Digital Networks of Political Action

Final Report

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Executive Summary

This study investigated emergent conversation online, generated in response to political events, focussing specifically on statements or declarations of political action – including signing petitions, boycotting, voting, gathering and marching, contacting representatives and institutions. The goal was to investigate the forms and directions of linkage between spaces online where political action is discussed, inspired, and realised, and to ask whether political action is fomented in online spaces, or networks of spaces, and if so, what, and who, the influential spaces and actors might be.

Implicit within this goal was the requirement to sample across the internet, from large, diverse datasets, which may be commercially or personally sensitive and which may be more or less accessible. Understanding the origins, nature and development of emergent online participation required an initially very large scale view, identifying and harvesting appropriate content from across the internet, as it was contributed in response to political events, thus situating the study within the big data paradigm. For this reason, the study utilised a powerful commercial data analytics service to look at contributions from across the web, including on forums, news sites and social media, in addition to smaller scale manual investigation. Such automated approaches are becoming mainstream, even within the political world, as a means of representing the public; this study unveils both positive and negative implications of this.

Online participation in campaigns related to a new NHS junior doctors contract, potential UK involvement in airstrikes in Syria, Donald Trump and his candidacy in the US presidential primaries, fracking-related legislation in the UK and the #blacklivesmatter movement all featured within the data harvested. Case study samples varied from 1000 to nearly 30000 items returned in the search results.

The most prevalent form of participation observed was simple expression of opinion or preference and the distribution and amplification of messages provided by figureheads within campaigns. Nonetheless, there was a sizable proportion of expression of formal political action (such as signing petitions) within each of the case studies. Discursive participation, involving conversation and interpersonal interaction was minimal in the case studies, particularly in the data returned by the analytics platform. Within the manually harvested

data, several small examples of discursive participation were discovered within small group forums.

The dominant influence on political action appeared to be mainstream media content, shared alongside links to spaces of political action more than any other resource. These findings illustrate a form of "commercial citizenship" in which individuals consume and distribute the mainstream political stories, presented to them by the digital platforms of their choice, alongside opportunities for action through sharing of links, but very few openly discuss these issues through interactive conversation. They are primarily influenced by mainstream media, but also more subtly by the commercial media structures that filter and present news content.

This conclusion is far from absolute, however, as a description of the citizens represented by the samples. The evidence of discursive citizenship forms uncovered during manual investigation undermine it somewhat, but its omission from the data provided by the analytics tool is perhaps more pertinent, highlighting the implicit bias within the automated research method towards commercially appropriate conclusions that focus on volume and reach of messages more than interaction between participants.

The study reflects mainstream methods of measuring digital publics, used by companies, NGOs and also political organisations, and thus highlights flaws and problematic assumptions within the dominant commercial models of digital analytics. The citizenship demonstrated is a digitally mediated construction of mainstream culture, expressed through everyday digital media production and consumption, rather than an accurate picture of the meaning of citizenship as it is experienced by people. It is not the whole picture, but it is the picture readily painted through algorithmic and analytical means. The study sheds light on how methodological approaches can construct conclusions, through reliance on the very structures as data that they present as evidence.

Certainly, the study findings provide evidence of a very real, and very popular model of political participation, related to real political action, which can be influenced by the intrinsic power structures of digital media. However, it also provided evidence of alternative models of participation in more discursive, less mainstream spaces. These findings suggest areas of interest, but do not explain them adequately, and should be a starting point for richer, more qualitative research which can paint a more accurate picture of exactly who is represented by the metrics of the big data approaches, and what they seek to achieve in these digital spaces.

1. Introduction and context

People talk about politics online in many different ways and for many different purposes. The way that researchers analyse and understand such conversation can influence the way that we depict public political opinion and citizenship. Many scholars have investigated political conversation online (for examples see (Coleman and Gotze 2001; Coleman and Moss 2012; Graham, Jackson, and Wright 2015a; Graham 2012; Jackson, Scullion, and Molesworth 2013; Mutz 2006; Wright and Street 2007; Wright 2012a), and indeed this study was preceded directly by a project that analysed the conversational and community dynamics of political talk in specific niches on the web (Birchall 2016). The study discussed here looked again at emergent political conversation online, but this time looking specifically at statements or declarations of political action – signing petitions, boycotting, voting, gathering and marching, contacting representatives and institutions, to name just a few potential actions – with the goal of finding out whether this form of participation is fomented in online spaces, or networks of spaces, and if so, what, and who, the influential spaces and actors might be.

Over the last two decades there has been much interest in, and many claims made about, the effect of the internet on citizenship practices. The initial euphoric claims of democratisation, and the resultant retorts of the mythical nature of this digital transformation of democracy, have given way in recent years to literature describing the changing patterns and forms of political action, particularly that related to action practiced in online spaces, services and media. There have been many examples of new media and political movements, from the Battle in Seattle (Gill 2000) and Occupy (Fuchs 2014) to the Arab Spring (Aday et al. 2012; Howard and Hussain 2011) and Kony 2012 (Zuckerman 2012). The growing presence of social media in the everyday practices of citizens in many countries has made them a focal point in the engagement of citizens in political topics and the generation of political action. Offering the "opportunity for continuous communication… shifting among social and political concerns" (Bimber 2012), or what Castells (2009) termed "mass self-communication", these platforms allow citizens to contribute and reach large audiences, challenging accounts and attempting to set agendas. However, these citizens are only in control of their voice, not their audience in these contributory spaces. While individual voice is accommodated, these campaigns often encourage different forms of participation, lighter weight actions, such as "badge wearing", sharing content and making statements within social media platforms noted along with traditional practices such as demonstrations, petitions, consultations and voting. Where these practices are seen as replacements for the traditional actions, terms such as *slacktivism* and *clicktivsm* (Fenton 2012) or *push-button citizenship* (Coleman 2012) have been used to highlight the different nature of participation, from the identity politics of the social network to the efficacy goals of traditional protest. Moreover, this fleeting presence of citizenship within everyday media consumption is at odds with the sustained interaction and exchange that many have deemed valuable as part of a deliberative democratic public sphere (Coleman and Gotze 2001). This liberal individual model of participation in which individual interests seem to replace collective movements has been cited as a means of weakening social movements, often linked to technologies as an active agent in this decline (Bennett 2003). However, others find online social structures to replace that which is lost offline. A recent study by Benkler et al. (2015) revealed a diverse and connected network, related to a high profile case of online activism in which major organisations played a role in motivating citizens from across society to act. The study analysed hyperlinks to uncover relevant connected content. The study did not look at social media, however, and did not investigate causality. Others have found that online discussion, emerging out of common interest, rather than political intent, can be helpful in generating political action (Graham, Jackson, and Wright 2015b). Often based upon studies of particular cases, such as the use of social media by one organisation or the use of social media during a particular campaign, many of these studies tell us a lot about particular occurrences and instances and give insights into parts of the online political landscape but the focus upon single cases and spaces, rather than networks means that there may be a broader narrative, acted out across the structures that shape and govern the online environment.

This investigation followed on from the research conducted during my PhD that focussed on emergent political conversation and analysed the conversational and community dynamics of political talk in niches on the web. Drawing on the work of Coleman and Gotze (Coleman and Gotze 2001), Coleman and Blumler (2009), Coleman and Moss (2012), Diana Mutz (2006), Scott Wright (2006, 2012a, 2012b) and Todd Graham (2008, 2010, 2012), this study investigated the nature of emergent political conversation online, highlighting the importance of interpersonal exchange between participants and exposure to diverse and opposing viewpoints in the formation of preferences and informed opinion. Informed opinion, generated through discursive processes can be beneficial during later periods of more active participation, in contrast to the preference expression commonly encountered in less deliberative forms of participation. Using a mixed methods approach that combined initial quantitative “big data” methods with increasingly smaller scale and more qualitative iterations of analysis the study gained deep insight into a wide range of online conversations in a variety of contexts.

Looking at the data on a large scale, the study illustrated how different communities of participants behave differently in different spaces, partly based upon the social ties that bind communities together and the perceived importance of maintaining them, as well as the social practices that allow those ties to be maintained. Examining Dahlgren’s framework of participatory spaces (2005)and Freelon’s categories of democratic model (2010), particular dynamics were observed in various spaces, including the institutionally linked spaces for political action, such as consultations and petitions, and the special interests groups where contributors discussed policy-related issues in a non-political space. From the observed evidence, a framework of models of political talk online was formulated that augmented the previous models and identified different models of participation that were more typical of distinct online niches. One particularly clear model related specifically to the participation in spaces designed for the purposes of active political participation such as signing petitions, contacting representatives or participating in a consultation. This model suggested that when citizens contribute to these specific participatory spaces for the purposes of carrying out a specific and deliberate political action, the mode of participation is distinct from other modes and is characterised by very low levels of interpersonal exchange and interaction. Participation is not at all in the form of conversation but almost entirely in the form of expression.

However, analysing the spaces in which such participation takes place is insufficient when seeking to understand why the action is taken, as well as in what form it occurs. As a network of active spaces, the internet facilitates the transmission and distribution of political content, aspirations and actions throughout and across the web as memes, travelling between connected individuals and communities, and while this content may emerge as action in one space, it may be the product of interaction and involvement in many other spaces from across the online sphere. It was hypothesised that these different behaviours and practices, and the others identified in the study, would not exist in isolation but would instead form a complex network of political discussion and interaction which includes end-points where action occurs.

The network, or networks, are of course not neutral and individual spaces and platforms within can be active constituents of the overall network by creating, shaping, filtering, suppressing or amplifying messages and content. They act alongside individual contributors and organised groups such as political parties, and activist, advocate or lobbying groups which each all command agency within the network. This study aimed to investigate the patterns of distribution created by some of these actors by analysing the pathways through which political action forms, spreads and is actualised and expressed online, within different online spaces, user communities, democratic models, organisations and institutions to uncover more detail about how specific case studies of action coexist, overlap and interact in the everyday use and consumption of commercial social network content, and the wider web.

This study aimed to investigate the forms and directions of linkage between spaces online in which political opinion and action are fomented. Implicit within this goal was the requirement to sample across the internet, from large, diverse datasets, which may be commercially or personally sensitive and which may be more or less accessible. There is no defined method for sampling such diverse digital human communication on such a large scale, and so the methodology used in this study was necessarily experimental. This methodology is explained and evaluated within the study to determine its successfulness, ease of use and appropriateness for the task of understanding the online communication of citizens. Therefore the study had three main aims:

1. to investigate the potential to identify expressions of political action and intent online;
2. to examine social media (such as Facebook and Twitter) as spaces for social sharing and discussion of political topics, placing them within the wider online political network and determining their centrality;
3. to examine the extent of linkage to, and between, other spaces within expressions of intent and investigating the nature of any observed networks, including the identification of influential nodes and the mapping of directions of travel of messages, memes and concepts.

Meeting these aims provided insight into the social creation of political action, allowing reflection upon some of the current assumptions and critiques of online political action. By examining cases across campaigns and platforms a more generalized picture of political agency was drawn which adds to the debate about how citizens are motivated, encouraged, persuaded or enabled to take political action.

2. Methods

The study looked at emergent political participation within online social and conversational spaces. Understanding the origins, nature and development of emergent online participation required an initially very large scale view, identifying and harvesting appropriate content from across the internet, as it was contributed in response to political events, thus situating the study within the big data paradigm. For this reason, the study utilised a powerful commercial data analytics service to look at political contributions from across the web, including on forums, news sites and social media. This tool provided data that was previously impractical, or impossible, to access. For example, the platform gave access to Facebook Topic data, one of the hottest marketing developments of 2015, providing anonymised, aggregated access to private personal contributions that are not available via any other means. This service came at a high financial cost, but provided the kind of scale and apparent completeness that is valued so highly in the modern marketing research industry. The platform also automatically generated some of the common measurements utilised in the analytics industry, including aggregated statistics such as the most shared posts, resources, hyperlinks and hash tags, but also bespoke metrics (such as “reach”, “visibility” and “volume”[1] – measurements of distribution and readership of contributions) and network analysis of the contributions which illustrated the links between spaces, resources and participants. The tool therefore provided an illustration of the connected nature of online participation and provided a description of how memes and messages were spread across the internet, helping to achieve the second and third aims of the study, outlined above.

The use of this analytics tool was complemented by other approaches to identify, analyse and monitor expressions of political action online, allowing the first aim, outlined above – to investigate the potential for the identification of political action online – to be met. The manual analysis provided alternative data that could be compared to the findings of the analytics platform while at the same time expanding the information garnered about networks of political action online. Two main approaches were utilised to identify and harvest relevant content: one approach involved the creation of searches for particular keywords, related to specific political actions and specific political issues, within the analytics tool; the second was the identification of online spaces for direct political action (such as online petitions and tools for contacting representatives) and a search for these spaces (as represented by their URLs) within other online contributions. These approaches were complemented by hyperlink analysis – using the *Issue Crawler* service[2] – and also followed up by manual research using a range of search tools to validate and evaluate the data from the analytics tool. The resultant data was processed and visualised within network analysis software to determine the connections and dynamics present.

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[1] Volume typically relates to the number of pieces of content related to a topic; “reach” is a measurement of the number of people that are exposed to a piece of content; “visibility” is an augmentation of those metrics which the analytics service provider describes as a measure of the ability of a piece of content to reach a larger then average audience and engage a larger than average crowd.

These methods of data gathering are of course, reliant upon the same sources of control that influence much of the data contribution by citizens; a point discussed in more detail later, and which has been made by other scholars previously (Baym 2013; Boyd and Crawford 2012; Gillespie 2014; Kennedy et al. 2014). However, by building up this network of action through examining links within content, overlap with alternative spaces and communities, or indeed the lack of, was observed, allowing the impact of mainstream social media on the fomentation of political action to be interpreted through analysis of the presence of actions outside of the everyday practices of liking, sharing and consuming commercial social media.

Case studies were identified by monitoring political campaigns as they happened during the study period in various ways. Online campaigns were identified through mainstream media coverage, from manual searches focussing on known sites of political action (such as petitions websites) and from social media monitoring tools, such as Twitter and Facebook trending topics and websites including trends24.in, a website that provides a breakdown of global social media trending topics. Search terms for these campaigns were then created for use in the analytics platform, alongside manual analysis using search engines to find associated citizen-generated online content. Search and analysis was continued in these two ways for the length of the study period to generate a real-time account of how each campaign developed during this time.

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[2] Issue Crawler is an online service that creates and maps online content based on hyperlink analysis, which identifies hyperlinks as a connection between websites, with the latter being represented as nodes in the network and the former as the edges between nodes. Available at: http://www.govcom.org/scenarios_use.html

Once campaigns ended, or ceased to be monitored at the end of the study period, key online spaces were identified for each (for example, URLs relating to points of action such as surveys, or the most shared URLs of a campaign) and used as seeds in Issue Crawler analyses, in order to build networks of related online content in which hyperlinks form connections between spaces that feature content related to the topic.

3. Results

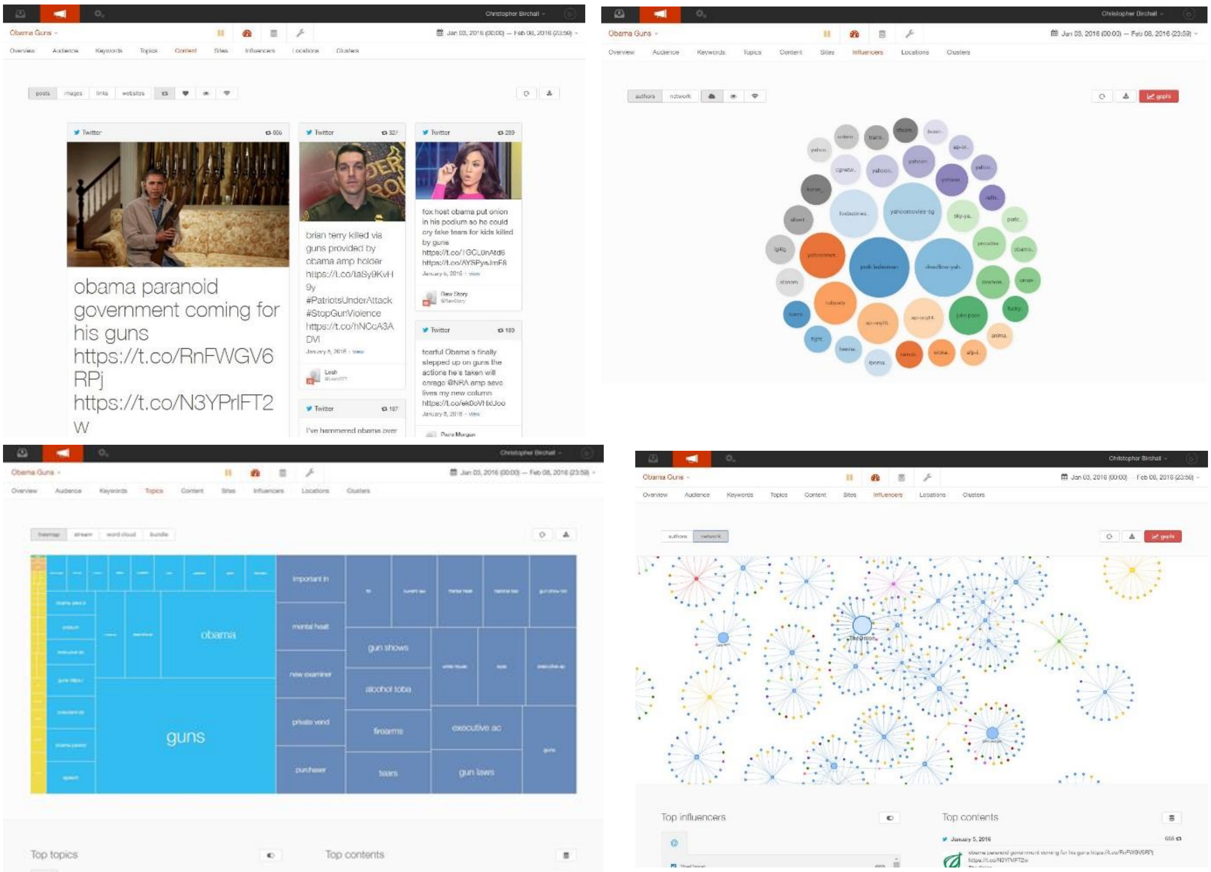
Throughout the study period there were a number of high profile campaigns carried out by citizens online. Campaigns related to a new NHS junior doctors contract, potential UK involvement in airstrikes in Syria, Donald Trump and his candidacy in the US presidential primaries, fracking-related legislation in the UK and the #blacklivesmatter movement all featured highly in the mainstream media headlines. However, while it was easy to identify the existence of these examples of citizen campaigns it was more difficult to isolate the expression of political action and intent related to them in online spaces. Content found through manual analysis could be identified accurately, but only at small scale. When utilising the automated tools of the analytics platform to harvest data at a much larger scale, the filtering of data became much more of a problem as the subjective judgment of the human communication represented by the data was no longer possible and the algorithms implicit in the tools operate through simpler methods of content analysis, such as text matching. Isolating these data required very complex and specific search queries for particular political phenomenon in order to filter out items other than deliberate political actions such as signing petitions and contacting representatives from more passive political expression, chat and commentary. Some topics proved more troublesome than others. For example, contributions related to the junior doctors' contract dispute were difficult to isolate due to terms such as "strike", "contract" and "doctor" being used in many different, often unrelated contexts; others, such as the anti-fracking campaign were more easily filtered, due to characteristic language and others, such as #blacklivesmatter, had very widespread use of particular hash tags.

A number of political topics were identified within the online sphere for which substantial data sets, consisting of relevant content, could be amassed:

- An anti-war movement, including an online petition connected to the UK parliament debate of potential air strikes in Syria;
- An anti-fracking campaign that gained strength around the time of a parliamentary debate about a future energy bill;
- Petitions for and against the banning of Donald Trump from the UK after his controversial comments in a US Republican Primary debate;
- A variety of different forms of action associated with the significant online debate around US social justice campaigns, particularly surrounding the legal cases involving Tamir Rice and Sandra Bland and the associated hashtag #blacklivesmatter;
- A campaign related to a left wing political movement connected to the UK Labour Party – Momentum.

Large data sets were amassed by the analytics tool, with between 1100 and 30000 items featuring in the results of each the searches listed above (the smallest being the UK-specific anti-fracking campaign, for which data was collected for 5 days and the largest being the campaign about US social justice, for which data was collected for 6 days). The vast majority of the content (over 90% for each search) harvested by the analytics tool was made up by the act of sharing within social networks, particularly Facebook, Tumblr and Twitter with conversational aspects such as interpersonal questioning and response lacking almost entirely. The analytics tool visualised this data in many different ways, segmenting the community of contributors based upon demographic characteristics or social networks, and grouping content into related or linked topics and concepts, and by the platform on which they originated (see figure 1, below).

Each of the case study campaigns followed similar patterns of distribution of messages, but each had their own unique communities of action, with different influential actors as well as different topics of interest. The anti-fracking vote, for instance, generated 5570 results in a search on the analytics platform in just two days, most of these being expressions of support for the movement (original posts and re-tweets/shares) with two thirds being labelled as


Christopher Birchall
Obama Guns
Jan 03, 2016 (00:00) — Feb 08, 2016 (23:59)
Overview
Audience
Keywords
Topics
Content
Sites
Influencers
Locations
Clusters
posts
images
links
websites
authors
network
graph
treemap
stream
word cloud
bundle
Twitter
important in
mental healt
new examiner
private vend
purchaser
obama
guns
gun shows
alcohol toba
firearms
fears
executive ac
gun laws
Top topics
Top contents
Top influencers

obama paranoid government coming for his guns https://t.co/RnFWGV6RPj https://t.co/N3YPrlFT2W

brian terry killed via guns provided by obama amp holder https://t.co/taSy9KvH9y #PatriotsUnderAttack #StopGunViolence https://t.co/hNCcA3ADVI

fox host obama put onion in his podium so he could cry fake tears for kids killed by guns https://t.co/1GCL0nAtd6 https://t.co/AYSPyaJmF8

tearful Obama's finally stepped up on guns the actions he's taken will enrage @NRA amp save lives my new column https://t.co/ek0oVHxUoo

I've hammered obama over

Figure 1: Sample visualisations from the analytics platform including, clockwise from top left: the most shared content; the most 'influential' authors; a social network of authors; a 'treemap' showing the most commonly mentioned topics. Note the colours in the treemap – dark blue represents content from Twitter, light blue from Facebook; these dominate the contributions.

'reactions' by the analytics platform[3]. These were not elements of discussion, however, but almost always distribution and amplification of the messages posted by figureheads of the campaign. Contributions also included 939 instances of URLs being shared, though only 42 of these were links to an actual site of political action (in this case a form to fill in on the Greenpeace website which would send a message to an MP), illustrative of an expression of political action. 207 of these were links to the advocates and activist websites that played a central role in orchestrating the campaign (Caroline Lucas MP, Greenpeace and WWF). All of the other links – nearly 700 – were to news articles, with 611 leading to BBC news stories.

The campaign against escalation of air strikes in Syria generated over 13000 contributions in seven days (leading up to a vote in the UK parliament) of which almost 7000 contained links to a petition on the official government online petition website – a much greater proportion of expressions of political action, but there were similarly negligible instances of discussion about the issue. This greater proportion of expressions of action was accompanied by a greater proportion of the contributions being original posts, rather than retweets and shares.

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[3] "Reactions" are contributions that are not entirely original content, and are created in response to something else. Re-weets, replies and quotations are examples of such contributions.

The campaign related to Donald Trump followed a similar pattern, with a high proportion of links to petitions amongst the 11000 search results generated in just a few hours. One of the interesting figureheads within this campaign – described within the analytics platform as one of the main influencers[4] – was the *Peoples Momentum* group – the left wing movement related to the Labour party. Many instances of shared hyperlinks that lead to a Momentum-affiliated website were apparent in the analytics data, though the website itself was largely free of content, except for a number of links to other campaign websites and Facebook pages. On closer manual inspection, it was clear that most of the Momentum activity is orchestrated though local Facebook pages populated by Momentum activists in specific city- or region-level localities within the UK. Within these Facebook pages, activists and supporters contributed expressions of their opinions and preferences through creative means (such as images, video monologues and satirical cartoons. Discussion, again, was minimal.

The US social Justice campaigns, including petitions in support of President Obama's gun restriction laws and reaction to trials related to killings of black Americans including the camping by the #blacklivesmatter movement. Contributions included monologue and expressions of outrage, distribution of news and amplification of messages, and sharing of online spaces for action including several petitions websites. Over one fifth of the sample included links to these places of action. As in the previous examples, interpersonal discussion was minimal, with the amplification of a common message seemingly the aim of this participation.

In all of the case studies, expression of opinion and amplification of a message was a primary mode of participation, but all also featured expressions of more formal action, such as signing petitions or contacting representatives. The 'reactions' and the lists of shared URLS provided by the analytics platform along with popular topics and images, and active participants, enabled links to be made between online spaces, resources and authors so that the networks that surrounded the political action could be investigated. It was possible to determine which

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[4] "Influencers" are defined as those with the most reach and visibility, able to create content that is exposed to the largest audience, and who are important links within a network, amplifying message by passing them from one network to another.

URLs had been shared alongside links to sites of political action – the online petitions and forms where citizens could participate, before reporting their action through expressions in other spaces. By far the most commonly shared resources were mainstream news articles, shared alongside an expression of action seemingly as supporting evidence or inspiration for the action. These were categorised to illustrate how different sources of content were utilised in expressions of political action (see figure 2, below).

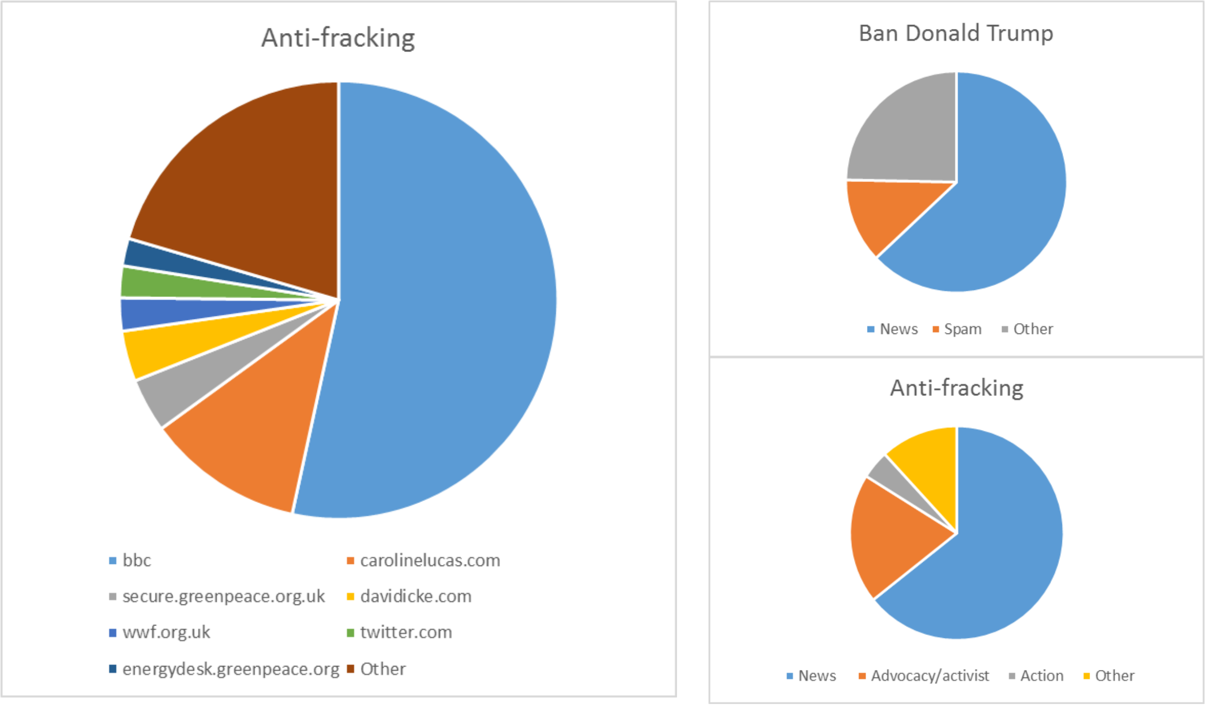

Figure 2: Pie charts showing the proportion of URLs shared from different types of sources, for two of the case studies. On the left the actual URLs shared as part of the anti-fracking campaign; and on the right the proportions after aggregation into categories for two example case studies. Note the grey segments, which represent the URLs of sites for citizen action (such as online petitions) themselves being shared.

However, small proportions of the content harvested by the analytics platform consisted of forms of participation other than just sharing links. Occurring within blogs and forums and specialist campaign communities, this participation included some interpersonal exchange as well as expression of opinion. The URLs of these spaces, alongside the URLs shared by participants were used in two ways: to build networks of content that was being used online for the development of opinion and preference, consisting of the news articles, blogs, videos and other memes that inspired the action; and as seeds for hyperlink crawls of the internet using the Issue Crawler service in order to investigate the spaces, beyond the social networks, where participation was occurring in more discursive ways (see figure 3, below).

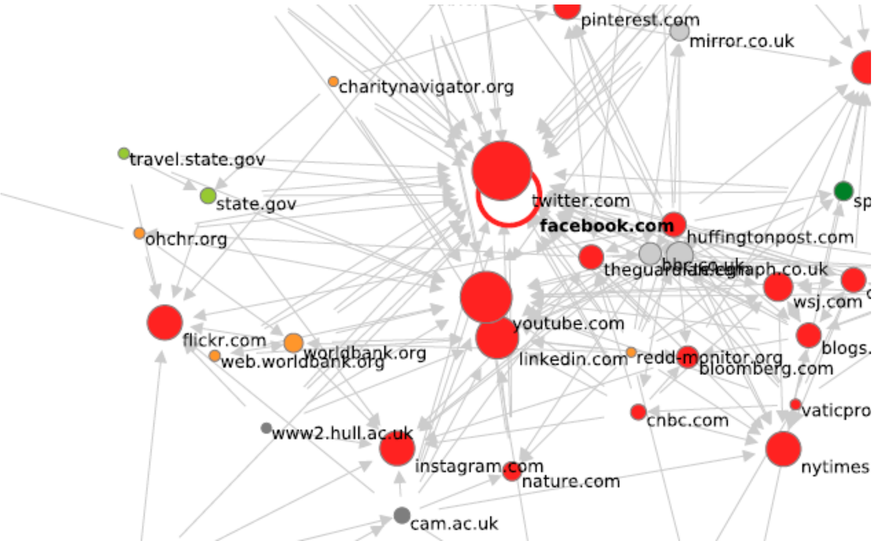
pinterest.com
mirror.co.uk
charitynavigator.org
travel.state.gov
state.gov
ohchr.org
twitter.com
facebook.com
sp
huffingtonpost.com
bbc.co.uk
theguardian.com
telegraph.co.uk
wsj.com
youtube.com
flickr.com
worldbank.org
web.worldbank.org
linkedin.com
redd
monitor.org
bloomberg.com
blogs.
vaticpro
cnbc.com
www2.hull.ac.uk
instagram.com
nature.com
nytimes
cam.ac.uk

Figure 3: Segment of an IssueCrawler map showing connected content related to one of the campaigns. Note Twitter and Facebook as prominent, central nodes in the network, illustrating their importance within the network of content.

The Issue Crawler maps of the data from each of the campaigns uncovered some loosely connected networks, which featured spaces related to some of the influential authors highlighted by the analytics platform, such as the *Green Party* (and it's parliamentary member Caroline Lucas), *Greenpeace* and *WWF* working together to oppose fracking and the *Stop The War* coalition working alongside the *Peoples Momentum* group to oppose the escalation of UK air strikes in Syria. These spaces included hyperlinks that connected them together and with common resources that built up an argument and narrative across various spaces online. However, content analysis of these examples revealed that these networks consisted almost entirely of informational web pages and tools for action, with discursive content largely absent as the groups sought to mobilise supporters, rather than discuss the issues. Very little conversation was present; dominant participation models were individual expression, sharing and mobilisation, rather than conversation. Even in the spaces associated with campaigns, little discussion was occurring.

The data harvested by the analytics platform, though large scale and rich, was not exhaustive. Manual searches related to the topics highlighted participation occurring beyond the networks reported by the analytics platforms, within forums and message boards in which emergent citizen conversation appeared. For example, discussion of Donald Trump and his presidential campaign was found on a non-political forum related to financial investment.

4. Discussion

The results illustrated a number of different modes of distribution of political content and amplification of messages and action, but there were some clear narratives present within the data generated by the different methods. As identified by the manual searching and analysis, some of the political discussion, including expressions of political action, took place in spaces that were not explicitly political in nature, within small discussion groups on forums, consistent with previous research such as that by Scott Wright (2006, 2012a, 2012b) and Todd Graham (2008, 2010, 2012). Many of the searches identified campaigns linked to political action that was driven by advocacy groups, representatives and activists; influential political figures and groups, including MPs and lobbyists, worked hard to create compelling messages and to distribute them widely. However, according to the insight generated by the analytics platform, the majority of interactions with the political topics of the case studies was through social media sharing, and the overwhelmingly dominant form of influence on political action was mainstream media content, shared alongside links to sites of action more than any other resource. These findings suggest a citizenry in which individuals are happy to distribute political stories and opportunities for action through sharing of links, but very few openly discuss these issues through interactive conversation. They are not only being influenced by mainstream media, but also but also by the commercial media structures that present them with their news. Such a model of political participation, mediated through the structures of content presentation that exist within commercial social media platforms is subject to the forces shaping this content distribution. These forces, it seemed in this sample, provided one of the dominant methods and conduits of distribution and communication of political messages and action. This model of contemporary digital citizenship illustrated by the findings is something akin to "commercial citizenship", in which political expression, and political action takes the form of everyday digital consumption and production, conforming to the commercial forces that shape the digital and social media industries. Mainstream media acts as an inspiration and a knowledge source and is utilised selectively by citizens, but only in a mediated form, subject to the algorithmic filtering and personalisation of the social media spaces in which the consumption occurs, as described by Sunstein (2001, 2008). Indeed, the commercial nature of this citizenship is subject to the same forces of disruption and co-option present in other commercial fields. For example, while some commercial models of content creation expanded and amplified messages and communities of action, in the most successful examples this often occurred at the cost of dilution and contamination of the message through pernicious practices, such as hijacking of trending topics with unrelated advertising or spam content, or inflammatory content in the form of trolling. The results lend weight to theories that place online political communication and participation within the realm of everyday consumption of digital media, including the professional production and distribution of mainstream news media and the commercial curation and presentation of content to consumers according to business models, rather than democratic ideals (Hindman 2009).

However, the commercial nature of the structures under investigation actually led to the infiltration of the investigatory method itself by commercial forces. For example, campaigns were found through analysis of trending topics on Facebook and Twitter – exactly the way that citizens find out about things, but exactly as designed by the companies that created the tools. The methods therefore were likely to reinforce the resultant findings, and so it was particularly important to include alternative means of investigation. There were clear challenges to this commercial and technological hegemony in the form of communities that form around specific topics – doctors seeking to take action about management of the NHS, environmental activists seeking to pressure the government over energy and conservation policy and civil rights activists seeking social justice and changes to policing and law enforcement – as well as communities that form elsewhere and occasionally discuss political events, which, as mentioned earlier, is consistent with previous studies by Scott Wright (2006, 2012a, 2012b) and Todd Graham (2008, 2010, 2012). The content produced by some of these communities was present within the sample collected by the analytics platform (though it was a small proportion), but some was not and only became apparent through alternative searches and analysis. Manual investigation did illustrate this alternative view of discursive participation and discussion of political issues in specific spaces online. While these methods could only highlight behaviour such as this at a very small scale, it is still a valuable demonstration of alternative participation models that exist alongside those illustrated through big data methods.

Big data methods can produce important overviews of large scale phenomena, and, when used to stimulate further analysis in a mixed methods approach, big data methods can provide significant value for social research. However, this is far from the dominant method for understanding digital publics. Mainstream approaches are often dominated by commercial social media analytics tools, used not only by companies to understand customers, but also increasingly by the media, NGOs and political institutions to understand contemporary forms of political expression, as described by Ceron et al. (2013) and Roginsky and Jeanne-Perrier (2014). Such approaches produce conclusions based largely upon quantitative measurements, offering just a picture of *what* happened, without any real insight into *why* it happened. Our understanding of digital citizenship, and interventions into this digital environment are increasingly dependent on such methods, partly due to the 'black boxed' nature of social media and our limited capacities to access certain aspects of it, but also due to the scale at which it exists which can render closer analysis impractical. Such methods are often exclusive (Baym 2013; Boyd and Crawford 2012; Kennedy et al. 2014) - as was demonstrated in this study by the omission of the small, discursive forum spaces – and generate crude quantitative knowledge, or what Gillespie called "calculated publics" (2014). Of course, all of these limitations can be accounted for during research, but big data and social media analytics are often touted as answering questions about the public, or citizens, on their own. Taken as a representation of the public, the calculated citizenship indicated by analytics platforms like the one utilised in this study can, and often does, feed back into the political process by providing an accessible and credible illustration of public opinion, reaction and preference. When it does so, the public is represented only by an illustration of what they said, read and shared online without consideration of why they might have done so, or indeed of what other forms of participation they might have been involved with outside of the commercially viable spaces targeted by commercial digital intelligence tools. The implicit risk, of course, is that this calculated public is actualised through the creation of policy responding to its expressed preferences in a cycle of mediated politics (Bennett 2012; Brants and van Praag 2015; Landerer 2013) - figure 4, below, provides a visualisation of this process. The large scale illustrations of public participation and preference are valuable and important, but should be accompanied by much more qualitative research, which can explain the networks and their content, as well as critiquing their accuracy and completeness.

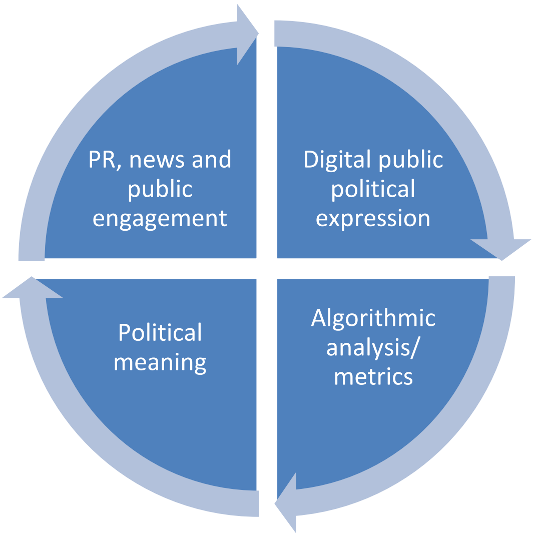
PR, news and public engagement
Digital public political expression
Political meaning
Algorithmic analysis/ metrics

Figure 4: A cycle of mediated politics; the implicit risk of digital measurement of publics

5. Conclusion

Utilizing digital methods for the processing of social media data, this project investigated the nature of a range online political campaigns, specifically focussing on expressions of political action and the networked structures and actors that might influence and inspire this action. The research highlighted some of the linkages and direction of travel of political memes and messages, as well as influential spaces and actors across a range of sites and content. It revealed a number of digital sources and sinks of political expression and action and demonstrates the commercial nature of this network. However, it also relates the citizenship forms that are illustrated to the methodology used to investigate it, linking commercial methods of investigation to commercially influenced results, and highlights the implications for citizenship scholars, political researchers, and citizens themselves.

Overall, the actors, sources and sinks identified within the data relate strongly to a model of mainstream media influence, through production of news stories by journalists and the distribution of these stories through social media spaces by citizens. Such a process is mediated by commercial social media structures, and primary modes of participation are sharing and expression, rather than discussion and personal interaction. The findings suggest that this citizenship, constituted by code, involves agonistic models of participation involving mobilisation, rather than deliberation, and that media laws govern citizen participation in online spaces, shaping information exposure through personalisation and filtering, as well as moderating, even marginalising, discursive engagement within communities.

The approach used in this study produced findings that suggest that we might reconfigure our understanding of what digital citizenship is and may be, when it is embodied by social media users and the forms of communication that are dominant in social media spaces. These findings must be considered within the methodological context, however, as they are in part constructed by the methods used.

It is challenging to investigate a topic that manifests at such a large scale and in such diverse spaces. Manual sampling, harvesting and analysis of online content can be utilised to provide detailed understanding of content, but can only operate at a small scale. The analytics platform enabled the expansion of this process to the very large scale. Through careful construction of searches, large data sets, specifically linked to expressions of political action could be amassed. However, there are clear shortcomings to these big data approaches and tools. Large scale digital analytics harvests data from commercially important spaces and measures commercially important metrics, all created to serve a commercial market centred upon advertising and marketing. Metrics such as visibility, volume, reach and influence all relate to goals of distribution of message, rather than discussion of content, understanding or deliberation. The investigatory tools define success and quality in these ways; therefore it is not surprising that these commercially focussed tools paint a picture of commercially-shaped behaviour. Many of the campaigns highlighted, and the methods of political participation that they involve, can be seen to be effective through the lens of social media analytics and measurement through metrics, by reference to the numbers of contributions and contributors involved. However, this can form a shallow evaluation which focusses entirely on quantity over quality and largely ignores the potential values of discursive engagement.

So where does this leave the findings of the study? The citizenship demonstrated is a digitally mediated construction of mainstream culture, expressed through everyday digital media production and consumption, rather than an accurate picture of the meaning of citizenship as it is experienced by people. It is not the whole picture, but it is the picture readily painted through algorithmic and analytical means. Certainly, the findings provide evidence of a very real, and very popular model of political participation, related to real political action (at least in the form of signing petitions, contacting representatives and spreading political messages). The analysis provides a very compelling picture of *what* happened in commercial digital media spaces during these political campaigns. It also provides evidence of alternative models of participation in more discursive, less mainstream spaces. These findings should only be a starting point, however, for richer more qualitative research which can paint a more accurate picture of exactly who is represented by the metrics of the big data approaches.

The overall picture of online political participation is complicated; political content crosses geographic and political borders, spans diverse technological platforms and occupies numerous online niches. It is influenced by many different parties and forces. Theories of the emergence of alternative democratic practices in online spaces can be strengthened by the individual cases highlighted by this study, but the evidence in this study suggests that the dominant forces are commercial, and consumption-led. Political participation in contemporary digital spaces is therefore to be understood within contemporary arguments about online identity and expression, digital media consumption and content control and creation by service providers. As discussed above, there is much recent research centred upon the impact of the internet and new media on citizenship, but the changing forms of civic and political participation carried out by digital citizens has been met with different, broader questions: what constitutes citizenship practice, what is identifiable as citizenship practice and what is claimed in the name of citizenship, are areas of much debate – particularly within the wider sphere of social media and contemporary digital culture. Political participation is an area of citizenship which reflects this debate, through complexities of definition and investigation. While it is relatively easy to identify online spaces in which interested parties overtly participate ‘politically’ through sharing and discussion, or spaces of more direct forms of political action, such as signing petitions; it is becoming much harder to address the critical issues of the relationship between social media and citizenship or the connections between what are increasingly approached as disparate or fragmented spaces. For this reason, complex and mixed-methods approaches are needed to fully understand it, but to operate at the scale afforded by contemporary digital media, big data methodologies can be invaluable in the direction of such approaches, through the identification of large scale participation models such as the one illustrated in this study.

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