# Looking for Answers A Naive Approach for Measuring Political Sophistication

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	Respondent A	Respondent B
Obama (+)		
Obama (-)		
Romney (+)		
Romney (-)		

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Obama (-)	I don't feel he is up for the job, he doesn't really know how to get things accomplished from idea to actual reality.	
Romney (+)	He comes across as an honest person and I feel that financially he would be better for the country.	
Romney (-)	I am a moderate conservative and there are some things about antigay rights that I don't support.	

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Obama (+)	I think he is honest, has good intentions.	He's got a hot wife. Sound mind. Bill Clinton, the best president we ever had, is voting for him. He's not in any type of scandal and is the perfect president for us now.
Obama (-)	I don't feel he is up for the job, he doesn't really know how to get things accomplished from idea to actual reality.	
Romney (+)	He comes across as an honest person and I feel that financially he would be better for the country.	
Romney (-)	I am a moderate conservative and there are some things about anti- gay rights that I don't support.	Everything.

Both respondents scored equally on the conventional political knowledge measure in the 2012 ANES!

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# Measuring text-based sophistication

$$1. \ \ \mathsf{Relative} \ \mathsf{length} = \frac{\log \left( \sum_{j=1}^J n_{ij} \right)}{\max \left[ \log \left( \sum_{j=1}^J n_{ij} \right) \right]}$$

n	Word count	
i	Individual respondent	
$j\in\{1,,J\}$	Like/dislike items (8 total)	

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$$\begin{aligned} &1. \text{ Relative length} = \frac{\log \left(\sum_{j=1}^{J} n_{ij}\right)}{\max \left[\log \left(\sum_{j=1}^{J} n_{ij}\right)\right]} \\ &2. \text{ Topic diversity} = 1 - \frac{\sum_{k_1=1}^{K} \sum_{k_2=1}^{K} |\theta_{ik_1} - \theta_{ik_2}|}{2K \sum_{k_1=1}^{K} \theta_{ik_1}} \end{aligned}$$

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$k \in \{1,, K\}$	Topics (estimated via STM, Roberts et al. 2014)
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3. Opinion diversity = 
$$1 - \frac{\sum_{j_1=1}^J \sum_{j_2=1}^J |p_{ij_1} - p_{ij_2}|}{2J \sum_{j_1=1}^J p_{ij_1}}$$

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$\theta_{ik}$	Predicted proportion of topic $k$ in the collection of re-
	sponses by individual i
$p_{jk}$	Proportion of words in the response of individual $i$ to
	question $j$ relative to the overall size of the individual's
	response

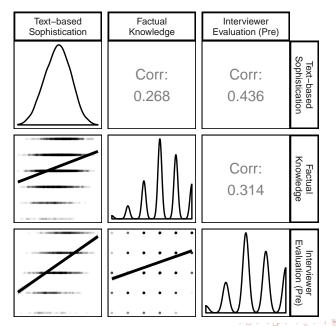
#### Data

- ▶ Main analysis: 2012 American National Election Study (ANES)
  - N = 5914 (2054 f2f + 3860 online)
  - ▶ Non-response: 417, Spanish: 228
- Replication 1: 2015 YouGov Survey
  - ► N = 1000 (online)
  - ► Non-response: 48
- ▶ Replication 2: 2008–2012 Swiss Referendum Survey
  - ► N = 1000 (phone)
  - ► Non-response: 48

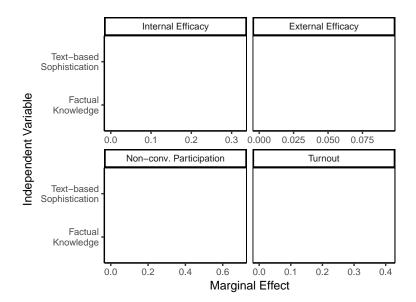
# Validating the Measure I

Text-based Sophistication	Factual Knowledge	Interviewer Evaluation (Pre)	
			Text-based Sophistication
			Factual Knowledge
			Interviewer Evaluation (Pre)

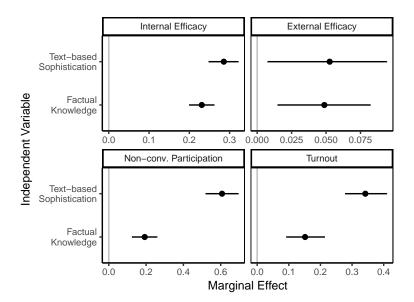
# Validating the Measure I



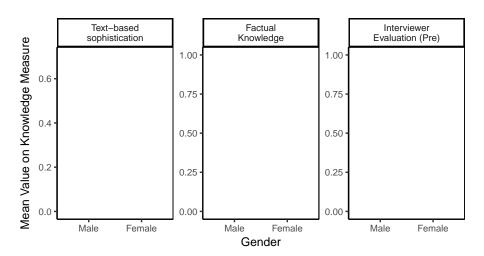
#### Validating the Measure II



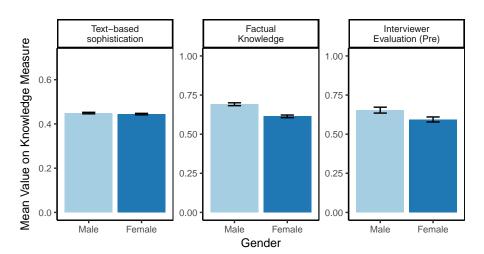
#### Validating the Measure II



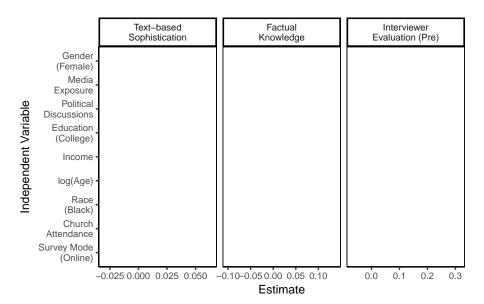
## Application: Assessing the Gender Gap I



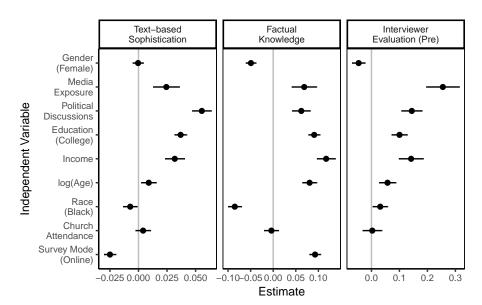
## Application: Assessing the Gender Gap I



## Application: Assessing the Gender Gap II



## Application: Assessing the Gender Gap II



#### Conclusion

- ► We observe theoretically meaningful variation in the complexity of verbatim open-ended responses.
- Text-based sophistication is conceptually closer to the structure of belief systems than conventional measures (e.g., Tetlock, 1983; Luskin, 1987).
- ▶ Women might score lower than men on factual knowledge about political institutions, but there are no differences in the sophistication of expressed political attitudes.

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

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

Comments, questions? patrick.kraft@stonybrook.edu

#### References

- Luskin, Robert C. 1987. "Measuring political sophistication." American Journal of Political Science 31 (4): 856–899.
- Roberts, Margaret E., Brandon M. Stewart, Dustin Tingley, Christopher Lucas, Jetson Leder-Luis, Shana Kushner Gadarian, Bethany Albertson, and David G. Rand. 2014. "Structural Topic Models for Open-Ended Survey Responses." *American Journal of Political Science* 58 (4): 1064–1082.
- Tetlock, Philip E. 1983. "Cognitive style and political ideology." *Journal of Personality and Social Psychology* 45 (1): 118.