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Linking for Influence: Twitter Linked Content in the Scottish Referendum Televised Debates

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Abstract
Twitter, the micro-blogging social media tool, has established a critical role in facilitating social engagement. Its low technical and economic barriers to uptake provide a readily accessible forum for public engagement with events such as televised political debates, and in this context provides a 'backchannel' to mainstream media, allowing users to comment on and engage in debates. Most recently during the 2014 Scottish Referendum, Twitter was used extensively by both 'Better Together' (pro-Unionist) and 'Yes' (pro-independence) campaigners. The aim of this research was to develop an understanding of the linked content present in Tweets sent during three televised debates on the issue of Scottish Independence. Analysis of the linked content shows a broad subject proximity to the topics under discussion during the debates, but highlights the lack of specificity in relation to the peaks and troughs of Twitter traffic during the debates. The paper also highlights the use made of links to a variety of resources such as the mainstream media as well as more informal sources including user-generated image and video content to support political viewpoints, and argues that while the use of such content is beneficial in terms of unifying perspectives, supporter activism and the gratification of the social need for connectivity, it does not act to convert political opinion.

Keywords
Twitter; Scottish Referendum; Televised Debates; Linked content; Backchannel

1. Introduction

Twitter is one of the most popular online social networking services. Posting text-only messages of up to one hundred and forty characters (Tweets), the 284 million active global Twitter users send approximately 500 million Tweets per day [1]. Twitter is used by wide range of groups including private individuals, public and private sector organisations and government agencies. Mainstream media agencies also make use of Twitter as a method of breaking news stories and directing internet traffic to their websites [2].

Increasingly Twitter is being used for citizen participation in socio-political discourse relating to events such the swine flu outbreak in 2009, war in Syria, and the 2011 Arab uprisings [3-5]. Specifically within the context of political campaigns such as local and general elections, Twitter presents opportunities for one to one, and one to many engagements between stakeholders from grassroots supporters through to senior political figures, which may be less viable through traditional media channels. As Harrington et al suggest:

> Twitter does not necessarily replace existing media channels, such as broadcasting or online mainstream media, but often complements them, providing its users with alternative opportunities to contribute more actively to the wider media sphere.[6: 405]

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Over the last eight years, the use of Twitter as a communication backchannel during political campaigns (and more specifically during televised political debates) has grown significantly. Diakopoulos and Shamma trace this usage back to the 2008 US presidential debates:

> In the fall of 2008, Current TV ran a program called Hack the Debate where they called for people to microblog comments during a live event. Using the popular Twitter service, these posts—called tweets —were displayed on TV underneath the live presidential debate between Barack Obama and John McCain. The success of Current's program has led many broadcasters to call for tweets during live broadcasts.[7: 1195]

Most recently, social media (and Twitter in particular) were used extensively by both sides in the 2014 Scottish Referendum. The Scottish Referendum was held on 18 September 2014 following the passing of the Scottish Independence Referendum Bill in November 2013 (subsequently enacted as the Scottish Independence Referendum Act 2013). The electorate were asked a single yes/no question: 'Should Scotland be an independent country?'. Ultimately, 55.3% of the electorate voted against independence, with an overall turnout of 84.6% of the eligible population [8]. Debate 1 (which took place on 5 August 2014) was held in front of a live audience of 350 people at Glasgow's Royal Conservatoire of Scotland and was between Alex Salmond, First Minister and leader of the Scottish National Party (SNP) and leader of the Yes campaign, and Alistair Darling MP (Labour), leader of the Better Together campaign. Debate 2 was broadcast on BBC Scotland on 25 August 2014 between 8.30 pm and 10.00 pm between Alistair Darling and Alex Salmond and came from the Kelvingrove Art Gallery in Glasgow in front of a studio audience of 200 people. The third debate took place in Edinburgh on 2 September 2014 on STV between 8.00 pm and 10.00 pm. The programme was simulcast on itvnews.com, as well as the STV website, and then repeated at 10.35 pm on STV's network partner ITV for the rest of the UK. This debate was slightly different in format, with two teams of three debating and more input from a television audience. It was described as a 'town hall debate' by STV. The teams were: Nicola Sturgeon MSP (SNP), Patrick Harvie MSP (Co-convenor of the Scottish Green party) and Elaine C. Smith, actor and political activist, for the Yes side, and Douglas Alexander MP (Labour), Ruth Davidson MSP (leader of the Scottish Conservative party) and Kezia Dugdale MSP (Scottish Labour) for Better Together.

The aim of this paper is to develop an understanding of linked content present in Tweets sent during three televised debates on the issue of Scottish Independence on 5 August, 25 August and 2 September 2014. This aim will be achieved through the following objectives:

- To identify and categorise the sources of linked content in Tweets sent during the televised debates.
- To classify the types of materials sent during the debates in the form of linked content.
- To establish the key themes present within the linked content.

Forms and types of Twitter linked content have been examined in other contexts, notably the 2009 H1N1 outbreak [3]. In addition some prior research does exist in relation to the use of Tweeted URLs for search [for example: 9; 10] and the use of Twitter as anchor text [11]. However there has to date been no work examining linked content in the context of televised political debates. Furthermore, Harrington et al [6] proposes three main research areas for work in this field, which clearly relate to this work: the tracking of Twitter activity relating to a specific television programme during its screening; the identification of key contributors to debates on Twitter; and lastly, the qualitative analysis of key themes emerging from the debate itself.

2. Literature Review

A growing body of academic research exists in relation to the use of Twitter during political campaigns. Perhaps understandably, much of this work has focussed on presidential elections in the US. McKinney and Banwart [12] propose that nascent use of digital communication to support electoral campaigns can be traced back to President Bill Clinton's 1992 presidential campaign. More recently the advent of social media has played a significant role as a tool for organising political campaigns, mobilising supporters and volunteers, and indeed raising campaign funding, notably during the 2008 US presidential election campaigns [13] and more recently in the 2012 election. Referred to by McKinney et al [14] as 'the Twitter election', research conducted by Houston et al [15] during the latter stages of the 2012 US presidential election, examines the influence of sociodemographics on tweet volumes during the debate, as well as political and campaign characteristics. This study also examined the impact of 'live tweeting' on debate attitudes and knowledge. Also focussing on the 2012 presidential debate, subsequent research by McKinney et al [14] emphasises the importance of watching televised debates on the political engagement by young US citizens. Both studies highlight

significant sociodemocratic factors on twitter engagement for political discourse (notably higher frequency of tweeting by males, and the impact of political understanding on the frequency of tweeting). These interrelationships between mainstream media and social media are attracting considerable interest, both from academics as well as broadcasters [7].

(1) The significance of the role of Twitter for backchannel discussions is also a growing area of research in relation to the political discourse in other countries including the Canada, Norway and Italy [16-18]. Although focussing on strategic social media interventions during a televised debate, Elmer highlights the interrelationships which exist between the televised debate and social media during the course of the debate itself:

> The multi-mediated nature of the debate evening, and in particular the interplay between viewership, social media commentary and partisan campaigning, is also further amplified in a number of posts made during the debate evening.[16: 26]

Similarly, and also much in line with the work of Pedersen et al [19], research by Kalsnes reveals both the close alignment between the televised debate and Twitter activity, as well as (conversely) highlighting the use of Twitter as a forum for contrasting debate [17]. The work of Ceron and d'Adda focuses on the impact of positive and negative messages used by political campaign groups [18]. Perhaps counter intuitively, their findings suggest that the use of negative campaigning may in fact have beneficial effects, and that these may be magnified when there is some form of retaliation:

> When a party responds to an attack, the backlash effect dwindles since voters will not blame it for defending itself and the party will have an incentive to strike back. As such, the use of negative campaign strategies becomes (increasingly) rewarding when the party is under attack.[18: 4]

Although this extensive usage of Twitter during the Referendum campaign may (in no small part part) be due to the relative significance of the political event itself, Chen [20] suggests that Twitter has developed the potential to gratify the social need for connectivity. The ability of Twitter to service this need is supported by and evidenced through the ongoing developments made to the platform itself. Farhi [21] suggests that, in its earliest incarnation, Twitter was little more than 'the latest info-plaything'. However, further research reveals that Twitter has established itself as a legitimate platform for the exchange of information, personal experiences and perspectives [22], and more recently, as a facilitating medium for connectivity and community building [20]. Notably however, prior research examining the use of Twitter as a facilitator for social connectivity does not acknowledge either political contexts (such as the Scottish Referendum presented in this paper), or the role of linked content. In line with this perspective, this paper adopts the theoretical position of Chen [20] by suggesting that the use of linked content may provide an additional dimension to a sense of camaraderie which may be experienced by Twitter users, by providing an opportunity to share, comment on, and 'favourite' Tweets which are predominantly graphical in nature.

3. Methodology

Prior research projects examining the use of social media as a political backchannel have adopted a variety of methodological approaches. Bober suggests that:

> Most research on Twitter and TV is quantitative in nature. The data lends itself to quantitative analysis due to the high number of messages generated around TV programmes, often running into the thousands.[23: 299]

Bruns and Stieglitz [24] also propose the use of quantitative approaches to identify different types of discussion on Twitter, using a variety of metrics based on hashtag data sets. However, qualitative approaches have also been used in this area to good effect. Kalsnes et al [17] apply a multi-method approach using a thematic coding process, and go on to propose the IMSC model (issue, meta, sentiment, close reading) as a framework for mapping Twitter debates. Similarly Elmer uses both qualitative and quantitative data:

> To determine the interplay between broadcast comments by the leaders and reactions on Twitter.[16: 24]

However, while this research focuses on the development and application of post-hoc content categories, Elmer focussed on a'real-time'analytical approach, which was used on the night of the Canadian election as part of a broadcast by CBC [16].

This research employed a purposive sampling approach to identify a sample of Tweets from approximately 300 Twitter accounts. These accounts were selected based on the interest of their owners in the Scottish Referendum, and Scottish politics more generally. The sample consisted of the accounts of academics, journalists, commentators and members of the public, and were sources from relevant existing lists on Twitter. In addition, Tweets using the 'indyref' hashtag, and those Tweets which were geo-tagged in Scotland were also collected.

Samples of Tweets were identified from 'peaks' and 'troughs' during the three televised debates, these being the high and low points of Twitter activity drawing on the work of Elmer [16] in relation to the use of Twitter discussion during the televised debates of the 2008 Canadian federal election. Text files containing the Tweets were generated from each peak and trough, with each file containing between 300 and 500 Tweets sent up to 30 seconds either side of each peak and trough. For the purposes of this paper, the highest six and lowest six points of engagement during each of the three debates were used as a sample. This provided the following: 5,038 (Debate 1); 8,549 (Debate 2); and 3,256 (Debate 3), a total of 16,843 tweets across the three debates.

The tweets were transferred to a separate Excel spreadsheet for each debate. Firstly, using the 'Filter' function in Excel, the tweets without 'http' were removed as these contained no linked content. This was achieved by applying the text filter 'does not contain' to each data set. Secondly, Excel's 'remove duplicates' function was applied to the data sets in order to remove identical, repeated tweets from the same source. Lastly, the tweets with broken or partial links were manually removed. This left 264 tweets with unique links in Debate 1; 329 tweets with unique links in Debate 2; and 205 tweets with unique links in Debate 3.

In addition to the use of descriptive statistics to summarise the data, an analytical template was developed based on prior research by Chew and Eysenbach [3] who used the following content types to categorise linked resources:

(2) Resource - Tweet contains H1N1 news, updates, or information. May be the title or summary of the linked article. Contents may or may not be factual.
(3) Personal Experience - Twitter user mentions a direct (personal) or indirect (e.g., friend, family, co-worker) experience with the H1N1 virus or the social/economic effects of H1N1.
(4) Personal Opinion and Interest - Twitter user posts their opinion of the H1N1 virus/situation/news or expresses a need for or discovery of information. General H1N1 chatter or commentary.
(5) Jokes/Parody - Tweet contains a H1N1 joke told via video, text, or photo; or a humorous opinion of H1N1 that does not refer to a personal experience.
(6) Marketing - Tweet contains an advertisement for an H1N1-related product or service.
(7) Spam - Tweet is unrelated to H1N1.

This research utilised an approach which used three analytical 'passes' over the data relating to the three debates to generate findings relating to the source, type and themes of linked content present in the sample of Tweets as shown:

(1) Source
  (1.1) Mainstream Media - Links to content from mainstream media
  (1.2) Social Media - Links to content from social media
  (1.3) Blogs - Links to blogs
  (1.4) Campaign website/blog - Links to Party or campaign website/blog
  (1.5) Other - Links to other websites
(2) Type
  (2.1) Image - Links to poster style image or meme
  (2.2) News - Links to news article or opinion piece
  (2.3) Photograph - Links to photographs
  (2.4) Video - Links to videos
  (2.5) Screenshot - Links to screenshots or clippings
(3) Theme
  (3.1) Positive about 'Yes' - Links to content favouring Scottish independence
  (3.2) Positive about 'No' - Links to content favouring British unity
  (3.3) Wealth/currency/jobs/spending - Links to content focussing on the Scottish or British economy

(3.4) Celebrity/public figure endorsement - Links to content containing celebrity endorsements
(3.5) Energy/oil - Links to content focussing on the energy industries (renewable and hydrocarbon)
(3.6) Negative about 'No' - Links to content containing negative views of the 'Better Together' campaign
(3.7) Negative about 'Yes' - Links to content containing negative views of the 'Yes' campaign
(3.8) Health/NHS - Links to content focussing on healthcare issues
(3.9) Pensions/Older people - Links to content focussing on issues relating to pensioners
(3.10) Nuclear weapons/power/defence - Links to content focussing on national defence issues (including Trident)

This three-part template was developed inductively through an initial analytical stage in which the total samples of Tweets from each debate were analysed for indicative sources, types and themes. This stage produced the final template used to identify and code the key sources, types and themes present within the sample data from each of the three debates.

An initial coding structure was developed and tested on a small sample of tweets with linked content. This revealed a number of issues, namely, sometimes the linked content had no 'theme' such as wealth or energy, rather, it was simply a negative message about one side of the campaign. Some examples of this would be a tweet containing a poster image of Alex Salmond with the words: "Dear fellow UK citizens, this man does not speak for Scotland". This type of content was not about currency or energy or any of the other themes, it was simply negative content about the pro-independence campaign leader, and was coded as such. Another example would be a tweet linking to a 'Wings Over Scotland' blog post which doesn't tackle any of the given themes in particular, it simply has some negative comments to make about the pro-union campaign.

Refining of this structure allowed coding for positive or negative content, which was a common aspect of the linked content especially from pro-independence accounts. However, this meant that a decision had to be made about some content which was both about, for example, health or older people, and had a negative or positive aspect. In these cases, the topic, such as wealth, energy, or nuclear activity, was recorded, rather than the appearance of a negative or positive message. As such, there was no coding for politically neutral messages.

As can be seen in the coding template, some themes contain quite a range of sub-topics, especially in the case of the 'wealth/currency/jobs/spending' theme. It was felt that grouping the themes into ten broader categories still allowed for a sufficiently detailed analysis while not allowing the template to become too fragmented and difficult to apply to a large number of tweets while coding manually.

4. Findings and Discussion

4.1. Introduction

The findings are structured around three issues: the sources of linked content itself; the types of linked content; and the themes present in the content. A word cloud derived from content of the 16,843 Tweets reveals the dominant terms used during the 3 debates as shown in Figure 1.

Figure 1. Twitter word cloud

From the sample data derived from the highest six and lowest six points of engagement during each of the three debates, the tweets during Debate 1 contained 9% linked content; Debate 2 contained 8% linked content; and Debate 3 had 21% linked content. Finally, tweets were analysed for relevance giving a final sample: Debate 1 (264 unique links; 33%); Debate 2 (329 unique links; 41%); and Debate 3 (205 unique links; 26%).

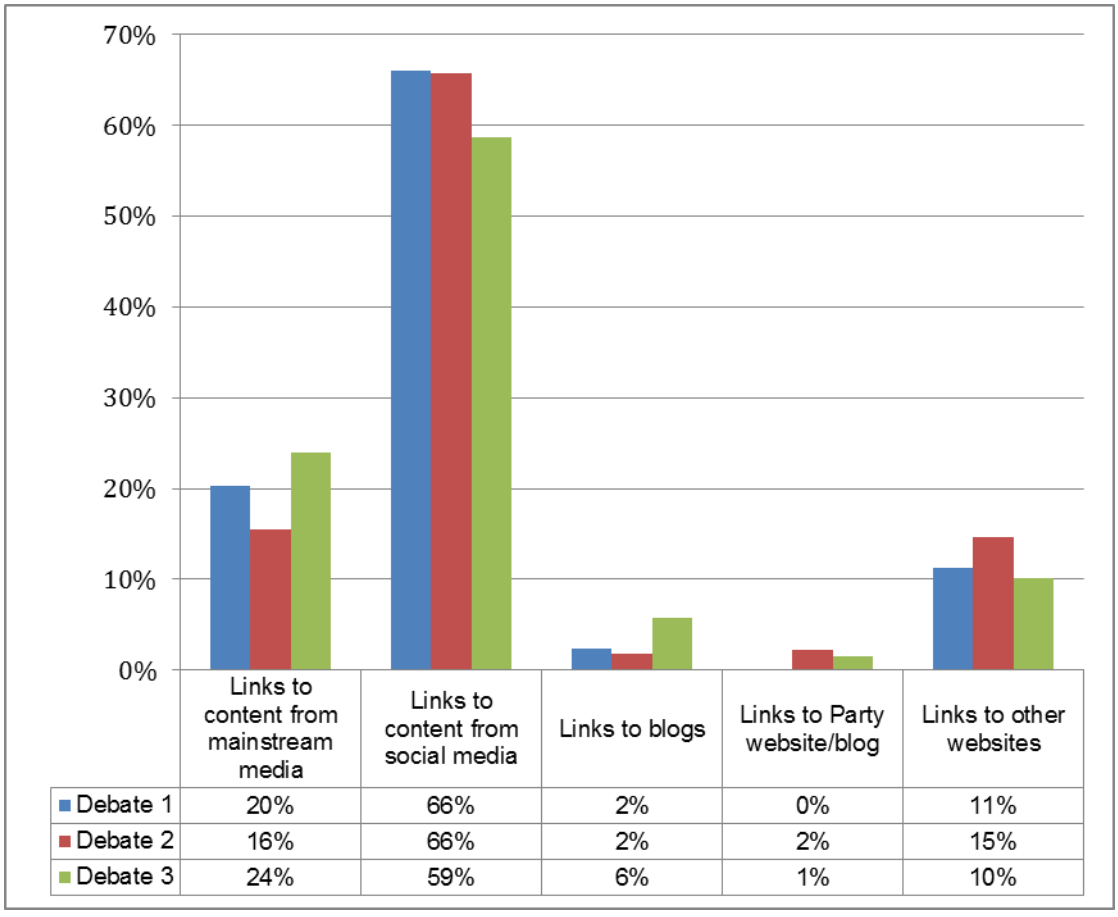
Disaggregation of the data by debate reveals that Tweeters in the sample during Debate 1 were more likely to link to a screenshot or a clipping (19%) than Tweeters in Debate 2 (12%) or Debate 3 (5%). Additionally, Debate 1 had the highest instance of negative linked content about the 'Yes' campaign (6.6% Debate 1; 6.0% Debate 2; and 3.0% Debate 3).

Tweeters in the sample during Debate 2 were more likely to link to other websites (11% Debate 1; 15% Debate 2; and 10% Debate 3) and less likely to link to content from the mainstream media (20% Debate 1; 16% Debate 2; and 24% Debate 3). This trend for linking to more informal sources is also seen in the type of content, with Tweeters in Debate 2 more likely to link to a poster style image or meme (32% Debate 1; 33% Debate 2; and 30% Debate 3). As would be expected, the links in Debate 2 were less likely to be to a news article or opinion piece (13% Debate 1; 7% Debate 2; and 17% Debate 3). Finally for Debate 2, the theme of the linked content was more likely than the tweet content of other debates to be about wealth, currency, jobs or spending (18% Debate 1; 21% Debate 2; and 15% Debate 3) and much more likely to be about health and the NHS (1% Debate 1; 9% Debate 2; and 1% Debate 3).

Linked content during Debate 3 was more likely to be from the mainstream media than linked content from the two other debates in the sample (20% Debate 1; 16% Debate 2; 24% Debate 3). As would be expected, this led to an increased proportion of linked content which was a news article or opinion piece (13% Debate 1; 7% Debate 2; and 17% Debate 3). Interestingly, however, the Tweets during Debate 3 were also most likely to link to a photo (11% Debate 1; 17% Debate 2; and 21% Debate 3) or a video (11% Debate 1; 12% Debate 2; and 14% Debate 3). Tweets during Debate 3 were also much more likely than those during the other two debates to link to content which was positive about the 'Yes' campaign (7% Debate 1; 9% Debate 2; and 24% Debate 3). Another popular theme for Tweeters during Debate 3 was linked content about a celebrity or authority figure endorsement (1% Debate 1; 2% Debate 2; and 10% Debate 3).

4.2. Sources

Across the three debates, the percentage of Tweets containing broken links, or content which was no longer available was relatively stable (36% in Debate 1, 32% in Debate 2 and 33% in Debate 3). Notably, many of the broken links were to video content on the YouTube accounts of both the 'Yes' and 'Better Together' campaigns. The majority of eligible tweets linked to social media content (i.e. links to sites such as Facebook, Twitter and YouTube), with 64% of linked content in the sample found to be of this type. More 'formal' sources of information such as the mainstream media only made up 19% of the eligible linked content. Far less evident within the samples were links to blogs, either formal campaign blogs (0% during Debate 1, 2% during Debate 2, rising to 6% in Debate 3) or more personal opinion-based blogs, many of which are closely identified with either side of the referendum debate, e.g. WingsOverScotland.com, with 2% during Debates 1 and 2, and 6% during Debate 3. Links to other websites (including all those which were not media websites, social media websites, or official party websites) accounted for 11% of shared linked content during Debate 1, 15% during Debate 2, falling to 10% during Debate 3 as shown in Figure 2.



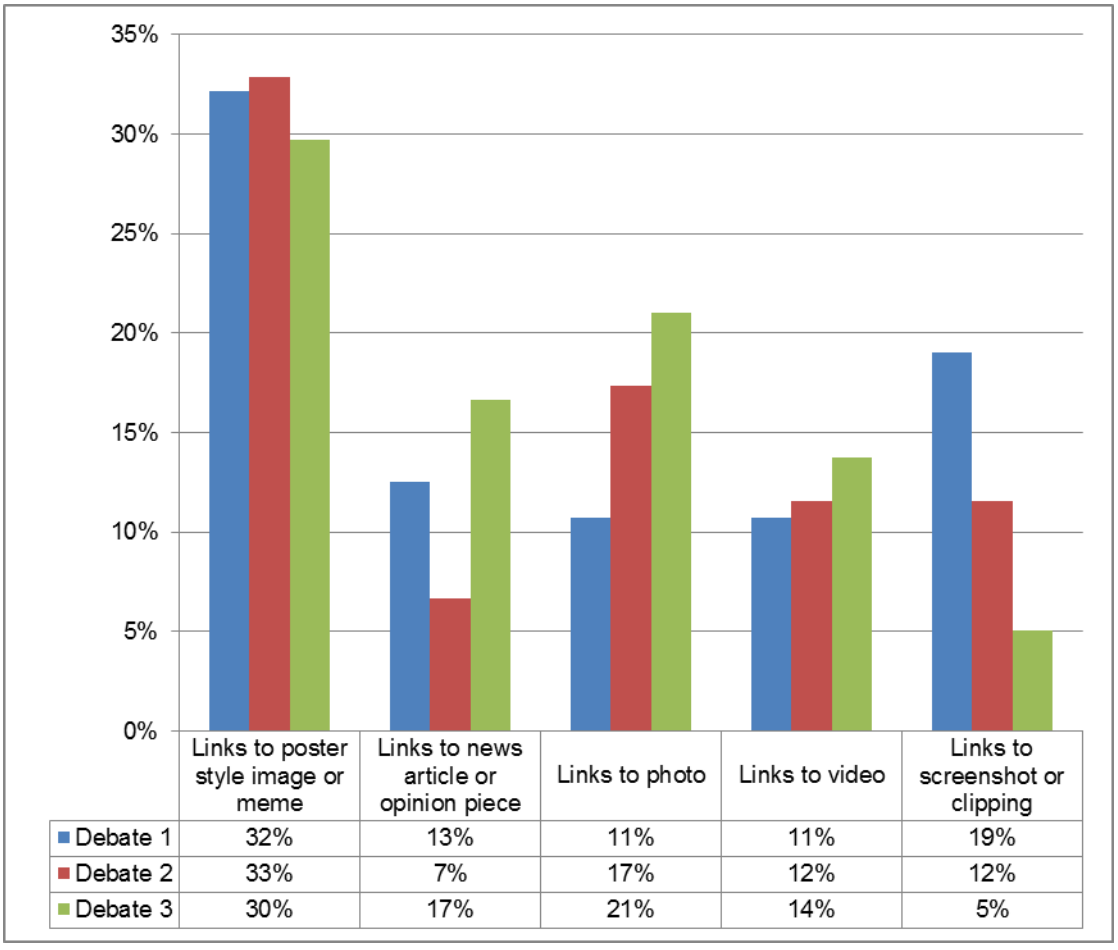
	Links to content from mainstream media	Links to content from social media	Links to blogs	Links to Party website/blog	Links to other websites
Debate 1	20%	66%	2%	0%	11%
Debate 2	16%	66%	2%	2%	15%
Debate 3	24%	59%	6%	1%	10%

Figure 2. Sources of linked content

4.3. Types

Analysis of the data according to type of linked content revealed a notable dominance of links to poster style images or memes, with 32% of linked content during Debate 1 being content of this type, 33% in Debate 2, and 30% in Debate 3. Links to news articles or opinion pieces was less pronounced, with 13% during Debate 1, dipping to 7% in Debate 2, and then rising to 17% during Debate 3. Links to photographs can be seen from the data to rise steadily across the three debates, with 11% during Debate 1, 17% during Debate 2 and 21% during Debate 3. Links to video content also grew

steadily but at a lower rate than linked content to photographs with 11% of linked content to videos during Debate 1, 12% during Debate 2 and 14% during Debate 3. Links to screenshots or clippings feel dramatically over the three debates, with an initial level of 19% during Debate 1, falling to 12% during Debate 2, and 5% during Debate 3 as shown in Figure 3.



	Links to poster style image or meme	Links to news article or opinion piece	Links to photo	Links to video	Links to screenshot or clipping
Debate 1	32%	13%	11%	11%	19%
Debate 2	33%	7%	17%	12%	12%
Debate 3	30%	17%	21%	14%	5%

Figure 3. Types of linked content

4.4. Themes

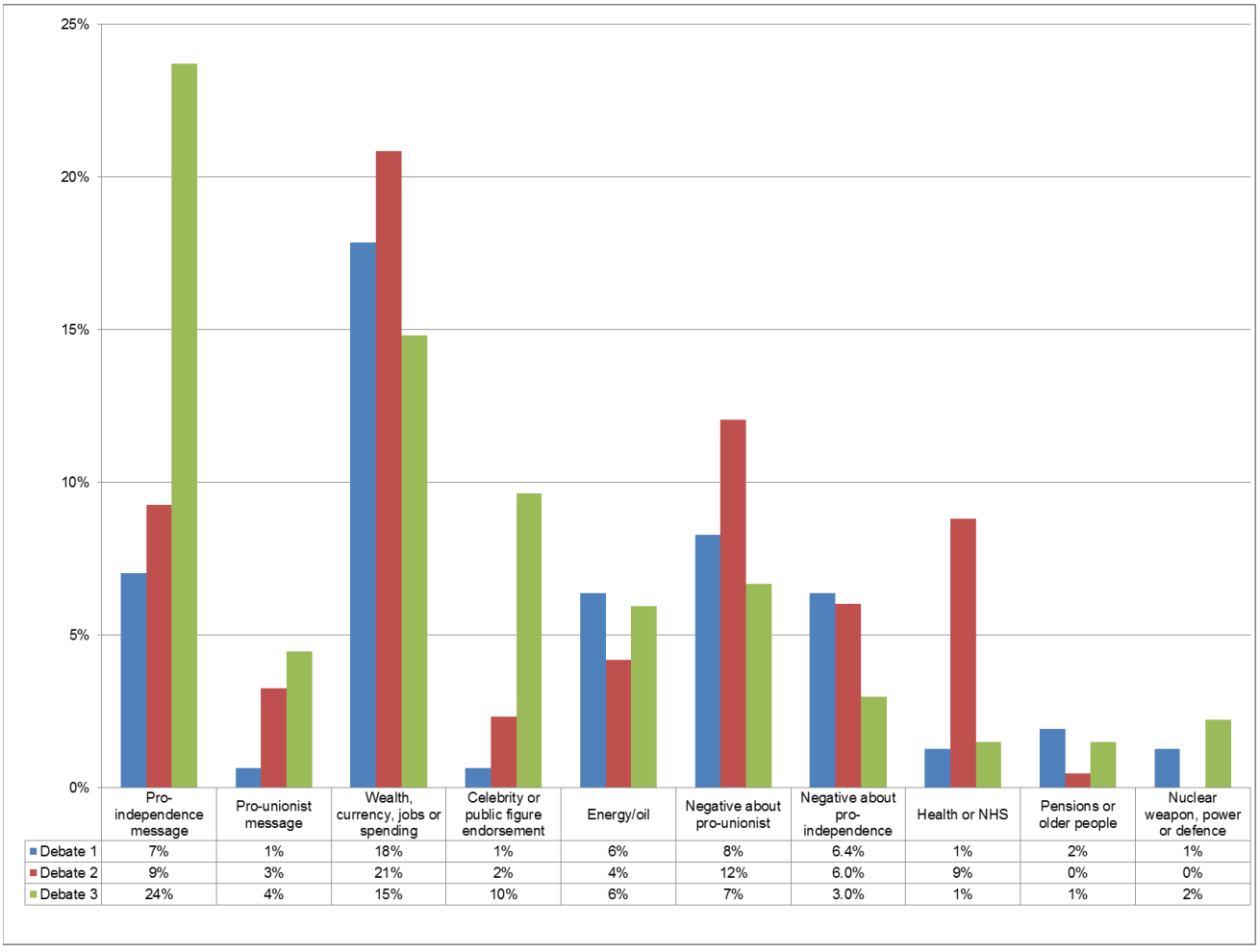
The data relating to the themes present within the Twitter linked content shows a significant rise in content which contained positive messages about the 'Yes' campaign. Twitter activity during Debate 1 shows 7% of content contained positive messages, rising to 9% during Debate 2, before a dramatic rise to 24% during Debate 3. Positive messages relating to the 'Better Together' campaign also grew over the course of the three debates but at a far more modest level. Only 1% of Twitter content sent during Debate 1 containing positive messages about the 'Better Together' campaign. This grew to 2% during Debate 2, before a final rise during Debate 3 to 5%. Negative messages relating to each of the campaigns are also in evidence across the three debates. 7% of Twitter linked content sent during Debate 1 contained negative messages about the 'Better Together' campaign, rising to 12% in Debate 2 before falling back to 7% in Debate 3. Negative messages relating to the 'Yes' campaign were less in evidence with 6% of content sent during Debate 1, 6% in Debate 2 falling to 3% in Debate 3.

Interestingly, the data shows that there was four times more linked content with a *positive* message about the 'Yes' campaign (12%), than the "No" campaign (3%) in the sample. Conversely, there was only slightly less than double linked content with a *negative* message about the 'No' campaign (9%) than the 'Yes' campaign (5%). These findings

clearly tie in with the previous work of Pedersen et al [19], who identify a peak of Twitter activity during Debate 1 around what Alex Salmond called 'Project Fear': 'the negative approach to campaigning from Better Together'. However, the data shows that negative campaign messages were more likely to come from 'Yes' campaigners towards the 'Better Together campaign' rather than the reverse, alluded to by Alex Salmond. While negative campaigns are by their very nature seen as lacking in contributing to constructive political debate, Ceron and d'Adda suggest that there are beneficial consequences to campaigns' public profiles:

> Being both the source and the object of negative campaign attracts attention and increases a party's prominence in the political agenda boosting its exposure in the daily debate (online as well offline).[18: 13]

There was a significant rise in Tweets relating to celebrity endorsements by both parties over the course of the three debates, with celebrity endorsements barely mentioned in the first two debates (1% and 2% respectively) before a significant rise to 10% in Debate 3 as shown in Figure 4. It is suggested that this is largely due to the change in format of the third debate which included a Scottish actress speaking in favour of independence: Elaine Smith. Although Smith was the only non-politician to appear in person on one of the three debates within the scope of this research, both sides made extensive use of high-profile celebrities including actors Brian Cox, Ken Stott and Robbie Coltraine for the 'Yes' campaign, and Ronnie Corbett, Ross Kemp and Kevin Whately for the 'Better Together' campaign [19].



	Pro-independence message	Pro-unionist message	Wealth, currency, jobs or spending	Celebrity or public figure endorsement	Energy/oil	Negative about pro-unionist	Negative about pro-independence	Health or NHS	Pensions or older people	Nuclear weapon, power or defence
Debate 1	7%	1%	18%	1%	6%	8%	6.4%	1%	2%	1%
Debate 2	9%	3%	21%	2%	4%	12%	6.0%	9%	0%	0%
Debate 3	24%	4%	15%	10%	6%	7%	3.0%	1%	1%	2%

Figure 4. Themes within linked content

Analysis of the themes of the linked content revealed that wealth, currency, jobs and spending was by far the most popular theme (18%), while themes such as the NHS and health (5%) and energy and oil (5%) received less attention when the Tweeters in the sample shared linked content. Discussions about the Scottish economy (and more specifically which currency Scotland might use post-independence) proved to be the most popular topic on Twitter over the course of the three debates, with 18% of Twitter activity focussing on this issue during Debate 1, 21% in Debate 2, and 15% in Debate 3. This issue was also reiterated in the mainstream media focussing on Alistair Darling's questioning of Alex Salmond during Debate 1 on 'Plan B', i.e. which currency Scotland would adopt if the Scottish Government was unable to retain the pound sterling, see Figure 5 for an example from the Huffington Post.

Figure 5. 'Better Together' campaign Tweet regarding Scottish currency plans

This issue largely dominated Debate 2, with discussions around alternatives to the currency union proposed by the 'Yes' campaign, as well as a return to the issue of the form of currency itself. 'Yes' campaigners on Twitter made particular reference to a video clip of Alistair Darling appearing to speak favourably about a currency union prior to the debates, before rejecting this proposal during the debates themselves. See Figure 6 for an example of the type of linked content related to this clip.

Linked content relating to energy issues (particularly the ownership of oil and gas licensing areas in the North Sea) were rather surprisingly (given the importance placed on the potential contribution made by oil revenues to an independent Scotland) limited. Notably, while prominence was given to this topic across all three televised debates, which was echoed in the text-based comments on Twitter, linked content only reached 6% during Debate 1, 4% during Debate 2, and 6% during Debate 3. An example of the type of linked content shared on this topic can be seen in Figure 7.

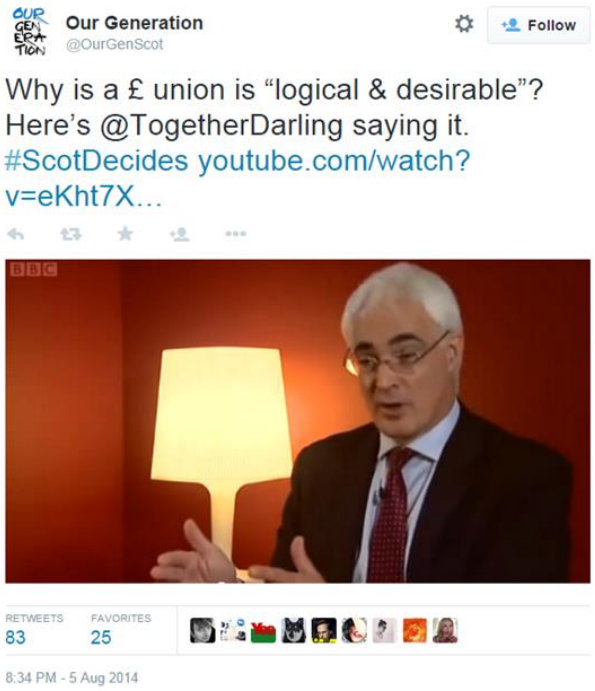


Figure 6. Pro-independence Tweet linking to the Alistair Darling currency video.

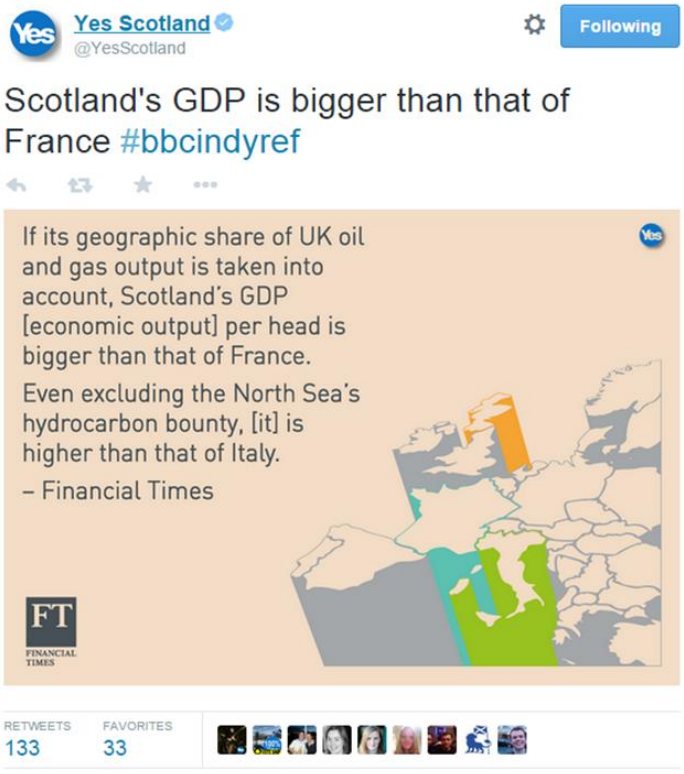


Figure 7. Pro-independence campaign Tweet regarding Scottish GDP

Health on the whole was relatively poorly represented by linked content in the first and third debates, with only 1% of linked content related to NHS or related health issues in these debates. However, data collated during Debate 2 shows a marked increase to 9%. One particular event during Debate 2 may be attributed to this rise, as Pedersen et al note:

> …another clear peak was stimulated by a question from a member of the audience asking Alistair Darling 'If we are better together, why aren't we better together already?' This came a few minutes after another audience member had accused Darling of being a hypocrite for attending dinners with representatives from private healthcare companies.[19: 17]

An example of the type of linked content related to the topic of health is given in Figure 8.

Figure 8. Pro-independence campaign Tweet focussing on the NHS

Linked content relating to both pensions or issues affecting the elderly were very poorly represented achieving only 2% during Debate 1, 0% during Debate 2, and 1% during Debate 3. This is closely reflects the activity on Twitter as a whole relating to these topics during the debates, in which 'troughs' in activity were noted during Debate 1. Defence was also poorly represented, despite the prominent position adopted by the Scottish National Party regarding their opposition to the renewal of the Trident nuclear missile system, and the potential concomitant contribution made to the Scottish Economy. The data shows only 1% of Twitter linked content related to issues of national defence during Debate 1, 0% during Debate 2, and 2% during Debate 3.

Figure 9. Pro-independence Tweet relating to defence.

5. Discussion

The findings show the different sources, types and contents shared through Twitter in relation to the televised debates. These include (inter alia) links to statistical graphics relating to topics under discussion (such as oil revenue figures); relevant blogs covering relevant political and social issues; articles from the mainstream media; governmental and public body websites; other social media sites (such as Facebook) and link to video content in on YouTube.

It is important to note that there was no overall growth in terms of the percentage of linked content across the three debates identified within the samples. Elmer's research on the 2008 Canadian federal election highlights an absence of linked content:

> Curiously absent is an expansion of Twitter's interface time onto other Web-based political documents.[16: 27]

He goes on to suggest that:

> Such a finding seems counterintuitive given Twitter's predominate convention today of sharing links to articles, YouTube videos, Wikipedia and the like.[16: 27]

This change in the use of linked content may be a reflection on the constantly changing forms of engagement with social media, with a notable recent increase in the use of user-generated content such as 'selfies', as well as the manipulation and sharing of existing images in the form of memes. This research shows that while there are Twitter often echoed the discussions on the televised Scottish Referendum debates, this was not as evident in the use of linked content.

The findings of this research highlight a lack of use of formalised campaign materials. Significantly in relation to this research, Houston et al suggest that formal campaign media is not related to the frequency of tweeting during televised debates, and should therefore be considered as a distinct process rather than a form of campaign media use [15].

An additional finding by McKinney et al also presents perspectives related to this research, specifically in terms of the levels of engagement by both the 'Yes' and 'Better Together' supports:

> The finding that Democrat participants and those who reported a more liberal political ideology tweeted more about the debate does, in fact, agree with the emerging picture of the greater Twittersphere. [14: 13]

Furthermore, Quinlan and Shephard suggest that:

> In part the answer may lie in the fact that younger people are more likely to use Facebook and are also rather more likely to be in favour of independence. But more importantly, we can expect that visitors to a campaign's Facebook pages and followers of their Twitter accounts are likely to be sympathetic to that campaign's cause in the first place. The social media world is more one where the committed interact with each other rather than one where converts are made. [25]

This point, in line with the findings of this research suggest that linked content is not used primarily to attempt to influence the political leanings of opposition supporters, and is in fact largely proselytizing, or more positively used as a (tacit or explicit) stimulus for collective political engagement.

Informal, poster style images or memes (32%) were more evident than links to more formal types of information such as news articles or opinion pieces (11%). In fact, Tweeters were more likely to link to a photo (16%) than to content from an official news source. The use of historical video and text-based content (often from the mainstream media) was a popular approach used by both campaign groups to undermine opponents' arguments (particularly where video evidence suggested a change in policy stance such as Darling's arguments against a currency union) and to bolster the arguments of their own campaigner's by highlighting the relative stability of their arguments (such as Salmond's position on the renewal of the Trident nuclear deterrent).

In relation to the positive and negative perspectives presented by Twitter linked content during the debates, this paper makes some significant findings. On the whole, as a percentage of linked content during the three debates, there can be seen to be far more positive messages relating to the 'Yes' campaign than the 'Better Together' campaign. The 'Yes' campaign specifically encouraged supporters to make extensive use of social media in support of the campaign, and this is evidenced by the scale of retweeting of linked content. Chen argues that:

> Twitter allows people to gratify their intrinsic need to form relationships with other people through the habitual process of using Twitter by sending tweets and direct messages, retweeting, following people, and gaining followers. [20: 756]

The results of this research project support Chen's argument and further emphasises the importance of sharing linked content as one potential route for community building which has not been previously explored [20]. From the data, the linked content themes identified within the Tweets sent during the debate broadly matched the topics of discussion during the debates themselves. However, these were not generally reactive to specific issues in the debates. While topic matching can be observed in the content of the Tweets in relation to the content of each debate, as suggested by Pedersen et al [19], this does not apply to the same extent for linked content. There are a number of possible reasons for this. Foremost, the use of linked content is less immediate than 'text only' Tweets. The use of linked content is highly reliant on personal knowledge of both the issues under discussion during the debates, and of existing material which could be used for linked content, such as video clips, photographs (original or not), and other materials such as cartoons and memes. Given this, it is perhaps unsurprising that linked content lacks of the immediacy of Tweets which do not contain linked content.

In addition to the thematic issues presented above, the data also reveals the use of social media in providing access to content on more 'generic' process-based issues surrounding both the debates and the referendum itself, including links to information about how to view the debates online, voter registration, campaign supporter registration, etc. This issue was also identified by Ceron and d'Adda in their examination of the 2013 Italian election, who suggest that while such content may appear to be somewhat sterile, it may help to raise levels of political awareness and subsequent engagement:

> As a consequence, the role of Internet in providing voters with information on electoral campaigns and stimulating their political engagement is becoming increasingly relevant.[18: 2]

While not being used to influence voter direction, these can be seen to be potentially beneficial sources of information for engagement across the political spectrum.

6. Conclusion

The extent to which the use of social media (and specifically Twitter) influenced the final outcome of the 2014 Scottish Referendum remains highly debateable. Both the 'Better Together' and the 'Yes' campaigns made extensive use of social media both to dispute their opponents' arguments, and to put forward their own cases for independence (in the case of the 'Yes' campaign, or unity (the 'Better Together' campaign). Following the result of the referendum both the mainstream and social media were filled with stories relating to the dominance of social media by the 'Yes' campaign. Yet it was the 'Better Together' campaign which was victorious. Published 6 months before the date of the referendum, Quinlan posits:

> It is clear that, at least so far as the official campaigns are concerned, the Yes side to date has been coming out on top in terms of generating enthusiasm online. But this begs the question as to why so far, at least, this has not translated into a lead for the Yes side in the opinion polls. [26]

He goes on to suggest that usage of social media is dominated by younger people who are more likely to favour a vote for independence. Furthermore, the usage of social media by younger voters (as noted by Quinlan and Shephard [25] above) may also highlight the lack of engagement with linked content related to issues which are not of primary importance to this group, for example the lack of engagement around the topic of pensions. This perspective is also shared by Ceron and d'Adda who reflect on the limitations of their own research on the 2013 Italian election:

> One potential weakness of our analysis is related to the fact that social media users are not representative of the electorate … They tend to be young and highly educated males.[18: 14]

This skewing of the data towards one sociodemographic grouping suggests that analysis of activity on social media is not enough on its own to predict a political outcome without significant insight into both the population as a whole, and its usage by social media. Furthermore, while the use of services such as Twitter may be useful for political groups to promote their own activities, they should not be used in isolation. Ceron and d'Adda also provide an additional useful insight into the nature of positive and negative statements (which were very much in evidence in the Scottish referendum debates), and the impact these may have on political campaigns:

> On the one hand, people pay greater attention to negative messages rather than to positive ones, and the perception of fear generated by negativity can also stimulate interest in the campaign. On the other hand, a negative "flame" also signals voters that the race is tight and this will bring partisan voters to mobilize and participate.[18: 13]

The paper also contributes to recent research examining the use of social media, specifically in relation to political contexts. Building on the work of Chew and Eysenbach [3], the development and application of a content analysis framework specifically to examine the forms, types and content of Tweets could be applied to other events (political or otherwise) or adapted for use within other media contexts. The need to update existing methodological approaches and to develop novel methods is particularly evident in the domain of social media research, given the immediacy of the data itself. This point is emphasised by Elmer who argues that:

> …the emergence of vertical tickers and other forms of hyper-immediate, time- compressed social media interfaces highlight the need for real-time forms of Internet research.[16: 19]

This point also goes some way to considering one of the most significant issues for researchers using social media: link rot. Link rot is defined by Parker as:

> …the decay of a URL as a result of removal of its website, content change or redirection.[27: 172]

Its impact on other research domains such as science [e.g. 28] and law [e.g. 29; 30] as well as in information science [e.g. 31] has been well documented in the literature, however its impact remains as pressing concern for all researchers drawing on data on Internet sources. Given this, researchers must give thought to both the speed at which research data should be collated to minimise the impact of link rot, and the methods applied to collate and analyse this data. Elmer also considers the issue of disseminating research results in highly time sensitive contexts:

> This, however, is not a call to do away with established forms of peer review and scholarly publishing, but rather to question how new theories, methods and venues for publishing and otherwise making research findings public can begin to address the growing importance of real-time media as a distinct event into itself (e.g. a debate or media event such as a weather-related disaster), or a series of micro-events that in sum offer researchers insight into the structure and effect of 'political cycles'.[16: 28]

As a focus of research, the use of social media in political contexts is still in its infancy. However, as can be seen from this research, as well as the plethora of prior work in the field, it is a burgeoning area. This research has attempted to highlight the variances between televised political debate content, text-based Twitter commentary and linked content. The research has shown that while linked content is strongly in evidence throughout the Scottish Referendum debates, its use is largely generic in terms of its coverage, and lacks the timeliness and specificity of text-based content. Despite this, it plays an important role in unifying political perspectives, and in helping to develop a sense of common purpose among politically engaged Twitter users.

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