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ON THE ATTACK: U.S. GUBERNATORIAL CANDIDATE DIRECT CAMPAIGN DIALOGUE ON TWITTER

Jeff Hemsley
Sikana Tanupabrungsun
Bryan Semaan
Jennifer Stromer-Galley
Syracuse University

Political candidates are increasingly utilizing social media in their campaign strategies. For example, of the 78 gubernatorial candidates in the 2014 U.S. elections, 76 actively tweeted messages in the months leading up to the election. In this paper we report on the initial stages of an ongoing project examining the messaging practices of these candidates on Twitter, Facebook and Instagram, as well as the discussions around the candidates. The work presented here focuses on the explicit referencing (@mentioning) practices on Twitter among the 2014 gubernatorial candidates.

Studies of election messaging online are certainly not new. Xenos and Foot (2005) provide an in-depth study of candidate messaging practices on Web pages during the 2002 U.S. election cycle and found that candidates communicated their position on issues far more frequently than they engaged in campaign issue dialogue. That is, candidates tended to avoid directly or indirectly mentioning their opponents, depriving voters of a clear understanding of where they stand. Stromer-Galley's (2000) assessment of the 1996 presidential and 1998 gubernatorial campaigns found that candidates actively avoided on-line interaction with their opponents on their websites. More recent scholarship exploring politician's messaging on Twitter (Golbeck, Grimes, & Rogers, 2010; Hemphill, Otterbacher & Shapiro, 2013) finds that members of congress use social media as a broadcast mechanism, rather than as a mechanism for interaction with constituents. A common theme in these studies has been in determining if Internet technologies promote transparency and deliberation.

Our work differs from this stance in that we focus specifically on @mentioning behavior among our gubernatorial candidates on Twitter. We consider @mentioning a means to engage in a publicly visible conversation with a specific candidate. Thus, we conceptualize @mentions as a form of direct campaign dialogue (Xenos and Foot, 2005). Based on Xenos and Foot's (2005) work, we expect our incumbent candidates to

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engage in direct campaign issue dialog less frequently than challengers. By examining messages utilizing machine learning trained with manually coded data, our intent is to provide insight into the differences in campaign dialogue practices among challengers and incumbents, democrats and republicans, as well as inter and intra-state.

Methodology

We employed an open source toolkit (Hemsley, Ceskavich and Tanupabrungsun, 2014) to collect 159,855 streaming tweets from our 76 candidates. After removing delete-request tweets, retweets and tweets without an @mention to one of our candidates, 7,140 tweets remained. To answer our questions concerning candidates mentioning other candidates, we exclude another self-mention-only 4,097 tweets, leaving us with 3,043 tweets. Table 1 shows the number of candidates and tweets by party and incumbent / challenger status.

		Incumbent	Challenger	TOTALS
Republican	Candidates	20	16	36
	Tweets	870	516	1,386
Democrat	Candidates	10	24	34
	Tweets	376	1,130	1,506
Independent	Candidates	0	2	2
	Tweets	0	33	33
Green Party	Candidates	0	1	1
	Tweets	0	48	48
Libertarian	Candidates	0	2	2
	Tweets	0	70	70
TOTALS		1,246	1,797	3,043

Table 1: Shows number of candidates and tweets by party

Incumbents mention challengers in 1,207 tweet, but challengers mention incumbents in 1,362 tweets. Like Xenos and Foot (2005) we find that challengers mention incumbents more than the other way around. However, when we look at the percentages we find that 98.87% of incumbent tweets mention a challenger, but only 75.79% the tweets sent out by challengers mention an incumbent.

Using a series of paired t-tests we also find that candidates mention other candidates in the same state more often than candidates in other states ($t = 4.08, p < 0.00$) and that candidates mention candidates from others parties more than those in the same party ($t = -4.12, p < 0.00$). These findings are consistent with the finding that the bulk of the tweets from both incumbents and challengers are to a challenger or incumbent, respectively.

To explore the nature of these messages, we adopt and modify the qualitative coding scheme used by Hemphill, Otterbacher & Shapiro (2013) in their study of congressional member's tweets. We add a code for Attack, but remove their code for Directing to Information since an initial scan indicates more than 70% included a link or could otherwise include this code. Two annotators manually categorize 200 tweets, in two

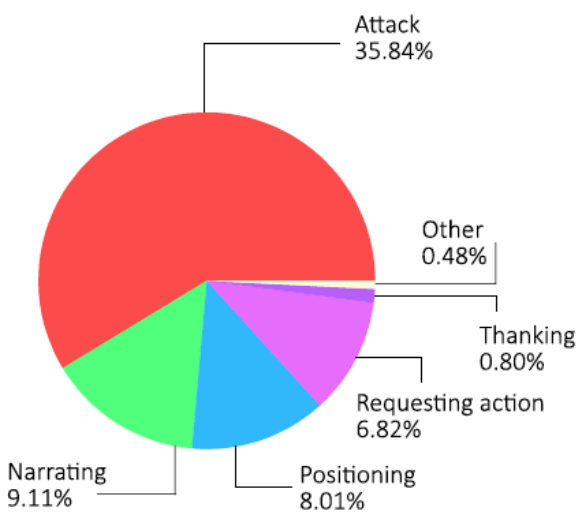
rounds, allowing mutual inclusive. That is, a tweet can be labeled as one or more codes. Table 2 shows the Cohen’s kappa scores (mean 0.853, SD 0.33) for our codes.

With the mutually inclusive code design, we construct five binary Naïve Bayes classifiers for each of the codes except Other, which only indicates no other code fit. All classifiers are constructed using the Python Scikit-learn toolkit (Pedregosa et al., 2011).

For each code, we train a classifier model with a random selection of 60% of the manually coded tweet text and verify the model against the remaining 40%. For instance, an Attack classifier predicts if a tweet is either Attack or Non-attack. Table 2 shows the average accuracy from three classification runs for each code. On average, classification accuracies for all codes are higher than 72.50% with less than 3.15 SD. These numbers indicate a reasonable fit, but that more work will need to be done in future phases of the work.

Code (Kappa)	Description	Manual Coding	%Accuracy Mean, SD.
Narrating (0.79)	Informing audiences of their daily activity, sometimes related to past events.	27.50%	74.58, 1.91
Positioning (0.78)	Situating oneself in a political alignment.	28.50%	72.50, 2.50
Request action (0.91)	Explicitly asking audiences to take some effortful actions.	19.50%	83.33, 3.15
Thanking (0.93)	Explicitly giving thanks to a specific person or group.	7.50%	93.33, 2.60
Attack (0.94)	Pointing out weaknesses/failures of others. Some Attack tweets are obvious with the use of negative words such as failure, inexperience or risking.	42.50%	72.50, 2.17
Other (0.77)	If no other codes applied	10%	72.50, 2.5

The results of running five classifier models on the remaining tweet texts indicates (see figure 1) that Attack is the most frequent message type in this dataset: 35.84%.



Narrating, Positioning and Requesting actions range from 6.82 - 9.11% of tweets with Thanking and Other in only 0.8% and 0.48% of our tweets respectively.

Focusing on the most frequent message type, Attack, we look at the distributions of tweets from three perspectives. First, the distribution by incumbency status suggests that incumbents attack challengers slightly more than the other way around. This finding is interesting because one would expect challengers to attack more. Second, the distribution by party shows that republicans attack others the most. This finding is

consistent with Glassman et al. [2010] who pointed out the difference in Republican and Democrat online campaigns. Last, the distribution by state indicates that all Attack

tweets are intra-state practice. This finding suggests that candidates restrict their attacking behavior to those they are competing with for a gubernatorial seat.

This work contributes to our understanding of how gubernatorial campaigns utilize Twitter in their direct campaign dialogue messaging practices to other candidates. Our results also make a meaningful contribution to the body of literature on the use of social media by U.S. politicians. We believe our findings are potential groundwork for future studies exploring the roles and impacts of social media on the relationship between politicians and the public.

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