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Published in:
SAGE Open

DOI:
[10.1177/2158244016659117](https://doi.org/10.1177/2158244016659117)

[Link to publication](#)

Citation for published version (APA):

Holmberg, K., & Hellsten, I. (2016). Twitter Campaigns Around the Fifth IPCC Report: Campaign Spreading, Shared Hashtags, and Separate Communities. *SAGE Open*, 6(3), [2158244016659117].
<https://doi.org/10.1177/2158244016659117>

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Twitter Campaigns Around the Fifth IPCC Report: Campaign Spreading, Shared Hashtags, and Separate Communities

SAGE Open
 July-September 2016: 1–7
 © The Author(s) 2016
 DOI: 10.1177/2158244016659117
 sgo.sagepub.com


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Abstract

In this article, we analyzed campaigning on Twitter around the publication of the fifth Intergovernmental Panel for Climate Change (IPCC) Working Group I report in September, 2013. In particular, we analyzed how participation in a specific campaign and use of hashtags connected to the campaign developed over time and what kind of sub-flows of tweets or spinoff conversations emerged. The campaign hashtag that we observed later appeared in connection to sharing of an article that was not directly connected to the original campaign. Although both the original campaign and this sub-flow of it were connected to the broader context of climate change, the sub-flow formed a separate community of tweeters that did not overlap with tweeters participating in the original campaign. Twitter campaigns have flexible boundaries both around the shared issues and around the communities of tweeters. Our results show that using information spreading approach does not account for the evolution of campaign spreading on Twitter, as other factors, such as celebrity endorsement, may heavily influence the spread of information and content on Twitter. Thus, our results suggest that although different tweeters participated in the two separate campaigns using shared hashtags, hashtags per se do not always indicate shared communities of tweeters nor can they always be considered as indicators of completely shared issues online.

Keywords

communication, information dissemination, network analysis, social media, Twitter

Introduction

Twitter enables rapid communications, information sharing, and organization of activist groups and online campaigns (Jansen, Zhang, Sobel, & Chowdury, 2009). The 140 character long messages, tweets, have proved to be efficient tools not only in organizing demonstrations, most notably linked to the so-called Arab Spring (Castells, 2012; Lotan et al., 2011) and climate activism (e.g., Bennett & Segerberg, 2011) but also in spreading of campaign messages during, for instance, political elections (e.g., Vergeer, Hermans, & Sams, 2011). Online campaign spreading is one type of online activism that draws into institutional change (de Bakker, 2015). In this study, we focus on a specific campaign on Twitter (as identified by the use of a specific hashtag) around the publication of the fifth IPCC (Intergovernmental Panel for Climate Change) Assessment Report of the Working Group 1 in September 2013. The IPCC reports summarize the current state in climate change science and policy, and the reports often gain wide media publicity. In fact, the publication of the fifth IPCC report was hotly debated in Twitter (Pearce, Holmberg, Hellsten, & Nerlich, 2014), making it an

interesting case to investigate Twitter campaigning. One notable part of the Twitter debate around the release of the report was a campaign started and spread by the web movement Avaaz to “put IPCC on the first page” of major newspapers. Avaaz identifies itself as “a global web movement to bring people-powered politics to decision-making” and serves as a virtual space that contributes to community building (Kavada, 2012) and provides a place where anyone can start and run a campaign about a topic of their choice. Avaaz was co-founded by the national advocacy organizations MoveOn, res Publica, and GetUp.org.au, and operates itself as an international web movement, aiming at articulating “global public opinion” (Kavada, 2012). Avaaz operates on the web and in social media by, for example, mobilizing

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petition campaigns as a rapid response to problems and social issues.

Our aim is to investigate the spreading and evolution of a specific online campaign on Twitter that was initiated by Avaaz around the publication of the Assessment Report of the Working Group 1 of the IPCC in September 2013. We analyzed the spread of the Avaaz campaign on Twitter, in particular retweeting and the use of hashtags, and the formation of ad hoc communities around shared hashtags. We observe the daily evolution of the network of the tweeters around the Avaaz campaign and the interaction between different hashtags used to mark the campaigns. The goals of the research can be summarized in three research questions:

Research Question 1: How did the network of tweeters develop over time?

Research Question 2: How did the use of hashtags develop over time?

Research Question 3: To what extent did the use of particular hashtags contribute to an issue formation in Twitter?

Our results contribute to the ongoing discussion about the use and representativeness of a hashtag (Bruns & Stieglitz, 2014). Our results also add to the emerging research into Twitter as a tool for campaign spreading and to the discussion of Twitter as a defraction chamber (Rieder, 2012), instead of a medium mainly for information dissemination. In the next section, the results from our analyses are presented, followed by a discussion of the results and their meaning for Twitter research in general and Twitter campaigns in particular.

Twitter as a Socio-Technological Space

Twitter facilitates specific types of affordances that both enable and restrict its social uses at the same time (Foot & Schneider, 2006). These affordances include the possibility to forward tweets by retweeting them, the use of hashtags to indicate shared interests and thematic connections in the content, the possibility to disseminate URLs, as well as the network structure constructed of the people one has chosen to follow and those that follow a specific user. Twitter's technical affordances and the built-in network structure of users make it a special type of "space" for campaigning that affects the spread of the message.

Rieder (2012) had approached Twitter as a sphere and a network in which refraction, that is, commenting on the tweets and connecting them to different issues, plays a crucial role for the spreading of the messages. Twitter can thus reflect the level of attention specific issues have received online (Jungherr, Schoen, Posegga, & Jürgens, 2016). However, Lotan et al. (2011) identified the use of hashtags and retweeting as the main technical functions that allowed for a rapid spread of information on Twitter during the

Tunisian and Egyptian revolutions that began in 2010 and 2011. In general, hashtags can be used to create ad hoc publics around specific topics of interest (Bruns & Burgess, 2011), but tweets can also contain several co-occurring hashtags, in which case the tweets are marked as part of several discussions or they connect to several different topics and meanings at the same time. Yuce, Agarwal, Wigand, Lim, and Robinson (2014) studied the interaction between two hashtags in a Twitter campaign on driving cars in Saudi Arabia and discovered that the two investigated hashtags were used for different purposes; the Arabic one was used to discuss local issues, while the English one was used to spread information about international women's organization supporting women's right to drive a car. This shows that the selection of hashtags can be strategic, as well as indicative of the context and purpose of the tweet. Hashtags can also be hijacked, for instance, for spamming purposes (Chu, Widjaja, & Wang, 2012), as well as for political campaigning (Hadgu, Garimella, & Weber, 2013), in which case the hijacked hashtags are used strategically to "piggyback" on the popularity of the hashtag and by doing so, gain increased visibility.

Marres (2015) argued for an affirmative approach that incorporates the media-specific affordances into the analysis of controversies online. In the case of Twitter, co-occurrence of hashtags may indicate the dynamics of underlying issues instead of the dynamics of Twitter as a medium. In general, Boynton et al. (2014) found that political tweets include more retweets, URLs, and hashtags than other type of tweets. Furthermore, it has been shown that URLs, hashtags, and the number of followers and followees are connected to the retweetability of tweets, as about 21% of the original tweets studied by Suh, Hong, Pirolli, and Chi (2010) contained at least one URL and about 10% contained at least one hashtag, in contrast to about 28% and 21% of the retweets, respectively. In an investigation of 1.2 billion random tweets, Sysomos (2010) reported that 6% of the tweets were retweets and that more than 90% of the retweets occur within the first hour after the original tweet was published, a result that is also supported by Kwak, Lee, Park, and Moon (2010). This suggests that the initial stage of a Twitter campaign is crucial and can determine whether the campaign will go viral or not. This may also suggest that for an online campaign to go viral, the network structure that makes information dissemination possible already has to be ready and willing to participate in forwarding the information to their personal networks.

Twitter as a campaign tool has been studied in the context of election campaigns online (Boynton et al., 2014; Vergeer et al., 2011) and activist campaigns (Vromen & Coleman, 2013; Yuce et al., 2014), such as the analysis of Twitter use during the Earth Hour 2009 campaign (Cheong & Lee, 2010) that revealed a correlation between real world energy consumption and Twitter activity during the campaign. Some studies have focused on campaign organizations' use of

social media (Kavada, 2012). A recent example of a successful Twitter campaign (at least when measured by gained visibility and awareness) is the Kony2012 campaign, organized by an organization called Invisible Children in 2012. The goal of the Kony2012 campaign was to increase awareness of the Ugandan war lord Joseph Kony and to “raise support for his arrest and set a precedent for international justice.” The center of the campaign was a 30-min video on YouTube and Vimeo, which in 6 days was the fastest video so far to reach 100 million views. The attention and awareness of the video was raised mainly using Twitter. Lotan (2012) claimed that there were two reasons for the campaign to go viral in such a short period of time: (a) pre-existing networks that were mobilized to spread the campaign message in the beginning were crucial in the initial stage of the campaign and (b) “forcing” celebrity accounts to participate increased the visibility substantially. On the campaign website, visitors could send a message with just two clicks to a celebrity account of their choice to convince them to take action and spread the campaign information to their millions of followers. Lotan (2012) called this “attention philanthropy tactics” and continued by stating that these tactics gave the campaign substantial volume when the celebrity accounts started sharing the campaign tweets to their followers.

Who the tweet comes from appears to have an impact on how the messages are spreading. Previous research on the composition of tweeters’ networks has indicated a highly skewed distribution of the amount of tweets sent as well as the amount of followers one has. Cha, Benevenuto, Haddadi, and Gummadi (2012) investigated how information spreads on Twitter and what kind of users contribute in the information sharing. They discovered that mass media sources (such as BBC and *Guardian*) play a vital role in spreading news of major topics to large audiences, whereas evangelists (such as opinion leaders, politicians, and celebrities) share a wider range of topics to audiences that are further away from the core of the network. Majority of the users, however, are passive and do not participate in spreading information though they constitute the largest part of the Twitter publics (98%). Morales, Borondo, Losada, and Benito (2014) came to similar conclusions and argued that a great deal of the tweets about a specific subject comes from only a small group of very active tweeters. Bruns and Stieglitz (2014) discovered that only 10% of tweeters are highly active, whereas the rest are mainly passive observers. Although mass media sources play a vital role in reaching the most audiences on major topics, evangelists as opinion leaders play an important role in reaching audiences that are further away from each other.

Data and Method

Tweets containing the acronym “IPCC” were collected through Twitter’s Search Application Programming Interface (API) (part of Twitter’s REST API) with Webometric Analyst 2.0¹ between September 17 and October 8, 2013. Twitter’s

Search API is rate limited, meaning that it allows only a specific number of queries to be submitted within a specific time frame.² For popular topics on Twitter, this means that only a fraction of the total number of tweets that meet the query parameters can be collected, as the rate limit would regularly halt the data collection. The time stamps of the collected tweets did not reveal any clear breaks in the data collection; thus, we can assume that rate limiting did not effect the data collection, and most of the relevant tweets had been collected.

Prior to the release of the Assessment Report of the Working Group 1 of the IPCC in September 2014, Avaaz started a campaign that aimed at putting pressure on selected mainstream news organizations to “drown out the phony propaganda and make sure the scientists’ global wakeup call is on the front pages,” as was stated on the campaign web page. Visitors to the web page were able to just by two clicks send a prewritten tweet to an editor of one of the major newspapers targeted by the campaign (CNN, *The New York Times*, *Reuters*, *Washington Post*, and *Wall Street Journal* and the specific journalists, Artley, Abramson, Adler, Baron, and Baker, respectively). An example of such a prewritten tweet was the following:

@ . . . @nytimes Put the #IPCC report as front page news!
Climate change is real and urgent #debateisover http://www.avaaz.org/en/ipcc_media_hub_us/

The campaign tweets were identified from the complete data set partly from content (e.g., “climate change is real and urgent”), specific hashtags (e.g., #debateisover, #thedebateisover, #telltheclimatetruth), or from an indication that they were sent “via @Avaaz.” In many tweets, various combinations of these coincided in the same tweets. A total of 11,838 tweets connected to the campaign were identified and extracted for closer analysis. Daily network visualizations of the tweeter communities (usernames of the senders of the tweets and usernames mentioned in the tweets) were created with Gephi, using the Force Atlas layout algorithm, to trace the spread of the tweets connected to the campaign in the context of providing a virtual space for campaigning and information spreading and to analyze how the interest and number of tweets about the campaign grew and developed. In the visualizations, the focus was on the usernames targeted by the campaign, and these are also highlighted in the figures by using labels that are proportional in size to the volume of their mentions.

Notably, about 11% of the tweets were not directly connected to the campaign initiated by Avaaz, although they were connected to the wider climate change debate. These tweets shared the hashtag or hashtags with the initial campaign and were connected to the IPCC, but they were linked to an article written by Avaaz and published on the news sharing site BuzzFeed. As these tweets were not directly connected to the analyzed campaign, they were considered as a

sub-flow of tweets or a spinoff communication from the original campaign. An example tweet from this sub-flow was,

@BuzzFeed 7 Reasons To Hug A Climate Scientist: <http://bit.ly/1fPhF5q> via @Avaaz #debateisover #IPCC

By comparing these two subjects, the campaign and the sub-flow of it, and the related hashtags, we aim to present a specific case of how a campaign spreads on Twitter, to discuss the findings in the broader context of other similar online campaigns, and to contribute to understanding of the anatomy of Twitter as a social campaign space.

Results

We focused on the Avaaz initiated campaign around the IPCC report, encouraging people to “hug a climate scientist” and targeting major news media. To investigate the developments in tweeting and the communities of tweeters engaged in the communication, we drew daily network maps of the tweeter communities of the 4 peaking days in the data set. These peak days, as measured by the volume of tweets, included and followed immediately the day of the release of the IPCC Working Group 1 report (September 26–29, 2013). On September 26, 2013, the day of the release of the report, the monitored campaign was mentioned in 3,014 tweets, clearly showing a structure of Twitter usernames targeting the five newspapers and the five journalists connected to the newspapers (Figure 1) with a smaller cluster of tweeters connected to Australian newspapers.

Interestingly, most of the tweeters did not send the campaign tweet to all the listed editors and newspapers, though they could have done it with just a few clicks. The network map is divided between those that targeted CNN, Reuters, New York Times, and Wall Street Journal, and their editors (left in Figure 1), and those that targeted *The Times*, Mail Online, and *Telegraph*, and their respective editors. This reflects a geographic division between the United States and the United Kingdom and of the national interests of those tweeting about the campaign. The Economist and @BarberLionel are the spiders in the web, connecting the two halves of the network. Notably, for a while there was an error on the campaign website as it targeted a username @BarberLionel instead of the editor of *The Financial Times*, @LionelBarber.

Although the initial campaign still attracted the main focus in Twitter activity, other related topics emerge as smaller separate clusters of tweeters in the graph of September 27, 2013 (Figure 2). These emerging clusters represent sub-flows of tweets to the original campaign, still using the original hashtag, but sharing a different, albeit connected message. One of these sub-flows involved an original tweet sent by the UNICEF UK, whereas another urged people to “hug a climate scientist.”

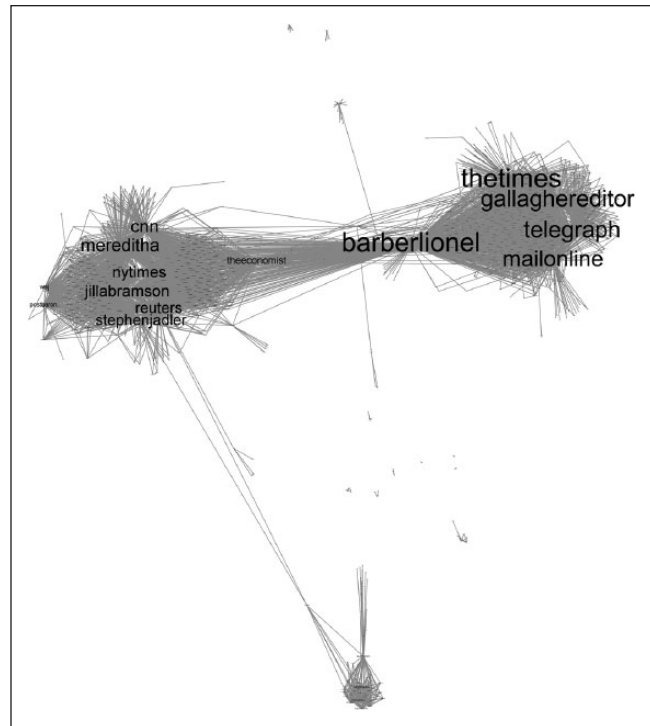


Figure 1. Tweeting on September 26, 2013 (altogether 3,014 tweets).

Note. Size of labels corresponds to how often the username was mentioned in a tweet.

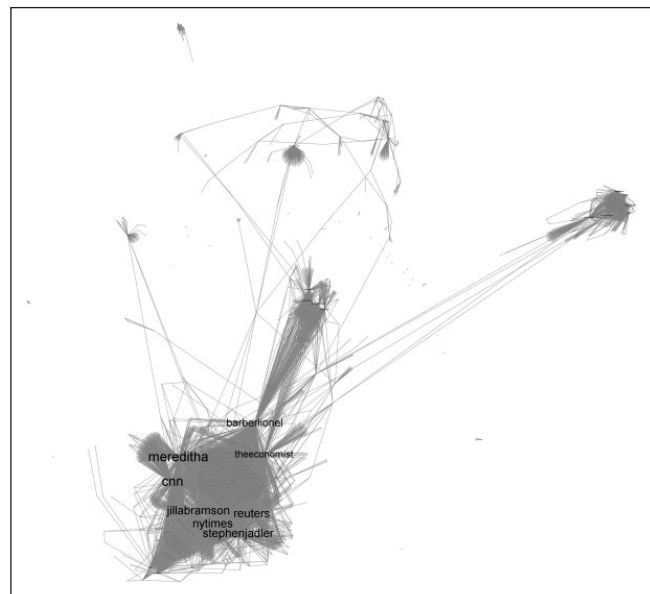


Figure 2. Tweeting on September 27, 2013 (altogether 5,835 tweets).

Note. Size of labels corresponds to how often the username was mentioned in a tweet.

Interestingly, the U.K. newspapers and their editors were not the main target anymore, whereas the U.S.-based

newspapers and their editors still received substantial amounts of tweets.

On September 28, 2013, the sub-flow around the tweet urging people to “hug a scientist” became widely retweeted after it was picked up by Leonardo DiCaprio who retweeted the original tweet by Avaaz with the added comment “Do it. Hug a scientist” (Figure 3):

Do it. Hug a scientist. @BuzzFeed 7 Reasons To Hug A Climate Scientist: <http://bit.ly/1fPhF5q> via @Avaaz #debateisover #IPCC

The U.S.-based newspapers and the editors still received some tweets, but the celebrity involvement had overtaken the original campaign in a fast pace on Twitter. This demonstrated how a single tweet, from an evangelist (Cha et al., 2012), may initiate the start of a campaign on its own.

The Avaaz initiated campaign about hugging a climate scientist did not get widely spread on Twitter on its own. Rather, that campaign gained ground via a celebrity endorsement in the form of retweeting of the original tweet. Nevertheless, in a broad sense, the issue still dealt with climate change, and even the sub-flow was originally started by Avaaz. This sub-flow of the original campaign was widely retweeted, but it remains unclear whether the tweeters were actually interested in climate change as an issue or in Leonardo DiCaprio as a celebrity. Some of the username that retweeted the tweet by Leonardo DiCaprio included references to DiCaprio and thus may suggest the latter explanation to be true, at least for some of the tweeters. Such celebrity endorsement may speed up the spread of the campaign message but place it in a different context, called refraction by Rieder (2012), wherein the shared hashtag was used by separate communities of Twitter users while both were linked to climate change as a general topic. Our results indicate that although shared hashtags can be used by completely separate communities, in a broad sense, the issue remained the same.

Finally, on the fourth day, the original campaign is fading away, although the sub-flow of tweets put forward by a celebrity still receives a considerable amount of attention (Figure 4). The U.K.-based newspapers and their editors only received tweets on the first day of the campaign, whereas the U.S.-based newspapers and editors received tweets much longer. In our analysis, we have not normalized the tweet counts against the population of or the number of Twitter users in the two countries, which may explain the longer lasting attention from the U.S.-based tweeters. The time difference between the United Kingdom and the United States may also partly explain why the U.S.-based newspapers received tweets longer than the U.K.-based newspapers.

While all tweeters in the graphs used the hashtag #debateisover, the tweeters participating in the original campaign and the sub-flows thereof did not overlap very much, as is confirmed by a strong negative Spearman correlation between the usernames ($-.831$ Spearman). The two campaigns clearly grabbed

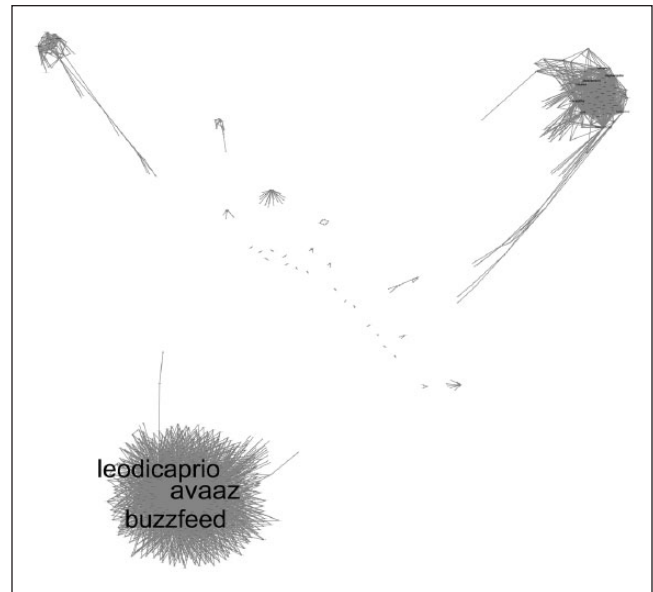


Figure 3. Tweeting on September 28, 2013 (altogether 1,325 tweets).

Note. Size of labels corresponds to how often the username was mentioned in a tweet.



Figure 4. Tweeting on September 29, 2013 (altogether 673 tweets).

Note. Size of labels corresponds to how often the username was mentioned in a tweet.

the attention of very different audiences. This raises questions about to what extent do hashtags per se contribute to a community formation on Twitter or issue formation online in general and how much it matters who is tweeting (Marres, 2015).

Discussion and Conclusion

The results demonstrate the very limited attention span of Twitter; with the campaigns peaking quickly and dying out almost as quickly as they had emerged. The results also showed that the cumulative visibility of the campaign was built by different strains or sub-flows that spread and evolved independently. The results echo the results from Cha et al. (2012) demonstrating how the evangelists on Twitter have great power to steer public interest and public debate and from Lotan (2012) showing how a campaign in social media in general and most likely in Twitter in particular, can get an additional boost if the campaign is successful in recruiting celebrities and other evangelists with millions of followers to retweet the campaign. In addition, our results show that, indeed, Twitter may function as a “refraction chamber” (Rieder, 2012) and provide a space for fragmentation of the communications.

In our case study, we analyzed tweets that contained a specific hashtag originally introduced by a specific campaign. This hashtag was also used in a sub-flow of the original campaign, in an online communication related to the overall topic, but yet distinct from the main campaign. The original campaign and the sub-flow of it were connected to each other via use of shared hashtags, but these hashtags were not used by the same tweeters, nor were the issues debated and shared attracting the attention of the same audiences. This suggests that the use of hashtags did not contribute to the emergence of a community around a single online issue, but that the sub-flow was rather a reflection of an existing community of followers of a specific celebrity. Nevertheless, in broad sense, the two events were linked to the broader issue of climate change. This finding contributes to the debate on the relations between technological devices and the underlying issue dynamics by showing that online events may be more flexible in their boundaries than suggested so far (Marres, 2015). The findings also highlight the importance of existing online social networks in the efficient spreading of information, something that was also argued to be one of the factors behind the success of the Kony2012 campaign (Lotan, 2012). The Kony2012 showed how an online campaign can gain a lot of attention. However, where the editors targeted by the Avaaz campaign had a few thousands of followers between them on Twitter, the celebrities targeted by the Kony2012 campaign had tens of millions of followers. Thus, the potential reach was much greater for the Kony2012 campaign, if they would be successful in getting the celebrities involved. Whether the Avaaz campaign was successful in their mission and got the Assessment Report of the IPCC’s Working Group 1 on

the first page of the mentioned newspapers was beyond the scope of this study. The campaign was, however, successful in gaining attention on Twitter.

The tweeters that contributed to the original campaign or to the sub-flow of it did not necessarily even be aware of the other. The two communities developed separately from each other. This dilemma is part of a wider question of social interaction at macro level, which is also beyond Twitter’s specific functions and serves as critical reflection to new media as a social space whose boundaries can be negotiated and defined for research purposes without individual participants being aware of the group membership. There is need for further research to conceptualize the spaces created in online settings, facilitated by a particular technological setting, and in particular, the dynamic co-evolution of the use of shared hashtags and the differentiation in the community formation.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research and/or authorship of this article: The authors acknowledge the support of the Dutch Scientific Organization in the Netherlands (NWO-ORA Grant 464-10-077).

Notes

1. See <http://lexiurl.wlv.ac.uk/index.html>
2. See <https://dev.twitter.com/rest/public/search>

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Author Biographies

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