Learning (and Unlearning) from the Media and Political Parties: Evidence from a YouGov-SMaPP 2015 UK Election

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Motivation

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4. Heterogenous treatment effects:
   - (Individual characteristics)
   - **Sender** characteristics
   - **Issue** characteristics

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    - Objective measure of media exposure
    - Caveat: Timeline is proxy for tweets seen

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Exposure to information on Twitter sent by a media organization on a specific topic will be positively related to an increase in knowledge of the facts associated with that issue.

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*Exposure to information sent by certain political parties on strategically advantageous topic will be **positively** related to an increase in knowledge of the facts associated with those issue:*

*(A) Tweets from incumbent parties will **increase** knowledge about changes in unemployment;*

*(B) Tweets from opposition parties will **decrease** knowledge about changes in unemployment;*

*(C) Tweets from UKIP will **increase** knowledge about the correct rate of immigration to the UK;*

*(D) Tweets from UKIP will **increase** belief in the number of immigrants coming to the UK.*

	SOMA	SOMA w Tweets	BES
Women	45%	43%	50%
15+ Years Education	52%	55%	41%
Median Age	48	48	53
Median HH Income	£34,200	£37,500	£27,500
Median L-R Ideology†	5.2	5.2	4.6

† Self-reported ideology, left to right; asked on a 0-100 scale in our survey and on a 0-10 scale in the BES.

Classifying Tweets

- Divide political accounts by party
- Divide media accounts by "expert coded" ideology
- Assign each tweet to a topic

Table: Number of Subjects Receiving At Least One Apropos Tweet

	ISIS	EU	Economy	Immigration	Any	Any %
Labour	522	532	532	532	532	19%
Tory	439	470	472	470	472	17%
LibDem	201	223	224	224	224	8%
UKIP	102	102	102	102	102	4%
Right Media	177	184	184	184	184	6%
Left Media	157	161	160	160	161	6%
Centrist Media	701	763	728	761	763	27%

Descriptive Statistics - Exposure Proportions

Table: Average % of Tweets On Each Topic, Among Those With $\geq$ One

	ISIS	EU	Economy	Immigration
Labour	3%	15%	**49%**	34%
Tory	3%	25%	**45%**	27%
LibDem	1%	29%	42%	28%
UKIP	1%	**36%**	19%	**44%**
Right Media	4%	25%	38%	33%
Left Media	6%	33%	35%	25%
Centrist Media	6%	26%	35%	33%

Table: The mean percentage of tweets about each topic sent by each source, of those respondents who saw at least one tweet from that source.

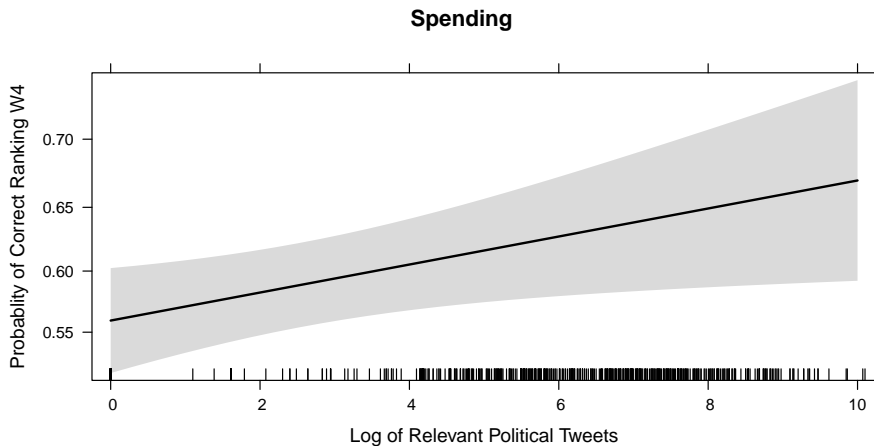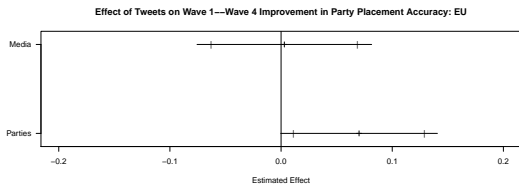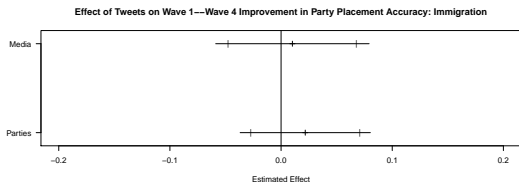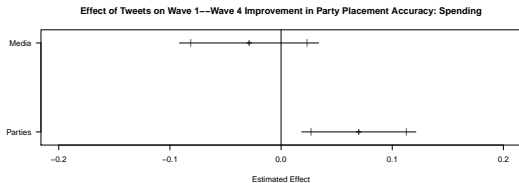**Wave 1––Wave 4 Improvement in Placement Accuracy**
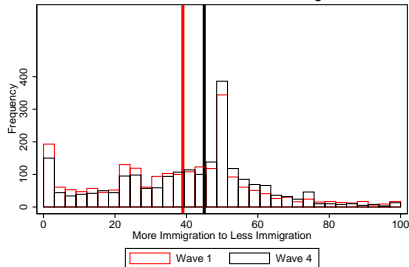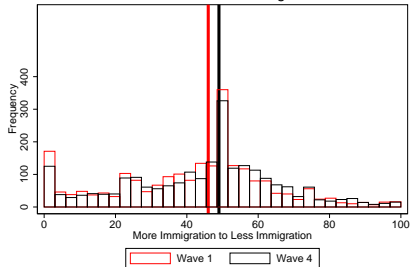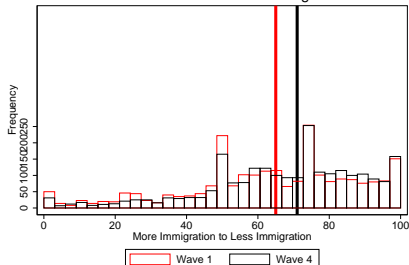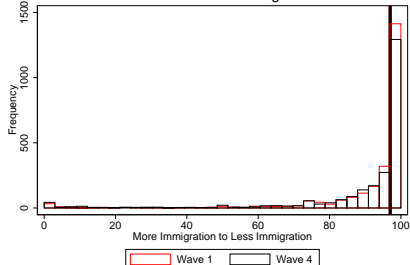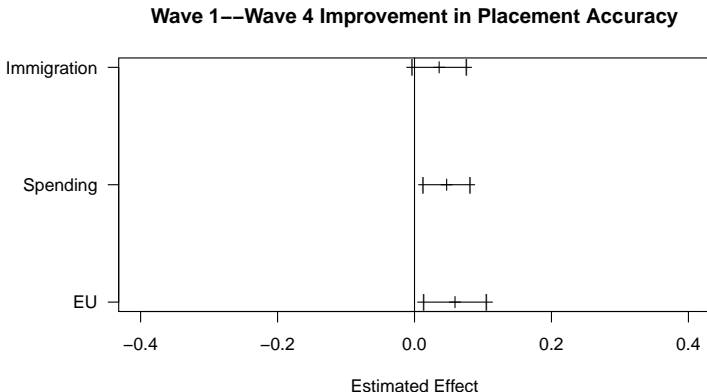
Figure: Estimates of the impact of the number of tweets in the respondent's timeline related to the that topic, with three separate regressions. The dependent variable in each case is whether the respondent correctly ranked the four parties on that topic in wave 4 of the survey.

Spending

Improvement in Party Placement by Source of Tweets

Effect of Tweets on Wave 1–-Wave 4 Improvement in Party Placement Accuracy: Spending

Effect of Tweets on Wave 1–-Wave 4 Improvement in Party Placement Accuracy: Immigration

Effect of Tweets on Wave 1–-Wave 4 Improvement in Party Placement Accuracy: EU

- (ISIS) The Islamic militant group known as ISIS currently controls territory in which of these countries: **Syria**, Kuwait, Morocco, or Pakistan?

	ISIS		
	Right W2	Wrong W2	Total W3
Right W3	88%	5%	93%
Wrong W3	3%	4%	7%
Total W2	91%	9%	

N = 1,226

- (Unemployment) Compared to a year ago, has unemployment in Great Britain increased or **decreased**?

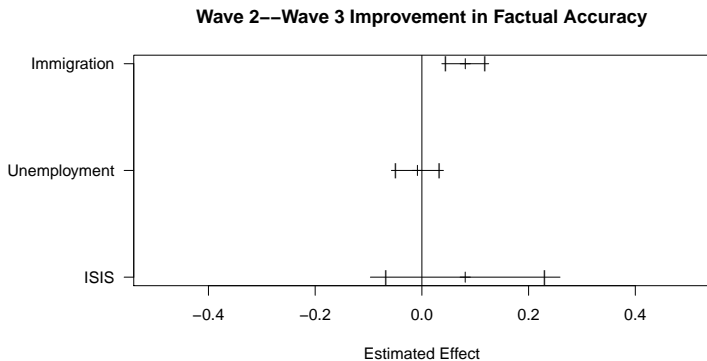| | Unemployment | | |
	Right W2	Wrong W2	Total W3
Right W3	51%	10%	61%
Wrong W3	13%	26%	39%
Total W2	64%	36%	

N = 1,226

- (Immigration) Over the past 5 years, has the number of immigrants to the United Kingdom from other EU countries been: Less than 100,000 per year, **Between 100,000 and 300,000 per year**, Between 300,000 and 500,000 per year, More than 500,000 per year?
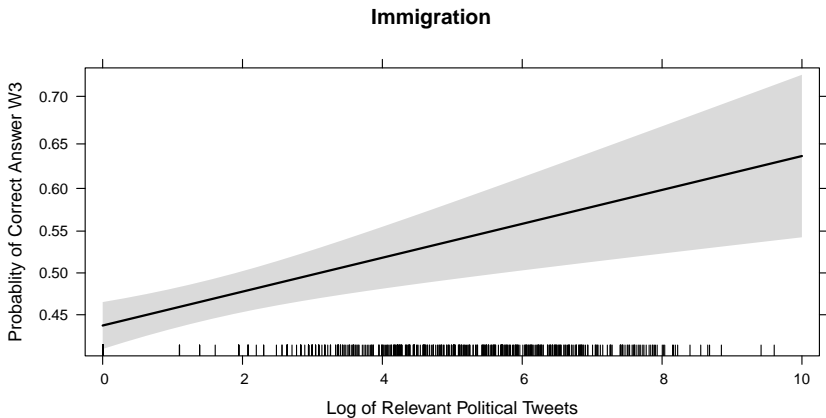
	Immigration		
	Right W2	Wrong W2	Total W3
Right W3	31%	17%	48%
Wrong W3	20%	32%	52%
Total W2	51%	49%	

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Improvement in Factual Accuracy

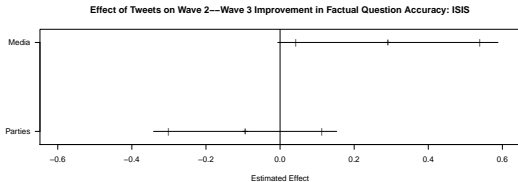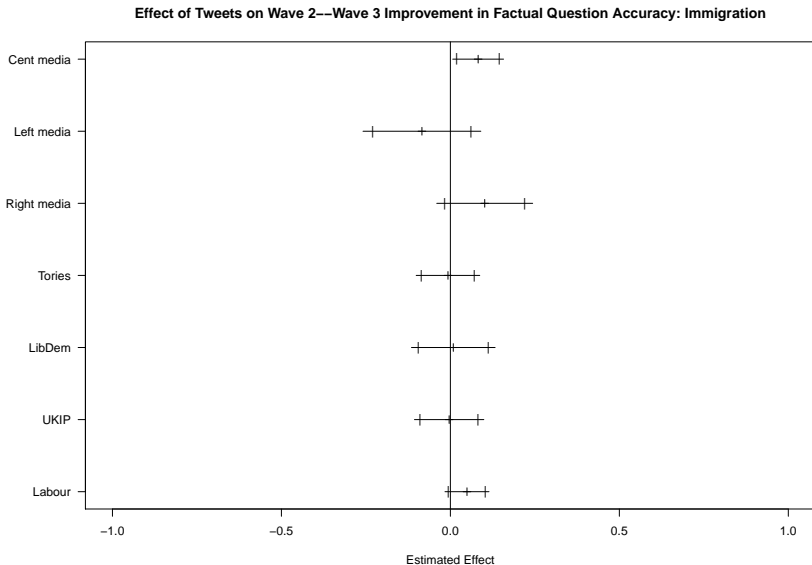**Wave 2––Wave 3 Improvement in Factual Accuracy**

Improvement in Factual Accuracy–Odds Ratio

Immigration
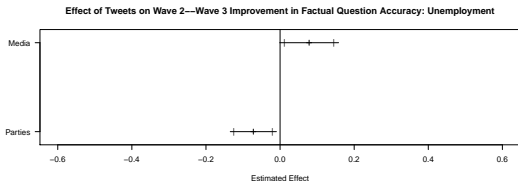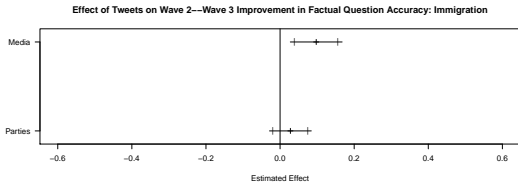
Improvement in Factual Accuracy by Partisan Source
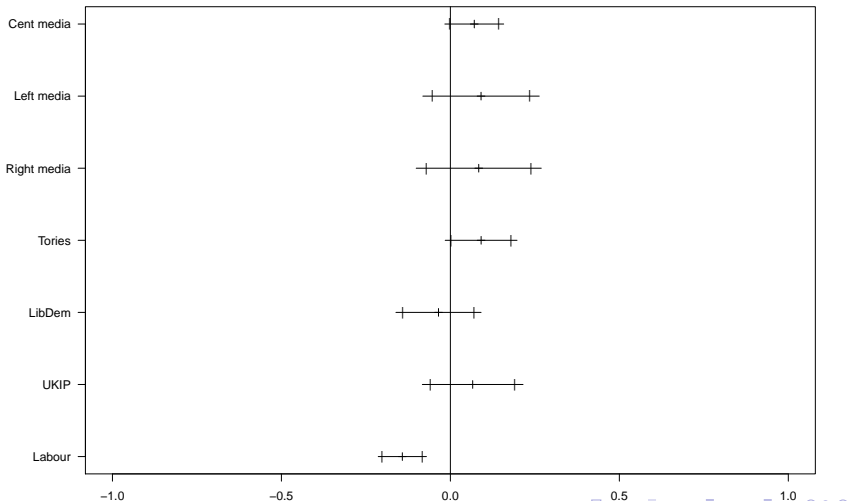

Effect of Tweets on Wave 2—–Wave 3 Improvement in Factual Question Accuracy: Immigration

Improvement in Factual Accuracy by Partisan Source: Unemployment

Effect of Tweets on Wave 2––Wave 3 Improvement in Factual Question Accuracy: Unemployment

BUT.. Change in Estimate by Partisan Source

	Estimate of Unemployment W3 - Estimate of Unemployment W2	Estimate of Immigration W3 - Estimate of Immigration W2
	Dependent variable:	
Labour Tweets	0.090^{**}	$-0.040^{\dagger}$
	(0.020)	(0.021)
UKIP Tweets	0.001	0.070^{*}
	(0.041)	(0.030)
LibDem Tweets	0.014	-0.045
	(0.034)	(0.037)
Tory Tweets	-0.041	-0.003
	(0.029)	(0.029)
Right Media Tweets	$-0.101^{\dagger}$	0.013
	(0.060)	(0.044)
Center Media Tweets	-0.029	0.017
	(0.025)	(0.024)
Left Media Tweets	-0.066	0.085
	(0.049)	(0.055)
Demographic controls	✓	✓
Media Use controls	✓	✓
Observations	1,713	1,398

Estimates of the impact of the number of tweets in the respondent's timeline sent by an account affiliated with that party or group of media outlets *and* related to the that topic, calculated from two separate regressions.

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  - UKIP (nativist) tweets ⇝ higher estimates of immigration
- Overall story is positive, but with some caveats

Thanks!

Retention

Table: Retention Rates Among Survey Respondents

Sample	Wave 1	Wave 2	Wave 3	Wave 4	All Waves
NR	1,118	1,047	1,094	958	1,660
Retention		63%	71%	87%	465 (in all 4 waves)
SoMA	2,574	2,507	2,776	2,490	3,846
Retention		68%	79%	90%	1,308 (in all 4 waves)

Table: Retention rates were high, and there were 1,308 respondents in the SoMA sample that completed all 4 waves of the survey. Note that wave 4 is the only post-election wave.

	SOMA	SOMA w Tweets	Election
Conservative	33	32	37
Labour	34	35	31
Liberal Democrats	8	9	8
SNP	5	5	5
UKIP	9	8	13
Green	10	11	4
Other	1	1	3
	100%	100%	100%

- Begin with anchor terms for each topic:
  - "Ties to the EU": 'brexit'
- Compute Relevancy Score per word:

$$Score_s^w = f_s^w f^w N_s^w$$

- f_s^w: relative frequency of word w in subset s
- f^w: frequency of word w overall
- N_s^w: count of word w in subset s
- s: combined text of all tweets containing eg 'brexit'

Table: Top Terms Pertaining to the Topic "Ties to the EU"

| Term	Score
brexit	1000
no2eu	44
betteroffout	18
eureferendum	6.7
eu	6.7
euref	5.9
grexit	2.2
scoxit	1.5
stayineu	1.3
flexcit	1.3

Table: Examples of the terms we found to tend to co-occur with our anchor terms for the topic "Ties to the EU." We used this process to find terms that identify a tweet as pertaining to a topic of interest.
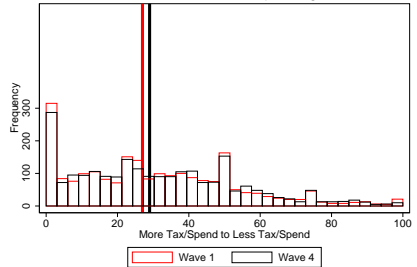
Party Placements: EU
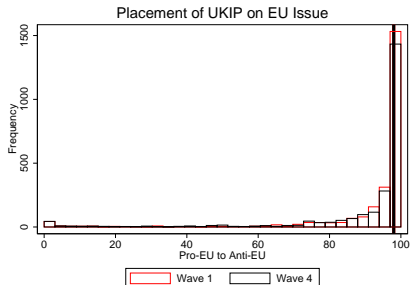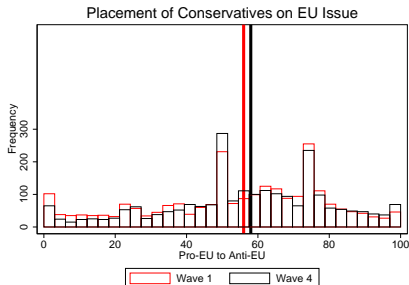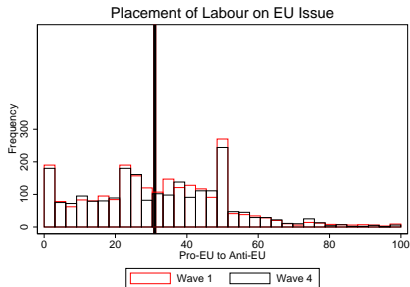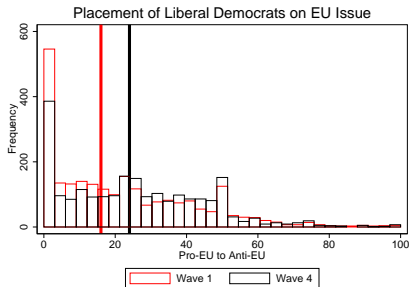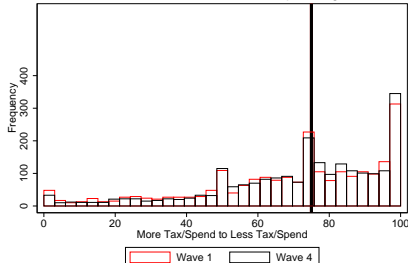
Party Placements: Spending
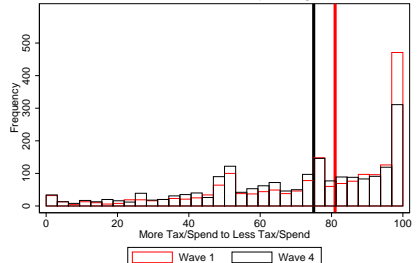

Placement of Liberal Democrats on Spending Issue
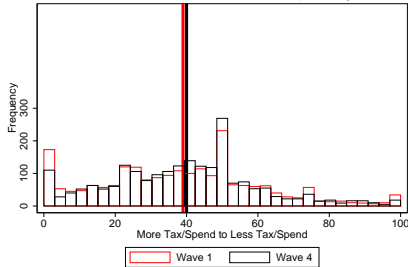
Placement of Labour on Spending Issue

Placement of Conservatives on Spending Issue

Placement of UKIP on Spending Issue

	EU, N= 1,220	
Correct Order W1	LibDem < Labour < Conservatives < UKIP	
Correct Order W4	LibDem = Labour < Conservatives < UKIP	
	Right W1	Wrong W1
Right W4	52%	26%
Wrong W4	5%	17%
	Immigration, N= 1,197	
Correct Order W1	Labour = LibDem < Conservatives < UKIP	
Correct Order W4	Labour = LibDem < Conservatives < UKIP	
	Right W1	Wrong W1
Right W4	62%	14%
Wrong W4	10%	14%
	Spending, N= 937	
Correct Order W1	Labour < LibDem < Conservatives = UKIP	
Correct Order W4	Labour < LibDem < Conservatives = UKIP	
	Right W1	Wrong W1
Right W4	36%	19%
Wrong W4	16%	29%