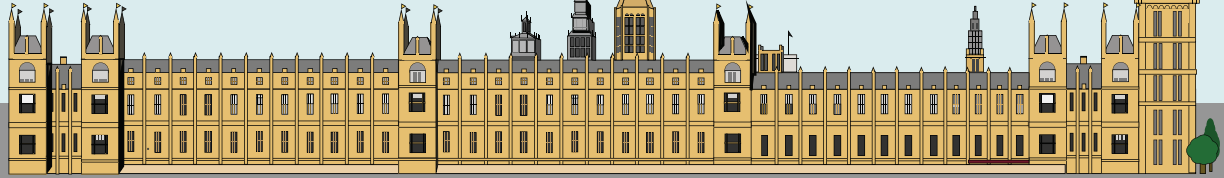# Identifying Opinion-Topics and Polarity of Parliamentary Debate Motions

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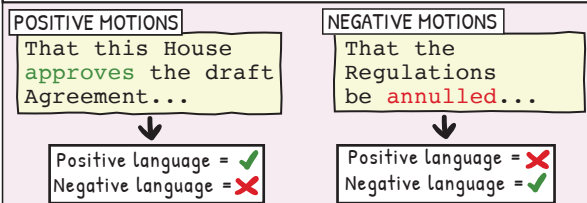
Debates in the UK Parliament begin with motions...

> I beg to move,
> That this House believes that the UK should opt of all EU police and criminal justice measures adopted before December 2009 and seek to rejoin measures where it is in the national interest to do so and invites the European Scrutiny Committee, the Home Affairs Select Committee and the Justice Select Committee to submit relevant reports
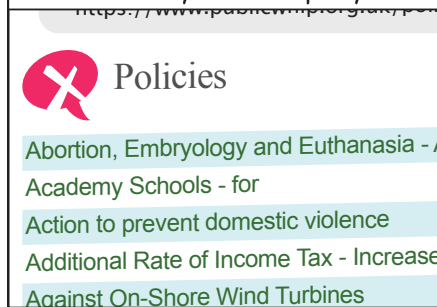
...which are the focus of opinions expressed during subsequent speeches.

The positions expressed in motions can have strong effects on the language used in these speeches...

POSITIVE MOTIONS
That this House approves the draft Agreement...
→
Positive language = ✓
Negative language = ✗

NEGATIVE MOTIONS
That the Regulations be annulled...
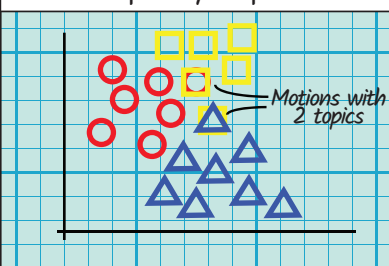→
Positive language = ✗
Negative language = ✓

...sometimes acting as polarity shifters for tasks such as sentiment analysis and stance detection.

publicwhip.org.uk provides crowd-sourced, manually annotated 'policy' labels.
https://www.publicwhip.org.uk/pol

✗ Policies

Abortion, Embryology and Euthanasia - A
Academy Schools - for
Action to prevent domestic violence
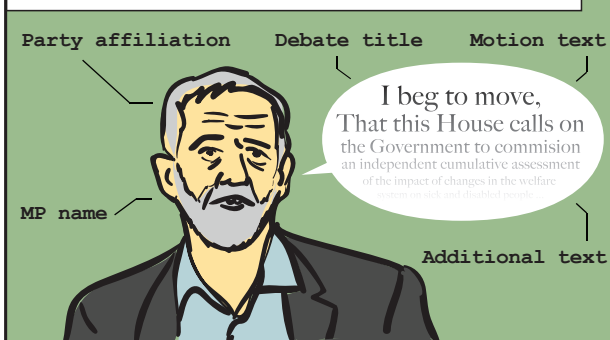Additional Rate of Income Tax - Increase
Against On-Shore Wind Turbines

> Can we use these labels to predict a motion's topic and get its sentiment polarity for "free"?

Because motions can have more than one policy/topic label...
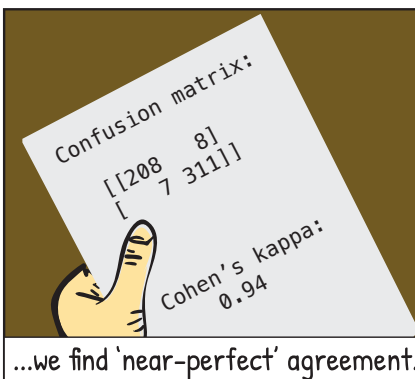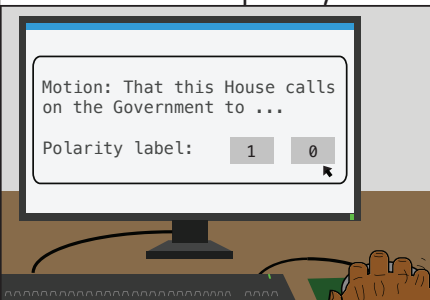
Motions with 2 topics

...we use a 1-vs-rest multilabel classifier.

We extract both textual and metadata features...

Party affiliation   Debate title   Motion text

> I beg to move,
> That this House calls on the Government to commision an independent cumulative assessment of the impact of changes in the welfare system on sick and disabled people...

MP name   Additional text

Features
Motion
Title
Motion + title
Motion + party + name
Title + party + name
(Support Vector Machine)
F1:   0.2 0.4 0.6 0.8

... achieving best performance when the titles of debates are included as features.

Comparing the output policy positions with hand annotated polarity labels...

Motion: That this House calls on the Government to ...
Polarity label: 1   0

Confusion matrix:
[[208   8]
 [7 311]]

Cohen's kappa:
0.94

...we find 'near-perfect' agreement.

It seems that topics and sentiment polarity are strongly linked in parliamentary debate motions.

However, as we only have a small number of labelled examples, ...

...in future work, it may be necessary to explore unsupervised methods.