Morality, Emotionality, and Social Network Structures of Political Twitter Users

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Rationale

Moral Foundation Theory (Graham et al, 2009) predicts that conservatives use more binding moral language (i.e., ingroup, authority, purity) and liberals use more individuating moral language (i.e., harm and fairness). Do these predictions generalize? Are there gross differences in emotional languages in conservatives and liberals?

Methods

Sixteen nights of network collections of 200 followers of Donald Trump and Hillary Clinton (the 100 most recent for each) from August 9th through 25th 2016 were performed. Tweets from 3,200 users' proximal networks (all the accounts they follow) were collected in total (100 for each candidate for each night). Morality was encoded by counting moral keywords in the 98,240,546 total number of tweets from these networks and averaged by candidate by night. Wordlists were generated by Graham, Haidt, & Nosek (2009). Below are some sample keywords for each moral foundation:

Binding Foundations:
- Ingroup: together, ally, imposter
- Purity: dirty, sin, integrity
- Authority: respect, control, obey

Individuating Foundations:
- Fairness: justice, rights, prejudice
- Harm: attack, care, harm

Positive and negative word usage (Tausczik & Pennebaker, 2010) was also recorded (e.g., "awesome" versus "hostile").

Results

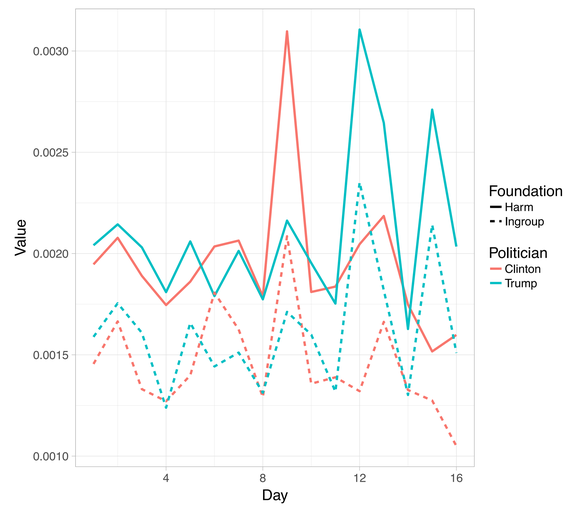

Figure 1. The average harm and ingroup language for each collection was graphed. Note that, in both candidates, harm and ingroup covary.

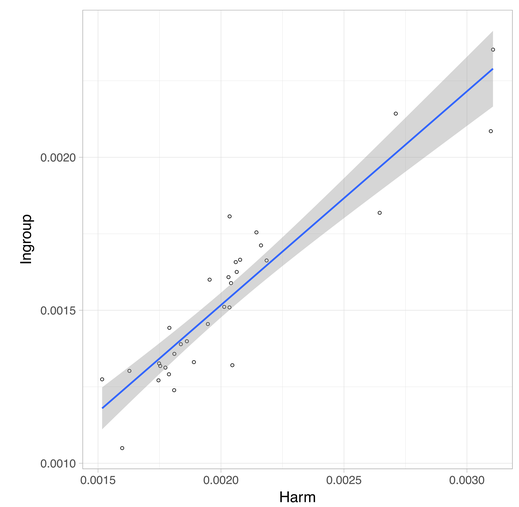

Figure 2. A notable correlation was found between the average amount of harm and ingroup language per collection, without separating by candidate ($r(30) = 0.92$, $p < .001$).

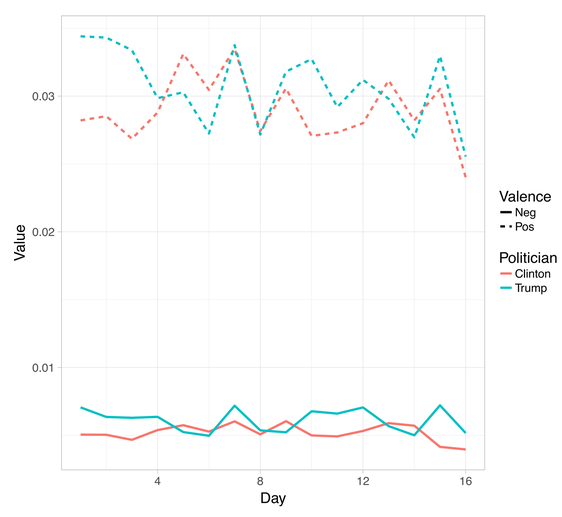

Figure 3. Positive and negative language varies over time. Trump networks contain an average of slightly more negative language than Clinton ($W(30) = 58$, $r = 0.12$, $p = .0075$), while no significant difference in positive language was found ($W(30) = 88$, $r = 0.18$, $p = .14$).

Example tweets with moral content:

Binding language across all Trump network tweets ($M = 0.0013$, $SD = 0.010$) was, on average, slightly higher than in Clinton networks ($M = 0.0012$, $SD = 0.0095$). Individuating language was also slightly higher in Trump networks ($M = 0.0011$, $SD = 0.0095$) than in Clinton ones ($M = 0.0013$, $SD = 0.010$). In total, the Clinton networks contained a total of 1.49 times as many tweets as the Trump ones (n = 58,751,641 versus n = 39,488,906).

Discussion

Neither individuating or binding language is associated with Trump or Clinton networks. A strong correlation exists between harm and ingroup language. Trump uses more negative language than Clinton.

Two possible explanations exist for why the use of binding and individuating language in Clinton and Trump's follower networks was not predicted by Moral Foundation Theory:

1.) Moral Foundation Theory is not predictive of the behavior of liberals and conservatives on Twitter.

2.) Clinton followers are not representative of liberals and/or Trump followers are not representative of conservatives. If so, alternative theoretical understandings must be identified and promoted.

Concerns over «terrorist attacks» account for the high correlation between harm and ingroup. Similar topics likely exist that combine binding and individuating moral foundations, suggesting that other distinctions may be theoretically useful in understanding morality and political distinctions.

Citations

Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology*, 96(5), 1029-1046. doi:10.1037/a0015141

Tausczik, Y.R., Pennebaker, J.W. (2010). The Psychological Meaning of Words: LIWC and Computerized Text Analysis Methods. *Journal of Language and Social Psychology.* 29(1):24–54.

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