

# Balanced View

Overcoming confirmation bias in social media

# The problem of fake news in social networks is made worse by the combination of a number of factors

## Problem

The lines between fake and real news have become distorted

Targeted algorithms mean that the content people see becomes unvaried

Echo chambers form around users of similar views and interests

People tend to seek and interpret information such that it confirms their own beliefs

The size of social networks and their constantly changing nature means solutions need to be automated and scalable

## Solution

A digital nudge that presents alternative views on the same subject

Rather than stop fake news entering a platform, provide an automated way of encouraging users to think twice

## Result

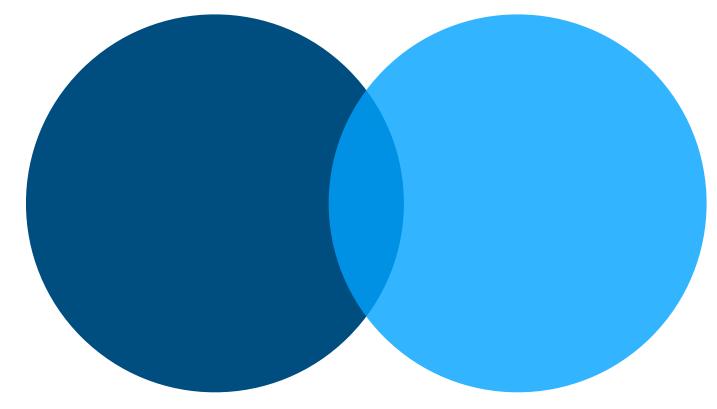
Provide a balanced view from news sources across the political statement and ensure every article or factual statement can be quickly fact checked

Without the need for third party fact checkers and overcoming scalability problems

The power of fake news to propagate lies in the power of groupthink, social networks make it easier for people to give up their own free thought

## Confirmation Bias

People tend to seek evidence that confirms their own beliefs

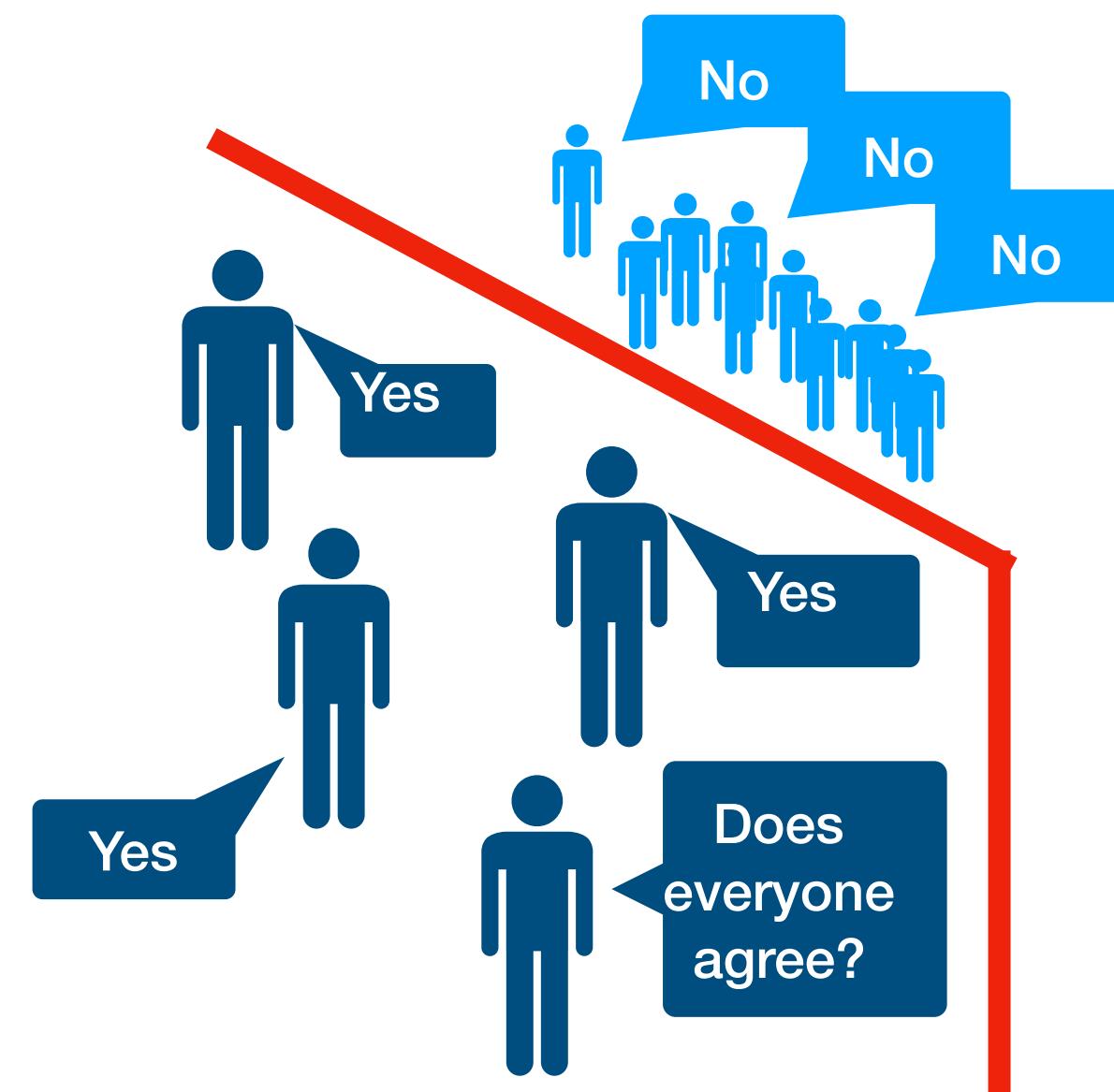


Evidence

Beliefs

## Echo Chambers

Beliefs are amplified and reinforced by others in an enclosed system



## Targeted Algorithms

Social networks rely on being able to direct content to individuals that they are likely to click on



# What would you choose as a snack?



**What if you've read things like this? You know that maybe there's something not so great about choosing a chocolatey snack**

## Obesity on rise as quarter of European teens eat sweets daily

**WHO report finds 'bleak picture' of young people eating and drinking too much sugar and spending too much time sitting down**



▲ Across Europe, only about a third of young people reported consuming fruit daily. Photograph: Alamy

A quarter of adolescents in England and Wales eat sweets or chocolates every day and 14% have a cola or other sugary drink daily, according to the authors of a report that shows obesity rising among teenagers across [Europe](#).

Even more adolescents in Scotland have a sweet tooth, with a third eating

Nudging is a way to influence decision making through indirect suggestions, nudges should cause an individual to ask questions the lead to a better decision

### Identifying Issues in the environment



### What questions should people ask?

Is chocolate a healthy choice?

Is there healthier option?

- 1) No healthy option given
- 2) Without any healthy alternative, someone will choose the unhealthy option
- 3) Consuming excessive sugary snacks lead to obesity
- 4) Choice isn't questioned**

## We can nudge through presentation



## We can nudge through information



# How is reading news on Twitter comparable to choosing a snack?

Donald J. Trump   @realDonaldTrump 

The Mueller Witch Hunt is a total disgrace. They are looking at supposedly stolen Crooked Hillary Clinton Emails (even though they don't want to look at the DNC Server), but have no interest in the Emails that Hillary DELETED & acid washed AFTER getting a Congressional Subpoena!

4:31 PM - 27 Nov 2018

Lou Dobbs   @LouDobbs 

#EndWitchHunt - @dbongino: Robert Mueller is conducting the biggest scam in modern American history. This witch hunt, this nonsensical garbage investigation is looking into a conspiracy that does not exist. #MAGA #TrumpTrain #Dobbs



4:59 PM - 3 Dec 2018

5,876 Retweets 13,471 Likes        

Chuck Woolery   @chuckwoolley 

Breaking: Mueller Withheld Exculpatory Evidence from Court to Exonerate Trump - Mueller LIED to the Court!... Will He Be Sent to Jail Too?

[thegatewaypundit.com/2018/12/breaki](http://thegatewaypundit.com/2018/12/breaking-mueller-withheld-exculpatory-evidence-from-court-to-exonerate-trump/) ...  
via @gatewaypundit



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thegatewaypundit.com

Lou Dobbs ✅ @LouDobbs · 22h

#EndWitchHunt- @pnjaban: Prosecutors are running wild looking for crimes against @realDonaldTrump because they don't like him, it's disgusting.  
@CharlesHurt: They'll never stop because @POTUS represents an absolute threat to the way the Swamp operates. #MAGA #TrumpTrain #Dobbs



LOU DOBBS TONIGHT

FEDERAL PROSECUTORS PROBING TRUMP INAUGURATION SPENDING

0:42 76.3K views

493 4.1K 9.2K

Lou Dobbs ✅ @LouDobbs · Dec 11

#EndWitchHunt - @GreggJarrett: The sentencing memos show no evidence of @realDonaldTrump-Russia collusion. There were no illegal campaign contributions. @VicToensing: Why aren't Hillary's campaign donations to Fusion GPS being looked at? #MAGA #TrumpTrain #Dobbs



LOU DOBBS TONIGHT

Gregg Jarrett FOX NEWS ANCHOR

1:03 20.6K views

125 1.4K 3.0K

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KillerBee  (Kevin  ) @KillerBee777 · Dec 11

Why is General Flynn in legal trouble and Hillary is on a dismal cross county promotion tour? #ClintonCrimeFamily  
#EndWitchHunt  
#StandWithFlynn



Rastus Who @rastus\_who · Dec 11

Replying to @LouDobbs @jsolomonReports .@LouDobbs MT

#EndWitchHunt

@jsolomonReports: Comey couldn't remember a lot during his testimony but remembered the FBI used the dossier for a FISA application knew it was unverified, and the law says you can't use unverified evidence for a FISA court.



One reason that fake news spreads in social networks is that people don't ask the questions about veracity and reputability of claims and sources

## Issues in the Environment

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4:31 PM - 27 Nov 2018

30,695 Retweets 109,615 Likes

37K 31K 110K

1) No other view given

2) Without any outside knowledge, there is not way of saying whether this is right or wrong

## What questions should people ask?

- ✓ Do I believe this statement?
- ✓ Am I going to try and find another view on this subject?
- ✓ Do I trust the source?
- ✓ Do I trust the author?
- ✓ Will I share this?

# The nudge aims to encourage a user to question veracity and reputability of tweets by changing the choice environment and nudging through presentation



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4:31 PM - 27 Nov 2018

Trump's misguided crusade against the...



Trump is trying to convince the public to oppose the Mueller investigation for financial reasons. The trouble is, the probe is largely paying for itself.

2018-11-29T13:40:21Z

Trump defends Russia business links after ex-lawyer admits lying



BBC NEWS  
The US president's dealings were thrown into focus after his ex-lawyer admitted lying to Congress.

Mueller faces new complications in final stretch, as targets balk and Trump turns up heat - Fox News



Fox News Mueller faces new complications in final stretch, as targets balk and Trump turns up heat Fox News Special Counsel Robert Mueller and his team are facing new complications in the final stretch of their investigation into Russian meddling and potentia...

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# Alternatively, we can nudge through information by inserting a signal of veracity and reputability

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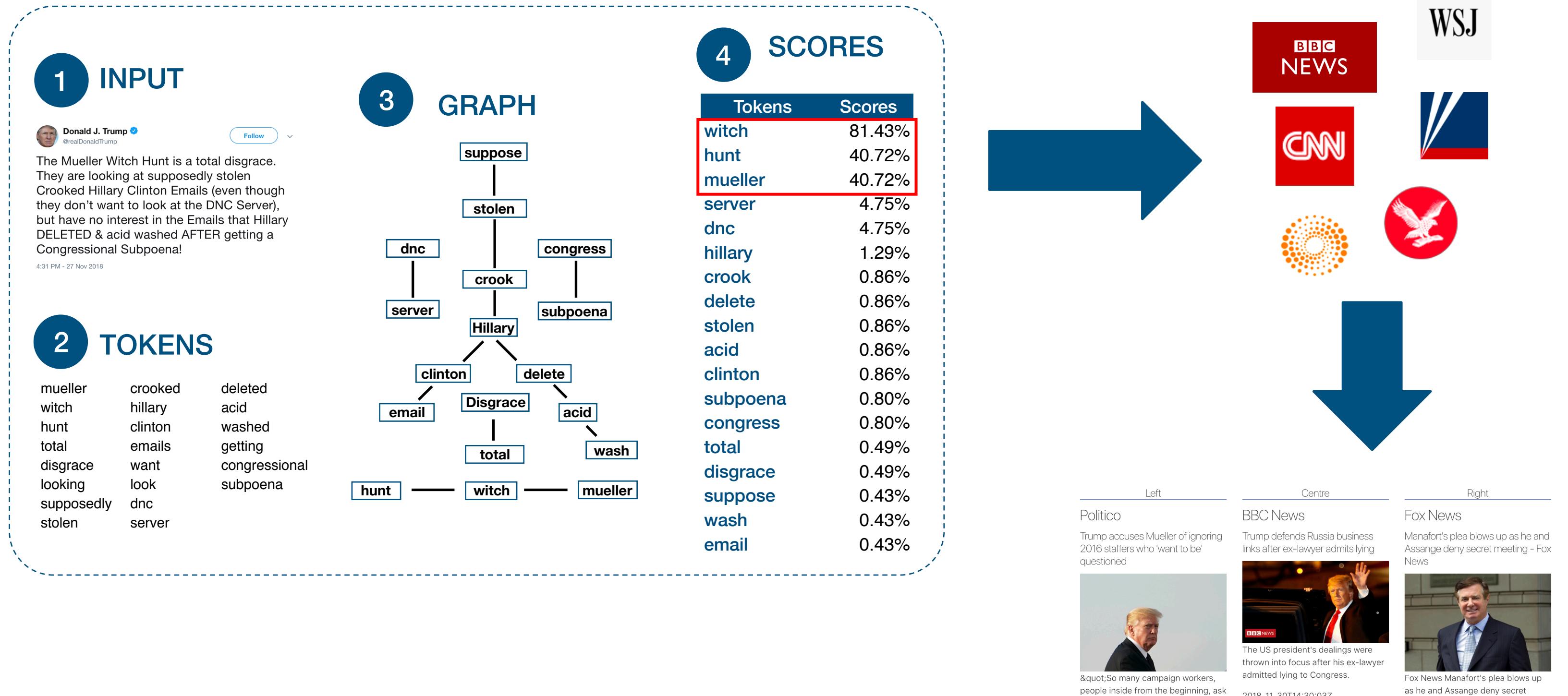
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Demo

# To build the nudge, we extract key meaning from a text and build a query to a selected number of sources



# Results

- 1) How relevant are the extracted results to the test text?
- 2) Does showing people additional information change their views?

# TextRank algorithm extracts relevant keywords that generally represent the story well, with some caveats



Donald J. Trump ✅

@realDonaldTrump

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▼

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Fox News Special Counsel Robert  
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## NLP is non-trivial

- Unexpected results can come up

## APIs are not free

- And those that are are limited

## All sources do not cover everything

- Leading to unbalanced results

## We gathered feedback on the effectiveness of different methods of nudging through a limited survey based experiment

Questions of the format

- How much do you trust this source?
- How much do you think this author represents a balanced view of the story?
- How much do you trust the author?

# Limited testing shows that nudges can change how people think about a tweet

## By Information

*Do people trust obviously untrustworthy news sources in the absence of a nudge by information?*

*Do people trust obviously reputable news sources in the presence of a nudge by information?*

## By Presentation

*Do people consider politically bias information a fair representation of a view, given a nudge by presentation?*

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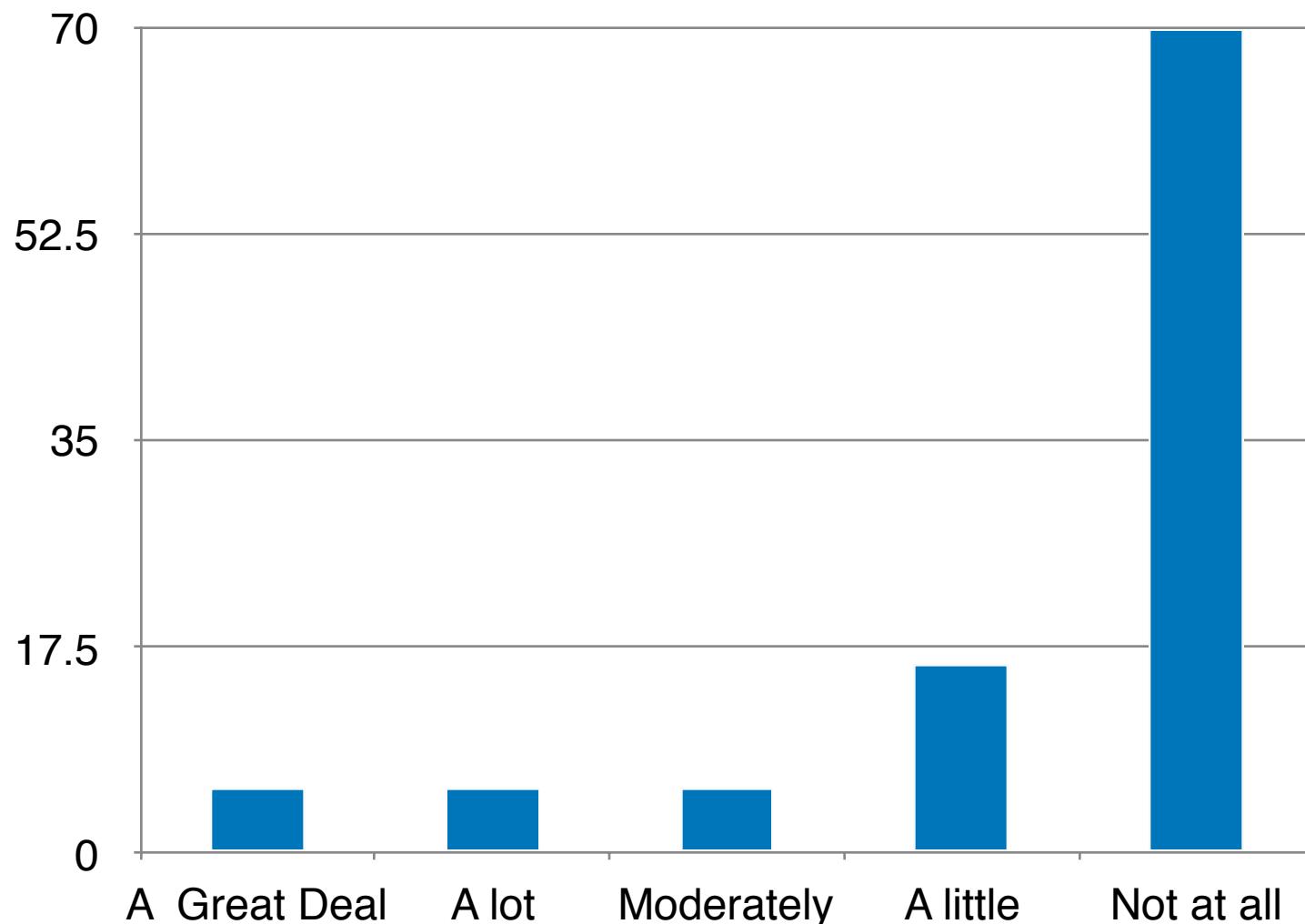
# *Do people trust obviously untrustworthy news sources in the absence of a nudge by information?*

 **George Washington Pundit** @GeoWashPundit · Nov 30  
The Mueller investigation has come up empty on Russia & is only a scheme to undermine the election.  
  
“The pattern and purpose of Mueller’s investigation and the endgame is becoming clear, and yes, it’s clearly get the president at all costs. “ #WitchHunt

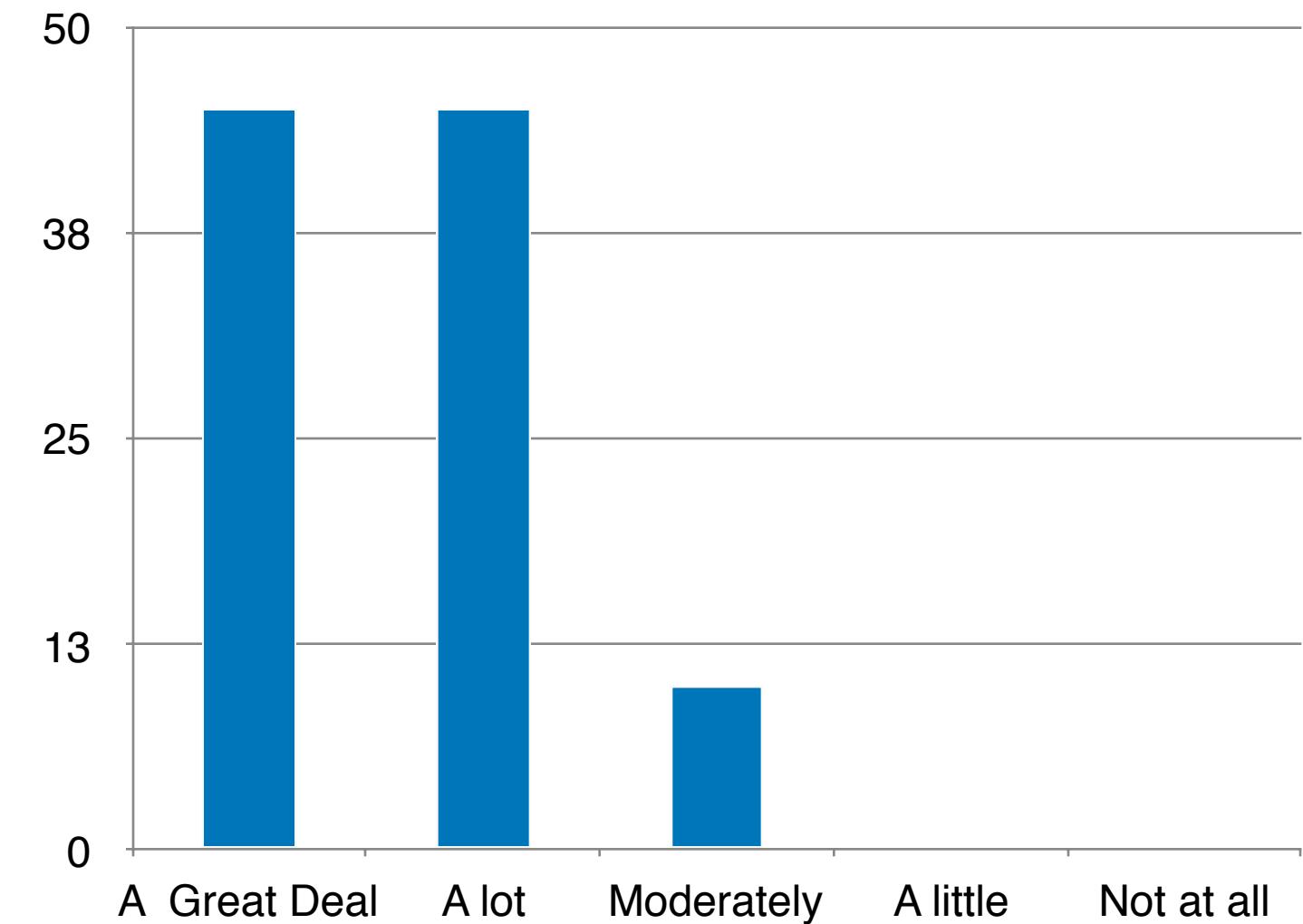


**Mark Penn:** The Mueller investigation has come up empty on Russia -...  
It's clear now Mueller is no longer looking for crimes in the presidential race of 2016. He is simply creating a narrative to delegitimize President Trump.  
foxnews.com

7 47 35  
Show this thread



*Do people trust obviously reputable news sources in the presence of a nudge by information?*



*Do people consider politically bias information a fair representation of a view, in the absence of a nudge by presentation?*

Ronna McDaniel  @GOPChairwoman · Dec 13

As a result of [@realDonaldTrump](#)'s successful negotiations at [#G20Summit](#), China just made one of the largest purchases of U.S. soybeans – ever.

A HUGE win for America's farmers!

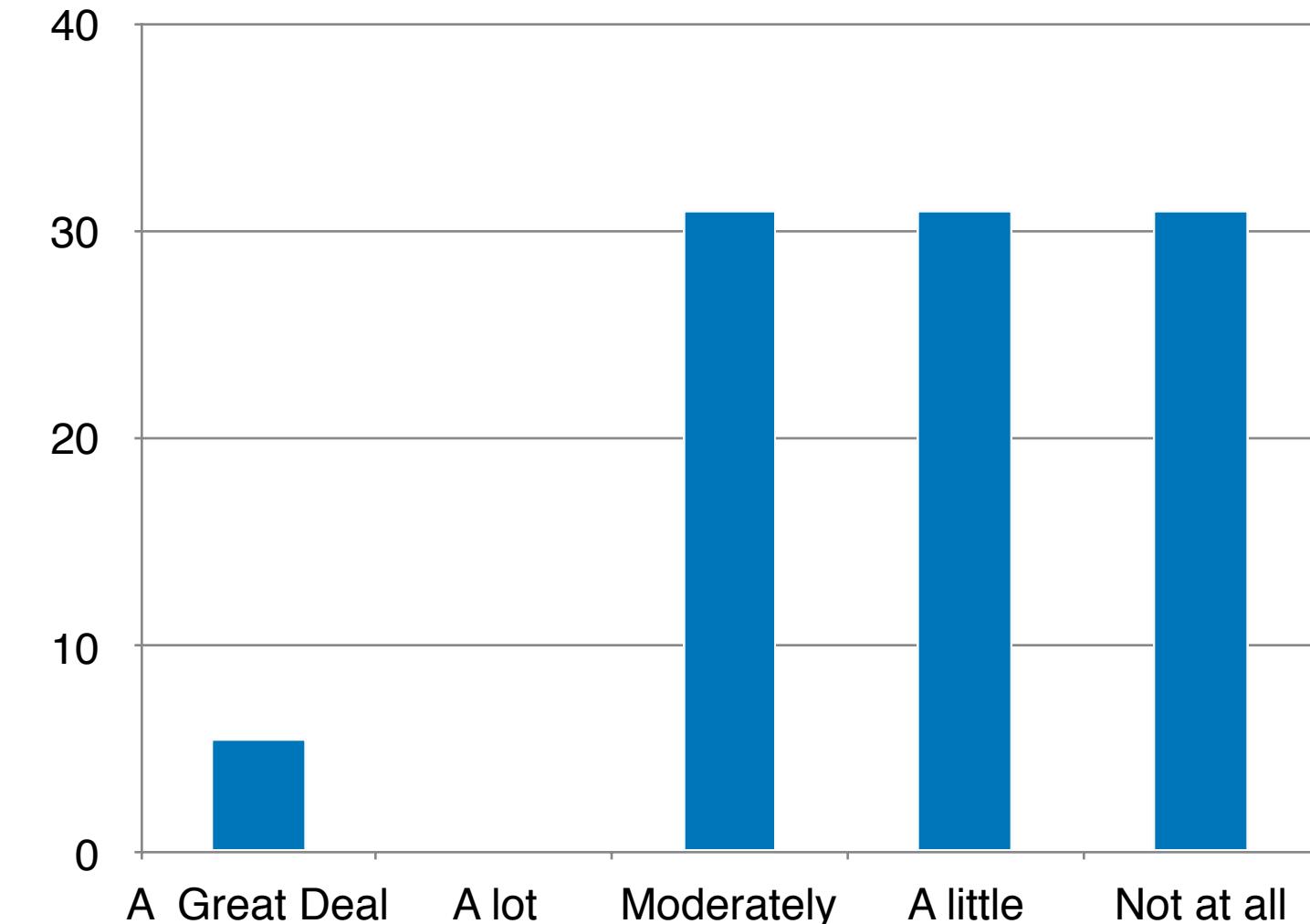


**In win for Trump, Beijing makes major U.S. soybean purchase**

Sales of the commodity to China are still far below normal levels.

[politico.com](#)

110 1.2K 2.3K



# *Do people consider politically bias information a fair representation of a view, given a nudge by presentation?*

Ronna McDaniel  @GOPChairwoman · 15m

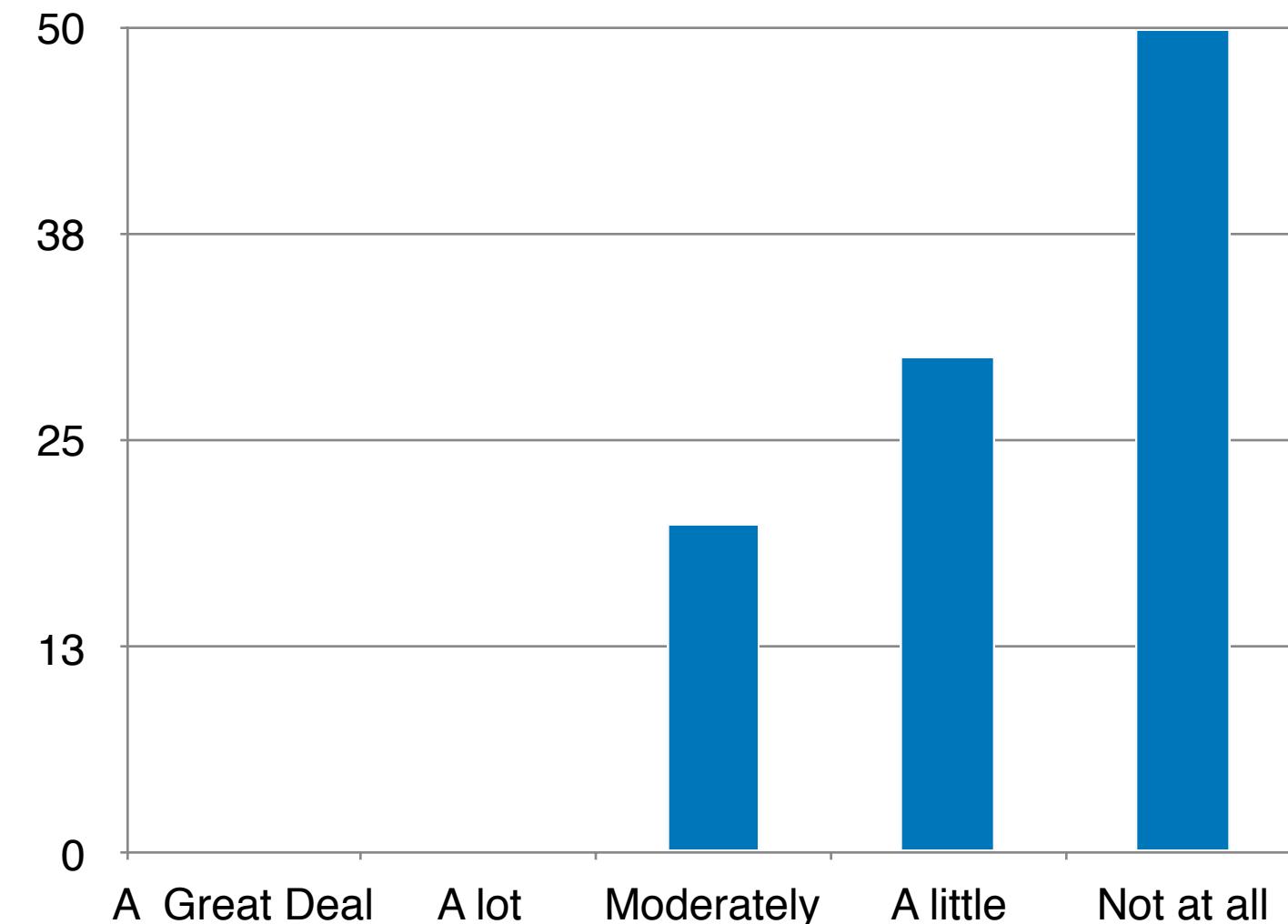
Chuck Schumer and Nancy Pelosi refuse to acknowledge the border crisis and the dangers it poses to our national security.

Attempted illegal border crossings are up nearly 90% compared to last year.

It's time for Democrats to work with [@realDonaldTrump](#) to address it.

69 150 336

Politico	The Wall Street Journal	Fox News
Pelosi, Schumer to meet with Trump next week over wall funding	Senate Republicans Wary of Shutdown Trump Has Threatened	Trump to meet with Democrats on border wall, possible partial shutdown - Fox News
		
Trump has said he's willing to shut the government down.	Senate Republicans spoke warily of the prospect of a partial government shutdown this month, highlighting the divisions	Trump to meet with Democrats on border wall, possible partial shutdown Fox News Is Team Trump



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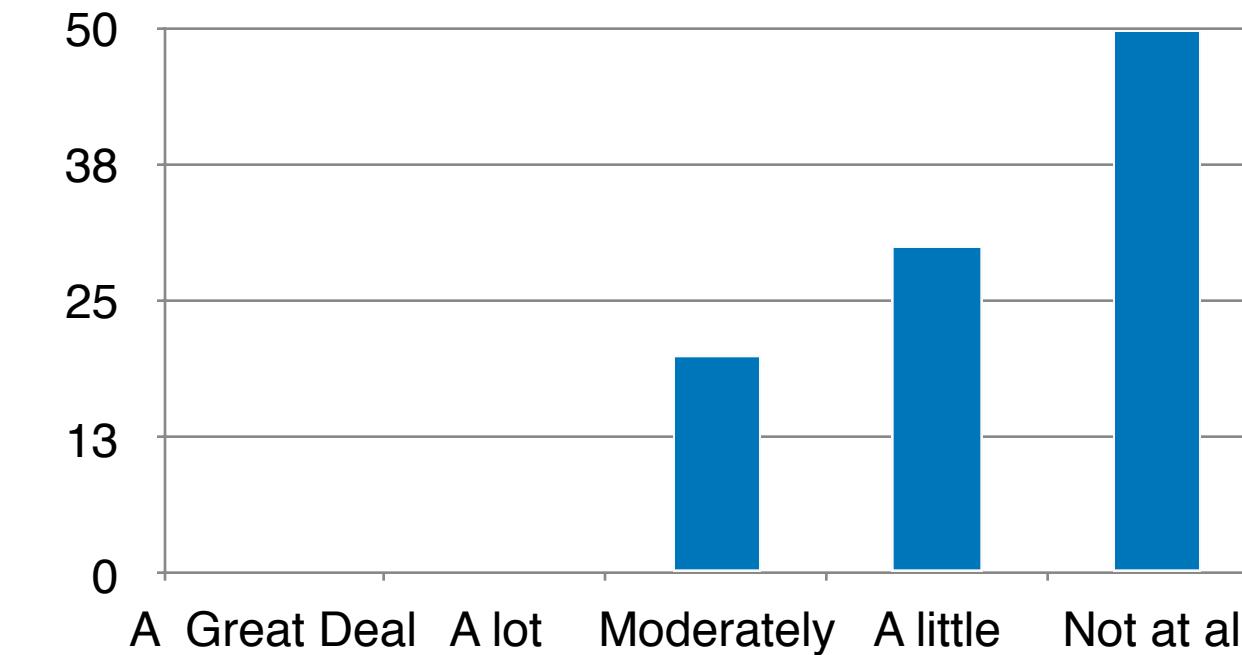
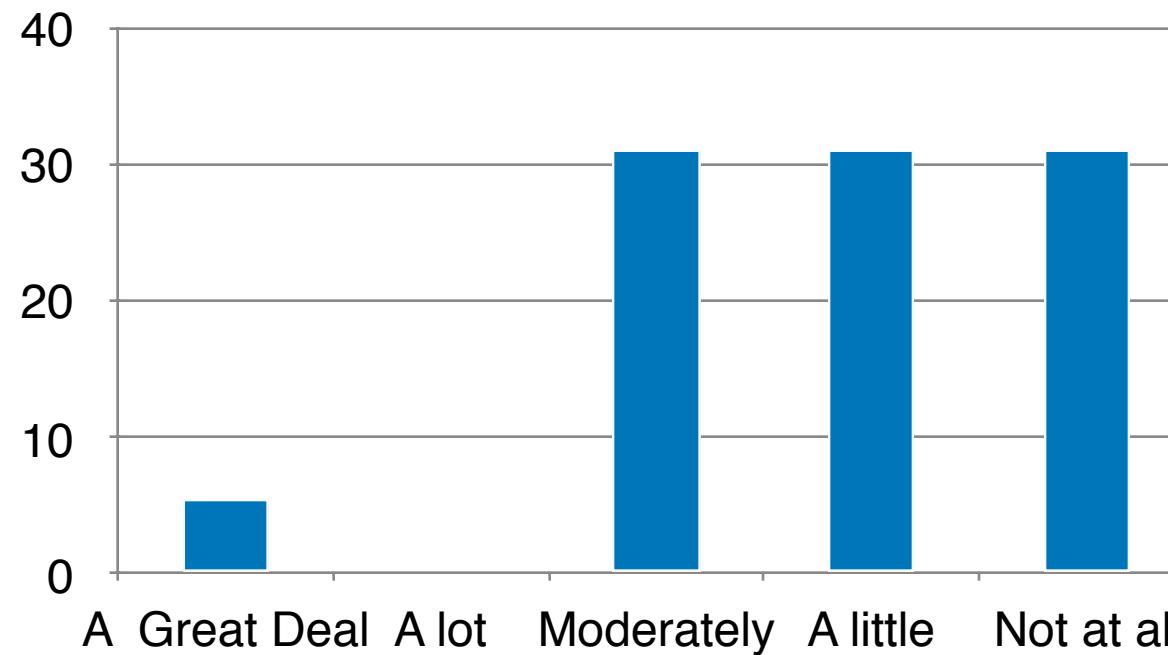
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Fox News Is Team Trump



## Concluding remarks

- Personalisation of content in social networks is a contributing factor to the spread of misinformation
- In order to prevent this, we have designed a tool that provides a balanced view of twitter content
- We aim to gather feedback on the impact of nudging through information and nudging by presentation

# Questions