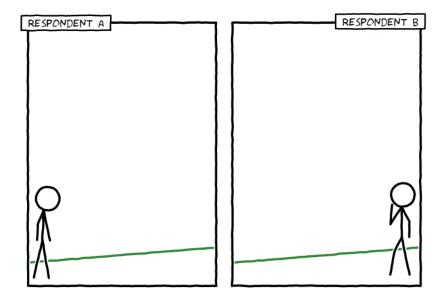
# Let's Talk Politics A Naive Approach for Measuring Political Sophistication

Patrick W. Kraft

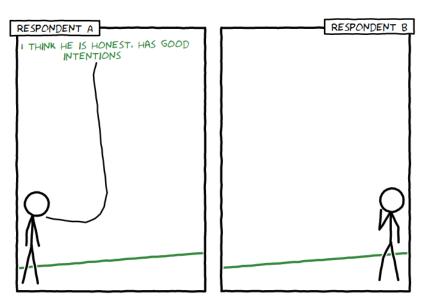
Zurich Text as Data Conference

October 26th 2019

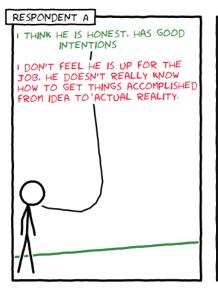


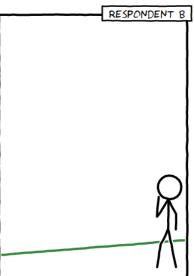


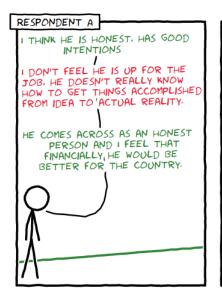
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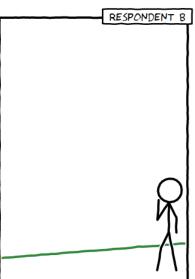


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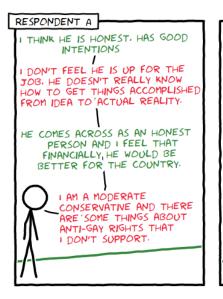


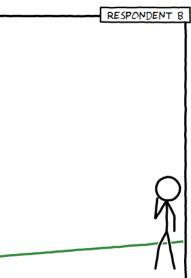




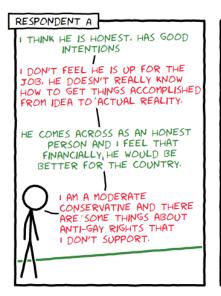


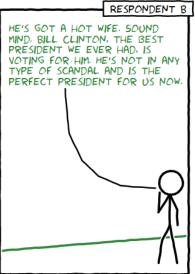
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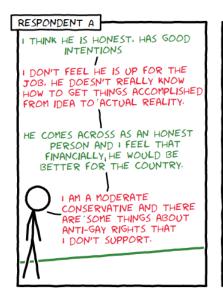


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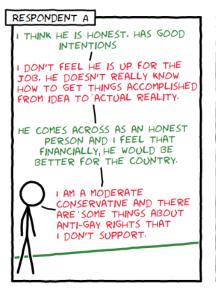


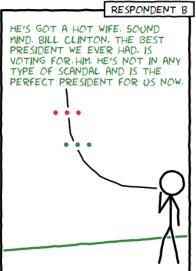
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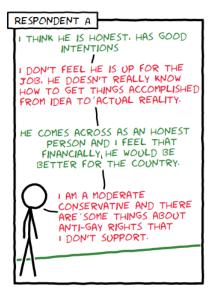


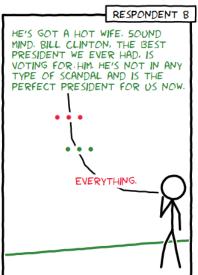
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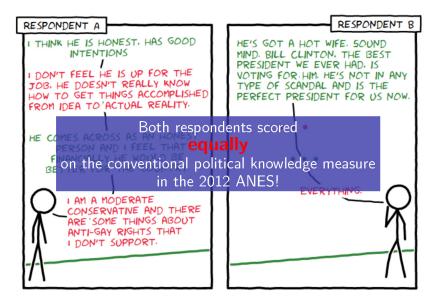


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Definition: "The range of factual information about politics that is stored in long-term memory." (Delli Carpini and Keeter, 1996, 10)

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General finding: Lack of information among the public

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Caveat 1: Measurement issues

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General finding: Lack of information among the public

Caveat 1: Measurement issues

Caveat 2: Theoretical relevance

Verbatim political attitude expression:

► Communication and information diffusion

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- ► Communication and information diffusion
- ► Reflects political belief system & accuracy motivation

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- ► Communication and information diffusion
- ► Reflects political belief system & accuracy motivation
- ► Capture salient issues, available frames, and related considerations
- Measure sophistication related to specific political tasks

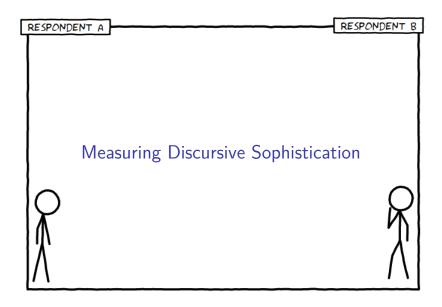
#### Verbatim political attitude expression:

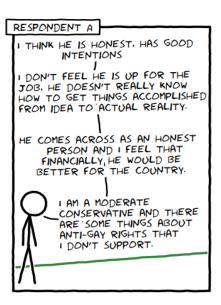
- ► Communication and information diffusion
- ► Reflects political belief system & accuracy motivation
- ► Capture salient issues, available frames, and related considerations
- Measure sophistication related to specific political tasks
- ► Fewer assumptions about necessary pieces of information

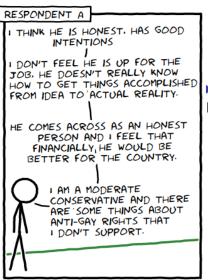
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→ A Naive Approach for Measuring Sophistication

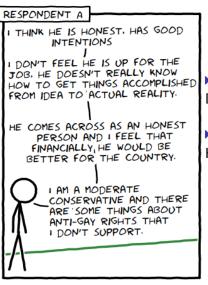






#### Opinionation

Does a respondent discuss all questions?



Opinionation

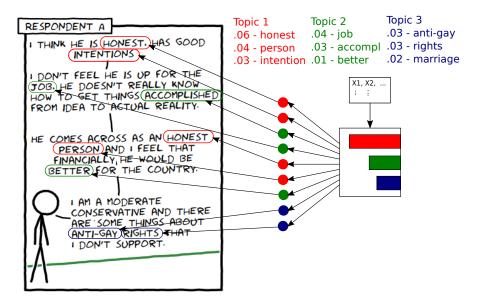
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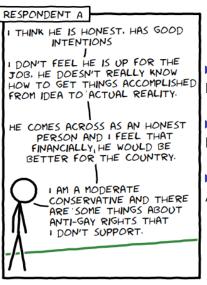
Considerations

How many topics are mentioned?

### Discursive Sophistication – Structural Topic Model



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Opinionation

Does a respondent discuss all questions?

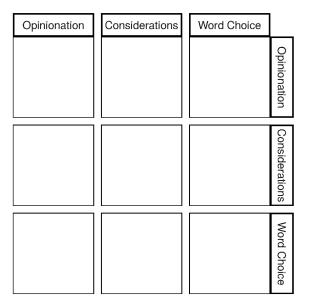
Considerations:

How many topics are mentioned?

▶ Word Choice:

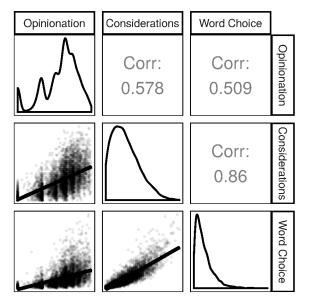
Are terms highly descriptive of topics?

# Discursive Sophistication – Components (2012 ANES)



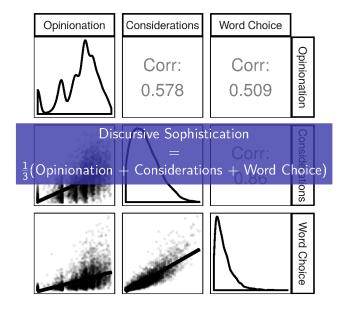
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# Discursive Sophistication – Components (2012 ANES)

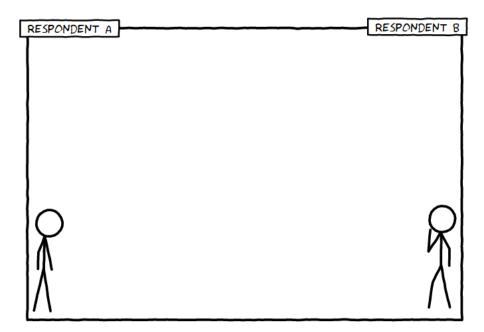


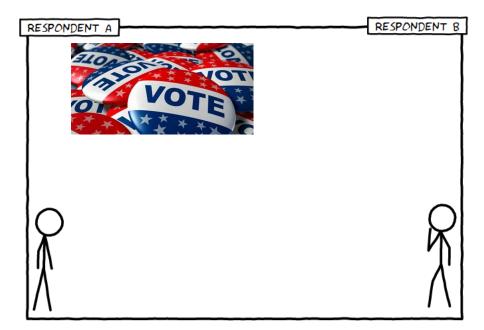
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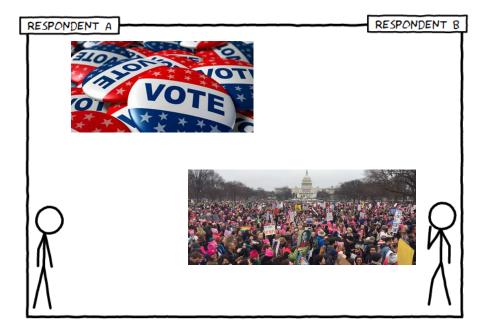
# Discursive Sophistication – Components (2012 ANES)

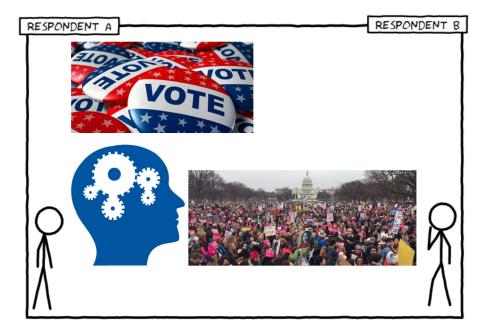


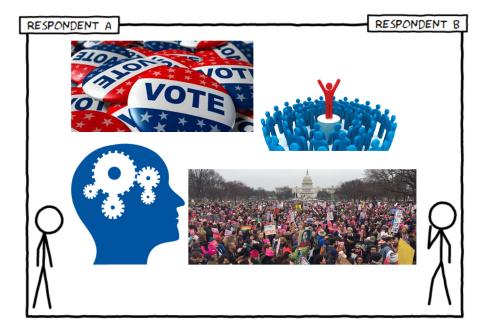
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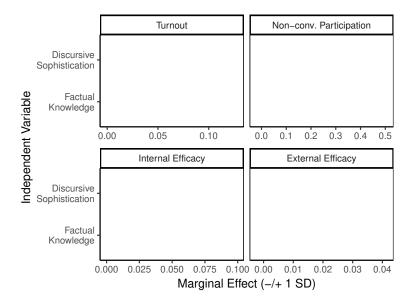






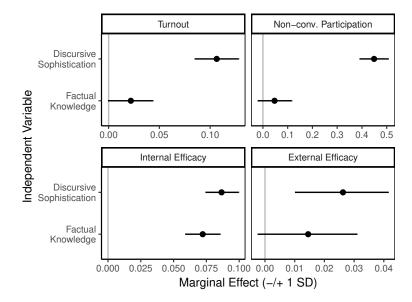


# Engagement and Participation

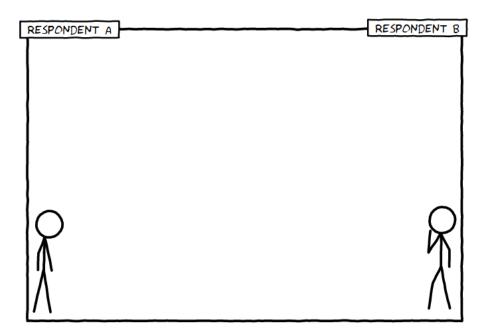


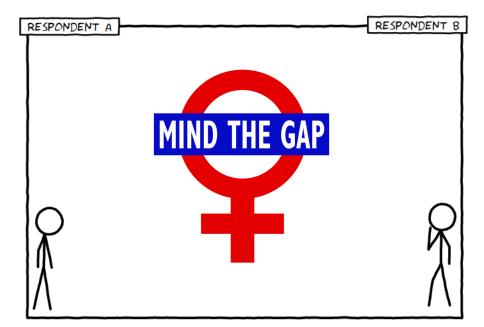
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# Engagement and Participation



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General finding: Women score lower than men on conventional measures of political knowledge

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• "One of the most robust findings in the study of political behavior."

Dow (2009)

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Explanation 1: Personality characteristics

General finding: Women score lower than men on conventional measures of political knowledge

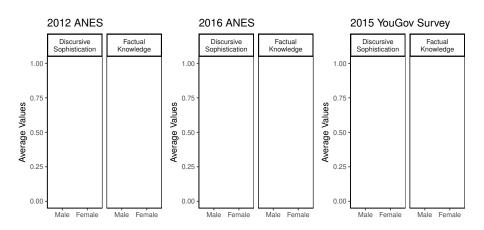
• "One of the most robust findings in the study of political behavior."

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Explanation 1: Personality characteristics

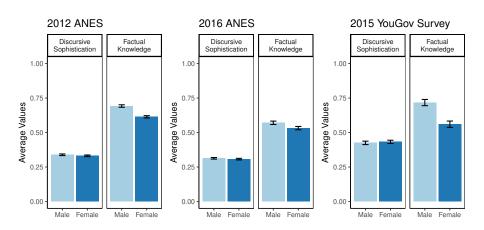
Explanation 2: Question content / gender-relevant knowledge

# Gender Differences in Sophistication



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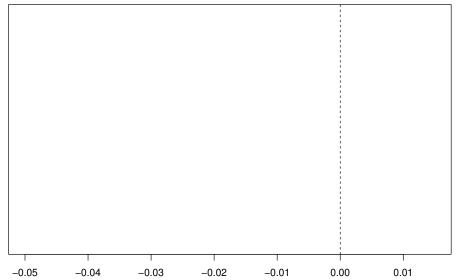
# Gender Differences in Sophistication



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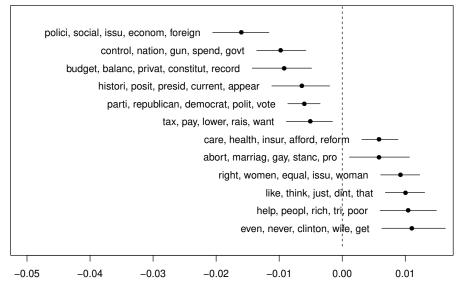
### Explaining the Gender Gap in Political Knowledge

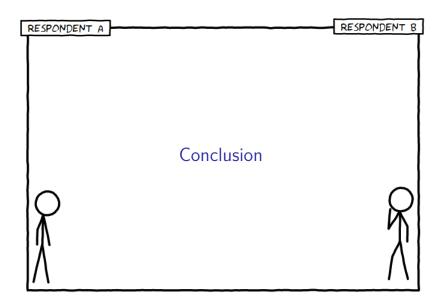




### Explaining the Gender Gap in Political Knowledge

#### Gender Differences in Topic Proportions (2012 ANES)





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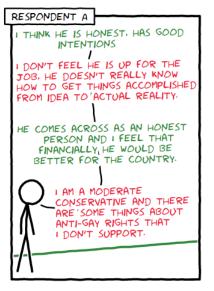
▶ We observe theoretically meaningful variation in the complexity of verbatim open-ended responses.

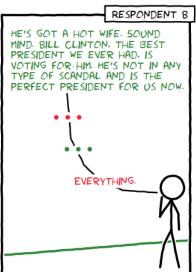
- We observe theoretically meaningful variation in the complexity of verbatim open-ended responses.
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- By directly examining how individuals justify their attitudes, we can measure sophistication related to specific political tasks.
- Discursive sophistication is conceptually closer to the structure of belief systems than conventional measures.
- ▶ Women might score lower than men on factual knowledge about political institutions, but there are no differences in the sophistication of expressed political attitudes.

### Illustration – Who scores higher on political knowledge?

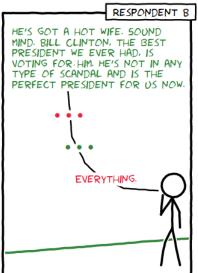




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### Illustration – Who scores higher on political knowledge?





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### Illustration – Who scores higher on political knowledge?





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#### Thank you very much for your attention!

Manuscript and code available at: https://github.com/pwkraft/knowledge

Comments, questions?

pwkraft.github.io
patrickwkraft

#### Content

#### Theoretical Introduction

Knowledge, Sophistication, and Competence Measuring Discursive Sophistication

#### Discursive Sophistication and Political Competence

Validation using 2012 ANES

#### Application: Assessing the Gender Gap

Previous Research on Gender Differences in Knowledge Gender Differences in Sophistication

#### Conclusion

General Discussion

# Appendix Content

#### Measuring Discursive Sophistication

Item Wording
Opinionation
Considerations
Word Choice

#### Additional Results

Topic Proportions – 2012 & 2016 ANES 2008–2012 Swiss Referendum Survey 2015 YouGov Study

#### Robustness Checks

Control for Word Count Control for Personality Determinants of Sophistication

# Factual Knowledge Questions

- ► Carpini and Keeter (1993): House majority, veto override percent, party ideological location, judicial review, identifying the vice president
- ➤ 2012 ANES: Number of times president can be elected, size of federal deficit, full term of senator, meaning of medicare, federal government spending
- ➤ 2015 YouGov: Speaker of the House, TTIP, Chair of Federal Reserve Board, unemployment rate, veto override percent, common core, largest electricity source, Senate majority

# Open-Ended Items: 2012 ANES

- Is there anything in particular about [CANDIDATE] that might make you want to vote for him? [...] What is that?
- Is there anything in particular about [CANDIDATE] that might make you want to vote against him? [...] What is that?
- Is there anything in particular that you like about [PARTY]? [...] What is that?
- Is there anything in particular that you don't like about [PARTY]? [...] What is that?

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# Open-Ended Items: 2015 YouGov

- ▶ Do you favor or oppose stricter gun control laws? [...] Still thinking about the question you just answered, what thoughts came to mind while you were answering that question? Please try to list everything that came to mind.
- ► Thinking about the mass shootings that have occurred in the U.S. in the last few years, what factors do you think are responsible for the shootings?
- ▶ Do you support or oppose the health care law passed by the President and Congress in 2010? [...] Still thinking about the question you just answered, what thoughts came to mind while you were answering that question? Please try to list everything that came to mind.
- ➤ For decades, experts have observed that the United States spends far more per person on health care than any other country. However, the U.S. falls behind on most measures of health care outcomes, such as life expectancy. What factors do you think are responsible for the state of our health care system?

## Open-Ended Items: 2008–2012 Swiss Referenda

- ▶ Which are your main reasons for accepting/rejecting the proposal [X]?
- ▶ What are additional reasons for accepting/rejecting the proposal [X]?

# Opinionation

$$\mathsf{Opinionation}_i = \frac{-\sum_{j=1}^J p_{ij} \ln p_{ij}}{\ln J}$$

 $i \\ j \in \{1, ..., J\}$ 

Respondent

Open-ended items

pii

Proportion of words in the response of individual i to question j relative to the overall size of the individual's response

### Considerations

$$\mathsf{Considerations}_i = \frac{|\mathcal{T}_i^*|}{\max|\mathcal{T}_i^*|}$$

i	Respondent
$\mathcal{T}_{i}^{*}$	Topic representation of response set $W_i$ , such that
•	$w  ightarrow t^* orall w \in \mathcal{W}_i$
$w \in \mathcal{W}_i$	Individual word $w$ in response set $\mathcal{W}_i$
$t^* \in \{1,, T\}$	Topic $t^*$ out of total number of topics $T$ assigned to
	w such that $P(t^* w,X_i)>P(t w,X_i)orall t eq t^*$
	$P(t w,X_i) = \frac{P(w t)P(t X_i)}{P(w X_i)}$
$X_i$	Covariates used in structural topic model

#### Word Choice

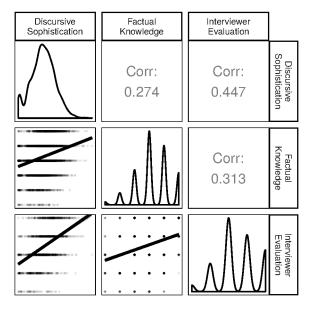
Word Choice<sub>i</sub> = 
$$\frac{\log \sum_{\mathcal{W}_i} P(w|t^*)}{\max \left[\log \sum_{\mathcal{W}_i} P(w|t^*)\right]}$$

Respondent  $w \in \mathcal{W}_i$ Individual word w in response set  $W_i$  $t^* \in \{1, ..., T\}$  Topic  $t^*$  out of total number of topics T assigned to w such that  $P(t^*|w,X_i) > P(t|w,X_i) \forall t \neq t^*$  $P(t|w,X_i) = \frac{P(w|t)P(t|X_i)}{P(w|X_i)}$  $X_i$ 

Covariates used in structural topic model

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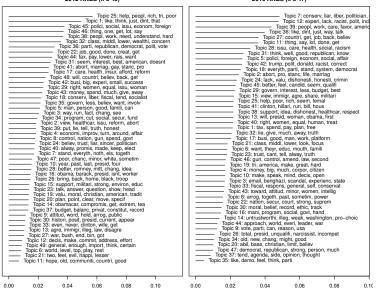
### Comparison with Conventional Measures – 2012 ANES



### Topic Proportions – 2012 & 2016 ANES

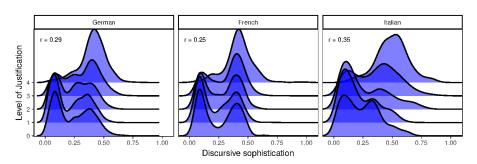
#### 2012 ANES (k = 49)

#### 2016 ANES (k = 47)



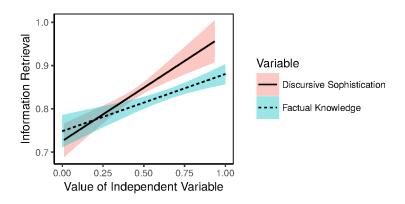
# Comparison with Manually Coded Levels of Justification

Data source: 2008–2012 Swiss Referendum Survey, N = 26,621 (phone)

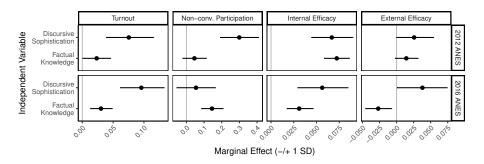


#### Accurate Information Retrieval

Data source: 2015 YouGov Study, N = 1000 (online)

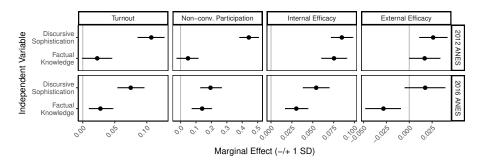


# Engagement and Participation – Control for Word Count



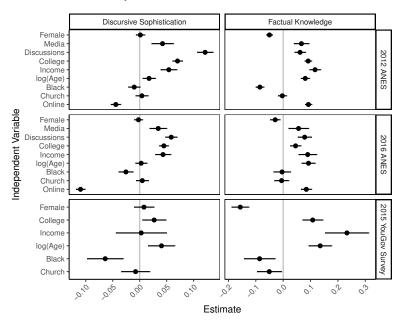
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# Engagement and Participation – Control for Personality



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### **Determinants of Sophistication**



#### References

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