

Mining Ethos in Political Debate

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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)

Hansard (UK Parliamentary Debate Records)

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.

<http://hansard.millbanksystems.com/commons/1986/jul/22/abolition-of-corporal-punishment>

Positive and Negative Ethotic Statements

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Issues with the Language

- Honourable
- Constituency Names
- Pronouns
- Parliamentary language
- Reported Speech (neutral)

Ethotic Words

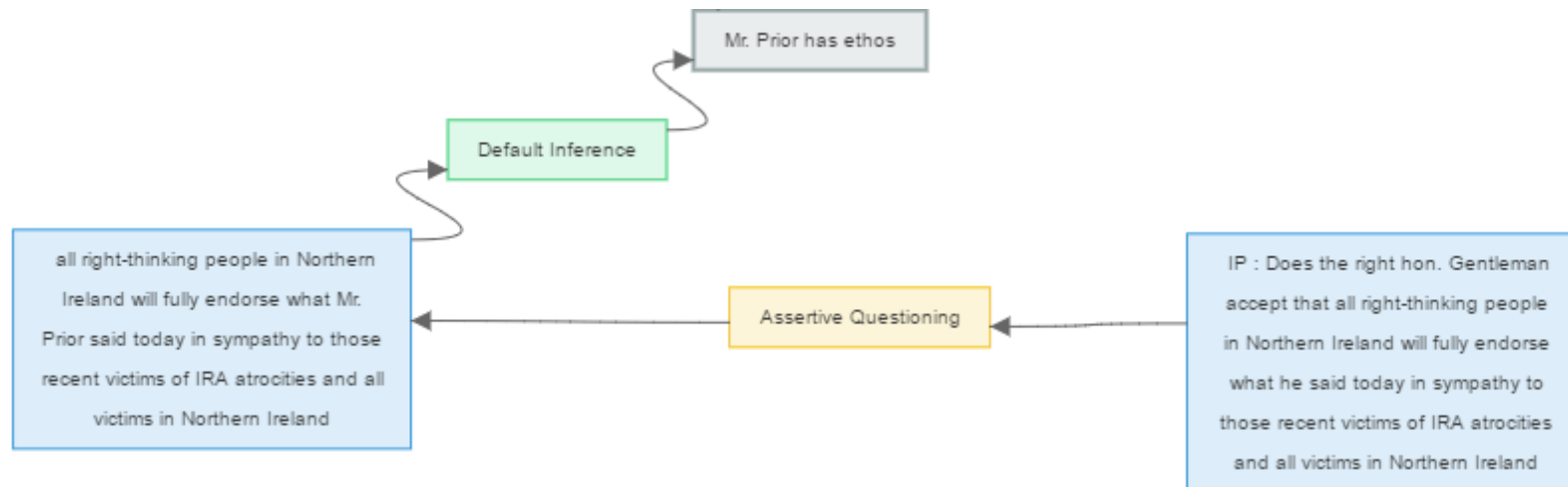
- Novel
- Good name
- Sneak
- Windbag

EtHan_Thatcher Corpus

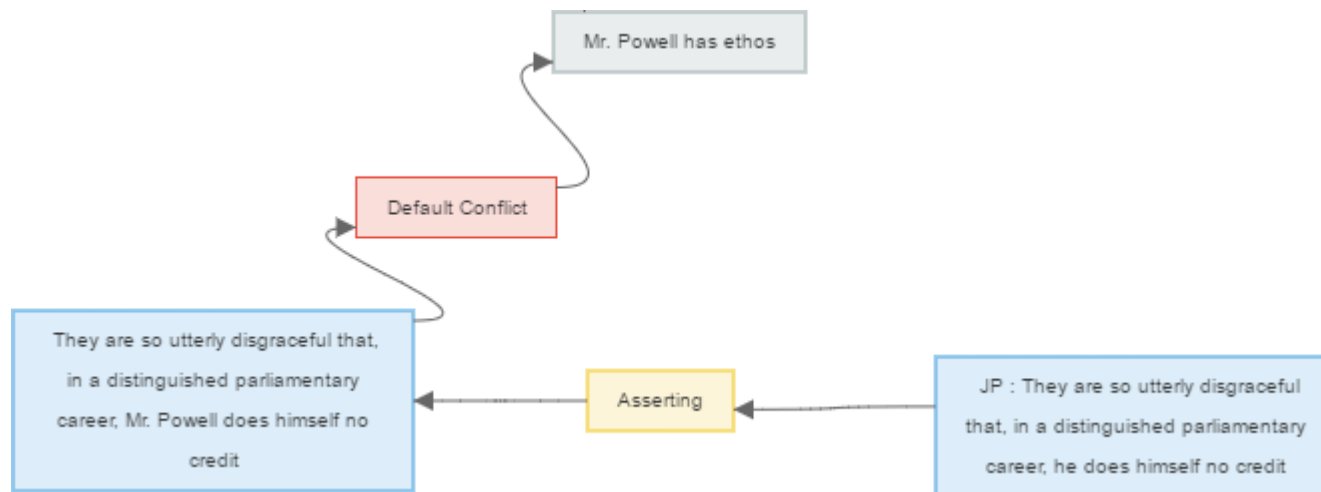


Corpus	Sessions	Words	Segments	Speakers	Location
Train	30	40,939	387	127	http://arg.tech/Ethan3Train
Test	30	29,178	352	126	http://arg.tech/Ethan3Test
TOTAL	60	70,117	739	253	

Ethos Support



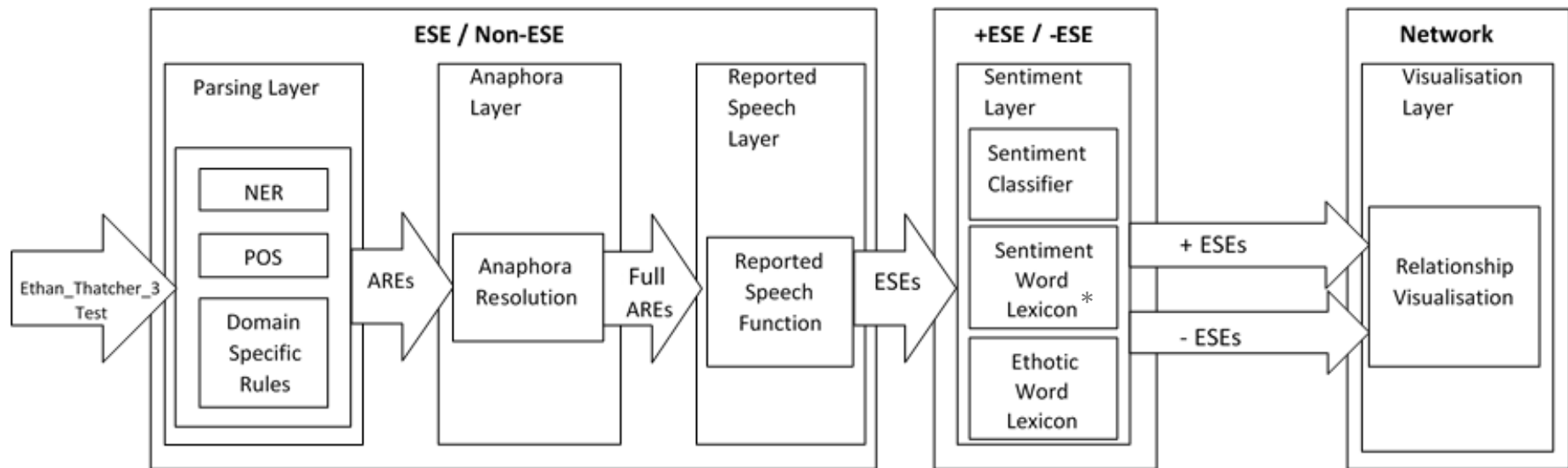
Ethos Attack



Annotation

	Occurrences	Kappa
Source-person	243	1
Target-person	212	.84
Ethos support	179	.95 (out of .67)
Ethos attack	560	.95 (out of .67)
TOTAL	1,194	

Ethos Mining Pipeline

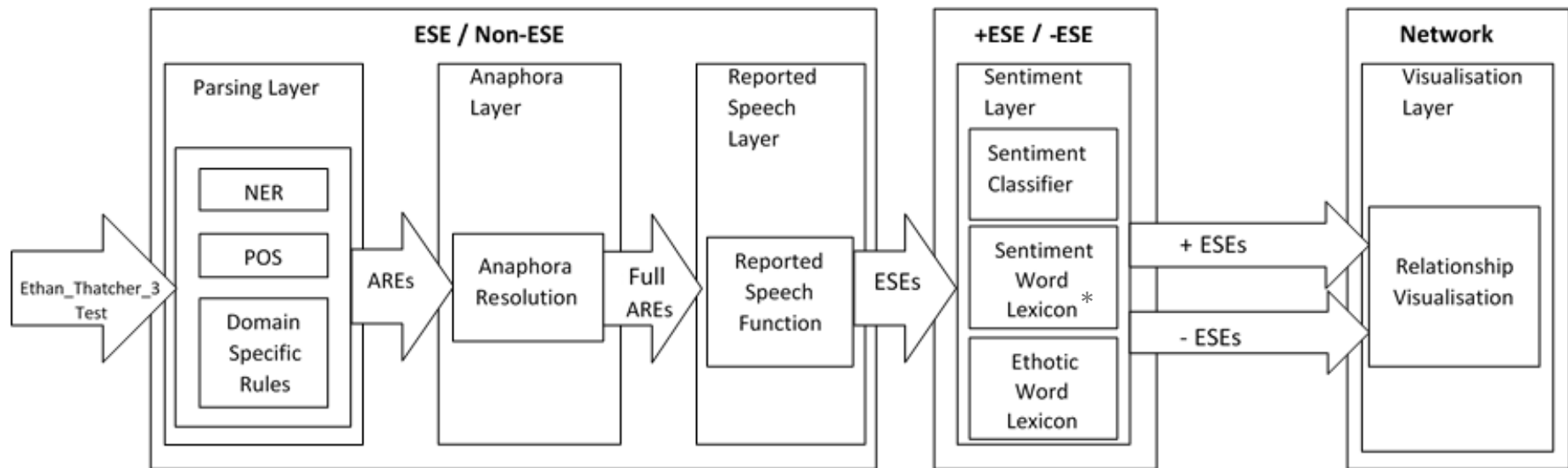


*(Hu & Liu, 2004)

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

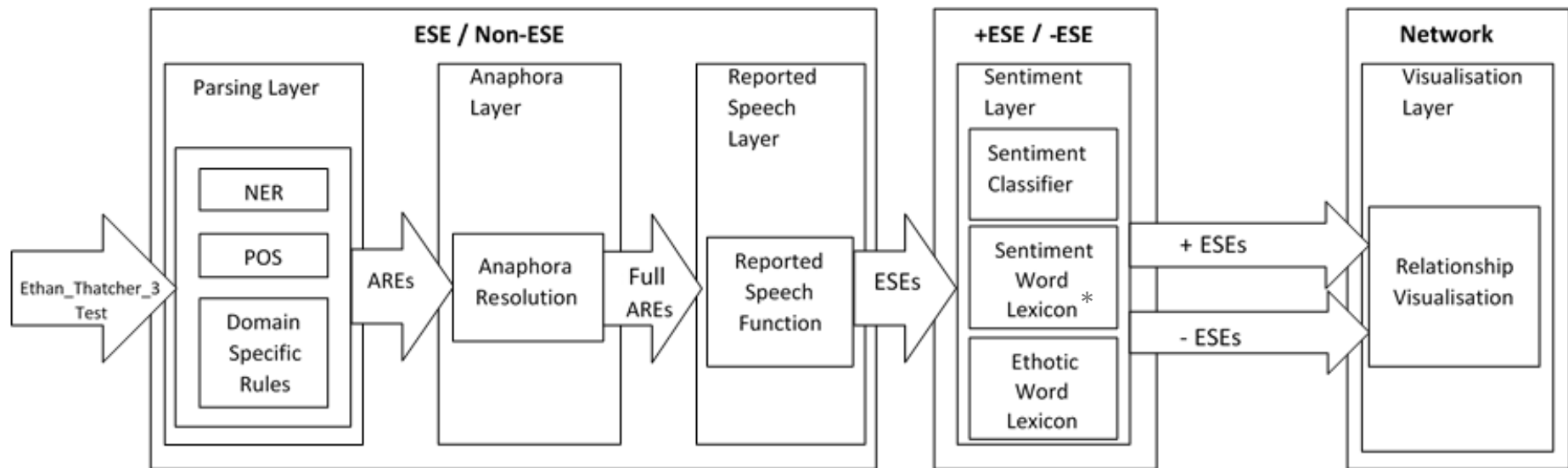


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Domain Rules Example

- 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

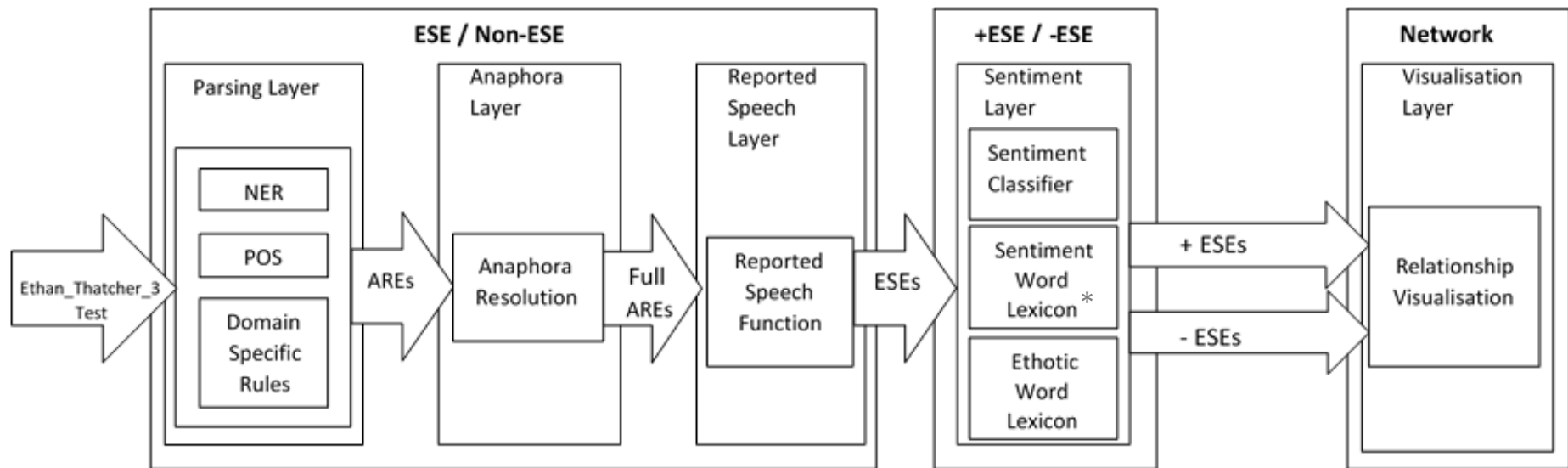


*(Hu & Liu, 2004)

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

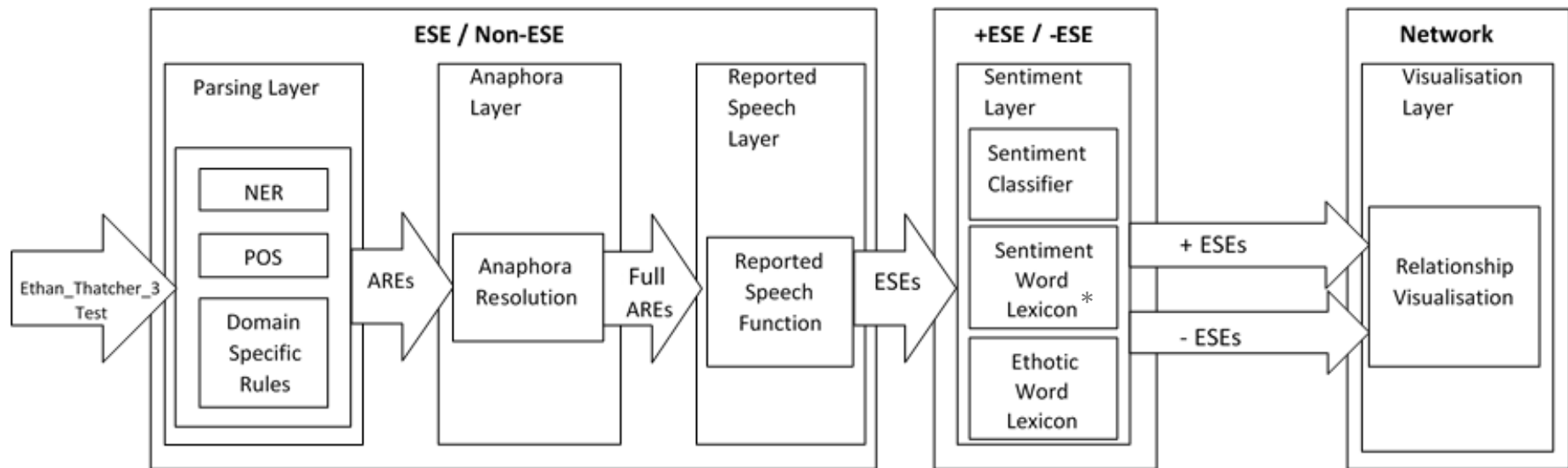


*(Hu & Liu, 2004)

Reported Speech Example

- 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)

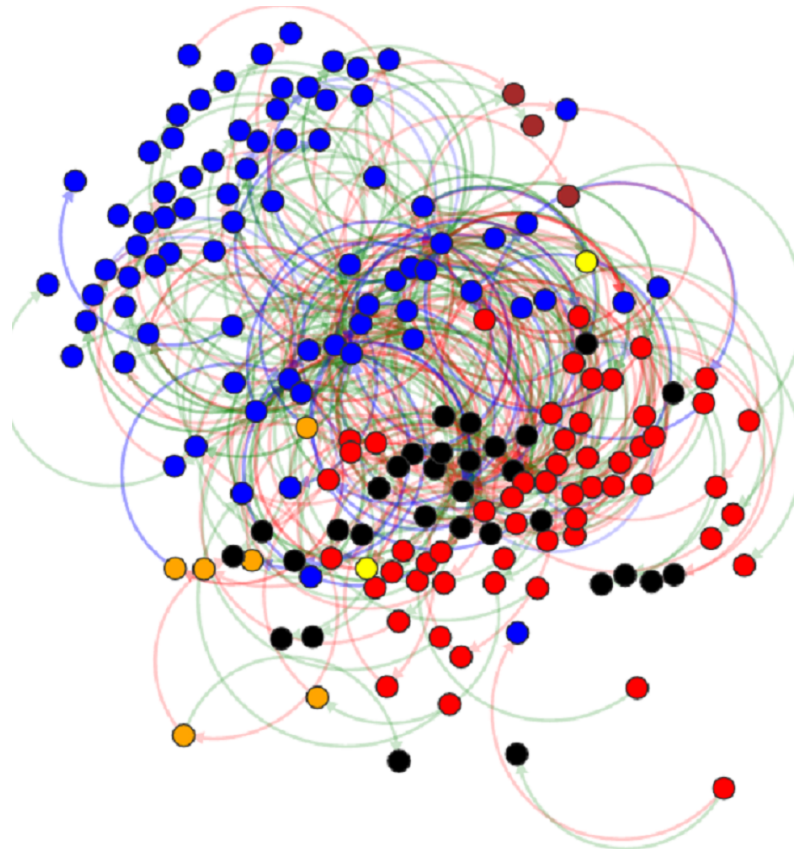
Results ESEs

ESE/Non-ESE	Precision	Recall	<i>F</i>-score
Baseline	0.29	1	0.45
SVM	0.30	0.30	0.30
NB	0.20	0.94	0.32
ME	0.46	0.27	0.34
NER, POS, DSR, AnaR, RSF	0.62	0.77	0.69*
POS, DSR, AnaR, RSF	0.64	0.76	0.70*

Results Sentiment

+/- ESE	Precision	Recall	<i>F</i>-score
Baseline	0.50	1	0.67
NB, SWL	0.58	0.57	0.57
ME, SWL	0.6	0.65	0.62
SVM, SWL	0.64	0.59	0.62
NB, SWL, EWL	0.74	0.67	0.71*
ME, SWL, EWL	0.71	0.73	0.72*
SVM, SWL, EWL	0.78	0.78	0.78*

Visualising Political Network



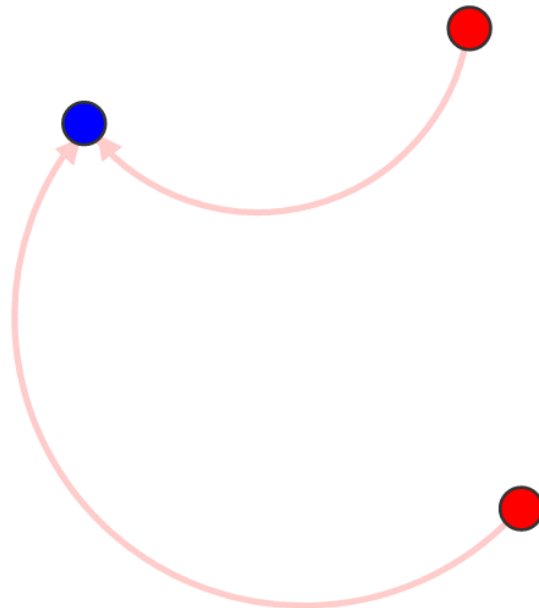
Ethotic Statements
Source: Mr. Simon Hughes

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.

Conservative: ■
Labour: ■
Liberal: ■
SNP: ■
UUP: ■
Misc: ■

Individual Networks



Ethotic Statements
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

Potential Conservative Leaders	Supports	Attacks
William Hague	33	30
Ian Lang	17	20
Stephen Dorrell	22	10
Michael Howard	4	4
Peter Lilley	3	0
John Redwood	2	0
Kenneth Clarke	0	0
MEAN AVERAGE	2	2

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**

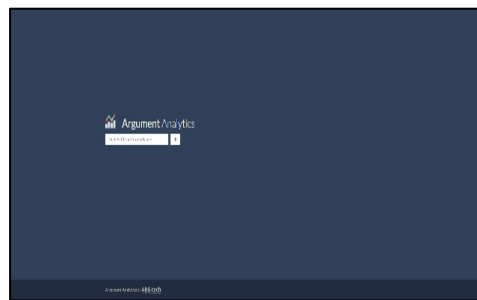
Conclusions

- 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**.

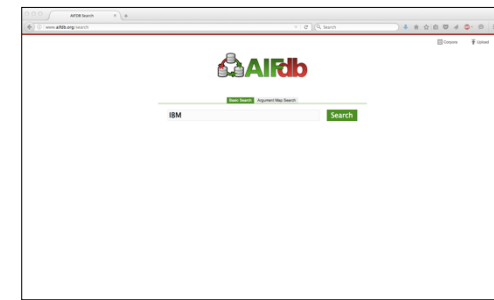
Thank You.



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Presentation and Demo
Of Argument Analytics
Later today



Investigate the
datasets at
<http://aifdb.org>

rory@arg.tech

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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

ESE/Non-ESE	Precision	Recall	F-score
Max Entropy	0.58	0.43	0.50
Naive Bayes	0.45	0.79	0.57
SVM	0.47	0.73	0.57