



or



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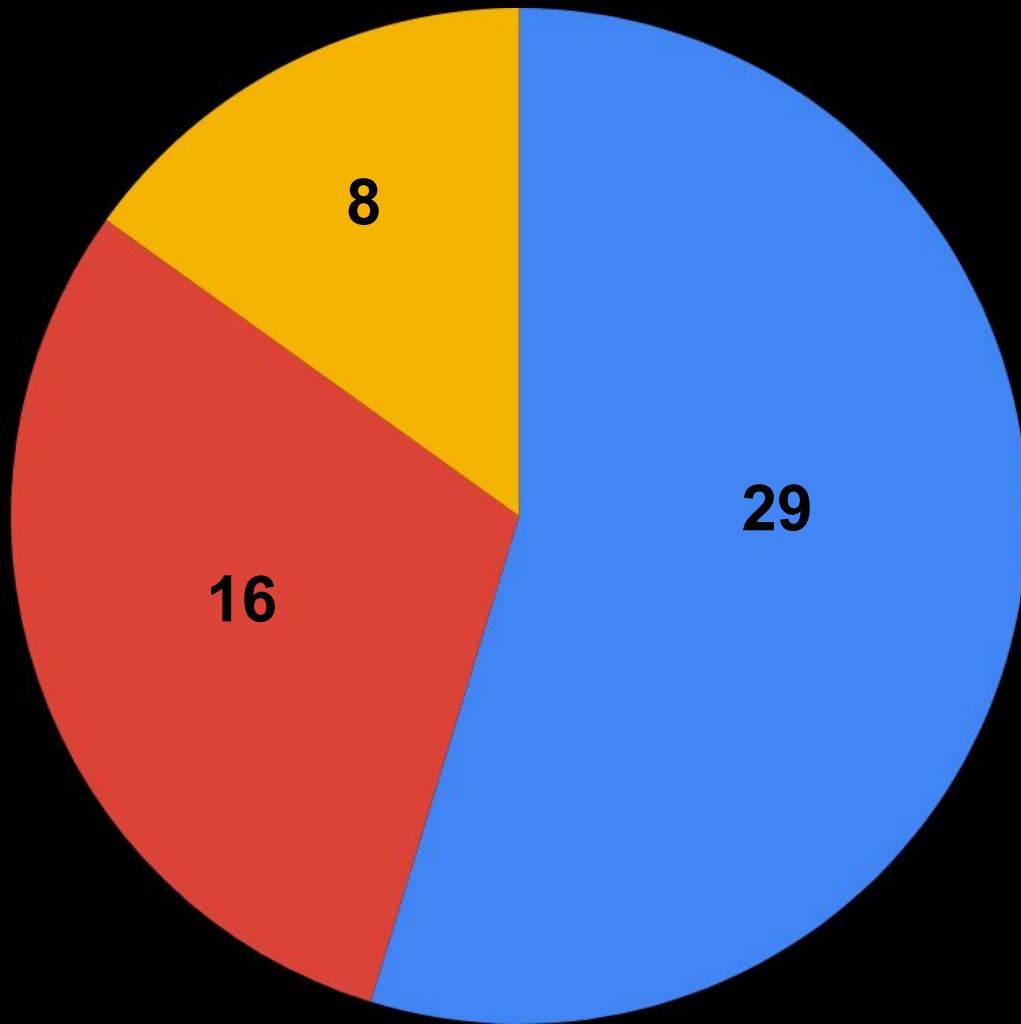
Topic-centric sentiment analysis of UK parliamentary debates

Gavin Abercrombie

MANCHESTER
1824

The University of Manchester

- CS
- PS/SS
- Multi



Find the needle or characterize the haystack?

Hopkins and King (2010) *A Method of Automated Nonparametric Content Analysis for Social Science*



Position scaling



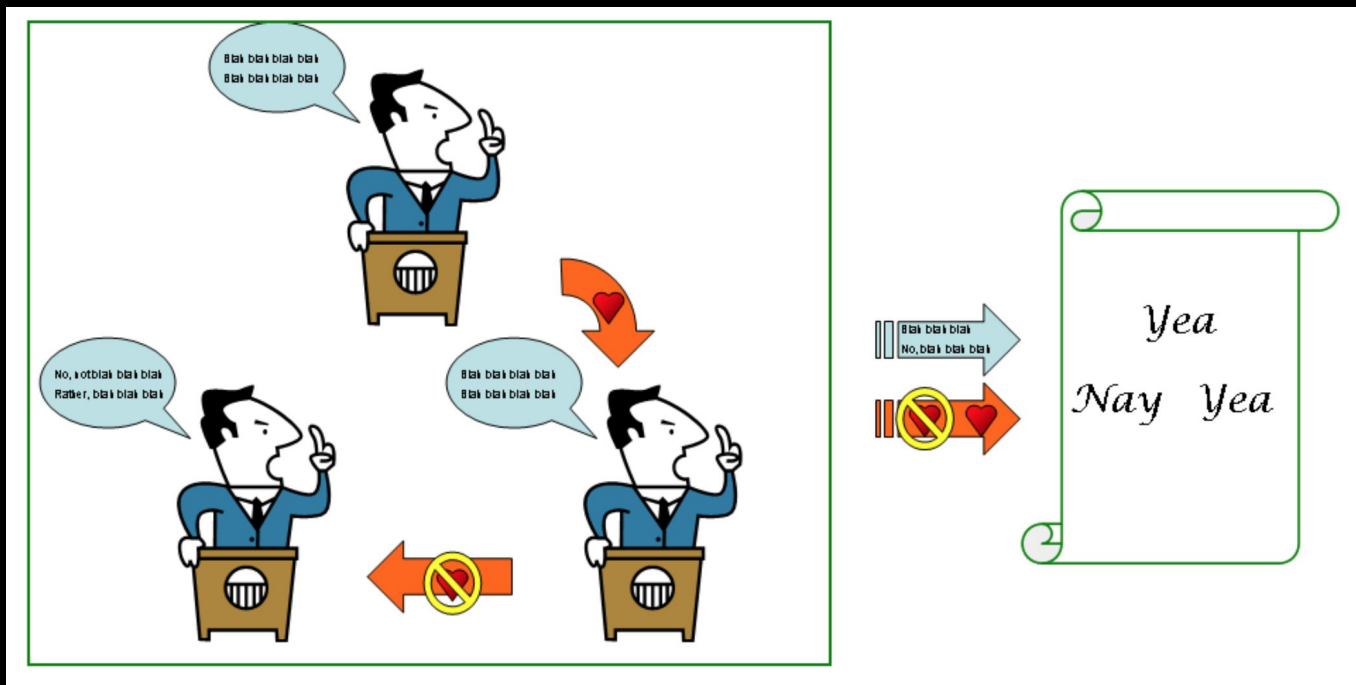
Laver, Benoit and Garry (2003) *Extracting Policy Positions from Political Texts Using Words as Data*

Proksch and Slapin (2010) *Position Taking in European Parliament Speeches*

Lowe and Benoit (2013) *Validating Estimates of Latent Traits from Text Using Human Judgment as a Benchmark*

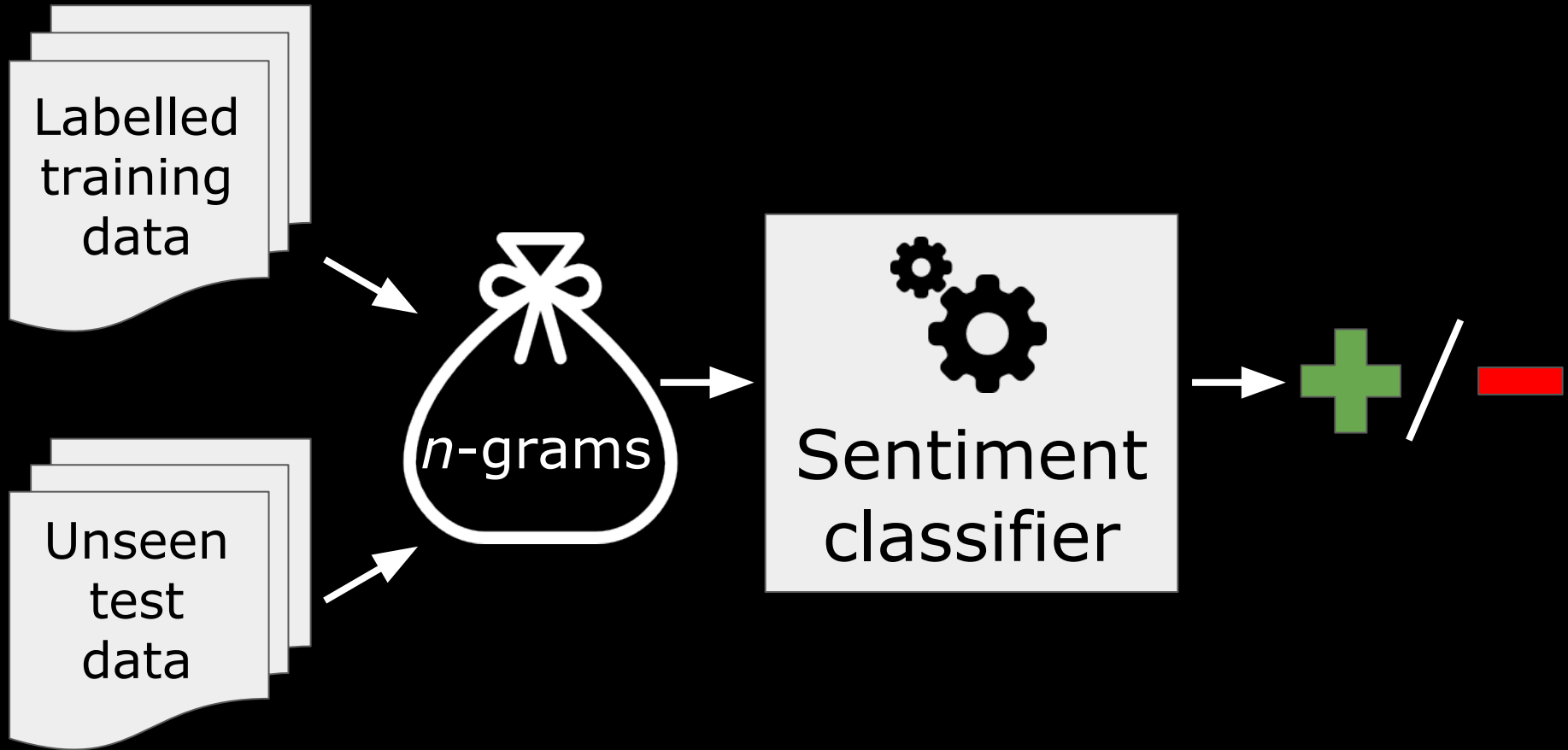
Glavaš, Nanni and Ponzetto (2017) *Unsupervised Cross-Lingual Scaling of Political Texts*

Classification



ConVote dataset Thomas et al. (2006)

Sentiment analysis with supervised classification



Motion: "I beg to move that this House..."

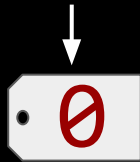
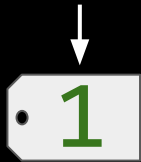
Speaker 1: "(I agree with the motion ...)"

Speaker 2: "(I disagree with the motion ...)"

...

Speaker n : "(an opinion about the motion)"

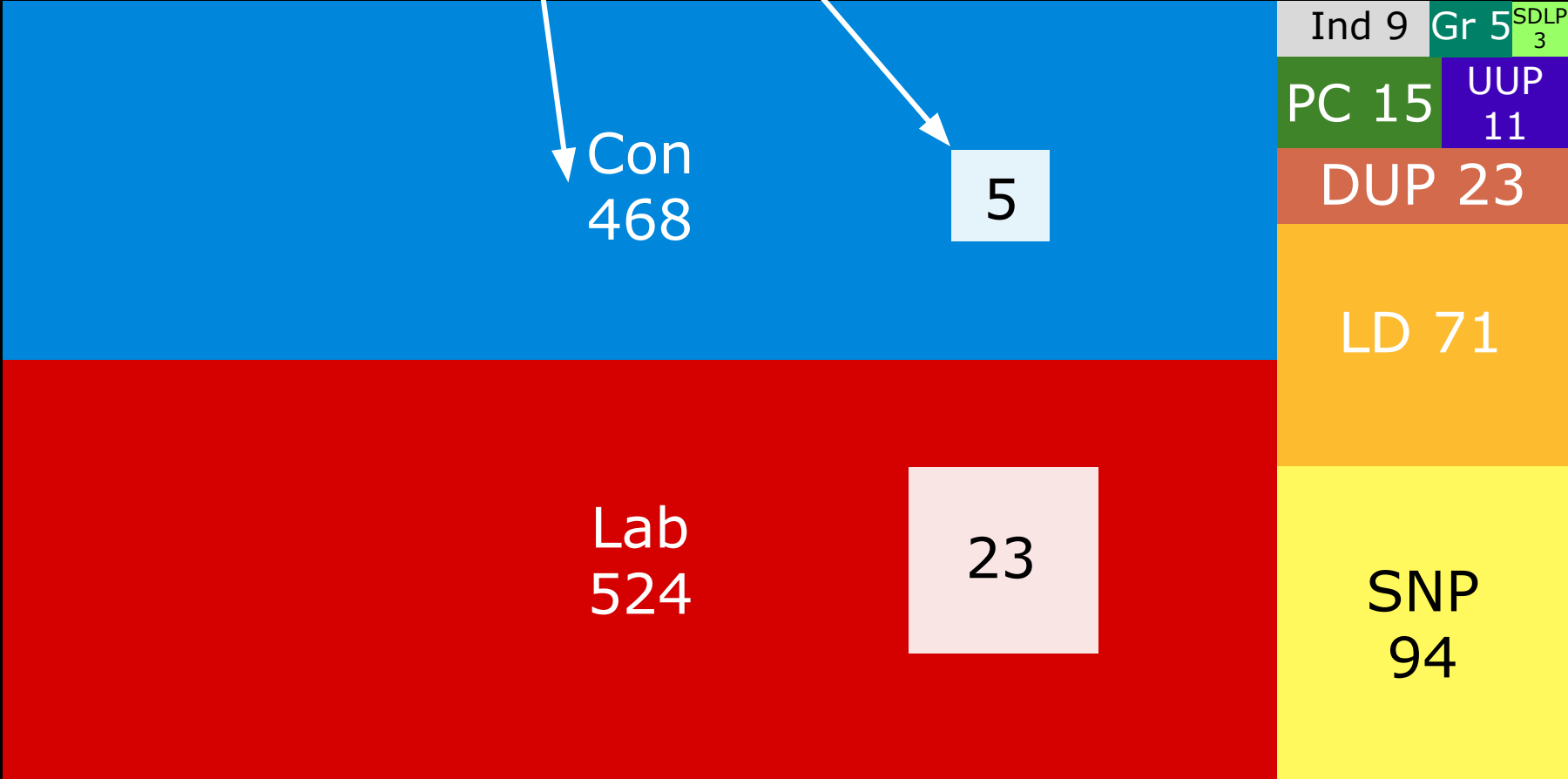
Division: 'Aye' or 'No'



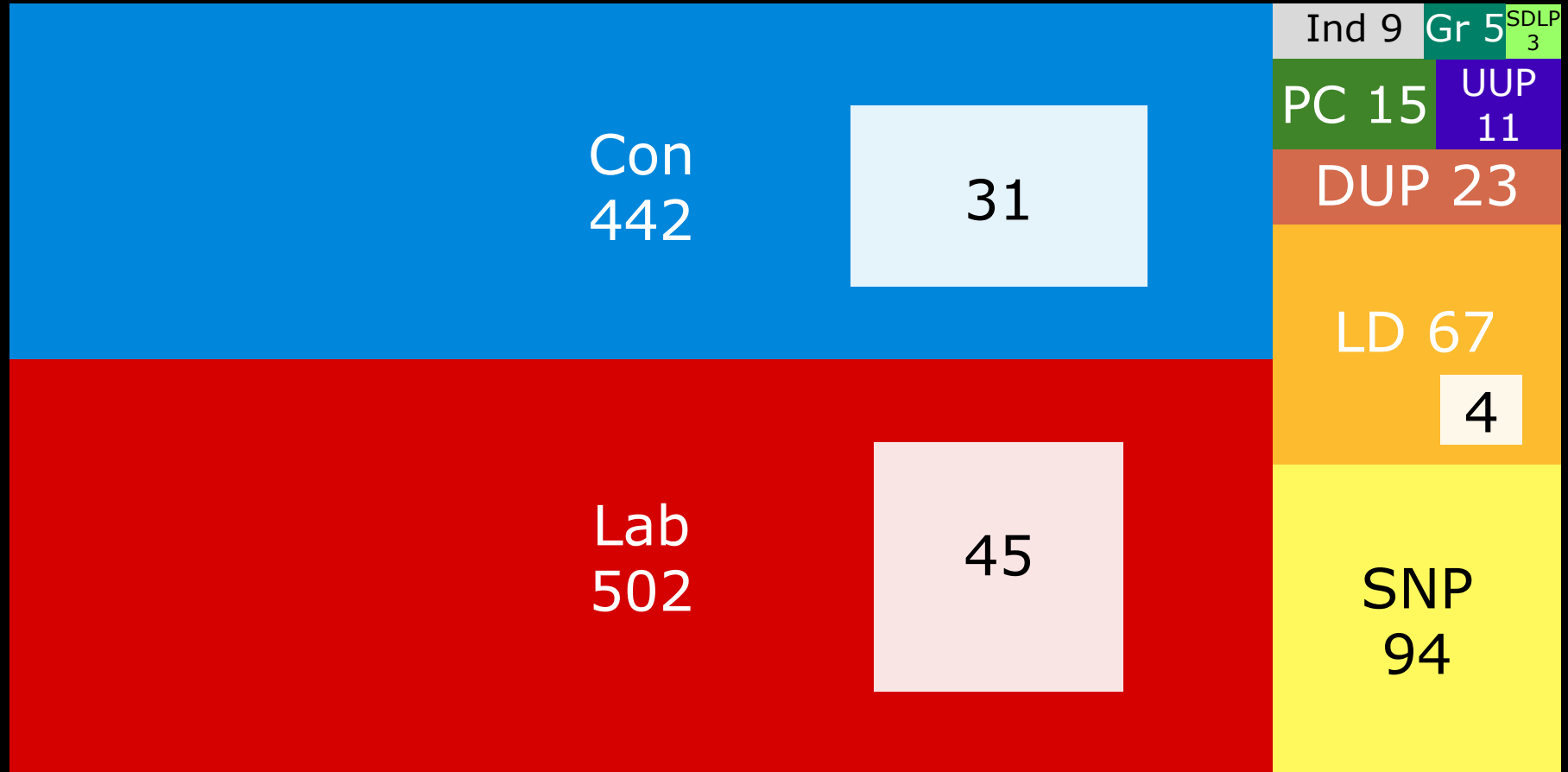
Speeches by party



Vote labels by party – 'loyal' and 'rebel' votes



Manual labels by party – 'loyal' and 'rebel' speeches



That this House approves the draft Agreement (Cm 9332), between the Secretary of State for Culture, Media and Sport and the British Broadcasting Corporation, which was laid before this House on 15 September 2016.

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I am pleased that the new royal charter has been taken seriously and dealt with positively by the Government.

Under the draft agreement, I see a BBC that suits the modern broadcasting and digital environment that we know today.

I am therefore pleased to support the motion and agreement, which will guarantee the BBC's important place in our society for many years to come.

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Many of us in this House think that the idea of forcing the BBC to pay for free television licences is a complete disgrace.

Does the Secretary of State understand the concern felt among those at BBC Alba that the framework agreement is not to their advantage?

Does the hon. Gentleman not find it bizarre that, because of the inexperience of the appointee, the BBC has had to create another post, at a time when it says it has no money?

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I think that this is a very good move. I hope that the Government will implement the formula sooner rather than later to give all our children a fighting fair chance.

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My hon. Friend is talking about the broken pledge on funding for schools. Is she aware that 74 out of 77 schools face real-term cuts by 2019?

The motion before the House makes it clear that our schools are facing a cocktail of cuts that will see 98% of schools lose out.

In my constituency, funding per pupil is being reduced further. Why is David Cameron's promise being broken?

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Positive motions



Negative motions



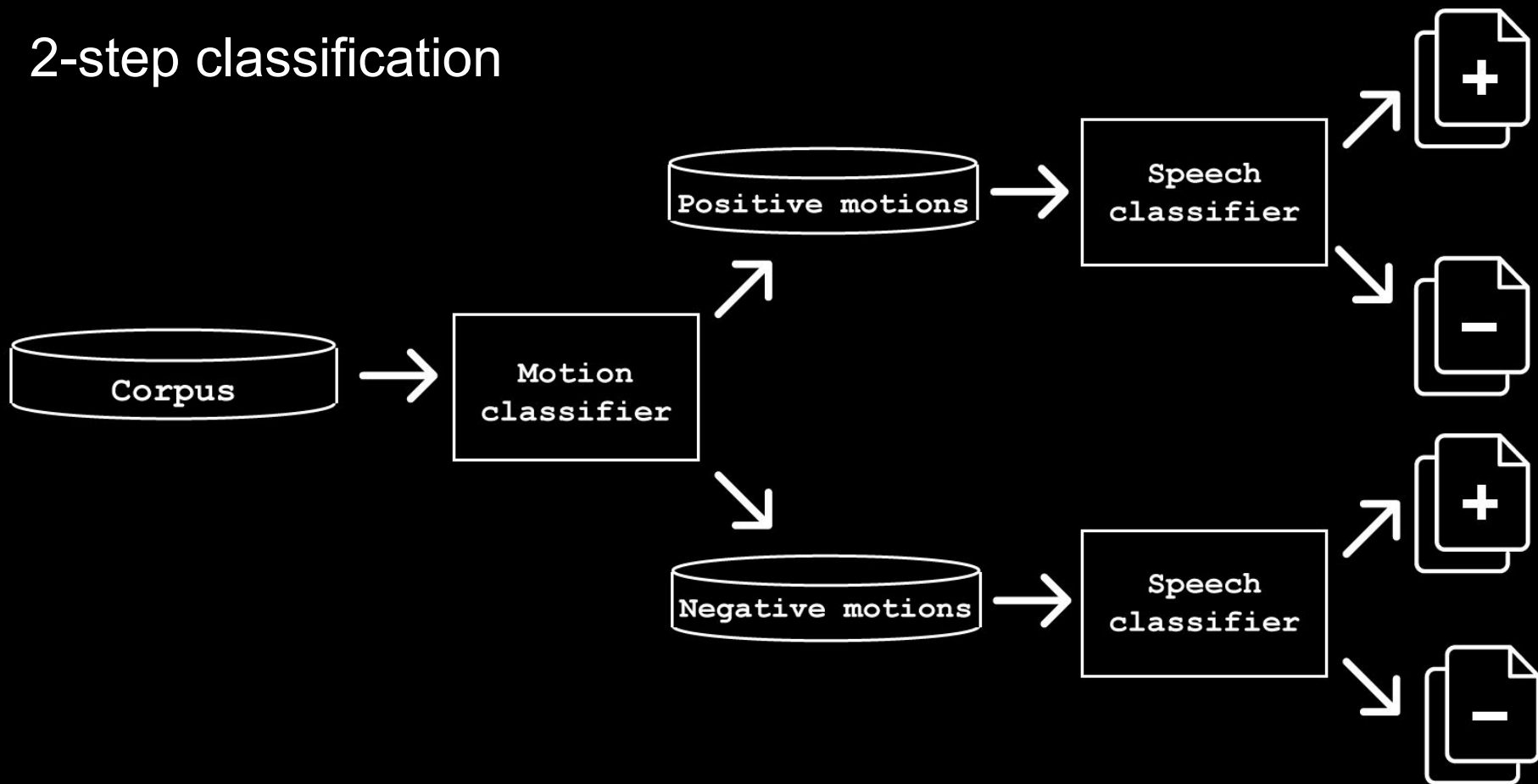
Positive
speeches:
{ "pleased",
"support",
"positive",
... }

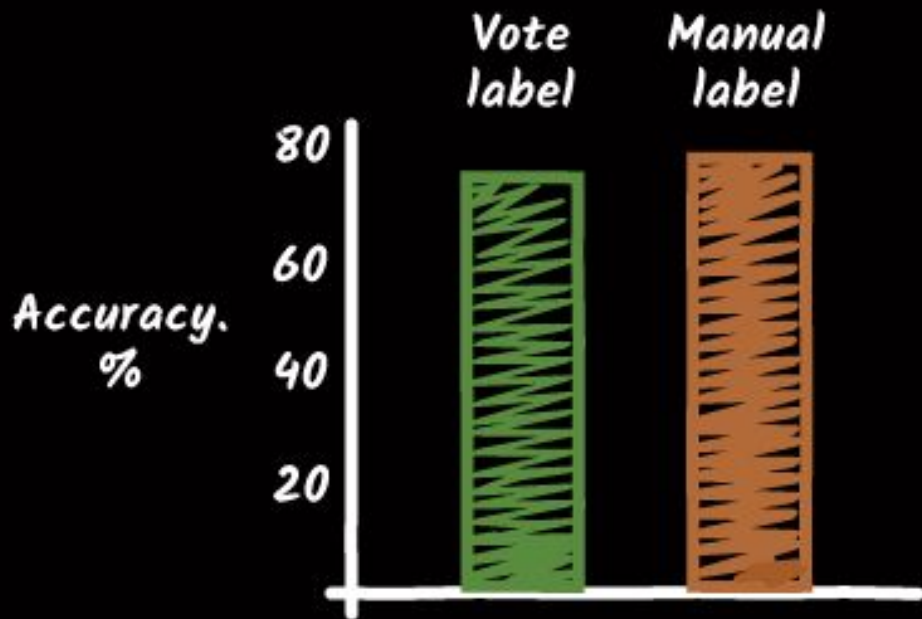
Negative
speeches:
{ "concern",
"bizarre",
"disgrace",
... }

Positive
speeches:
{ "broken",
"cuts",
"reduced",
... }

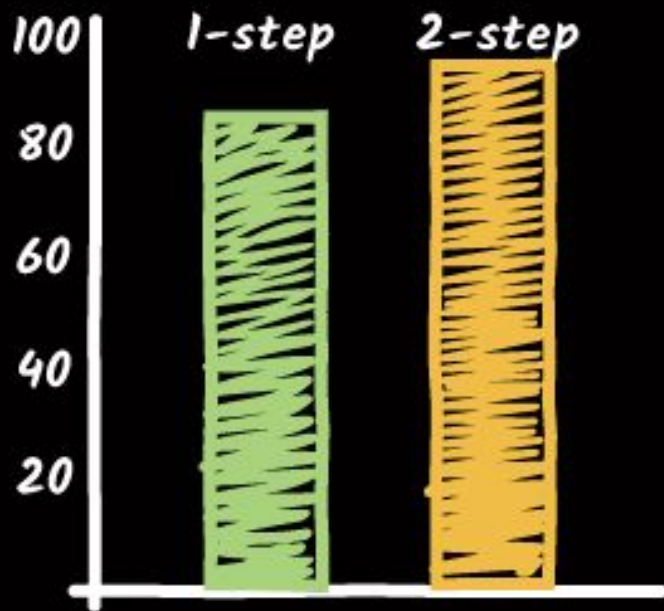
Negative
speeches:
{ "support",
"grateful",
"right",
... }

2-step classification





Text features only



Text + metadata

Policies

Policies are stated positions on a particular issue. For example "Privatise the NHS", or "Join the EU". Policies are used to track a MP's position and a way to vote in relevant divisions in Parliament.

This table summarises all policies, including how many times they have "voted". Click on their name to see the policy details. **You can get a policy to the top by editing and correcting motion text for**

Votes (<i>unedited</i>)	Policy
31 (1)	Abortion, Embryology and Euthanasia– Against
17	Academy Schools – for
4	Action to prevent domestic violence
23	Additional Rate of Income Tax – Increase
5	Against On-Shore Wind Turbines
5	Apprenticeships
6	Assisted Dying
60 (2)	Asylum System – More strict

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topic

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60 (2) [Asylum System - More strict](#)

topic

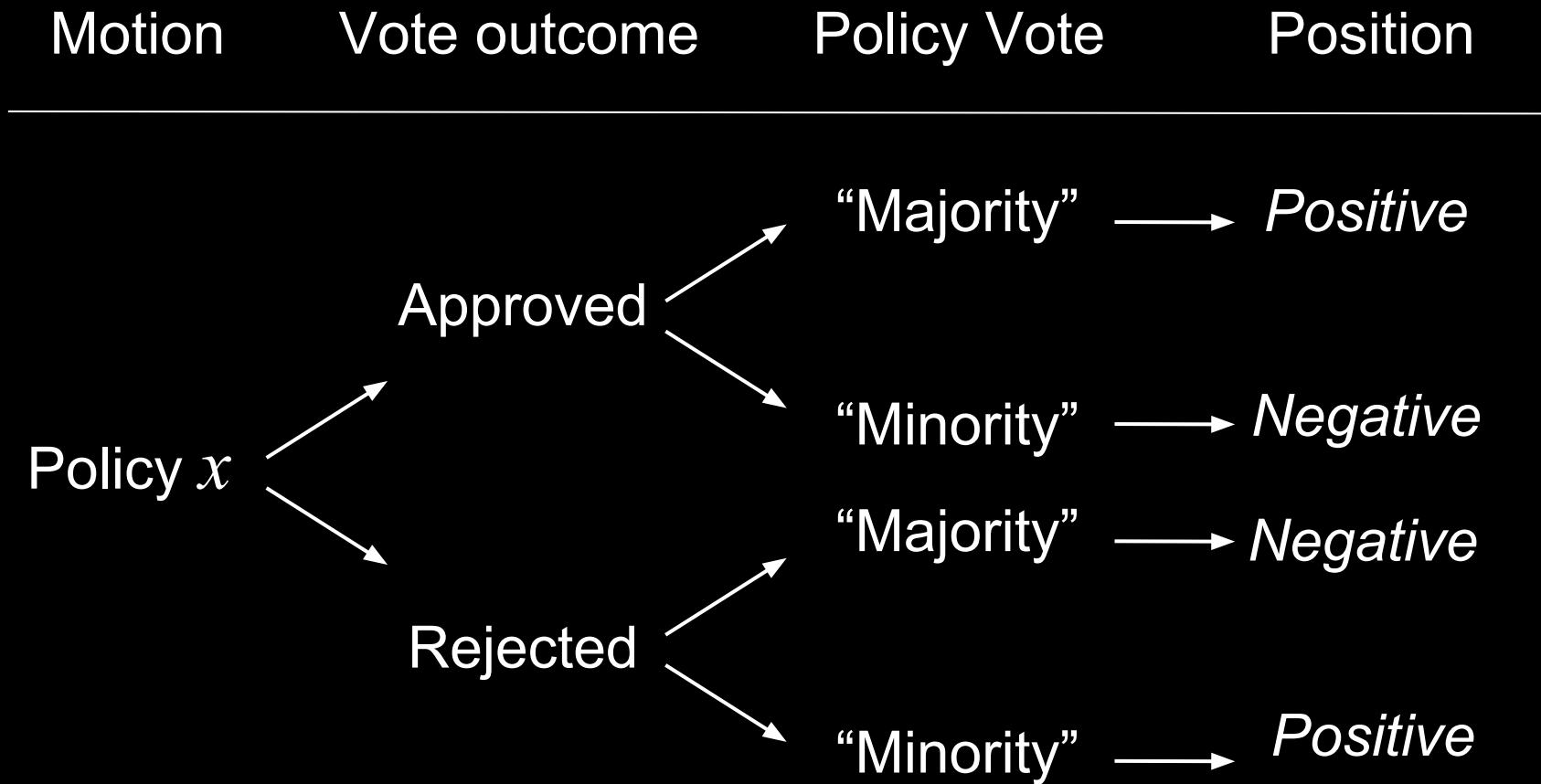
opinion

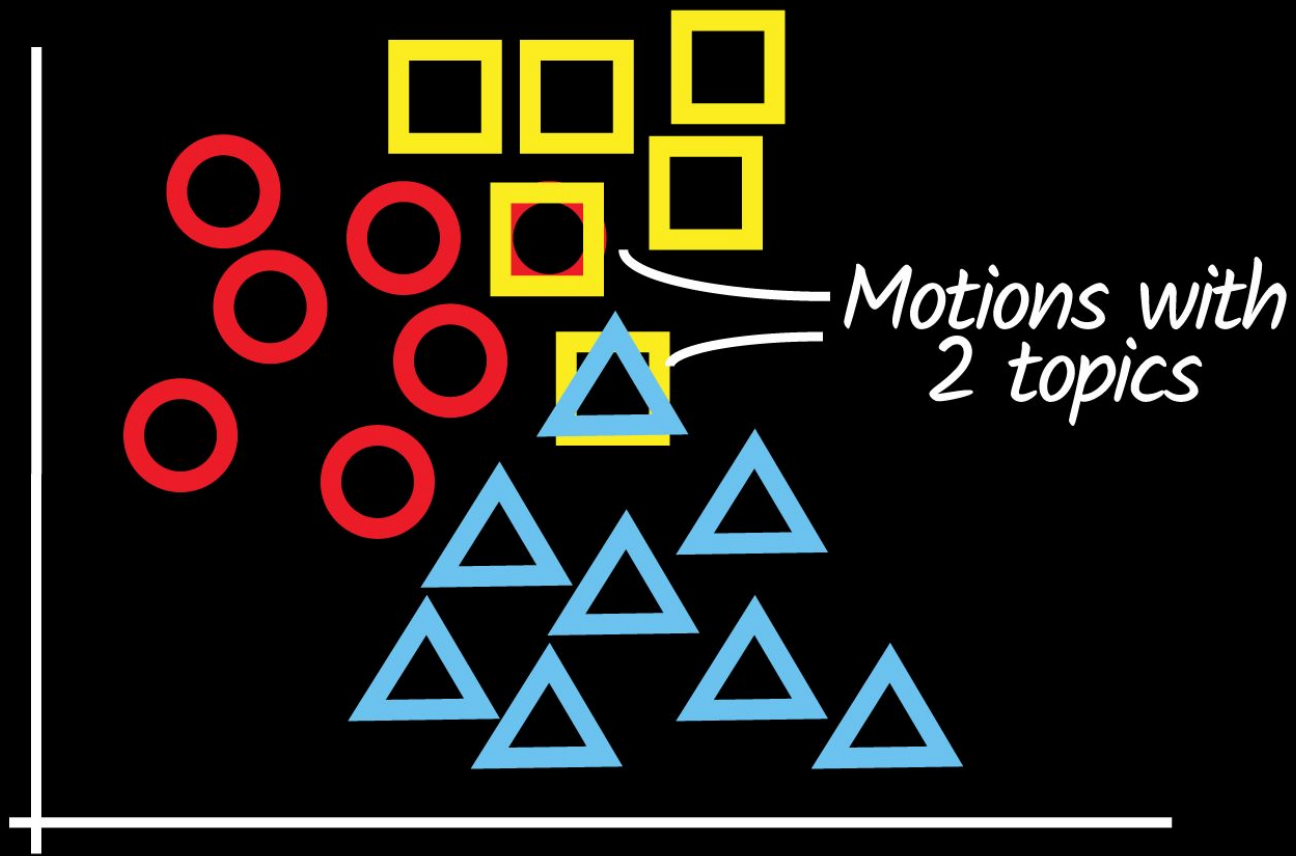
Policy #813: "Abortion, Embryology and Euthanasia- Against"

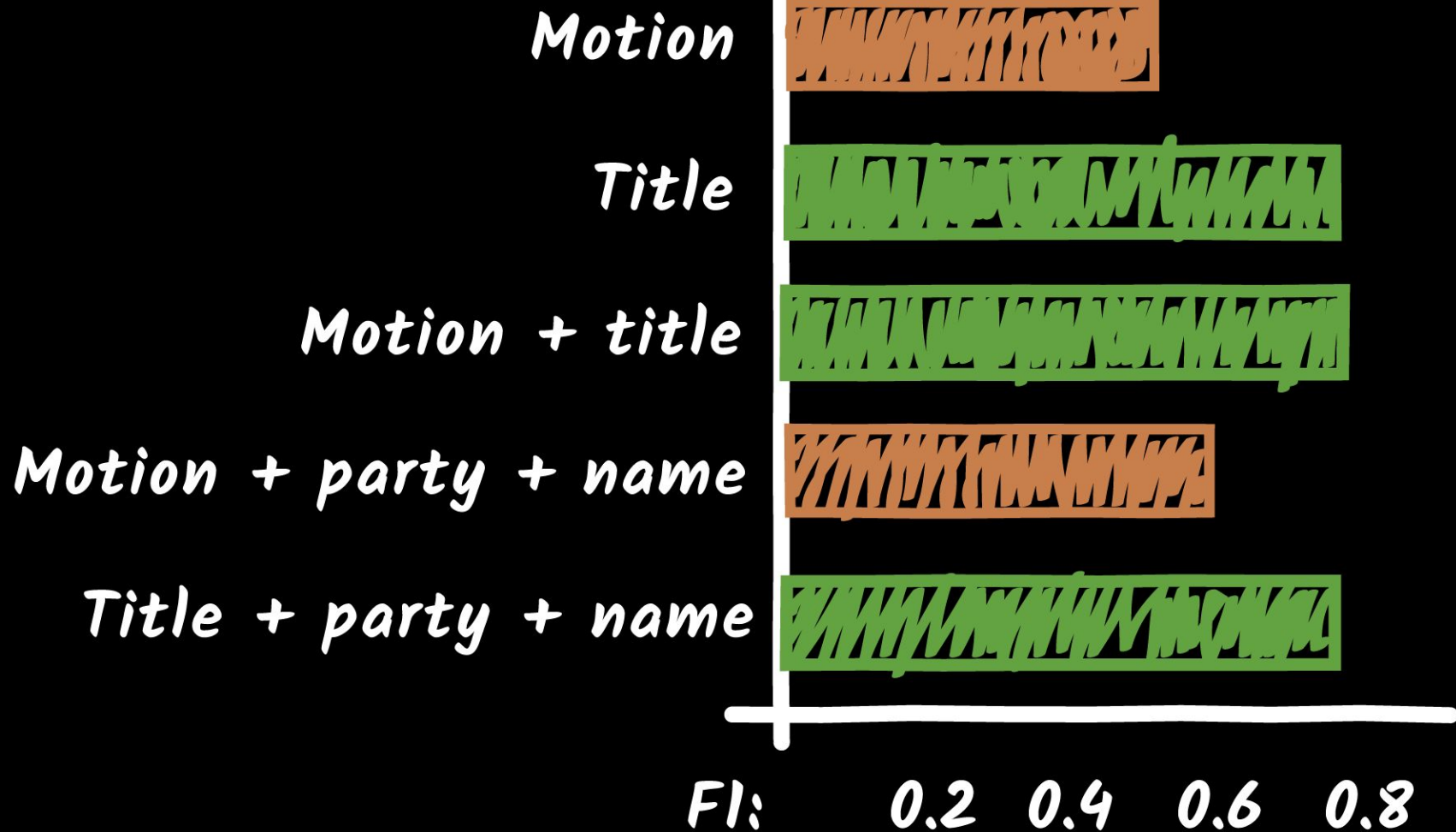
This is the votes by vote definition of Public Whip policy #813: "Abortion, Embryology and Euthanasia- Against". You may want to [read an introduction to policies](#), or [read more about Public Whip](#).

Someone who believes that medical procedures such as euthanasia, assisted killing, abortion and embryo destruction should be illegal would have voted like this...

House	Date	Subject	Policy vote
Commons	10 Dec 1997	Doctor Assisted Dying Bill — Leave to Bring In	Majority (strong)
Commons	28 Jan 2000	Medical Treatment (Prevention of Euthanasia) Bill — Second Reading	Majority
Commons	14 Apr 2000	Medical Treatment (Prevention of Euthanasia) Bill — Continuation of Debate	Majority
Commons	19 Dec 2000	Human Fertilisation and Embryology (Research Purposes) Regulations	<i>minority</i> (strong)
Lords	12 May 2006	Assisted Dying for the Terminally Ill Bill — Delay Second Reading	Majority (strong)
Commons	31 Oct 2006	Foreign and Commonwealth Affairs — Termination of Pregnancy	<i>minority</i> (strong)







Public whip

Asylum System — More strict

Manifesto Project

National Way of Life: Immigration:

Negative Statement advocating the restriction of the process of immigration, i.e. accepting new immigrants.

Might include statements regarding:

- Immigration being a threat to national character of the manifesto country;
- ‘the boat is full’ argument;
- The introduction of migration quotas, including restricting immigration from specific countries or regions etc.

Public whip

Schools — Greater Autonomy

Manifesto Project

Education Limitation

Limiting state expenditure on education.

May include:

- The introduction or expansion of study

Fees at all educational levels

- Increasing the number of private schools.

Public whip

Shift Powers from MPs in the Commons to Ministers

Increase VAT

Identity cards – For introduction

Higher taxes on alcoholic drinks

Manifesto Project

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Future work

- Extract policies from debate motions:
 - Manifestos project categories:
 - Similarity measurement?
 - Sentiment analysis?
 - Unsupervised methods:
 - Labelled topic modelling?
- Analyse speaker attitudes in speeches:
 - Agreement/disagreement detection
 - On/off-topic analysis
 - Sentiment classification



Thanks for your attention!

