Mining Ethos in Political Debate

RORY DUTHIE, KATARZYNA BUDZYNSKA & CHRIS REED
Outline

• Motivation & Background
• Corpus & Annotation
• Automatic Methods & Results
• Scaling up
Persuasion

• Logos
• Pathos
• Ethos

• The character and credibility of a speaker
  (Aristotle, 1991)
Ethos

• the **character of a person** who is the **participant of a conversation**

• **Example 1** Mr. Chris Patten said, The hon. Member for Falkirk, East (Mr. Ewing) in his admirable speech, put the position much more clearly than I could.

• **Example 2** Mr. Giles Radice said, In doing so he (Mr. Pawsey) failed to face up to his responsibility both to the House and to the schools of England, Scotland and Wales.
Motivation

- Automatically extract ethotic supports and attacks from natural language text

- Find ethotic relations between politicians in the UK parliament

- Apply a pipeline and compare the output with manual analysis
Ethos VS Trust

Trust:
• **Validation** of argument (Parsons et al., 2014)
• Based on **circumstance** (Castelfranchi & Falcone, 2010), (Paglieri & Castelfranchi, 2014)
• **Decision based** process (Burnett et al., 2011)

Ethos:
• **Component** of trust (e.g. help make trust decision based on character)
• Ethos alone is a **first step** in recognising trust
Related Work

• The application of **NLP techniques to Hansard** to build a database of claims associated with their parliamentary authors (Onyimadu et al., 2013)

• The use of a lexicon based and classification approach in analysing **sentiment of UK parliamentary debates** (Salah, 2014)

• **Mining of arguments from the Canadian Hansard parliamentary record** (Naderi & Hirst, 2015)
Mr. Jack Ashley (Stoke-on-Trent, South): The hon. Member for Luton, South (Mr. Bright) made a fine speech. I have never heard such a bad speech from the hon. Member for Rugby and Kenilworth (Mr. Pawsey). The hon. Gentleman tried to observe the letter of the EEC regulations, while dodging their spirit. He was trying to have it both ways and, of course, he failed.

The hon. Member for Rugby and Kenilworth offered the House a completely bogus argument in saying that Britain has always had corporal punishment and that it is a tradition. Imagine the House debating slavery and advocates of that practice saying, "We have always had slavery in this country and it is a tradition." Imagine our predecessors in this place saying, "We have always denied women the vote, so why should we now allow women to vote? It is a tradition that they have not had the vote." I know that even now some hon. Members do not like the concept of women having the vote. Some Members prefer slavery and others prefer corporal punishment. Let it be understood that the tradition argument is bogus and nonsensical.

The hon. Member for Rugby and Kenilworth was offering us a message of despair, in stark contrast to the message offered by Mr. Martin Rosenbaum of the Society of Teachers Opposed to Physical Punishment. He has presented a marvellous message of enlightenment, in which he sets out how Britain can rid itself of corporal punishment to the advantage of teachers and pupils. I pay tribute to Mr. Rosenbaum for the fine work that he has done on behalf of STOPP. Those who oppose STOPP surely do not know anything about the research that it has conducted.

Positive and Negative Ethotic Statements

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Issues with the Language

• Honourable
• Constituency Names
• Pronouns
• Parliamentary language
• Reported Speech (neutral)
Ethotic Words

- Novel
- Good name
- Sneak
- Windbag
EtHan_Thatcher Corpus

<table>
<thead>
<tr>
<th>Corpus</th>
<th>Sessions</th>
<th>Words</th>
<th>Segments</th>
<th>Speakers</th>
<th>Location</th>
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Ethos Support

all right-thinking people in Northern Ireland will fully endorse what Mr. Prior said today in sympathy to those recent victims of IRA atrocities and all victims in Northern Ireland

Mr. Prior has ethos

Default Inference

Assertive Questioning

IP: Does the right hon. Gentleman accept that all right-thinking people in Northern Ireland will fully endorse what he said today in sympathy to those recent victims of IRA atrocities and all victims in Northern Ireland
Ethos Attack

They are so utterly disgraceful that, in a distinguished parliamentary career, Mr. Powell does himself no credit.

Default Conflict

Mr. Powell has ethos

Asserting

JP: They are so utterly disgraceful that, in a distinguished parliamentary career, he does himself no credit.
Annotation

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<th>Occurrences</th>
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<td>Source-person</td>
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<tr>
<td>Target-person</td>
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<td>Ethos support</td>
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<td>.95 (out of .67)</td>
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<td>Ethos attack</td>
<td>560</td>
<td>.95 (out of .67)</td>
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<tr>
<td>TOTAL</td>
<td>1,194</td>
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Ethos Mining Pipeline

*(Hu & Liu, 2004)*
POS Example

• Mr. Giles Radice said, In doing so he (Mr. Pawsey) failed to face up to his responsibility both to the House and to the schools of England, Scotland and Wales.
Ethos Mining Pipeline

*(Hu & Liu, 2004)*
Mr. Chris Patten said, The hon. Member for Falkirk, East (Mr. Ewing) in his admirable speech, put the position much more clearly than I could.
Ethos Mining Pipeline

*(Hu & Liu, 2004)*
Anaphora Example

• Mr. Giles Radice said, In doing so he (Mr. Pawsey) failed to face up to his responsibility both to the House and to the schools of England, Scotland and Wales.

• Mr. Chris Patten said, The hon. Member for Falkirk, East (Mr. Ewing) in his admirable speech, put the position much more clearly than I could.
Ethos Mining Pipeline

*(Hu & Liu, 2004)*
• Mr. Giles Radice said, The hon. Member for Rugby and Kenilworth (Mr. Pawsey) said that in the United States and Australia this was a local decision.
Ethos Mining Pipeline

*(Hu & Liu, 2004)*
## Results ESEs

<table>
<thead>
<tr>
<th>ESE/Non-ESE</th>
<th>Precision</th>
<th>Recall</th>
<th>F-score</th>
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<td>SVM</td>
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<td>NB</td>
<td>0.20</td>
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<tr>
<td>ME</td>
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<tr>
<td>NER, POS, DSR, AnaR, RSF</td>
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<td>0.77</td>
<td>0.69*</td>
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<tr>
<td>POS, DSR, AnaR, RSF</td>
<td>0.64</td>
<td>0.76</td>
<td>0.70*</td>
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## Results Sentiment

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<th>+/- ESE</th>
<th>Precision</th>
<th>Recall</th>
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<tr>
<td>ME, SWL</td>
<td>0.60</td>
<td>0.65</td>
<td>0.62</td>
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<tr>
<td>SVM, SWL</td>
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<td>0.62</td>
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<tr>
<td>NB, SWL, EWL</td>
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<tr>
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<td>SVM, SWL, EWL</td>
<td>0.78</td>
<td>0.78</td>
<td>0.78*</td>
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Visualising Political Network

Ethotic Statements
Source: Mr. Simon Hughes
Target: Government

Ethos Expression: Until that happens this will be a bigger muddle than any of the other reorganisations that local government has gone through at the behest of the Government and the Conservative predecessors.
Individual Networks

Ethos Statement:
Source: Mr. John Home Robertson
Target: Mrs. Margaret Thatcher

Ethos Expression: We acknowledge the extremely difficult task of the Foreign Secretary in repairing the damage to British-German relations caused by the Prime Minister’s crass insensitivity.
Scaling Up

• Three date ranges

• Automatically extract transcripts

• Look at political science literature for trends
Scaling Up (1/3)

February 1st 1997 to April 30th 1997, 53 text transcripts

<table>
<thead>
<tr>
<th>Potential Conservative Leaders</th>
<th>Supports</th>
<th>Attacks</th>
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<tbody>
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<td>William Hague</td>
<td>33</td>
<td>30</td>
</tr>
<tr>
<td>Ian Lang</td>
<td>17</td>
<td>20</td>
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<tr>
<td>Stephen Dorrell</td>
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<td>Peter Lilley</td>
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<td>John Redwood</td>
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<td>Kenneth Clarke</td>
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<tr>
<td><strong>MEAN AVERAGE</strong></td>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
</tr>
</tbody>
</table>
Scaling Up (2/3)

March 30th 1979 to July 30th 1979, 58 text transcripts

• Infighting in the Labour party. (Hinnfors, 2006)
  - 15 supports
  - 17 attacks

• Attacks on Government and Margaret Thatcher (Labour party’s loss of power)
  - 41 attacks on the Government
  - 22 attacks on Thatcher’s ethos
  - mean 2
Scaling Up (3/3)

November 30th 1978 to January 20th 1979, 32 text transcripts

• Worker strikes, put pressure on Prime Minister James Callaghan (Taylor, 2013)
  - 11 attacks - mean 1

• Shirley Williams
  - 8 attacks - 17 supports (two Labour members)

• founding member of the Social Democrat Party (SDP)
  Labour party splinter. (Liberal Democrats, 2016)
Limitations & Future Work

Limitations:
• Domain dependent
• Context limitation
  • E.g. context in annotation

Future work:
• Improve features
• Full argument analysis
Conclusions

• Extracted ethotic relations in Hansard using an Ethos Mining pipeline with F-scores of 0.70 and 0.78.

• First ethotic word lexicon and corpus.

• Trends in the subsequent political networks.
Thank You.

Find out more at http://arg.tech

Presentation and Demo Of Argument Analytics Later today

Investigate the datasets at http://aifdb.org

rory@arg.tech
REFERENCES (1/2)


REFERENCES (2/2)


Ethotic Circularity

• A support to a person’s own ethos should not be analysed as this is deemed to be a fallacy through circularity (Budzynska, 2012)
## Updated ESE Results

<table>
<thead>
<tr>
<th>ESE/Non-ESE</th>
<th>Precision</th>
<th>Recall</th>
<th>F-score</th>
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</thead>
<tbody>
<tr>
<td>Max Entropy</td>
<td>0.58</td>
<td>0.43</td>
<td>0.50</td>
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<tr>
<td>Naive Bayes</td>
<td>0.45</td>
<td>0.79</td>
<td>0.57</td>
</tr>
<tr>
<td>SVM</td>
<td>0.47</td>
<td>0.73</td>
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