

Looking @ Position: Examining the Location of Twitter Handles in a Political Event

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Abstract

In the following article we examine how differences in location of @-mentions constitute both differences in meaning and social signaling in the context of the 2012 United States Presidential election. Through our analysis we establish that the Twitter handles of Barack Obama and Mitt Romney have distinctly different positions in tweets where they are mentioned. We expand on this finding by exploring how these positions change over time and how different syntactical features affect this position.

Keywords: Twitter, political discourse, social media, syntactical features

Introduction

Twitter is a global platform where participants dynamically construct context and express their positions on a wide range of topics. Over time, Twitter users have developed and adopted a set of prescribed syntactical features that to participate in conversations, exchange information and frame both durable and ephemeral context. The most widely used syntactical features include @-mentions, hashtags and retweets. The content and the resulting, dynamically constructed context *depends on* humans embedding technological symbols in the content of their message. Whether it is a retweet, an @-reply or @-mention, these symbols in the context of Twitter imply action possibilities.

To date, little research has been done on positions of syntactical features on Twitter (Zappavigna, 2011). We have been seeking to close this gap through analysis that spans multiple domains and multiple syntactic features. The research presented here examines @-mention position in a narrow context of political discourse in the United States; specifically, tweets referencing the two candidates running for office in the 2012 United States Presidential Election.

Literature

In Twitter, @-mentions are used to direct a tweet towards another user and insert one's tweet into that person's stream. Because @-mentions serve as a technologically specific hyperlink (a "learning affordance") (Kaptelinin and Nardi, 2012) we conceptualize them here as a technological affordance. When considering @-mentions as affordances, they are technologically constitutive and only perceived when made. One must affix an @-mention to content for it to be viewed as a technological affordance.

In the case of @-mentions, we take the view of @-mention as both an affordance, in the technological sense, and its demonstrated role in coherent conversation and demonstration of one's goals. Thelwall et al. (2011) propose applying the concept of *affordances* to understanding the purpose of function of tweets in terms of users goals during an event, a proposition that aligns itself with the uses and gratifications model of media, which argues that people actively exploit media for their goals. In Thelwall's et al. (2011) conceptualization, events are more narrowly defined as an exogenous occurrence that results in an increased use of one or more words. Here we consider news pertaining to the incumbent President and opponent during an election season to constitute an ongoing event. We hypothesize @-mention use in the context of presidential candidates to be informed by a desire to demonstrate conversation (if in representation only) or insinuate talk. That is, its use merely implies conversation.

Dataset and Methods

As part of a larger collection effort examining the 2012 United States Election, we collected every time the handle of Barack Obama (@barackobama) and Mitt Romney (@mittromney), the two major candidates in the 2012 US Presidential Election, were mentioned on Twitter. This time period incorporated April 1, 2012 through August 13, 2012. Our data collection was conducted using the TwitterZombie architecture that queries the SEARCH API for tweets that meet specific selection criteria identified by the researcher (Black et al., 2012). We bound our data as this timeframe represents a distinct time in the United States where civic discourse shifted from the Republican Party primary season to the general election up through the time that immediately precedes the party conventions. Our analysis follows similar methods used in previous studies of political events on Twitter (Black et al., 2012; Mascaro and Goggins, 2012; Mascaro et al., 2012).

Research Questions

Our dataset represents a specific political context, but we believe it can be applied to other domains. We ask the following questions:

1. To what extent does the position of @-mentions of a national level presidential candidate vary?
2. What factors influence the positions of @-mentions for the two Presidential candidates?

Findings

Mention Position and Syntactical Feature Distribution

Table 1 represents the distribution of the syntactical features along with the median position of the handles of Barack Obama and Mitt Romney. We see that there were significantly more tweets collected with Obama's handle. The median percent through each tweet that @BarackObama appears is 10.24%. In contrast, we see that @MittRomney occurred 21.77% of the way through a tweet, indicating that the handle occurred more towards the middle of the tweet. We also see that the distribution of other syntactical features was much more spread out with @BarackObama having a greater percentage of links and retweets and @MittRomney having more hashtags and @-replies. This difference is notable since we would expect that the earlier position of @BarackObama might indicate that there were more @-replies in the dataset, but our analysis indicates otherwise.

Table 1
Syntactical Feature Frequency

Dataset	Tweets	Median Position	Link %	Hashtag %	At-reply %	Retweet %
BarackObama	3,935,897	10.24%	36.36%	30.70%	24.13%	59.29%
MittRomney	1,311,983	21.77%	29.94%	39.12%	29.42%	47.82%

Longitudinal Analysis

There is a definite difference in the position of the @-mentions of the two candidates in both dataset over a five-month period indicating different uses. In order to more fully understand the longitudinal trend of this median position, we plotted the median position of the two handles on a daily basis over the examined time period. Figure 1 represents the longitudinal position of @BarackObama and Figure 2 represents the longitudinal position @MittRomney. For the purpose of illustration and comparative analysis we plotted a standard regression line of best fit (red) and LOESS derived line (blue) that more closely identifies the localized movement of the medians over time.

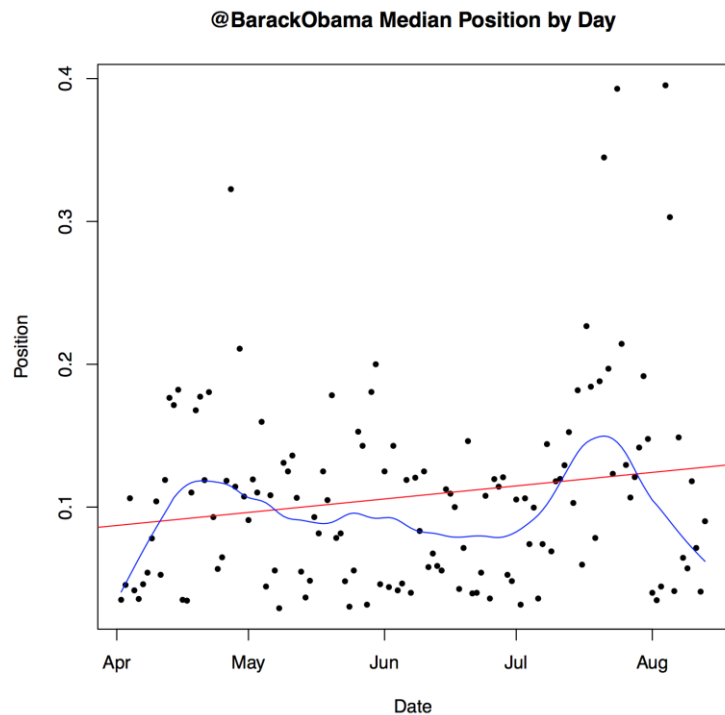


Figure 1: Longitudinal Position for Barack Obama

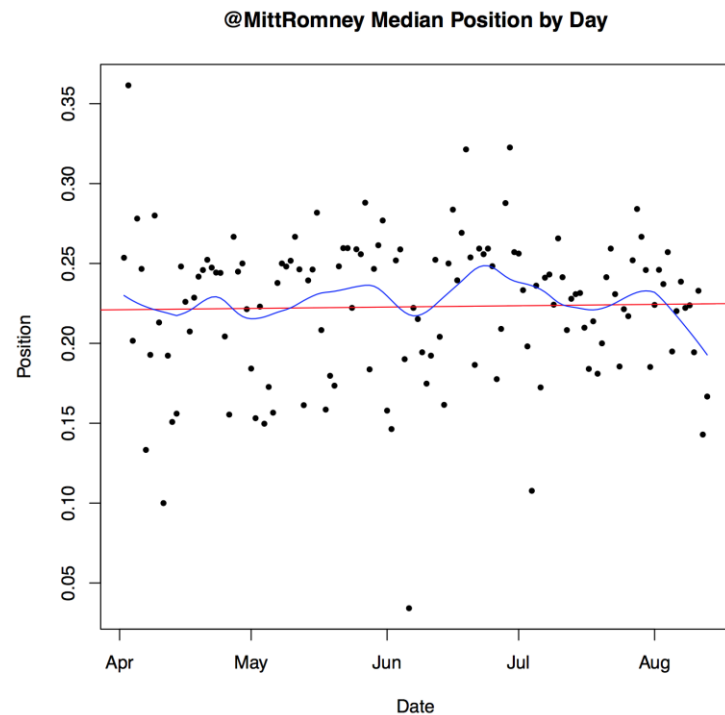


Figure 2: Longitudinal Position for Mitt Romney

The longitudinal analysis illustrates that although the daily median position of the @-mentions of the two candidates varies, it does not vary significantly as the standard regression line for BarackObama only has a slight positive slope and the standard regression line for @MittRomney has almost no change longitudinally. The blue line represents a LOESS regression, which identifies more localized shifts in the position of the hashtag. Although the blue line oscillates for both @BarackObama and @MittRomney, the

position seems to have an equilibrium that is marked by the standard regression line. That is, we identify that although there are daily shifts, the general position of the @-mention does not differ significantly over time.

Identifying the Shift

We need an explanation for why @barackobama and @mittromney maintain their position over time at the first position and early-to-middle position, respectively. We hypothesized that this was the result of more individuals directly addressing @BarackObama, but the distribution of @-replies indicates a similar percentage of tweets that had these characteristics.

We identify that in the @BarackObama dataset, 53.05% of all of the retweets were retweets of @BarackObama tweets. In contrast, in the @MittRomney dataset, we see that only 16.97% were retweets of @MittRomney's tweets. Since the most common nomenclature of a retweet is "RT @[username]" and is commonly done at the beginning of the tweet (Kooti et al., 2012). This high percentage of @BarackObama being retweeted would indicate that this is likely the cause of @BarackObama tending to appear earlier in the tweet but not quite first. It's also why @Mittromney appears later; tweets are more often about him than retweets of him or tweets directed at him.

Discussion

Our findings represent an exploration of the position of Twitter handles in one specific context and contribute to an emerging discourse about the syntactical features of Twitter. First, we identify that the position of handles of different users does vary and that longitudinally this variance tends to have an equilibrium state even though there is some oscillation. Second, we identify that even though the syntactical feature distribution in datasets may not vary significantly, that further analysis identifies significant differences can be found in the content of different syntactical features.

We determine that @BarackObama is, on average, mentioned earlier in tweets because he is more often being retweeted. Even though the @MittRomney dataset had a significant amount of retweets we see that these retweets were mostly about him and not from him. This illustrates a distinctly different level of discourse that needs to be accounted for in analysis of big datasets.

References

- Black, A., Mascaro, C., Gallagher, M., & Goggins, S. (2012). *TwitterZombie: Architecture for Capturing, Socially Transforming and Analyzing the Twittersphere*. Proceedings from ACM Group, Sanibel Island, FL.
- Kaptelinin, V., & Nardi, B. (2012). *Affordances in HCI: toward a mediated action perspective*.
- Kooti, F., Yang, H., Cha, M., Gummadi, K., & Mason, W. A. (2012). The Emergence of Conventions in Online Social Networks. ICWSM 2012, Dublin, Ireland.
- Mascaro, C., Black, A., & Goggins, S. (2012). *Tweet Recall: Examining Real-Time Civic Discourse on Twitter*. Proceedings from ACM GROUP, Sanibel Island, FL.
- Mascaro, C., & Goggins, S. (2012). *Twitter as Virtual Town Square: Citizen Engagement During a Nationally Televised Republican Primary Debate*. Proceedings from American Political Science Association Annual Meeting, New Orleans, LA.
- Thelwall, M., Buckley, K., & Paltoglou, G. (2011). Sentiment in Twitter Events. *Journal of American Society for Information Science*, 62(2), 406-418.
- Zappavigna, M. (2011). Ambient affiliation: A linguistic perspective on Twitter. *new media & society*, 13(5), 788-806.