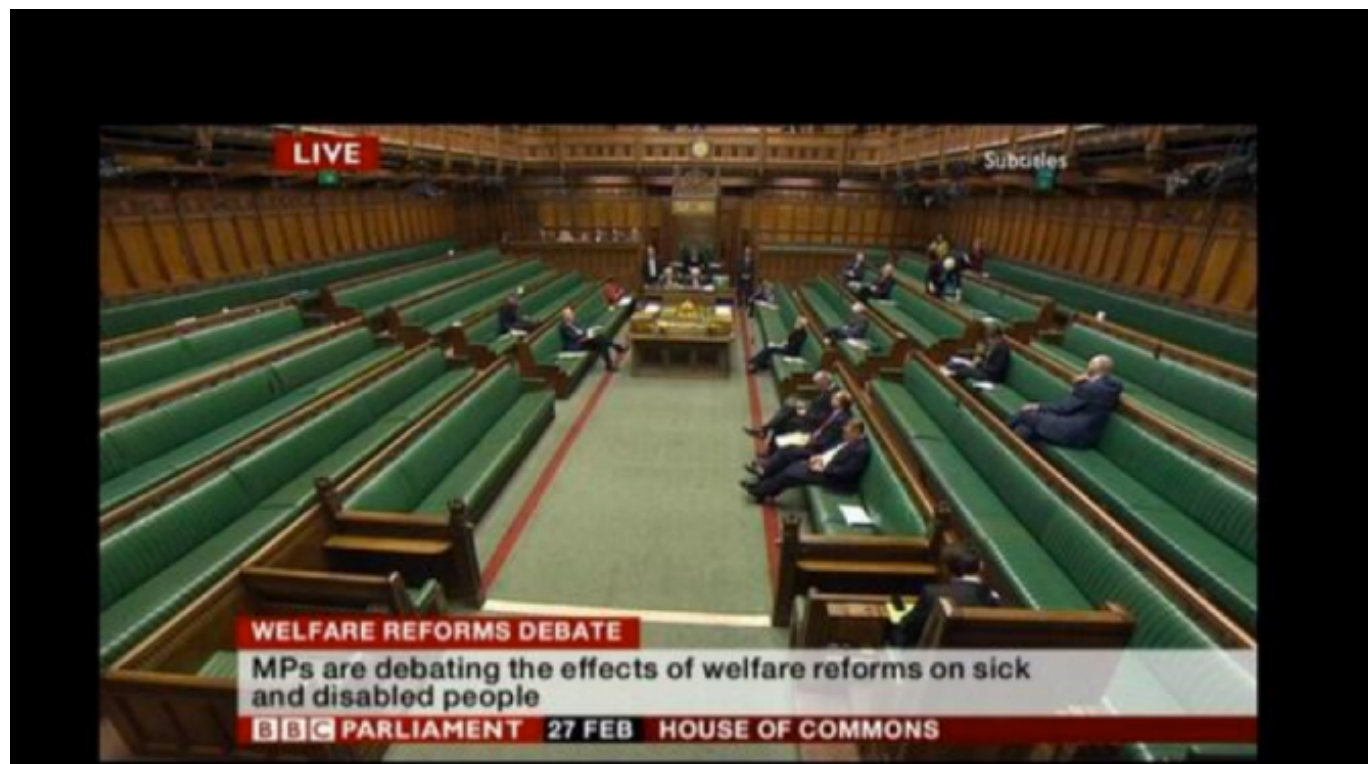
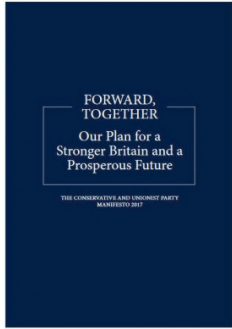


NLP Applications in Political Science

Slava Jankin Mikhaylov





Basic workflow

When I presented the supplementary budget to this House last April, I said we could work our way through this period of severe economic distress. Today, I can report that notwithstanding the difficulties of the past eight months, we are now on the road to economic recovery.

In this next phase of the Government's plan we must stabilise the deficit in a fair way, safeguard those worst hit by the recession, and stimulate crucial sectors of our economy to sustain and create jobs. The worst is over.

This Government has the moral authority and the well-grounded optimism rather than the cynicism of the Opposition. It has the imagination to create the new jobs in energy, agriculture, transport and construction that this green budget will

docs	words	made	because	had	into	get	some	through	next	where	many	irish
t06_kenny_fg	12	11	5	4	8	4	3	4	5	7	10	
t05_cowen_ff	9	4	8	5	5	5	14	13	4	9	8	
t14_o'caolain_sf	3	3	3	4	7	3	7	2	3	5	6	
t01_lenihan_ff	12	1	5	4	2	11	9	16	14	6	9	
t11_gormley_green	0	0	0	3	0	2	0	3	1	1	2	
t04_morgan_sf	11	8	7	15	8	19	6	5	3	6	6	
t12_ryan_green	2	2	3	7	0	3	0	1	6	0	0	
t10_quinn_lab	1	4	4	2	8	4	1	0	1	2	0	
t07_odonnell_fg	5	4	2	1	5	0	1	1	0	3	0	
t09_higgins_lab	2	2	5	4	0	1	0	0	2	0	0	
t03_burton_lab	4	8	12	10	5	5	4	5	8	15	8	
t13_cuffe_green	1	2	0	0	11	0	16	3	0	3	1	
t08_gilmore_lab	4	8	7	4	3	6	4	5	1	2	11	
t02_bruton_fg	1	10	6	4	4	3	0	6	16	5	3	

Descriptive statistics
on words

Scaling documents

Classifying documents

Extraction of topics

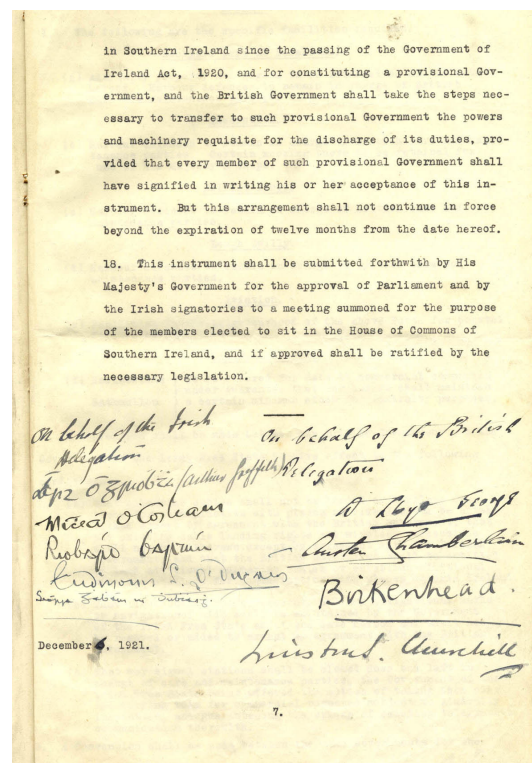
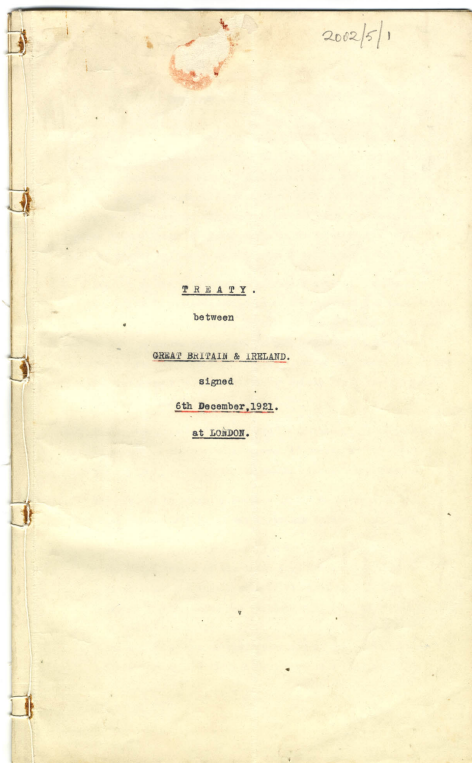
Vocabulary analysis

Sentiment analysis

Parliamentary debates



“in the beginning there was the Treaty...”

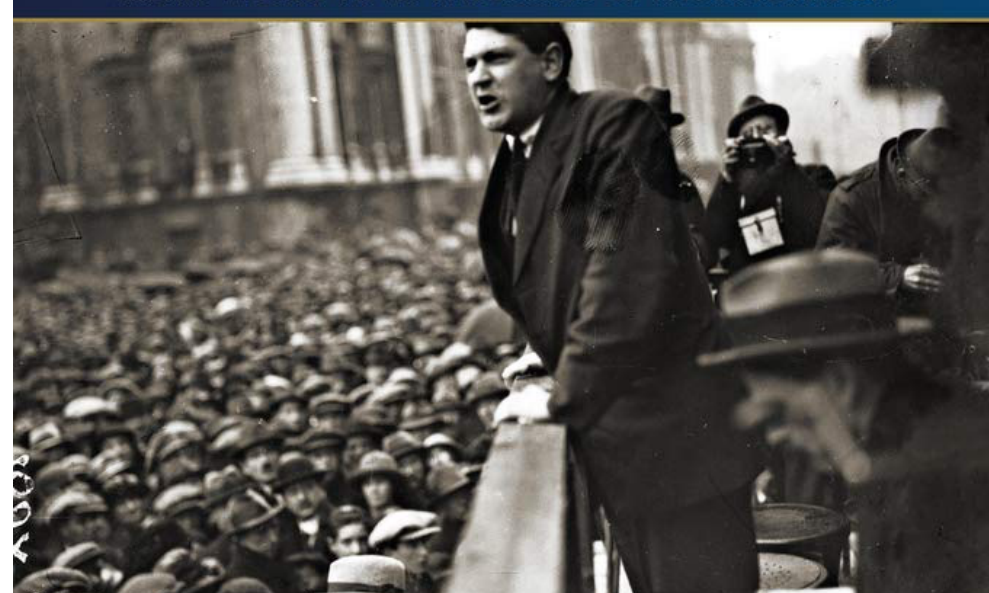


THE TREATY

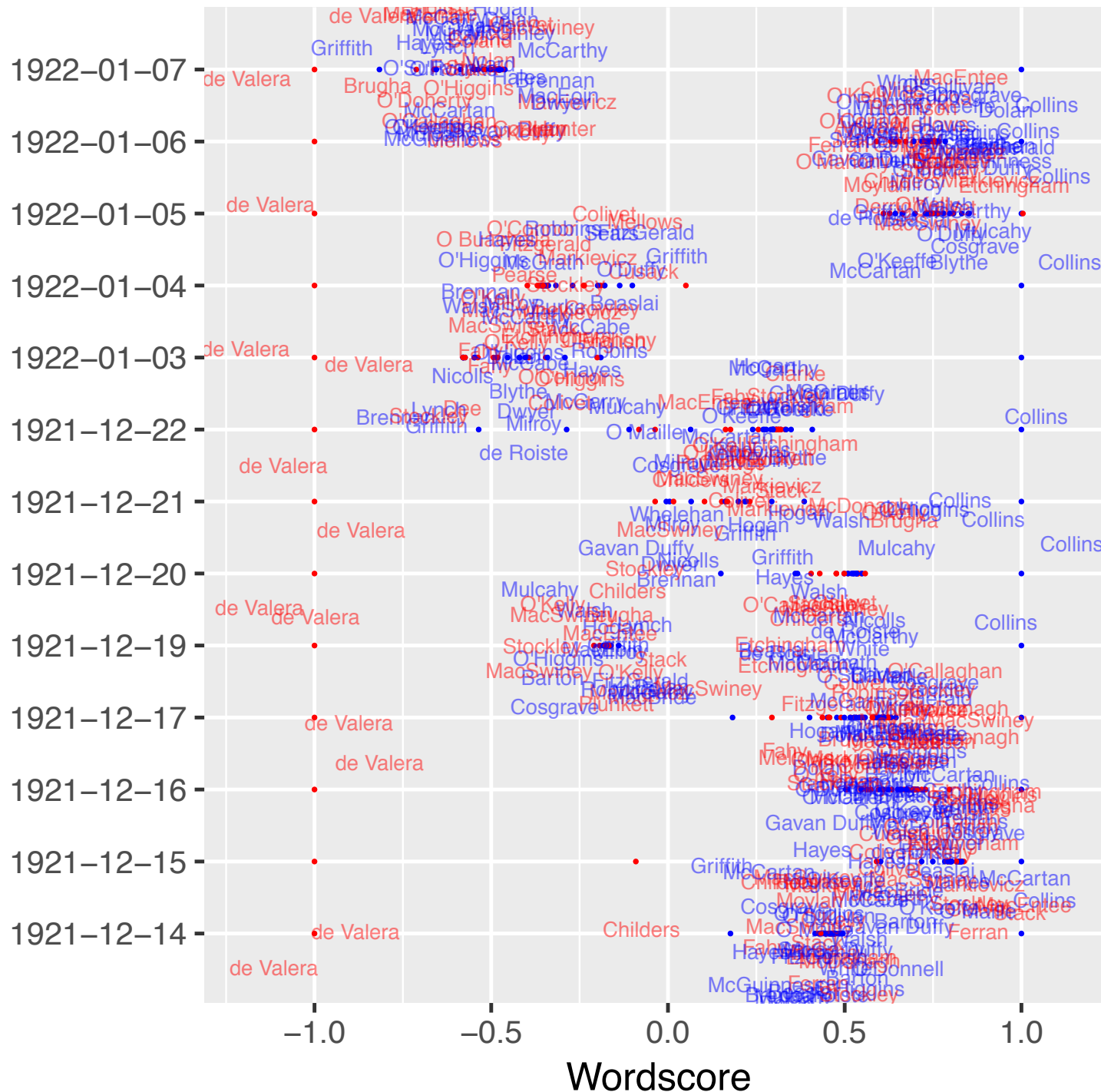
DEBATING AND ESTABLISHING THE IRISH STATE

EDITED BY

LIAM WEEKS AND MÍCHEÁL Ó FATHARTAIGH



Date of Debate



Vote

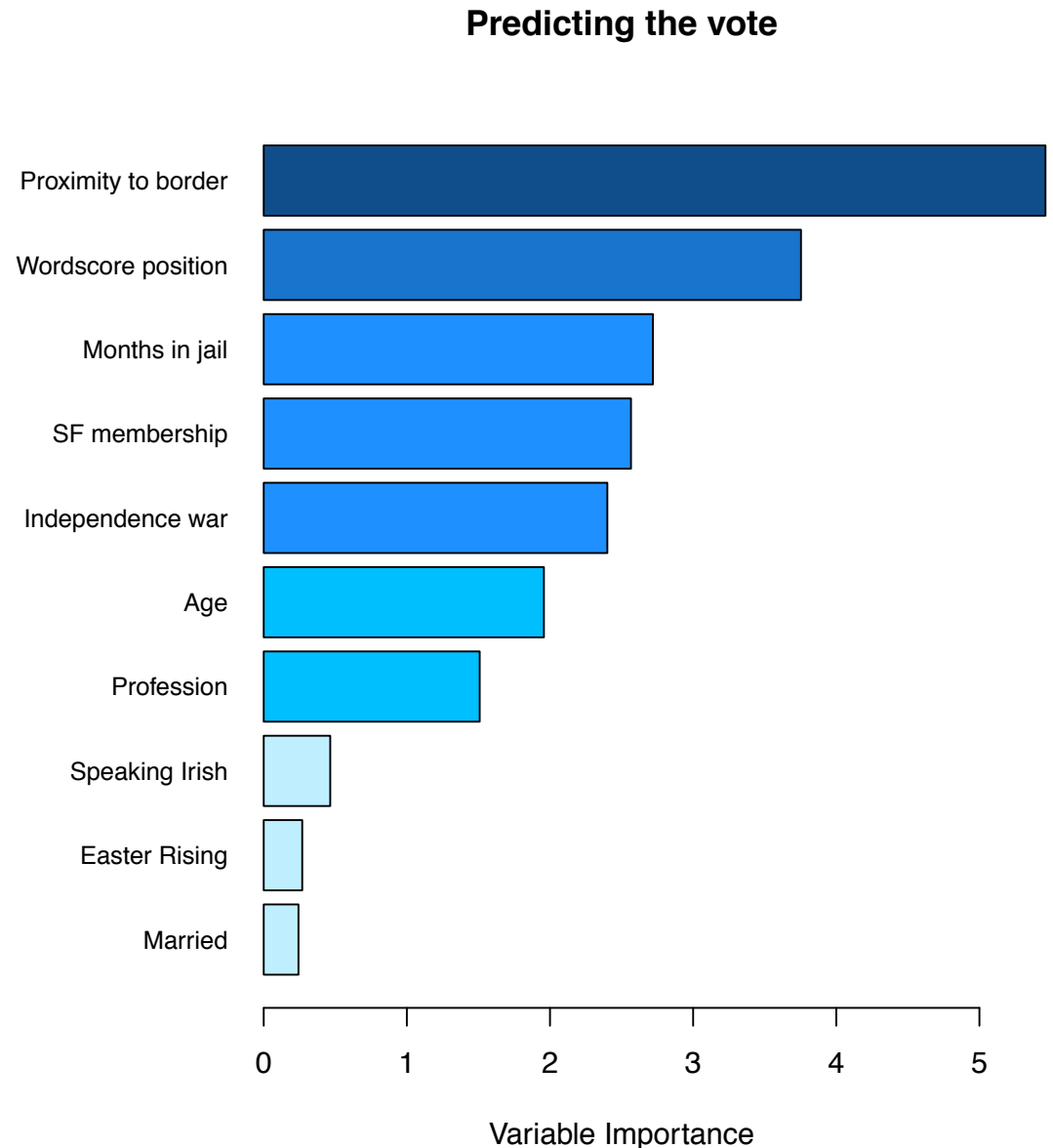


Collins vs. de Valera

Predicting the Treaty vote

- Random Forest model
- Out-of-bag error rate 21.74%
- Confusion table:

	0	1	class. error
0	24	4	0.14
1	6	12	0.33

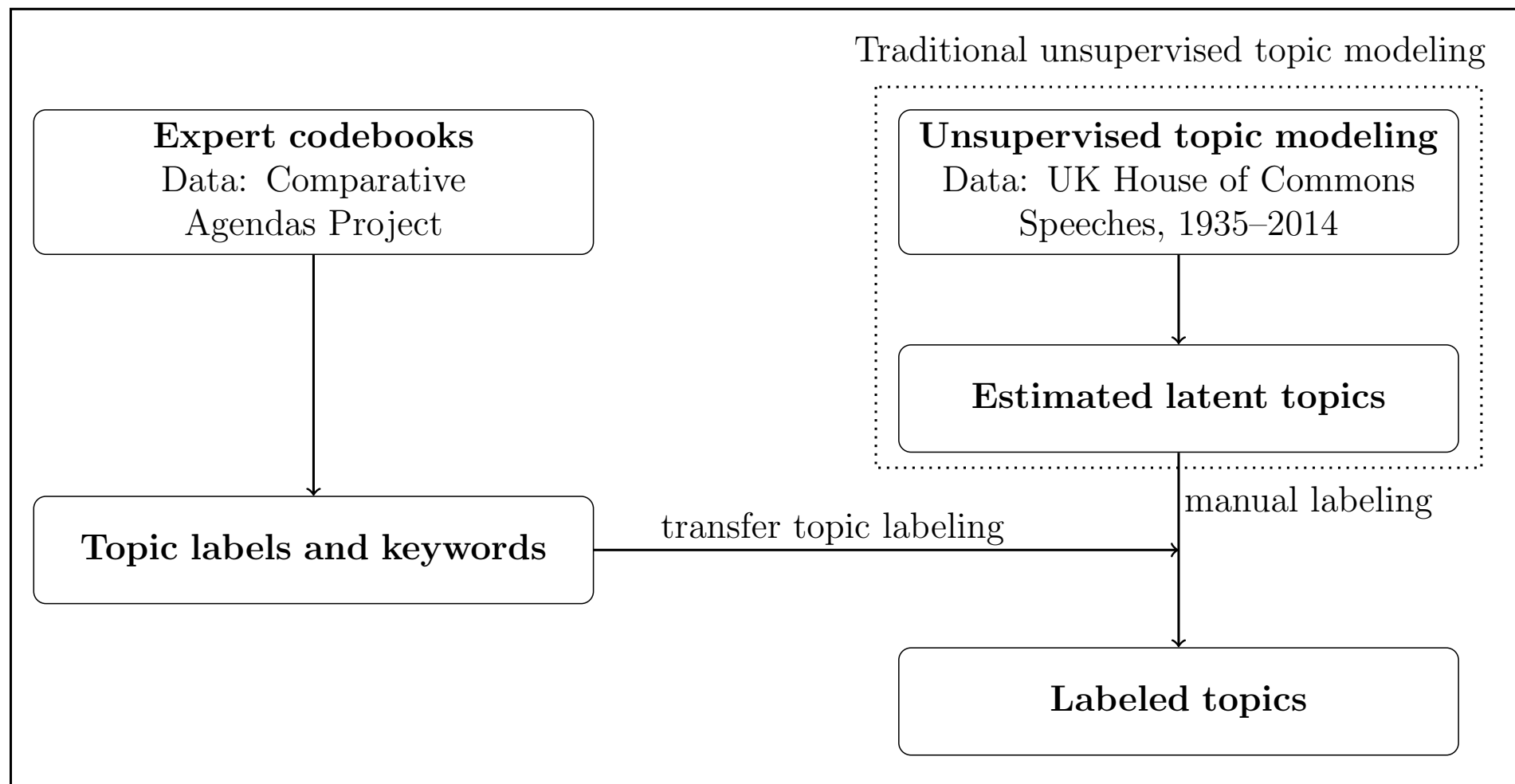




Transfer Topic Labeling

<https://arxiv.org/abs/1806.00793>

Unsupervised topic modeling with transfer topic labeling



Transfer Labeling

Jaccard index

$$J(A, B) = \frac{|A \cap B|}{|A \cup B|}$$

A: Set of top k words from an estimated topic

B: Set of weighted keywords from a Comparative Agendas Project topic

NLP in International Relations



UNGDC

<https://github.com/sjankin/UnitedNations>

- All speeches from 1970 to 2017.
- United Nations Dag Hammarskjold Library: English version.
- 7,897 statements.
- UN membership: 70 (1970) and 193 (2017).
- On average 123 sentences, 945 unique forms, and 3,248 individual words each.

The meeting was suspended at 11.25 a.m. and resumed at 11.50 a.m.

ADDRESS BY MR. GEORGE BUSH, PRESIDENT OF THE UNITED STATES OF AMERICA

The PRESIDENT: The Assembly will now hear an address by the President of the United States of America.

Mr. George Bush, President of the United States of America, was escorted into the General Assembly Hall.

The PRESIDENT: On behalf of the General Assembly I have the honour to welcome to the United Nations the President of the United States of America, His Excellency Mr. George Bush, and to invite him to address the General Assembly.

President BUSH: I am honoured to address the General Assembly today at the beginning of its forty-fourth session. I should like to congratulate Joseph Garba of Nigeria, a distinguished diplomat, on his election as President of this session of the General Assembly, and I wish him success in his presidency.

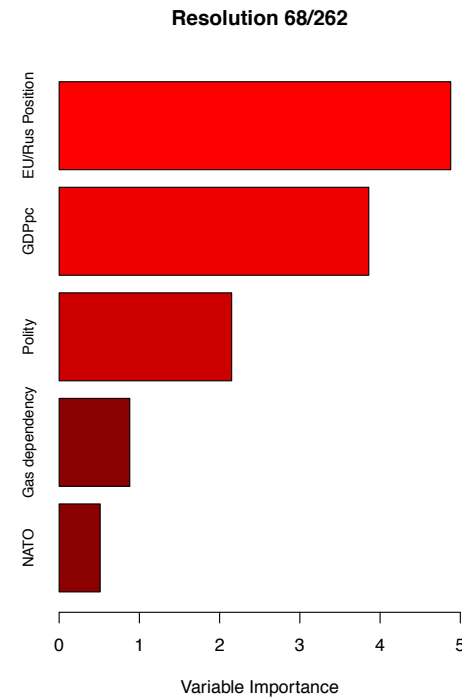
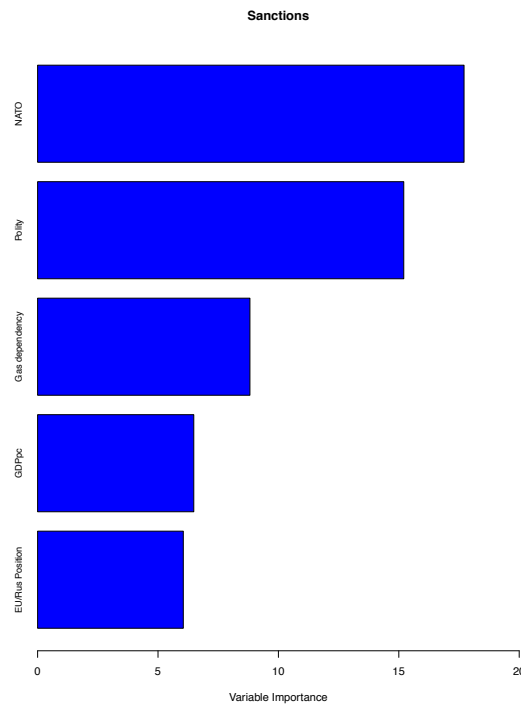
I feel a great personal pleasure on this occasion, for this is a homecoming

Conflict Prediction



Ukraine Territorial Integrity

- Vote on Resolution 68/262; Sanctions.
- Random forest estimation.
- Out-of-bag test error rate 7.78%.
- Variable importance - aggregate improvement in the optimization objective for each predictor.



Rhetorical links and policy

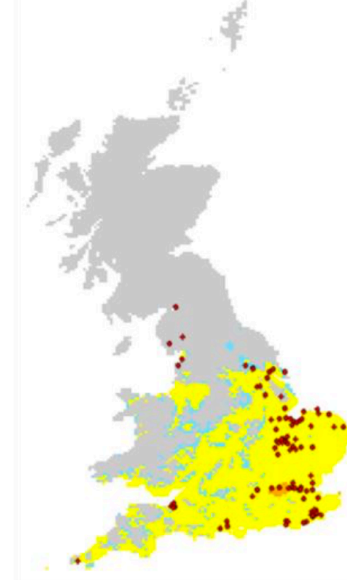
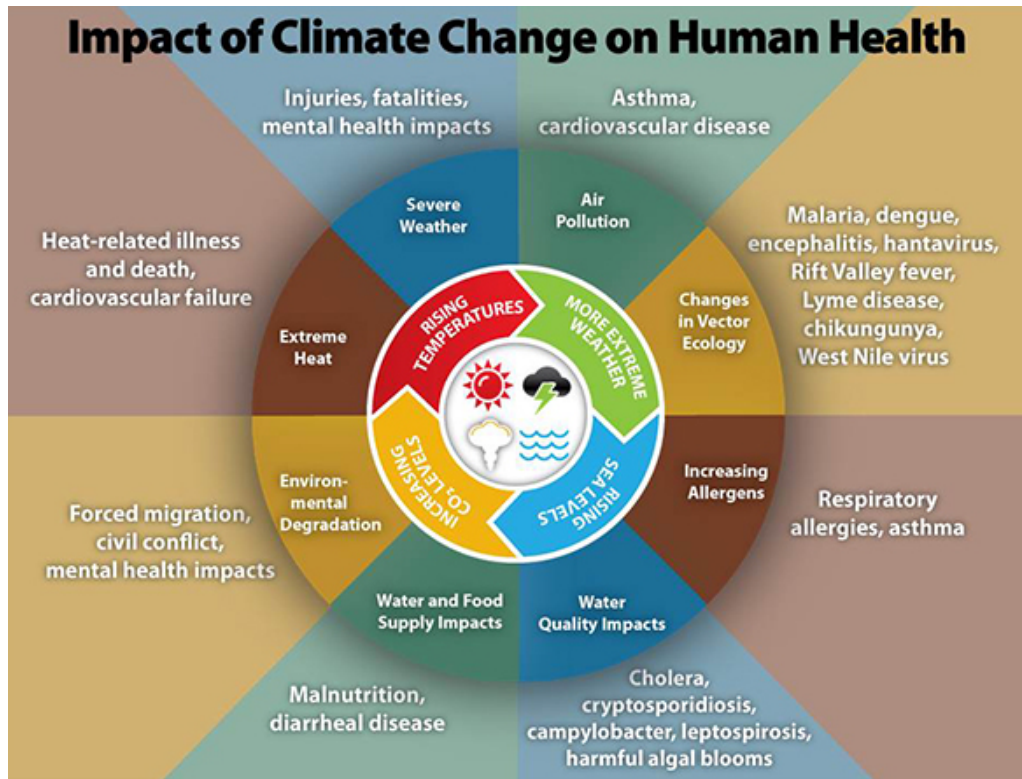


Figure 8.4. Areas of the UK where the climate could support vivax malaria. Shading represents the number of months where vivax malaria could be transmitted (grey =0, blue =1, yellow =2, orange =3). Red circles show malaria cases in the 19th Century. Based on the UKCIP for 1961-90.

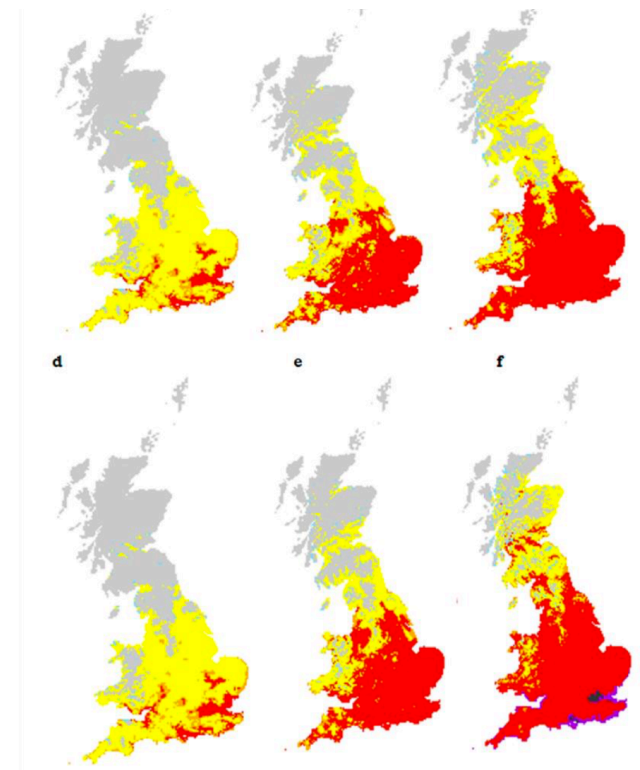
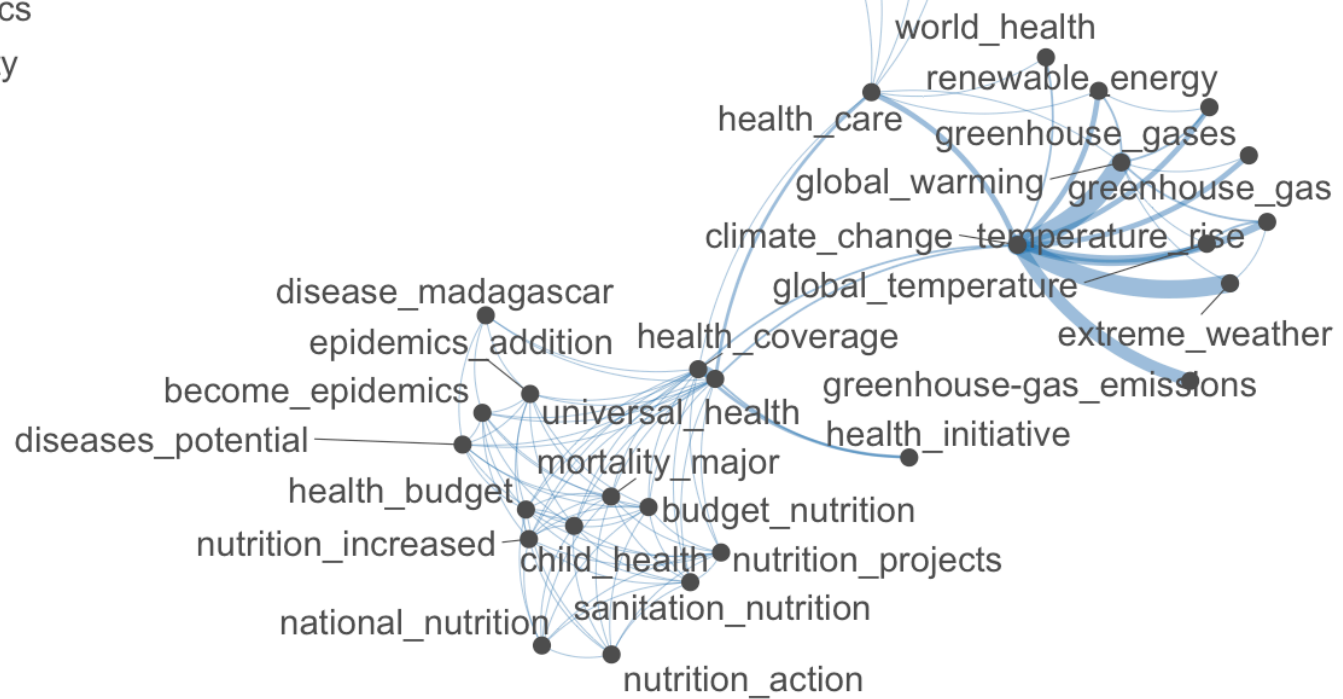
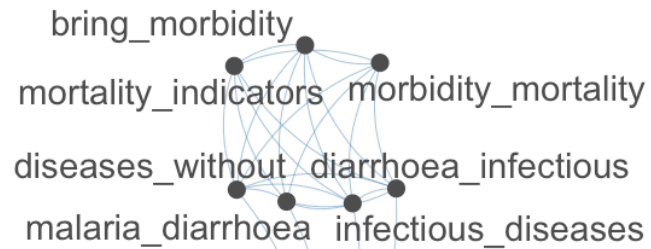
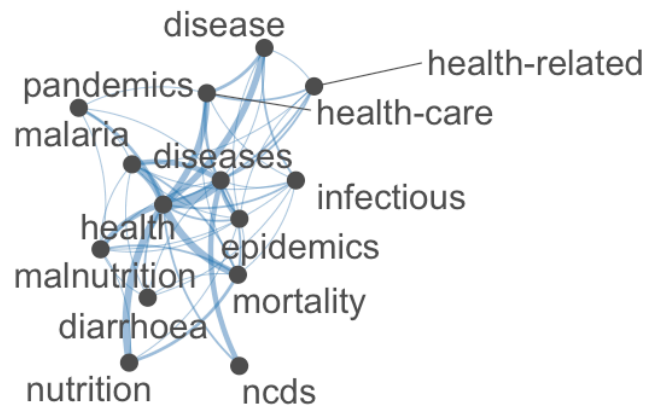
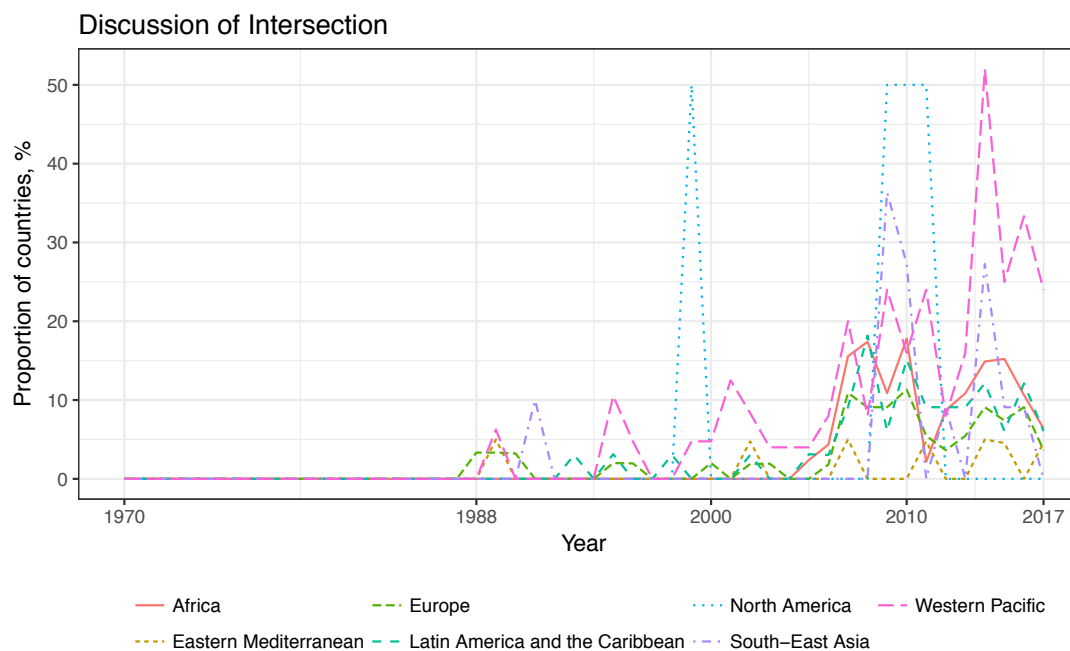
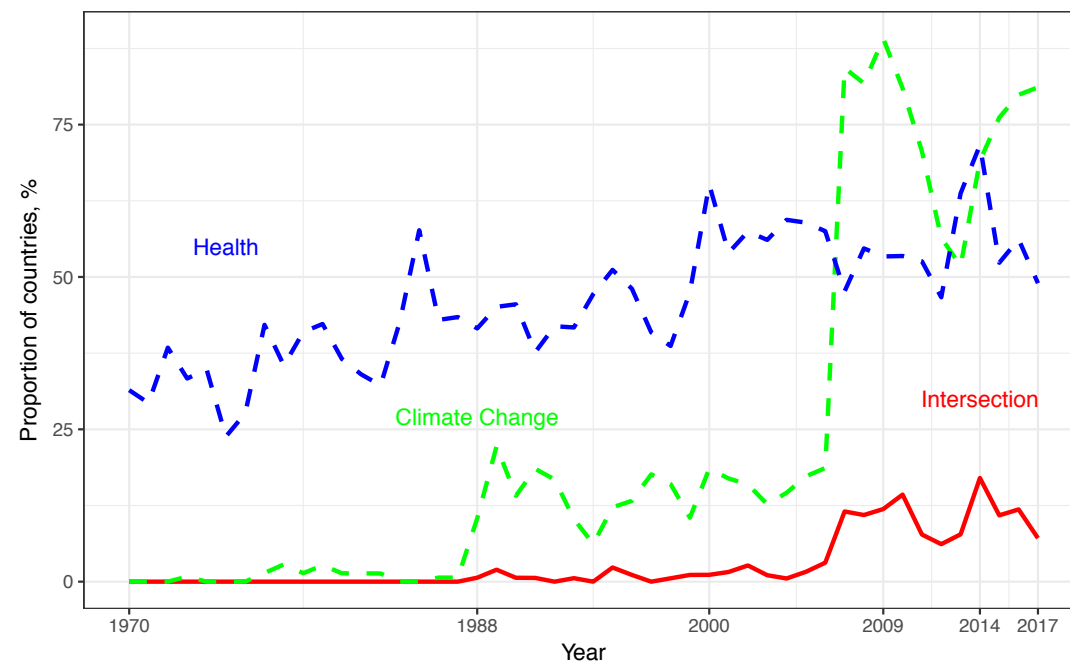
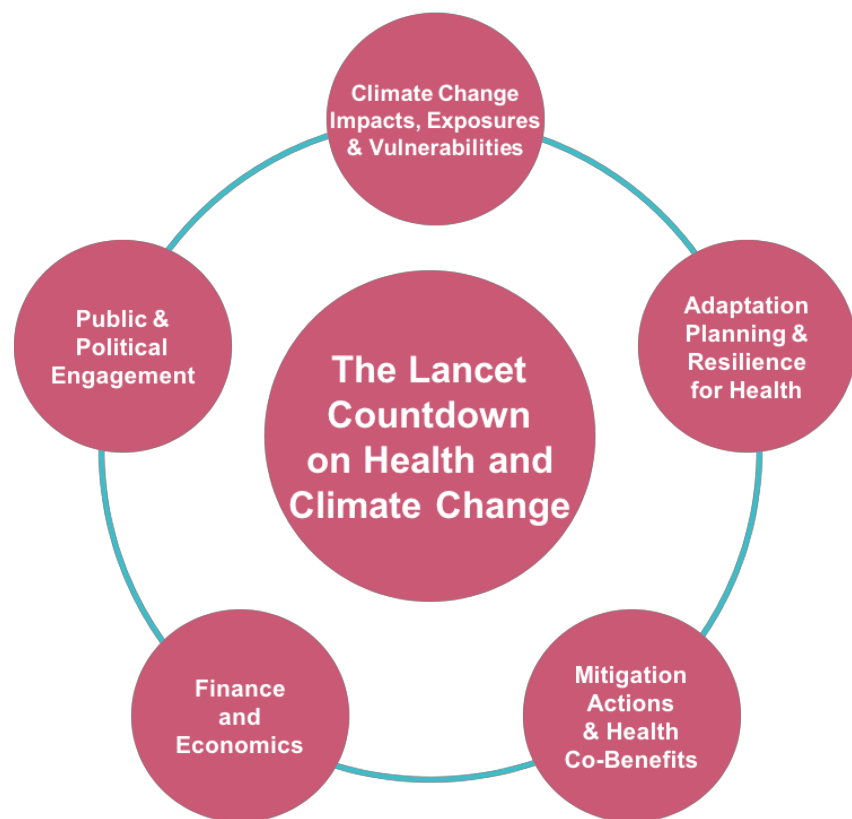
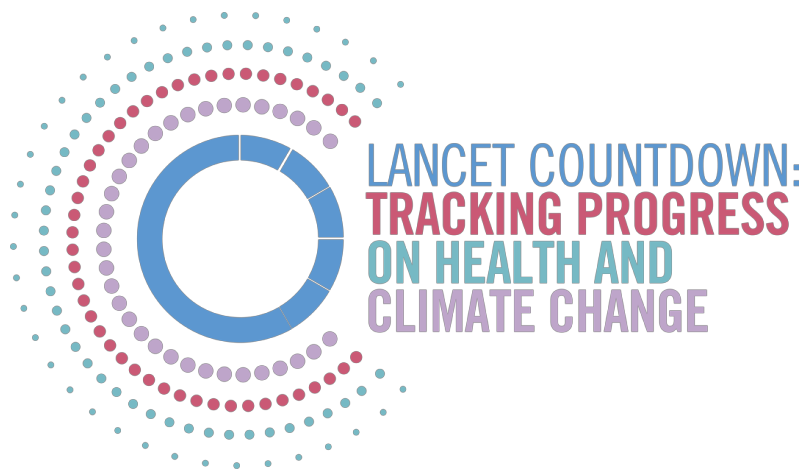


Figure 8.5. Projected future risk maps for vivax malarial transmission under a medium-low (a, b and c) and a medium-high (d, e and f) climate change scenario. Maps show risk for the period 2020s (a and d), 2050s (b and e) and 2080s (c and f). Based on UKCIP02.





THE LANCET



THE LANCET

November, 2018

www.thelancet.com

The 2018 report of the *Lancet* Countdown on health and climate change



"The nature and scale of the response to climate change will be the determining factor in shaping the health of nations for centuries to come."



A Review by *The Lancet*

Thank you!

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