

## Investigating Political Polarization on Twitter: A Canadian Perspective

Anatoliy Gruzd ([gruzd@dal.ca](mailto:gruzd@dal.ca)), Dalhousie University, Halifax, Nova Scotia, Canada

During the 2011 Canadian Federal Election, a lot was written about the influence of social media on the election (Curry, 2011). On some level this is not very surprising. In just a short period of time, social media have altered many aspects of our daily lives, from how we teach and learn (Young, 2010), to how we find and access health information (Fox & Jones, 2009). Now social media are also beginning to affect how elections and political discourse are conducted (Wattal et.al., 2010; Gulati & Williams, 2010; Robertson et.al., 2010; Chen & Smith, 2011). Politicians, party organizers, the media and the general public are moving in droves to promote and debate party platforms, solicit donations, organize political rallies or flashmobs, recruit new supporters, and connect with other voters using social media. While this new reliance on social media has many obvious benefits, there is a growing concern that people are becoming more politically polarized on social media, this is especially prevalent among supporters of different parties (On the Media, 2011). Political polarization often occurs in a so-called “echo chamber” environment, in which individuals are exposed to only information and communities that support their own views, while ignoring opposing viewpoints. In such isolation, ideas can become more extreme due to lack of contact with contradictory views.

Modern examples of political polarization have been observed among audiences of cable news and radio talk shows (Dilliplane, 2011). On the web, political polarization has been found among political blogs. For example, Adamic and Glance (2005) found that liberal and conservative bloggers in the US tend to link to other bloggers who share their political ideology. A similar tendency has also been observed on a popular social networking site, Facebook. For example, Gilbert and Karahalios (2009) discovered a weak connection between someone’s political view and the likelihood that two people are connected on Facebook. Gaines and Mondak (2009) also observed a marginal tendency of some Facebook users (primarily students) to cluster together ideologically, a sign pointing to possible polarization.<sup>1</sup>

This study investigates whether users of Twitter, a popular microblogging platform for sharing short messages, are also likely to cluster around shared political interests. Like blogs and Facebook, Twitter has actively been used for political discourse during the past few elections in the US, Canada and elsewhere (e.g., Shamma et.al., 2010), but it differs from both blogs and Facebook in a number of significant ways. Unlike blogs, Twitter provides social networking features that enable its users to find and connect to other users of this service and follow their status updates. In addition, unlike Facebook, Twitter’s connections tend to be less about strong social relationships, such as those that exist among close friends or family members, and more about connecting with other people for the purposes of information sharing (Gruzd et.al., 2011). Since people can freely choose whom to follow (or unfollow) on Twitter, one would expect to see an even tighter clustering effect around political topics and possibly an even stronger “echo chamber” effect on Twitter than on Facebook.

This work aims to add a Canadian perspective to previous US-centric studies on political polarization and Twitter by Conover et.al. (2011) and Yardi and boyd (2010). Looking at the Canadian use of Twitter in this context is especially interesting, since unlike the US, Canada has a parliamentary political system; as a result, different usage patterns may arise. For the purpose of this study, we collected a sample of 5,918 Twitter messages (or *tweets*) about the 2011 Canada Federal election<sup>2</sup> posted by 1,492 people (or *tweeters*) between April 28-30, a few days before the federal election on May 2. This time period was chosen because it was late enough in the campaign for people to have an informed opinion, but still early enough for them to be persuaded as to how they should vote.

To determine if there is a clustering tendency among Twitter users with similar political views, all 1,492 of the tweeters in the sample were manually classified based on their self-declared political views and affiliations. The classification was conducted by a human coder based on the manual review of public user profiles and 20 recent messages posted by each person in the sample during the month that immediately followed the election. For the purpose of the paper, we only focused on people who expressed their support for a single party. In total, there were 256 supporters of the Liberal Party of Canada (LPC), 221 - New Democratic Party of Canada (NDP), 83 - Conservative Party of Canada (CPC),

and 48 - Green Party of Canada (GPC) that were selected for further analysis. The 8 supporters of the Bloc Québécois and 7 supporters of non-mainstream political parties such as the Anarchist Party of Canada were excluded from further analysis due to their relatively smaller numbers.<sup>iii</sup>

Based on an absolute count of all possible communication connections between tweeters in the study, supporters of the four parties had more connections to people in other parties than to supporters of their own party. For example, the LPC supporters were 1.76 times more likely to talk to people who are supporters of other parties than to the LPC supporters, and for the NDP supporters, this ratio was even higher – 2.75. This fact may suggest that there is no clustering around political views on Twitter. However, when the observed communication network is compared to 10,000 randomly generated networks (using UCINET, software for Social Network Analysis; Borgatti et.al., 2002), the answer is not as straight forward as it first appeared. Only LPC, NPD, and GPC supporters had connections to other groups that appear more likely than by chance alone. Specifically, LPC to GPC, NDP to LPC, and GPC to LPC. As for CPC, although CPC supporters talked to other groups, statistically speaking, the number of external connections to LPC, NDP and GPC is much smaller than what would be expected by chance alone. At the same time, when examining the number of internal connections (within the group) for all four parties, this number is higher than what would be expected in a random network, and especially high for GPC, CPC and LPC (see Table 1). This suggests that all four parties exhibited the tendency to talk to people with shared political views, but at the same time they are also likely to talk to people from at least one other party, except CPC supporters who seem to be the most polarized group in this sample. The latter observation is somewhat expected since CPC has the most different ideology comparatively to the three left-leaning parties in Canada (LPC, NDP and GPC).

The study results show that there are some pockets of political polarization on Twitter, but at the same time Twitter as a communication and social networking platform has potential for supporting open cross-ideological discourse. The latter is supported by the presence of cross-party connections for the three parties in the study, and by the fact that about 43% of the accounts in the sample still had not explicitly stated their support to any party or stated support to more than one party. Interestingly, this result is somewhat different from what we expected to observe on Twitter at the beginning of the study.

The previous research in this area by Conover et. al. (2011) and Yardi & boyd (2010), made similar observations regarding the presence of cross-ideological connections on Twitter. However, Yardi and boyd (2010) concluded that even though people are likely to be exposed to a variety of points of views on Twitter, it is not an effective platform to carry on meaningful discussions and that even “replies between different-minded individuals reinforce ingroup and outgroup affiliation” (p. 316). Our future work in this direction will focus on the content analysis of messages that form across ideological connections on Twitter, to see whether most of these messages do in fact lack “meaningful discussions” or if there is something unique about the Twitter platform that allows for more cross-ideological connections, making it a truly democratic medium for political discourse.

**Table 1: Ratio of Observed/Expected Connections among Political Parties’ Supporters on Twitter**

	LPC	NDP	CPC	GPC
LPC	<b>3.43</b>	0.52	0.40	1.71
NDP	1.47	<b>1.60</b>	0.40	0.69
CPC	0.79	0.34	<b>3.71</b>	0.79
GPC	1.71	0.40	0.26	<b>6.99</b>

### Acknowledgements

This work was supported in part by the NCE GRaphics, Animation, and New meDia (GRAND) and Social Sciences and Humanities Research Council (SSHRC) grants. The author would like to thank the Amanda Wilk, a member of the Social Media Lab at Dalhousie University, for her help in preparation of this article.

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<sup>i</sup> The presence of political polarization on social networking sites, blogs and other various web 2.0 platforms may be explained by a well-known phenomenon in sociology called *homophily* (McPherson et.al., 2001), where people in social networks tend to group around similar backgrounds and interests, including shared political views.

<sup>ii</sup> To ensure that only tweets about the Canadian election were captured, only tweets containing the #elxn41 keyword (or *hashtag*) were collected. A hashtag is a convention that is unique to Twitter which allows users to denote that a tweet is related to or is about a particular topic; making it easier for other Twitter users (or *tweeters*) to find related messages within the Twitterverse.

<sup>iii</sup> There were also 305 left-leaning undecided supporters and 13 people who stated their support for more than one party and these parties were not all left-wing parties. 106 accounts of political organizations, media organizations or journalists, businesses and educational institutions were classified as “undisclosed” since they did not openly support any of the parties. Finally, 349 accounts did not clearly declare their support to any of the parties, 87 accounts were spam, and 9 were protected accounts.