashboards>. Last accessed on: 4 Jan. 2022.

The sentiment analysis in this paper was performed using Microsoft Power BI in addition to Microsoft Azure, analysis and insight tools that enable the creation of several reports on various forms of social interaction. As stated by the manufacturer:

> Power BI is a collection of software services, apps, and connectors that work together to turn your unrelated sources of data into coherent, visually immersive, and interactive insights. Your data may be an Excel spreadsheet, or a collection of cloud-based and on-premises hybrid data warehouses. Power BI lets you easily connect to your data sources, visualize and discover what's important, and share that with anyone or everyone you want (Maggiesmsft, 2019)[6].

In addition to Microsoft Power BI, the Microsoft Azure platform was used to run applications and services, including Artificial Intelligence (AI), giving our project the opportunity to innovate by performing sentiment analysis using AI from Microsoft processing centers.

Resumo

A cobertura de mídia escrita tradicional e os eventos de cibersegurança: o caso NSA

Este artigo investiga a maneira como três portais de comunicação escrita (CNN, Fox News e BBC), vistos como politicamente partidários, enquadraram as notícias sobre Edward Snowden envolvendo questões sensíveis sobre cibersegurança. Sendo a mídia um ator influente na política nacional e internacional, importa conhecer como a mídia enquadra os fatos sobre informações de falhas de segurança na internet, sob disputa narrativa. Análises de sentimentos foram realizadas em centenas de artigos destes portais de livre acesso entre 2013 e 2018. Os resultados mostram sentimentos disseminados pela maioria das manchetes, enquanto textos mais neutros são encontrados no corpo das notícias.

Palavras-chave: cibersegurança; Edward Snowden; opinião pública; análise de sentimento; mídia escrita

Resumen

La cobertura de la prensa tradicional y los eventos de ciberseguridad: el caso NSA

Este artículo investiga la forma en que tres portales de comunicación escrita (CNN, Fox News y BBC), considerados políticamente partidistas, representaron las noticias sobre el caso de Edward Snowden, que involucra temas sensibles de ciberseguridad. Dado que los medios de comunicación son un actor influyente en la política nacional e internacional, es importante saber cómo los medios enmarcan los hechos sobre la información sobre brechas de seguridad en Internet, bajo disputa narrativa. Se realizaron análisis de sentimiento en cientos de artículos publicados en estos portales de libre acceso entre 2013 y 2018. Los resultados muestran sentimientos difundidos por la mayoría de titulares, mientras que en el cuerpo de la noticia se encuentran textos más neutrales.

Palabras clave: seguridad cibernética; Edward Snowden; opinión pública; análisis de sentimientos; medios escritos

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[6] Maggiesmsft. *What is Power BI?* Power BI, 2019. Available at: <https://docs.microsoft.com/pt-br/power-bi/power-bi-overview>. Accessed on: 21 Apr. 2020.

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Résumé

La couverture de presse traditionnelle et les événements de cybersécurité: le cas de la NSA

Cet article examine la manière dont trois portails de communication écrits (CNN, Fox News et BBC), considérés comme politiquement partisans, ont encadré les actualités d'Edward Snowden concernant des questions sensibles de cybersécurité. Étant donné que les médias sont un acteur influent de la politique nationale et internationale, il est important de savoir comment les médias encadrent les faits sur les informations sur les violations de la sécurité sur Internet, dans le cadre d'un différend narratif. Des analyses de sentiments ont été menées sur des centaines d'articles de ces portails librement accessibles entre 2013 et 2018. Les résultats montrent des sentiments diffusés par la plupart des titres, tandis que des textes plus neutres se retrouvent dans le corps de l'actualité.

Mots-clés: cybersécurité; Edward Snowden; opinion publique; analyse des sentiments; médias écrits