Ideological Differences in Language Use

Joanna Sterling
Why do you oppose same sex marriage?

It will destroy the family!

There is an agenda to put it in our faces.

quotes adapted from: http://www.pewresearch.org/fact-tank/2013/06/06/in-your-words-views-of-same-sex-marriage-homosexuality/
Zoe Lofgren (D-CA): “America is a beacon of hope and #freedom around the world in part due to our refugee & asylum programs #immigration: http://t.co/8pUdZych1E”

Richard Hudson (R-NC): I cannot and will not support any type of immigration reform until we secure the border first. Read more here: http://t.co/SoylksipVX

Marcia Fudge (D-OH): “@Chris_Kerr I do support immigration reform that unites families and strengthens the diversity that has moved our country forward”

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Jason Smith (R-MO): “The President must prove that he will enforce immigration laws #NoAmnesty http://t.co/fkUI40Emqo”
Mind and Language

• There are powerful situational constraints on language
• “Linguistic fingerprints”
  – Cross-situational consistency of language
  – Not *what* is being said, but *how*
  – Unintentional, spontaneous, and difficult to change
• Linguistic style and word choice is reflective of situational and dispositional factors

Political Conservatism is associated with:

- Fear and aggression (Altemeyer, 1998)
- Intolerance of ambiguity (Fibert & Ressler, 1998)
- Rule following and negative affect (Tomkins, 1965)
- Uncertainty avoidance (Wilson, 1973)
- Need for cognitive closure (Kemmelmeier, 1997)
- Personal need for structure (Altemeyer, 1998)
- Prevention-oriented regulatory focus (Liberman et al., 1999)
- Death anxiety (Jost, Napier, et al., 2007)
- Group-based dominance (Sidanius & Pratto, 1999)
- System justification tendencies (Jost, Nosek, & Gosling, 2008)

updated list from Jost, Glaser, Kruglanski, & Sulloway, 2003
Political Conservatism is associated with:

- **Motivated Social Cognition**: Stronger epistemic, existential, and relational needs
- **Parenting Styles**: Strict father (vs. nurturant parent) mentality
- **Moral Foundations**: Ingroup, authority, and purity (vs. harm and fairness) moral concerns
- **Motivational Profile**: Power and influence (vs. affiliation and social connectedness)

Brundidge et al. (2014); Meisenberg (2015); Tetlock (1983); Cichocka, Jost, et al. (in press); Sylwester & Purver (2015); Neiman et al. (2016)
Research Question

- Do liberals and conservatives communicate differently (in terms of linguistic style and word choice)?
  - Which individual difference characteristics manifest themselves most prominently in the form of linguistic style and word choice?
Analyzing Twitter Language
Tweets

• **Sample:** 24,988 Twitter users
  – provide between 1 and 3,200 instances of language

• **Data:**
  – **Document:** all of the language each user sent on Twitter collapsed into a single document
  – Using each user’s estimated political ideology to predict the number of words used in each language category of interest

Barberá (2015)
Language Measurement

- **Dictionary-based methods**: Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, Boyd, & Francis, 2015); Harvard IV dictionaries (General Inquirer; Stone, 1997); Neiman et al. (2016) dictionaries, Graham et al. (2009)

- We focus on 28 language predictions posited by previous work on ideology and word choice
# Language Predictions

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Parenting Styles

Language Category Effect Sizes Ordered by Magnitude

- Nurturant/Caregiving
- Empathy/Openness
- Self-discipline
- Rules and Reinforcement

Higher Likelihood of Use Among:
- Conservatives
- Neither group
Moral Foundations

Language Category Effect Sizes Ordered by Magnitude

- Fairness
- Harm
- Ingroup
- Purity
- Authority

Higher Likelihood of Use Among:
- Conservatives
- Liberals
- Neither group
Motivational Profile

Language Category Effect Sizes Ordered by Magnitude

Affiliation

Affiliation (Harvard IV)

Money

Power (Harvard IV)

Power

Higher Likelihood of Use Among
- Conservatives
- Neither group
Discussion

• Political ideology reliably predicts the word choices of Twitter users for some aspects of language.

• Conducted 28 tests of ideological effects on language:
  – 14 / 28 had effect sizes which significantly differed from a null effect.
  – 13 / 14 confirmed initial hypotheses.

• Why for only these categories?
## Mass Level Language Findings

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Analyzing the Language of U.S. Legislators’ Social Media Posts and Floor Speeches
The Language of Legislators

• Mass-level partisans often learn about political issues through political elites
• Most extant work is on mass-level partisans

• Methodological advantages:
  – Ease of collecting language from multiple sources
    • Better able to measure communicator, receiver, context effects
  – DW-Nominate scores directly comparable to Barberá ideology estimates
Multi-platform Approach

• **Sample:** 529 legislators
  – provide between 1 and 2,607 instances of language

• **Data:**
  – Twitter (88,874 instances of language)
  – Facebook (43,733 instances of language)
  – Congressional Floor speeches (9,184 instances of language)
    • Congressional Record

• **Time period:** February 9th-May 28th, 2014
Research Question

• Do liberals and conservatives communicate differently (in terms of linguistic style and word choice)?
  – Which individual difference characteristics manifest themselves most prominently in the form of linguistic style and word choice?
  – Are these differences stable across communication context?
Model

• Fixed Effects:
  – Level 1: message effects
    • Word count
    • Platform
    • Platform * Ideology
    • Bill topics (defense, surveillance, immigration, gun control, welfare, budget)
  – Level 2: person effects
    • Ideology (DW-Nominate Score)
    • Sex
    • Age
    • Chamber
    • Chamber & Ideology
Motivated Social Cognition

Language Category Effect Sizes Ordered by Magnitude

- Certainty
- Long Words
- Death
- Anxiety
- Resistance to Change
- Risk Focus
- Past Focus
- Future Focus
- Inequality
- Tentative
- Threat
- Inhibition
- Uncertainty
- Religion

Higher Likelihood of Use Among
- Conservatives
- Neither group

Effect Sizes (Incidence-Rate Ratios)
Motivated Social Cognition

Language Category Effect Sizes by Platform

- Anxiety
- Certainty
- Death
- Future Focus
- Inequality
- Inhibition
- Long Words
- Past Focus
- Religion
- Resistance to change
- Risk Focus
- Tentative
- Threat
- Uncertainty

Effect Sizes (Incidence-Rate Ratios)
Parenting Styles

Language Category Effect Sizes Ordered by Magnitude

Higher Likelihood of Use Among
- Red: Conservatives
- Blue: Liberals
- Black: Neither group

- Nurturant/Caregiving
- Self-discipline
- Rules and Reinforcement
- Empathy/Openness

Effect Sizes (Incidence-Rate Ratios)
Parenting Styles

Language Category Effect Sizes by Platform

Empathy/Openness

Nurturant/Caregiving

Rules and Reinforcement

Self-discipline

Higher Likelihood of Use Among
- Conservatives
- Liberals
- Neither group

Effect Sizes (Incidence-Rate Ratios)
Moral Foundations

Language Category Effect Sizes Ordered by Magnitude

Effect Sizes (Incidence-Rate Ratios)

Higher Likelihood of Use Among
- Conservatives
- Liberals
Motivational Profile

Language Category Effect Sizes by Platform

Affiliation

Affiliation (Harvard IV)

Money

Power

Power (Harvard IV)

Effect Sizes (Incidence-Rate Ratios)

Higher Likelihood of Use Among

- Conservatives
- Neith group
Discussion

• U.S. legislators use some words differently based on their political ideology
• Conducted 28 tests of ideological effects on language
  – 17 / 28 had effect sizes which significantly differed from a null effect
  – 12 / 17 confirmed initial hypotheses
• Significant variation across platform, but still some signal
  – Language patterns on Twitter and Facebook are mostly consistent
  – Weaker effects between ideology and language on the Congressional Record
# Elite Language Findings

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### Mass and Elite Consistencies

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Congressional Interviews

• Legislators have teams of communication specialists who write their posts for them with varying levels of direct supervision

• Conducted interviews with 37 Congressional offices so far
  – 23 reported that the Congress member had very little direct impact on what was posted on their behalf
  – Only 3 reported that the Congress member was the only person to post on their accounts
Remaining Questions

• Mixed evidence of psycholinguistic effects:
  – Dictionary-based methods do not reliably capture some of the psychological relationships established in previous research

• Inconsistencies among samples:
  – The relationships between psychological traits and ideology may operate differently for elites than they do for mass-level partisans
  – Or observed differences may be an artifact of differing language production processes
THANK YOU!