

## Written evidence submitted by M C McGrath

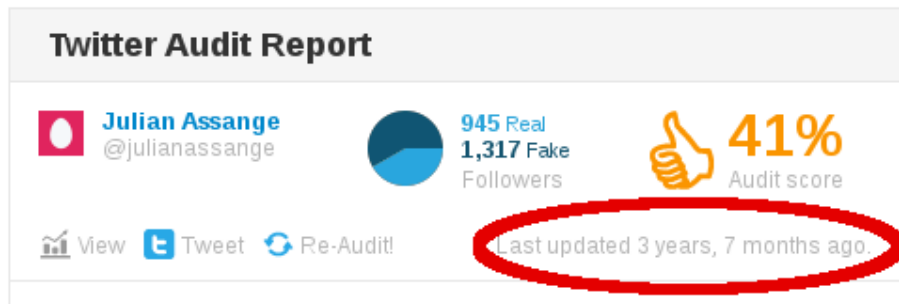
- I am the founding director of Transparency Toolkit, a non-profit organization based in the United States that helps journalists and human rights groups collect, analyze, and understand data online, including social media data.
- One under-discussed issue is that accusations of fake news themselves are often based on exaggerations, inaccurate data, and sloppy analysis. Just like other forms of disinformation, when mistaken allegations of fake news are accepted as fact, they risk misleading the public and can feed a dangerous cycle of self-reinforcing circular reasoning that needlessly worsens political divides.
- On December 19<sup>th</sup>, 2017, David Alandete from *El País*, Francisco de Borja Lasheras from the *European Council on Foreign Relations*, and Mira Milosevich-Juaristi from *Elcano Royal Institute* presented evidence to this Committee about disinformation on social media during the referendum in Catalonia [10].
- I scrutinized their testimony, along with other publications about Russian interference in Catalonia, such as the *El País* story “Russian meddling machine sets sights on Catalonia”[2], the research report “#ElectionWatch: Russia and Referendums in Catalonia?” from *Atlantic Council's Digital Forensic Research Lab* [13], the report “The ‘combination’: an instrument in Russia’s information war in Catalonia” by *Elcano* [1], and articles about the findings of Javier Lesaca's unpublished report [15]. For this case study, I focused on their claims about the role of Julian Assange and WikiLeaks.
- I discovered numerous instances of misinterpretation of data sources, use of inaccurate information, lack of attention to detail, and poor research methodology. As a result of these errors, I would suggest that the conclusions drawn in these reports and presented in the December 19<sup>th</sup> Committee session are exceptionally misleading.
- Specifically, my review identified the following key problems in existing reports:
  - 1. Failure to accurately use digital analytics tools
  - 2. Dubious research methodology
  - 3. One-sided analysis that ignores botnets disseminating anti-Catalan independence messages
  - 4. Exaggeration of the influence of bots and trolls
  - 5. Careless analysis of data from questionable sources
  - 6. Overstating the influence of Assange on *RT* and *Sputnik*

In the following report, I provide a more detailed analysis of each of these issues. If it is helpful, I am also happy to provide the Committee with further assistance, either in writing or in person.

## 1. Failure to Accurately Use Digital Analytics Tools

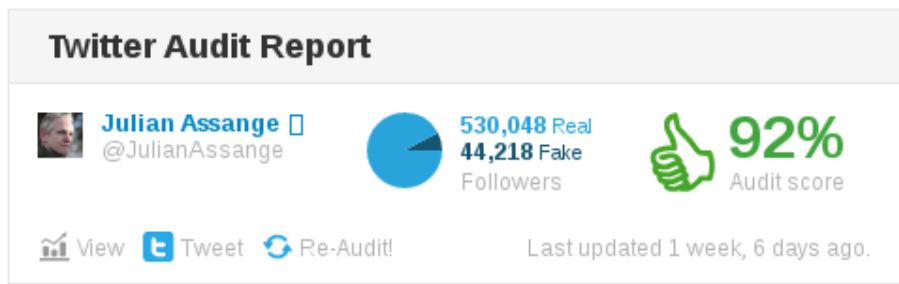
1.1 The *El País* articles about the social media response to the situation in Catalonia are widely cited by *Elcano* and other groups in Spain who praise *El País* journalists' use of “digital analytics” to conduct “detailed analyses of pro-Russian websites and social network profiles” [1]. However, David Alandete, the author of the *El País* stories, made egregious mistakes in his analysis which result in serious misrepresentation of the true state of affairs.

1.2 One illustrative example is his claim that “A detailed analysis of 5,000 of [Julian] Assange’s followers on Twitter provided by TwitterAudit, reveals that 59% are false profiles” [2]. This assertion is entirely inaccurate because the data is from an inactive account with no tweets. Julian Assange only started tweeting on February 14<sup>th</sup>, 2017 [4], but the Twitter Audit data is from February 12<sup>th</sup>, 2014 [3], three years before anything was tweeted from the account. Plus, Twitter Audit results need to be taken with a grain of salt anyways; for reference, Twitter Audit says that 39% of the @10DowningStreet followers are fake [33].



**Figure 1:** Screenshot of Twitter Audit report with date circled. See <http://archive.is/uFGa4> for an archived copy of the page from September 23<sup>rd</sup>, 2017.

1.3 These 2,262 early followers from before Julian Assange started tweeting are not representative of his current 753,000 followers. When an account has no tweets for human users to read yet, there is little reason for real people to follow it, but bots may still automatically follow the inactive account. After reassessing @JulianAssange's followers on November 24<sup>th</sup>, 2017, Twitter Audit now shows that 92% of his followers are real [5].



**Figure 2:** Screenshot of the Twitter Audit report with updated data from November 24<sup>th</sup>, 2017.

1.4 Of course, Twitter Audit still claims that 8% of Assange's followers are bots or otherwise fake, but this is relatively low considering that recent scientific studies estimate that 9% to 15% of all Twitter accounts are bots [6].

1.5 In contrast, Twitter Audit estimates that around 25% of the *El País* followers [7], and 34% of Mariano Rajoy's followers[8] are bots or otherwise fake. A high percentage of fake followers is not unusual, especially amongst public figures. For example, Twitter Audit flags 39% of the @10DowningStreet followers [33], 38% of @jeremycorbyn's followers [34], and 48% of @EmmanuelMacron's followers [35] as potentially fake accounts.

1.6 Twitter Audit only provides a very rough estimate of the percentage of fake followers. It attempts to guess if each follower in a sample is a real person by calculating a quality score “based on number of tweets, date of the last tweet, and ratio of followers to friends” [9]. Twitter Audit admits that “this scoring method is not perfect but it is a good way to tell if someone with lots of followers is likely to have increased their follower count by inorganic, fraudulent, or dishonest means” [9]. This score is only a quick heuristic so Twitter Audit showing a high percentage of fake followers does not necessarily indicate that an account is engaged in malicious activity.

1.7 In my opinion, errors like this demonstrate exceptionally poor attention to detail. At best, *El País* interpreted information in an erroneous and perfunctory manner, demonstrating an inability to conduct accurate analyses using even the most basic digital analytics tools. At worst, they used outdated information and sloppy analysis to mislead their readers.

## 2. Dubious Methodology

2.1 In the December 19<sup>th</sup>, 2017 evidence session of this inquiry, Paul Farrelly thoughtfully noted that in papers like Javier Lesaca's, “unlike a scientific paper, there is no control, no comparator”[10]. I agree with this sentiment and have noticed that lack of rigorous scientific methodology is a widespread problem in this area. In my analysis of articles from *El País* and *Atlantic Council's Digital Forensics Research Lab (DFRLab)*, I found numerous assumptions about how information 'normally' spreads on social media, but no citations to scientific studies to back up those assumptions or attempts at comparative analysis with controls. In some cases, there are indications that Twitter traffic patterns presumed to be suspicious may actually be relatively normal.

2.2 Examples of this dubious methodological approach are the claims from both *El País* and *DFRLab* that a particular tweet by Julian Assange spread suspiciously quickly. On September 15<sup>th</sup>, Assange tweeted “I ask everyone to support Catalonia’s right to self-determination. Spain cannot be permitted to normalize repressive acts to stop the vote” [14]. *El País* stated that:

“Messages on social media usually go viral over the course of several days because the act of sharing a message depends on the decision of followers in several countries. But in the case of the tweet from Assange, as with many of his messages on the social media platform, it received 2,000 retweets in an hour and obtained its maximum reach – 12,000 retweets, in less than a day. The fact that the tweet went viral so quickly is evidence of the intervention of bots, or false social media profiles, programmed simply to automatically echo certain messages” [2].

2.3 While the claim that normally retweet rates should gradually accelerate over time makes intuitive sense in some situations, neither *El País* nor *DFRLab* provides any citations to research on these dynamics. The wide and rapid spread of tweets alone is not necessarily indicative of “the intervention of bots”, especially for Twitter users with many followers. When an account has many followers, more people can see the tweet immediately without anyone else retweeting it, and thus tweets may reach their maximum spread faster. More extensive studies are needed to fully assess how the spread of

tweets varies based on factors such as number of followers, but my analysis does indicate that the spread of this particular tweet is not abnormal relative to other tweets from this account.

2.4 Each of Julian Assange's tweets between August 1<sup>st</sup> and December 12<sup>th</sup>, 2017 was seen by 232,249.63 people on average. The specific tweet that *El País* scrutinized received 761,410 impressions (that is, this particular tweet was shown to other Twitter users 761,410 times). This is a bit higher than normal, but not disproportionately so; Assange's most popular tweets regularly receive 3 or 4 million impressions, 4 to 6 times as many as the tweet that *El País* said must have been amplified by bots. Many of Assange's most widely spread tweets are not related to Catalonia, or other narratives allegedly promoted by Russian bots.

2.5 While the 12,033 retweets that particular tweet about Catalonia received sounds high, only 1.58% of the people who saw the tweet retweeted it. It was more common for people to interact with the tweet in other ways, for example by 'liking' it or viewing Assange's profile page. This pattern of retweets not being the primary form of engagement is consistent across all of Assange's Catalonia-related tweets. On average, fewer than 8 of every 1000 people who saw Assange's tweets about Catalonia retweeted them. Users were more likely to 'like' these same tweets than retweet them, with 1.14 'likes' per every retweet.

2.6 Researchers have found that like-to-tweet ratios under 0.1 are indicative of an account being a bot, while higher like-to-tweet ratios closer to 1 are more often seen with human users [12]. Bots aiming to amplify or spread tweets have little incentive to interact with tweets in ways that do not lead them to be retransmitted to other users through retweets. Based on these statistics, there is clear evidence that Assange's tweets are viewed and interacted with by many people, but these interactions follow patterns that are normal for humans and consistent across Assange's tweets.

2.7 The rate of retweets also appears proportionate to the number of Assange's followers. At the time of the tweet in question, Assange had about 374,000 followers [11]. *DFRLab* pointed out that 66 users retweeted this tweet in the first minute [13], claiming that this behavior was unusual. But this statistic needs to be put into perspective with the number of Assange's followers, who would have seen the tweet immediately if they were logged in. The 66 initial retweeters are less than 0.018% of Assange's total followers. Even if some of these users happened to be bots, there would be so few relative to the number of followers that the impact would be trivial and any possible 'amplification' provided would be inconsequential to the overall reach of Assange's tweets.

### **3. One-Sided Analysis**

3.1 Rather ironically given the claims about bots and trolls promoting messages about independence in Catalonia, there is clear evidence of anti-Catalan independence messages being spread by bots on Twitter. On September 11<sup>th</sup>, @marilena\_madrid tweeted a link to a story that *ABC* published several months previously, which emphasized Puigdemont's lack of legitimacy with EU institutions [21].

3.2 This @marilena\_madrid tweet was retweeted over 15,000 times, but 'liked' only 99 times. Researchers working on Twitter bot detection have discovered that bots often have low likes-to-tweets ratios, often below 0.1 [12]. In contrast to Julian Assange's tweets, which receive 1.14 'likes' per retweet on average, this tweet from @marilena\_madrid has a 'likes' per retweet ratio of only 0.0062.



Figure 3: Tweet from @marilena\_madrid of abc.es story with 15,869 retweets and 99 'likes'.

3.3 Upon further scrutiny, many of the accounts retweeting this message seem to be bots. A large number of the retweeters have random gibberish usernames such as @M9ycMppdvp5AhJb, @hdLrUNkGitXyghQ, and @fQq96ayN3rikTw.

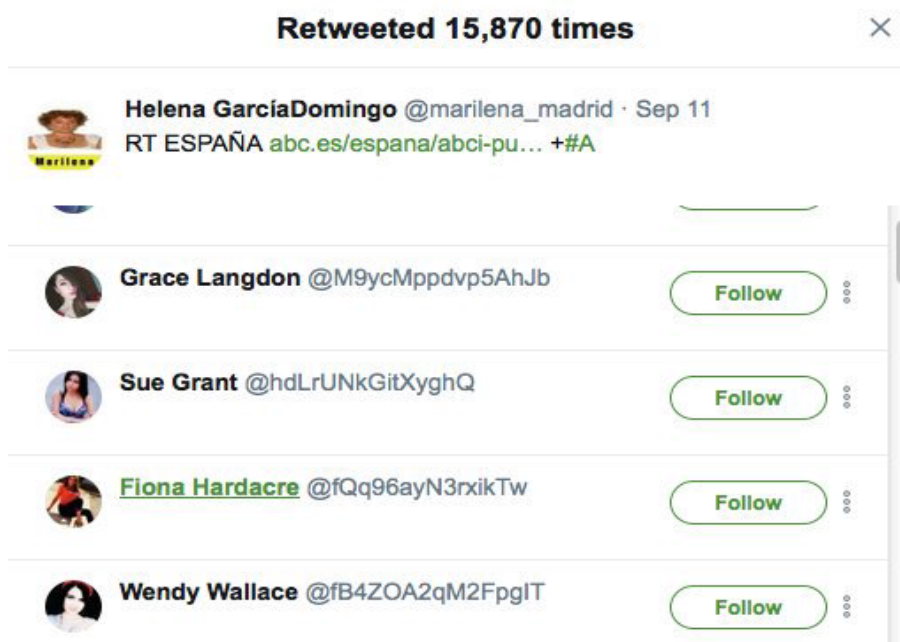


Figure 4: A list of retweeters of @marilena\_madrid's tweet. Note the random-looking usernames.

3.4 Most of the accounts that retweeted @marilena\_madrid, as well as @marilena\_madrid's account itself, now appear to be suspended by Twitter. This is a clear indication that they were found by Twitter to be in violation of the terms of service, which states that accounts that are “just plain fake” (such as propaganda bots) are “against our Twitter Rules” [22].

## Account suspended

This account has been suspended. [Learn more](#) about why Twitter suspends accounts, or [return](#) to your timeline.

**Figure 5:** *Account suspended message shown on one of the profile pages of a bot amplifying anti-Catalan independence messages*

3.5 Unfortunately, there is limited data to study this particular botnet in more detail because Twitter suspended the accounts and it is not possible to view data about suspended accounts except from on pages previously saved on archive websites. If Twitter made this information available, it would be of great value to researchers in this area.

3.6 While it is clear that there were bots spreading articles from *ABC* about Catalonia, a lack of data means that it is not possible for me to assess if this was an individual who had their tweets promoted by bots, a social media strategy by *ABC* to spread their stories with bots and trolls, or a state-sponsored propaganda campaign.

3.7. This case exemplifies the dangers of one-sided analysis. In order to reach a credible assessment of the impact of messages spread by suspected bots and trolls around the Catalan independence crisis, researchers need to scrutinize both pro- and anti-Catalan independence messages.

3.8 I am not alone in observing partiality in the *El País* coverage of the Catalan issue. *Columbia Journalism Review* noted that “suspicion of *El País* has left much of Spain and Spanish readers without a place to read even modestly neutral coverage of the complex Catalan crisis” [36].

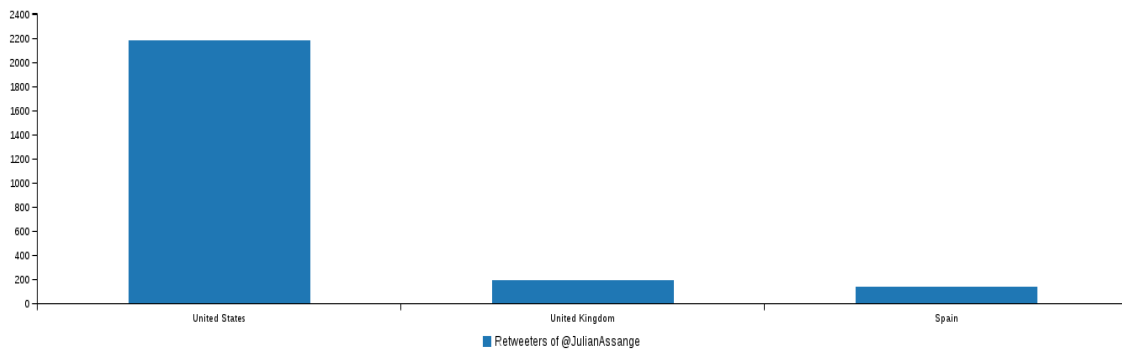
## 4. Exaggeration of Influence of Bots and Trolls

4.1 Reports such as those by *DFRLab*, *Elcano*, and *El País* identify a suspiciously large number of tweets about Catalonia from Russian bots and trolls, in particular retweets of *RT* and *Sputnik*, as well as Julian Assange's personal account [2, 13]. Javier Lesaca's report additionally raises questions about unusual proportions of retweets by Venezuelan accounts, stating that “of those that shared *RT* content about the Catalan crisis, 13.18% are in Venezuela. In the case of *Sputnik*, they account for 10.46%” [15]. The assumption seems to be that these statistics are indicative of attempts to promote Kremlin propaganda, but in reality there seem to be other possible explanations.

4.2 First of all, nothing is unusual about the proportion of accounts located in Russia or Venezuela that retweeted Julian Assange's Catalonia-related tweets. A sample of 23,418 retweets of Assange's tweets discussing Catalonia in September and October 2017 shows that 0.45% of the retweeters seem to be located in Venezuela and 2.1% are in Russia. These percentages are in line with world population ratios and do not show disproportionate interest in the situation in Catalonia from Venezuela or Russia. According to the CIA World Factbook, about 1.92% of the world's population (142,257,519 people)

lives in Russia [16, 17], and 0.42% lives in Venezuela (31,304,016 people) [16, 18]. 0.45% of Assange's retweeters being from Venezuela and 2.1% from Russia are consistent with 0.42% of the people in the world living in Venezuela and 1.92% in Russia.

4.3 In fact, Julian Assange's retweeters appear to be concentrated in the United States. A sample of 7,278 people retweeting Assange (identified via the Twitter Streaming API between November 21st and 24th, 2017) shows that more of Assange's retweeters are based in the United States than any other country.



**Figure 6: Top Locations of @JulianAssange's Retweeters.** I determined the location of users by referencing the timezone setting on each Twitter account, which is listed by specific city or country rather than hour offset, and grouping together all cities in each country.

4.4 While Assange's retweeters are overwhelmingly American, Lesaca's statement that *Sputnik* and *RT* have disproportionately high proportions of retweeters from Venezuela seems to be correct, at least for their media content in Spanish. In my sample of retweet data, 24.23% of the retweets of *Sputnik Mundo*'s stories about Catalonia in September and October 2017 were from users located in Venezuela and 17.5% of retweets of *RT*'s Spanish stories also came from Venezuela.

4.5 These statistics are not necessarily indicative of nefarious attempts to spread Russian propaganda. The retweets of Spanish language editions of other international media publications show similar patterns. 6.36% of the retweets of *BBC Mundo*'s messages about Catalonia during the same time period came from Venezuelan accounts, second only to retweets from the United States. This relatively high proportion of Venezuelan retweeters seen across international media organizations may simply be indicative of general interest in news about Catalonia, which would make sense given that Venezuelan President Nicolas Maduro publicly criticized Spain's response to the situation in Catalonia [19].

## 5. Careless Analysis of Data from Questionable Sources

5.1 On September 18<sup>th</sup>, *AntiWar.com* published an article written by Justin Raimondo comparing the crisis in Catalonia to Tiananmen Square [23]. Assange retweeted this article a few times on September 18<sup>th</sup> and 19<sup>th</sup> [24]. Both *DFRLab* and *El País* claimed that this resulted in the story being subsequently promoted by Russian bots and trolls [2, 13]. *El País* said that they detected this using the Hamilton 68 tool:

“The definitive proof that those who mobilize the army of pro-Russian bots have chosen to focus on the Catalan independence movement can be seen in the fact that Catalonia has begun to appear in the list of regular topics on social media alongside Syria, Russia, Ukraine, Trump, Hillary Clinton and the so-called Islamic State (ISIS). This is reflected by the results of the Hamilton 68 tool developed by the Alliance for Securing Democracy, a project of the German Marshall Fund created in the wake of Russian



meddling in the US elections. This tool permanently monitors 600 pro-Kremlin accounts, both real and false. In 48 hours from Wednesday to Friday last week, one of the most-used hashtags employed by these profiles was #Catalonia, behind others including #HerpesHillary and #Trump. According to this tool, one of the media outlets most widely shared by these pro- Russian profiles was AntiWar, home to the opinion article comparing Barcelona and Tiananmen” [2]

5.2 In recent months, the credibility of Hamilton 68 has been widely challenged. Journalists and researchers have identified numerous inaccurate stories that were based on Hamilton 68 data [25], examined the involvement of biased parties in the development of the tool [26], and questioned the “secret methodology” of Hamilton 68 and the refusal to disclose the list of 600 accounts on which it bases its data [27]. Some additionally note that the narrative about Russian bots and trolls is increasingly used as a tool to discredit a wide variety of legitimate political movements around the world [27].

5.3 In an interview, one of the creators of Hamilton 68 themselves expressed frustration with the inaccurate conclusions drawn by journalists using Hamilton 68 with only a superficial understanding of the data, saying that “It’s somewhat frustrating because sometimes we have people make claims about it or whatever — we’re like, *that’s not what it says, go back and look at it*” [28].

5.4 Like many other journalists, Alandete seems to have come to questionable conclusions based on haphazard analysis of the Hamilton 68 data. *El País* claim that they looked at the trends on the Hamilton 68 dashboard on or around September 22<sup>nd</sup>, and saw *AntiWar.com* and Catalonia trending [2]. However, Hamilton 68 only monitors tweets from the previous 48 hours [29] and the *AntiWar.com* article comparing Barcelona to Tiananmen was published 96 to 120 hours before *El País* looked at the data [23]. Assange's tweets linking to this article were also published 72 to 96 hours before September 22<sup>nd</sup> [24].

5.5 I found archived copies of the data from September 19<sup>th</sup>, within 48 hours of both the publication of the article and Assange's tweets linking to it. On September 19<sup>th</sup>, neither *AntiWar.com* nor Catalonia were trending on Hamilton 68 [30]. Of course, the links to this story could have been spread more slowly by bots and trolls, but the more gradual dissemination seen here appears more uncoordinated and organic. In particular, it is quite different than the previous claim that Russian bots and trolls jump to amplify Assange's tweets and narratives of interest to the Kremlin unusually quickly. It also does not appear that *El País* investigated why *AntiWar.com* was trending on Hamilton 68, and Alandete does not consider that there may be other stories or combinations of stories that caused *AntiWar.com* to trend on the day they checked Hamilton 68.

5.6 In addition to citing Hamilton 68, *El País* identified three supposedly Russia-linked accounts (@Ian56789, @UncleRuthless, and @RichardWellings) which tweeted the link to the article comparing Barcelona to Tiananmen, implying that they were influenced by Assange to spread this content [2]. This argument does not make sense because one of these accounts, @Ian56789, tweeted the *AntiWar.com* article more than 9 hours before Assange tweeted the story for the first time [31]. Furthermore, none of these supposedly Russia-linked accounts actually retweeted Assange's tweets of the article [32]. They may have found the link from another source entirely. Accounts can tweet the same links without any coordination or link between them.

## **6. Overstating the Influence of Assange on RT and Sputnik**

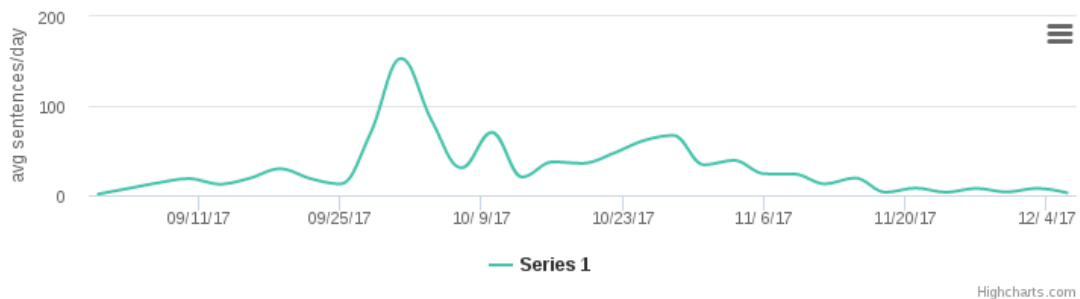


6.1 During his testimony on December 19<sup>th</sup>, David Alandete claimed that “*RT* and *Sputnik* are at the centre of this. Assange and Snowden are a very handy source for them; anything that Assange says is a quote and a headline”[10].

6.2 In fact, *Sputnik* and *RT* only mentioned Assange in a small minority of their stories about Catalonia. I used Media Cloud, a tool created by researchers at MIT and Harvard for tracking the spread of news stories and ideas [20], to analyze the coverage of the situation in Catalonia by *RT* and *Sputnik*. Between September 1<sup>st</sup> and December 8<sup>th</sup>, 2017, Media Cloud shows that there were 596 stories about Catalonia published by *RT* and *Sputnik*. In these stories, 2,998 sentences mention Catalonia specifically.

### Matching Sentences

We have collected 2,998 sentences.

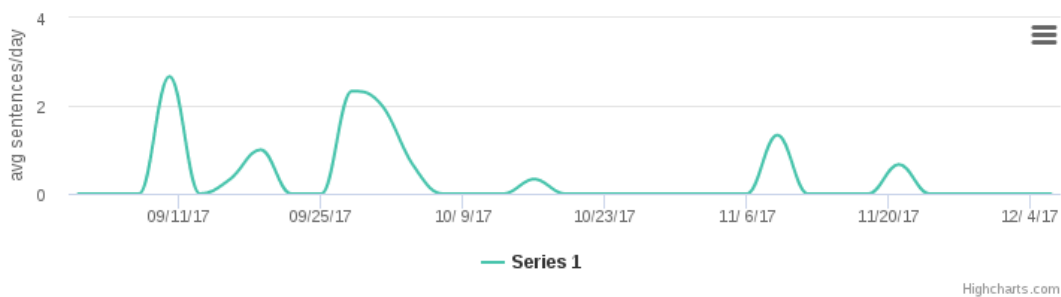


**Figure 7:** Media Cloud's graph of the 2998 sentences mentioning Catalonia in *Sputnik* and *RT* between September 1<sup>st</sup> and December 8<sup>th</sup>, 2017.

6.3 Only 17 of these 596 stories about Catalonia, or 2.85%, also mention Assange. This is a small proportion of *Sputnik* and *RT*'s coverage about Catalonia. Furthermore, analysis of sentences mentioning Assange in stories about Catalonia shows that references were centered around a few isolated events and comments, in contrast to the continuous coverage of the situation in Catalonia illustrated by the graph above of all of *RT* and *Sputnik*'s stories on the topic.

### Matching Sentences

We have collected 34 sentences.



**Figure 8:** Media Cloud's graph of the 34 sentences mentioning Assange in stories about Catalonia in *Sputnik* and *RT* between September 1<sup>st</sup> and December 8<sup>th</sup>, 2017.

6.4 On the other hand, Media Cloud shows that *El País* named Assange in 22 stories about Catalonia during the same time period. Ironically, then, *El País* published more stories that mention Julian Assange than *Sputnik* and *RT* combined.

6.5 A sample of 53,929 retweets of 1,508 Catalonia-related tweets posted in September and October 2017 by *RT* and *Sputnik's* English and Spanish Twitter accounts (@*RT\_com*, @*ActualidadRT*, @*SputnikMundo*, @*SputnikIn*) shows similar rates of mentions of Assange as Media Cloud does. Only 22 of the 1508 tweets (1.46%) mention Assange at all. 2.86% of retweets of tweets from *RT* and *Sputnik* about Catalonia mention Assange. These numbers are in line with the Media Cloud statistics, indicating that 1% to 3% of *RT* and *Sputnik's* coverage of Catalonia references Assange. These statistics confirm that while *RT* and *Sputnik* do reference Assange's comments on Catalonia, this is only a small portion of their coverage of the topic.

## Conclusion and Recommendations

Claims about fake news, especially those published in the media and brought before legislative bodies, need to be more thoroughly scrutinized. It is important to conduct further research to understand how widespread of an issue fake news about fake news is and how these unfounded allegations come about.

Sometimes erroneous allegations of disinformation may be innocent. In assessing fake news, journalists and public officials are often dealing with complex technical topics that they do not understand and may accidentally draw inaccurate conclusions as a result. To ensure that the public is accurately informed, such mistakes need to be prevented, possibly through a combination of training, consultation with experts, and encouragement of more balanced, comparative analyses following scientific principles. Social media companies could assist here by making more information about deleted or suspended accounts available to journalists and researchers.

In some cases, there may be a temptation to use groundless allegations of fake news to support political arguments. Disinformation is not a technique unique to Russia, Venezuela, or any one country or group. It is necessary to explore how claims of fake news can themselves be used as a manipulative tactic and understand the impact this has on society.

*March 2018*

## References

[1] Mira Milosevich-Juaristi, "The 'combination': an instrument in Russia's information war in Catalonia" (*Elcano Royal Institute*, November 11<sup>th</sup> 2017), [http://www.realinstitutoelcano.org/wps/portal/rielcano\\_en/contenido?WCM\\_GLOBAL\\_CONTEXT=/elcano/elcano\\_in/zonas\\_in/ARI92-2017-MilosevichJuaristi-Combination-instrument-Russia-information-war-Catalonia](http://www.realinstitutoelcano.org/wps/portal/rielcano_en/contenido?WCM_GLOBAL_CONTEXT=/elcano/elcano_in/zonas_in/ARI92-2017-MilosevichJuaristi-Combination-instrument-Russia-information-war-Catalonia)

[2] David Alandete, "Russian meddling machine sets sights on Catalonia" (*El País*, September 28<sup>th</sup> 2017), [https://elpais.com/elpais/2017/09/26/inenglish/1506413477\\_994601.html?id\\_externo\\_rsoc=TW\\_CM\\_EN](https://elpais.com/elpais/2017/09/26/inenglish/1506413477_994601.html?id_externo_rsoc=TW_CM_EN)

- [3] Archived Twitter Audit results for @julianassange (archived September 23<sup>rd</sup> 2017, data from February 12<sup>th</sup> 2014), <http://archive.is/uFGa4>
- [4] First tweet from @JulianAssange's account, "Rumors of my death have been greatly exaggerated (in a curious plot)" (*Twitter*, February 14<sup>th</sup> 2017), <https://twitter.com/JulianAssange/status/831534671146188800>
- [5] Current Twitter Audit results for @julianassange (November 24<sup>th</sup> 2017), <https://www.twitteraudit.com/julianassange>
- [6] Onur Varol, Emilio Ferrara, Clayton A. Davis, Filippo Menczer, Alessandro Flammini, "Online Human-Bot Interactions: Detection, Estimation, and Characterization" (*International AAAI Conference on Web and Social Media*, March 9<sup>th</sup> 2017), <https://arxiv.org/pdf/1703.03107.pdf>
- [7] Twitter Audit results for @el\_pais (December 2017), [https://www.twitteraudit.com/el\\_pais](https://www.twitteraudit.com/el_pais)
- [8] Twitter Audit results for @marianorajoy (April 2017), <https://www.twitteraudit.com/marianorajoy>
- [9] Twitter Audit explanation of methodology, <https://www.twitteraudit.com/>
- [10] Digital, Culture, Media and Sport Fake News Committee (December 19<sup>th</sup> 2017 evidence session), <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/digital-culture-media-and-sport-committee/fake-news/oral/74926.pdf>
- [11] Archived @JulianAssange Twitter profile (September 15<sup>th</sup>, 2017), <https://web.archive.org/web/20170915021548/https://twitter.com/JulianAssange>
- [12] Gilani, Zafar & Almeida, Mario & Farahbakhsh, Reza & Wang, Liang & Crowcroft, Jon. "Stweeler: A Framework for Twitter Bot Analysis" (*ACM WWW*, July 2016), <https://www.cl.cam.ac.uk/~lw525/publications/stweeler.pdf>
- [13] Ben Nimmo, "#ElectionWatch: Russia and Referendums in Catalonia?" (*Digital Forensic Research Lab*, September 28<sup>th</sup> 2017), <https://medium.com/DFRLab/electionwatch-russia-and-referendums-in-catalonia-192743efcd76>
- [14] Julian Assange, "I ask everyone to support Catalonia's right to self-determination. Spain cannot be permitted to normalize repressive acts to stop the vote." (*Twitter*, September 15<sup>th</sup> 2017), <https://twitter.com/JulianAssange/status/908733891137146882>
- [15] David Alandete, "Russian network used Venezuelan accounts to deepen Catalan crisis" (*El País*, November 11<sup>th</sup> 2017), [https://elpais.com/elpais/2017/11/11/inenglish/1510395422\\_468026.html](https://elpais.com/elpais/2017/11/11/inenglish/1510395422_468026.html)
- [16] CIA World Factbook, <https://www.cia.gov/library/publications/the-world-factbook/geos/xx.html>
- [17] CIA World Factbook Russia (February 22<sup>nd</sup> 2018), <https://www.cia.gov/library/publications/the-world-factbook/geos/rs.html>

[18] CIA World Factbook Venezuela (March 6<sup>th</sup> 2018), <https://www.cia.gov/library/publications/the-world-factbook/geos/ve.html>

[19] Reuters, “Venezuela blasts Spain's Rajoy over 'repression' in Catalonia” (October 1<sup>st</sup> 2017), <https://www.reuters.com/article/us-spain-politics-catalonia-venezuela/venezuela-blasts-spains-rajoy-over-repression-in-catalonia-idUSKCN1C61S9>

[20] Media Cloud, “What We Do”, <https://mediacloud.org/about/>

[21] Enrique Serbeto and Alex Gubern, “Puigdemont vuelve a toparse con el desprecio de Europa” (*ABC*, January 17<sup>th</sup> 2017), [http://www.abc.es/espana/abci-puigdemont-vuelve-toparse-desprecio-europa-201701170244\\_noticia.html](http://www.abc.es/espana/abci-puigdemont-vuelve-toparse-desprecio-europa-201701170244_noticia.html)

[22] Twitter, “About suspended accounts”, <https://help.twitter.com/en/managing-your-account/suspended-twitter-accounts>

[23] Justin Raimondo, “In Catalonia: A Spanish Tiananmen Square?” (*AntiWar.com*, September 18<sup>th</sup> 2017), <http://original.antiwar.com/justin/2017/09/17/catalonia-spanish-tiananmen-square/>

[24] Julian Assange tweets of *AntiWar.com* article,  
<https://twitter.com/JulianAssange/status/909881976647233538>  
<https://twitter.com/JulianAssange/status/909882751465218048>  
<https://twitter.com/JulianAssange/status/909883606910275584>  
<https://twitter.com/JulianAssange/status/910056476814794752>

[25] Mathew Ingram, “The media today: Are Russian trolls behind everything?” (*Columbia Journalism Review*, February 21<sup>st</sup> 2018), [https://www.cjr.org/the\\_media\\_today/russian-trolls.php](https://www.cjr.org/the_media_today/russian-trolls.php)

[26] Glenn Greenwald, “With New D.C. Policy Group, Dems Continue to Rehabilitate and Unify With Bush-Era Neocons” (*The Intercept*, July 17<sup>th</sup> 2017), <https://theintercept.com/2017/07/17/with-new-d-c-policy-group-dems-continue-to-rehabilitate-and-unify-with-bush-era-neocons/>

[27] Matt Taibbi, “The New Blacklist” (*Rolling Stone*, March 5<sup>th</sup> 2018), <https://www.rollingstone.com/politics/taibbi-russiagate-trump-putin-mueller-and-targeting-dissent-w517486>

[28] Miriam Elder and Charlie Warzel, “Stop Blaming Russian Bots for Everything” (*Buzzfeed*, February 28<sup>th</sup> 2018), <https://www.buzzfeed.com/miriamelder/stop-blaming-russian-bots-for-everything>

[29] J.M. Berger, “The Methodology of the Hamilton 68 Dashboard” (*Alliance for Securing Democracy*, August 7<sup>th</sup> 2017), <http://securingdemocracy.gmfus.org/publications/methodology-hamilton-68-dashboard>

[30] Hamilton 68 archived data (September 19<sup>th</sup> 2017), <https://web.archive.org/web/20170919144235/http://dashboard.securingsdemocracy.org/>

[31] @Ian56789, “In Catalonia: A Spanish Tiananmen Square? Madrid gov and Catalonians are headed for a violent confrontation” (*Twitter*, September 18<sup>th</sup> 2017), <https://twitter.com/Ian56789/status/909736497678573570>

[32] @RichardWellings, “Old habits die hard: Spain using draconian police-state tactics to thwart independence referendum in Catalonia” (*Twitter*, September 19<sup>th</sup> 2017), <https://twitter.com/RichardWellings/status/910253462126043136>

@UncleRuthless, “Catalonia independence referendum: A Spanish Tiananmen Square in the making?” (*Twitter*, September 20<sup>th</sup>, 2017), <https://twitter.com/UncleRuthless/status/910518692256952320>

[33] Twitter Audit results for @10DowningStreet (February 2018), <https://www.twitteraudit.com/10downingstreet>

[34] Twitter Audit results for @jeremycorbyn (February 2018), <https://www.twitteraudit.com/jeremycorbyn>

[35] Twitter Audit results for @EmmanuelMacron (August 2017), <https://www.twitteraudit.com/emmanuelmacron>

[36] Marc Herman, “Spain’s most famous paper stumbles amid Catalonia independence crisis“ (*Columbia Journalism Review*, October 27<sup>th</sup> 2017), [https://www.cjr.org/business\\_of\\_news/catalonia-independence-el-pais-spain.php](https://www.cjr.org/business_of_news/catalonia-independence-el-pais-spain.php)