



# Fake News

HF795 Research Project

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# The context

Facebook used disputed tags  
on news stories.

It backfired !

More attention was drawn  
towards disputed stories.

**Betsy Marshall Barda** shared Joe Redner's post.  
March 2 at 5:56pm · 🌐

OMG if this is true I will laugh soooo hard. He's right - we need to investigate the leaker!!! LOLLOL

**Joe Redner**  
March 2 at 4:39pm · 🌐

Investigators from A.R.H. Intelligence and Z|13 Security believe that the unsecured Android device was most likely compromised by a suspicious animated GIF that was sent to President Trump via text message.





👍❤️ 4 1 Comment

Like Comment Share Embed

# Our question

How much attention do disputed and verified tags can draw towards or away from particular news stories.



Verified



Disputed

# Measuring

We decided to measure this shift in attention through rating  
likeliness-to-click.

# Our hypothesis

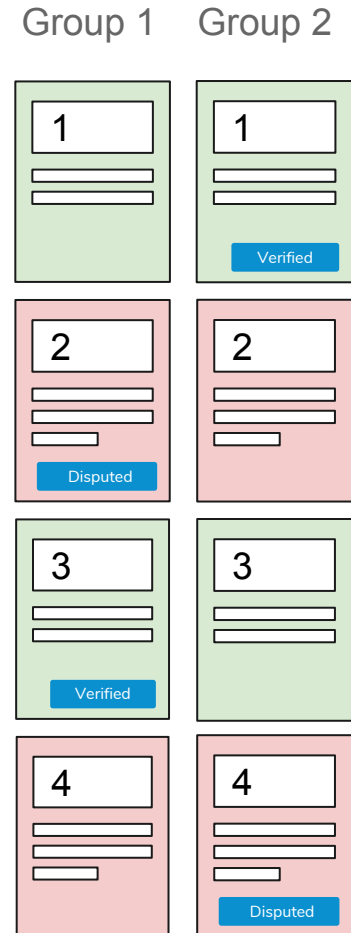
The addition of a **disputed tag** to a **fake news story** will increase the average likeliness-to-click versus no **disputed tag**.

The addition of a **verified tag** to a **real news story** will increase the average likeliness-to-click versus no **verified tag**.

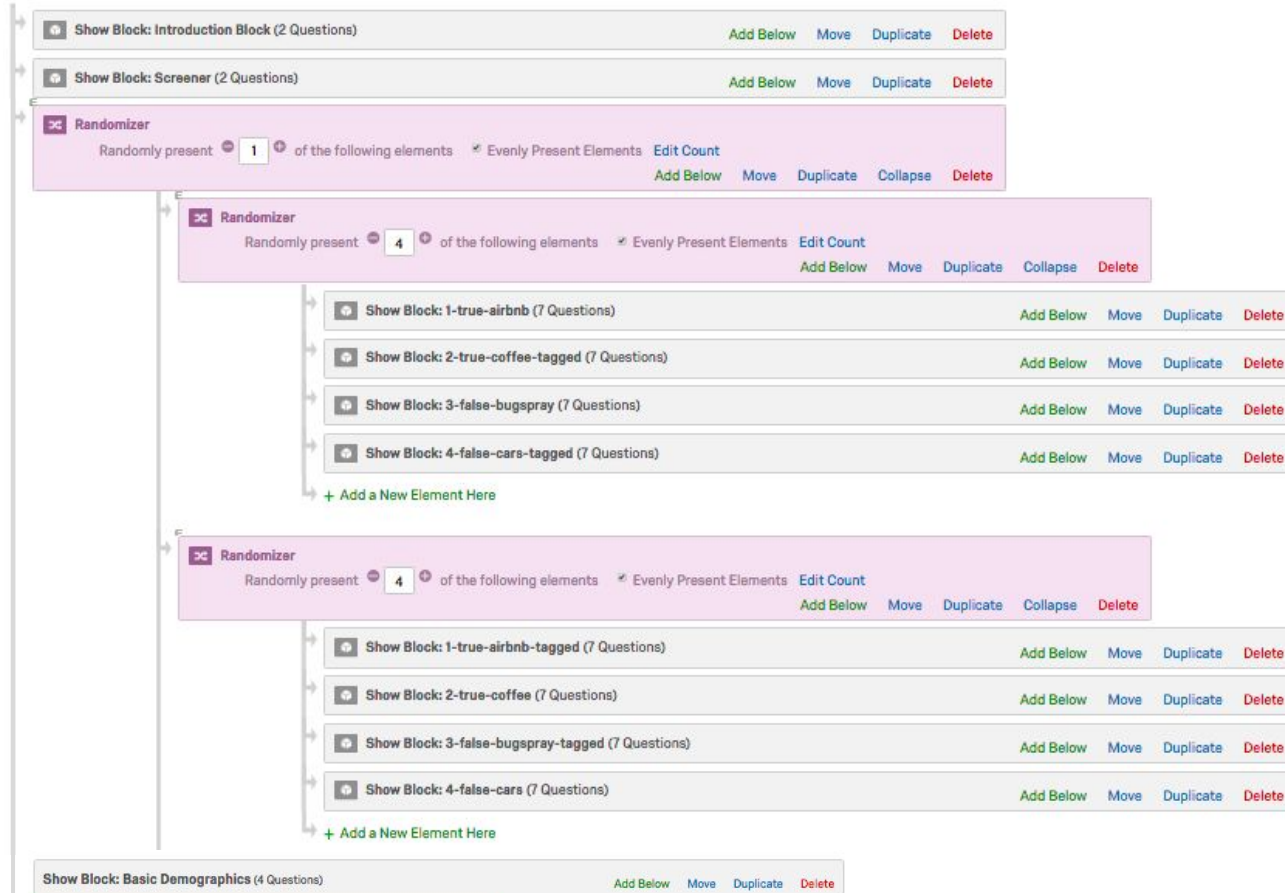
The increase in likeliness-to-click in **fake news stories** with **disputed tags** will be greater than the increase in likeliness-to-click in **real news stories** with **verified tags**.

# Our experimental design


- Two groups
- Show one story at a time
- 2 real, fake news stories
- 2 real, true news stories
- This design isolates confounds as much as possible.
- This also simplified our study as much as possible.




# Survey Flow



# Story 1 - Real




 John Smith ▸ David Andrew  
6 min · 🌐


[https://www.washingtonpost.com/.../airbnb-for-cars-is-here-.../...](https://www.washingtonpost.com/.../airbnb-for-cars-is-here-.../)




Airbnb for cars is here. And the rental car giants are not happy.

Car clash: The growing war between rental car companies and Silicon Valley  
WASHINGTONPOST.COM

 Like     Comment     Share


 John Smith ▸ David Andrew  
6 min · 🌐




[https://www.washingtonpost.com/.../airbnb-for-cars-is-here-.../...](https://www.washingtonpost.com/.../airbnb-for-cars-is-here-.../)



Airbnb for cars is here. And the rental car giants are not happy.


Car clash: The growing war between rental car companies and Silicon Valley  
WASHINGTONPOST.COM

 Verified


 Like     Comment     Share



# Story 2 - Fake

 **John Smith** ▸ David Andrew  
6 mins · 🧑

<http://www.complex.com/style/2014/06/car-parks>







**Photos of Unsold Cars Deteriorating in Full Lots Reveal a Dark Side of the Auto Industry**

Author Vince Lewis stumbled upon one of the auto industry's dirty little secrets, so he quickly snapped some photos.


COMPLEX.COM

**Disputed**

 Like    Comment    Share

 **John Smith** ▸ David Andrew  
6 mins · 🧑




<http://www.complex.com/style/2014/06/car-parks>




**Photos of Unsold Cars Deteriorating in Full Lots Reveal a Dark Side of the Auto Industry**

Author Vince Lewis stumbled upon one of the auto industry's dirty little secrets, so he quickly snapped some photos.


COMPLEX.COM

 Like    Comment    Share

# Story 3 - Real

 John Smith ▸ David Andrew  
6 min · 🌐

<https://www.reuters.com/.../starbucks-coffee-in-california-mu...>







**Starbucks coffee in California must have cancer warning, judge says**

Starbucks Corp and other coffee sellers must put a cancer warning on coffee sold in California, a Los Angeles judge has ruled, possibly exposing the...


REUTERS.COM

Verified

 Like     Comment     Share

 John Smith ▸ David Andrew  
6 min · 🌐



<https://www.reuters.com/.../starbucks-coffee-in-california-mu...>



**Starbucks coffee in California must have cancer warning, judge says**

Starbucks Corp and other coffee sellers must put a cancer warning on coffee sold in California, a Los Angeles judge has ruled, possibly exposing the...

REUTERS.COM

 Like     Comment     Share

# Story 4 - Fake

 John Smith ▸ David Andrew  
6 min · 🌐

<http://www.dailymail.co.uk/.../Huge-surge-people-getting-high...>



**Huge surge in people getting high on BUG SPRAY, health officials warn**

Health officials in Mississippi, Tennessee and Indiana have reported an increasing number of overdoses from people getting high off heavy-duty bug sprays such...

DAILYMAIL.CO.UK

👍 Like    💬 Comment    ➦ Share

 John Smith ▸ David Andrew  
6 min · 🌐

<http://www.dailymail.co.uk/.../Huge-surge-people-getting-high...>



**Huge surge in people getting high on BUG SPRAY, health officials warn**

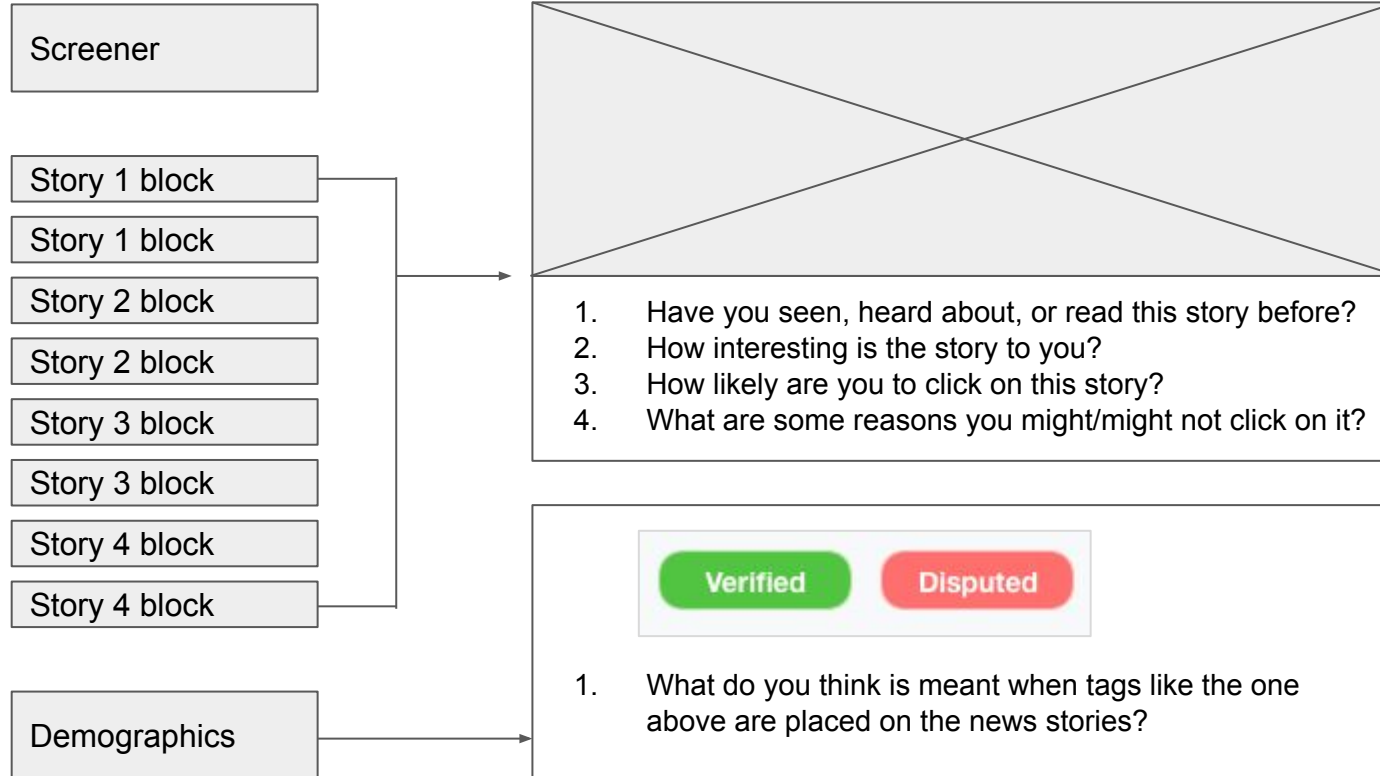
Health officials in Mississippi, Tennessee and Indiana have reported an increasing number of overdoses from people getting high off heavy-duty bug sprays such...

DAILYMAIL.CO.UK

Disputed

👍 Like    💬 Comment    ➦ Share

# Survey Questions



# Survey turnout

## Numbers

120 respondents - 90 after Filtering  
Equal males (45) and Females (45)

## Age

15-24	25-34	35-44	35-44	45-54	55-64	65+
13	63	12	7	3	0	1

## Time Span

April 18 - April 30

# Survey turnout

## **Where we recruited from**

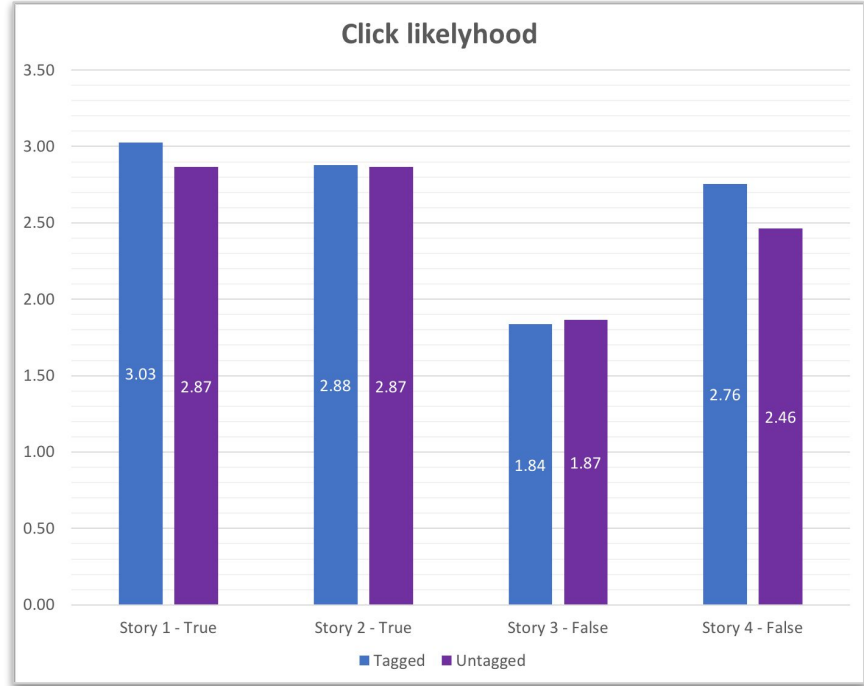
- Bentley HFID Certification Facebook Group
- Bentley HFID Greater Community Facebook Group
- Bentley HFID California Facebook Group
- Bentley HFID Slack - General Channel
- Friends and family
- Bentley Whatsapp Community Groups
- Linked In

# Data Cleaning

- 1. Filtered people who didn't complete the survey**  
22 people filtered (120 to 98)
- 2. Filtered people who used facebook once in 6 months or less frequently.**  
6 people filtered (98 to 92)
- 3. Filtered people who read news articles once in 6 months or less frequently**  
0 people filtered (98)
- 4. Filter people who answered all 1's all 5's**  
0 people filtered
- 5. Filter people who have seen the story before**  
08 people for story 1  
28 people for story 2  
03 people for story 3  
11 people for story 4

# Results

	Tag	No Tag	Diff.	P-value
Story 1	3.03	2.87	0.6	0.587
Story 2	2.88	2.87	0.01	0.973
Story 3	1.84	1.87	-0.03	0.906
Story 4	2.76	2.46	0.3	0.334



A similar analysis was conducted for just participants with high interest level in stories and no significant difference was found from these results.



# Results

Relationship between “interest” and “likeliness to click”?

	Tagged				Untagged			
	Story 1	Story 2	Story 3	Story 4	Story 1	Story 2	Story 3	Story 4
Correlation	0.90	0.74	0.83	0.78	0.82	0.86	0.85	0.80

“I don't really care if people are getting high on bug spray. That's their own fault. Natural selection.”

“Would be a fun read. Ludicrous but fun.”

“Doesn't really feel like something that I could fit into my time allocation for reading the news.”

“Not interested.”

“I just find the article moderately interesting because it's something I've never heard of before.”

“Love to drive nice cars”

# Results

44

People understood the meaning of our tags. The question was optional.

“Key words are used to catch your attention based on what you’ve clicked on in the past. Everything is quantified and tracked by algorithms with the end goal of keeping you on fb a little Bit longer”

“Verified - the site has checked to make sure it comes from some kind of journalistic site and not a bot. Disputed - might be a bot.”

“That a third party verified the claim, or that someone flagged it as disputed.”

“I appreciate the effort to verify news story, but I would like to know more about how they label the tags, and if the source for verifying is trustworthy“

“Fake news vs. Real news”

“I think it's an attempt to try and convey what are real stories and what are fake stories. However, verified by whom? It's an attempt at being objective but feels much more subjective.”

# Results

7

People who mention the tags as a reason to click or not click?

“Starbucks. Cancer. California. Reuters. I like the Verified button.”

“Disputed tag, clickbaity; depressing.”

“Does not interest me, and the 'disputed' makes me question its authenticity. ”

“I've never heard of complex.com, plus the "disputed" label makes me wary. ”

“The post says it is disputed”

“I don't care at all about the news but I would definitely want to click or find out why and how is this news is Disputed.”

“I would click on the Verified button for cross references or google the news for other sources.”

# Results

21

People mentioned the source as a reason to click or not click?

“Starbucks. Cancer. California. Reuters. I like the Verified button”

“This is from Washington post and it is related to new stuff in the tech industry.”

“It seems genuine and Washington Post is well-known.”

“Again, this is not really of interest to me but I'm from Washington, DC and so I have a fond association with the Washington Post and like the newspaper.”

“Coming from a relatively trustworthy source: Washingtonpost.”

“I trust the Washington Post, the content is interesting. Plus, it used to be my daily paper (I lived in DC for 11 years).”

“Again, this is not really of interest to me but I'm from Washington, DC and so I have a fond association with the Washington Post and like the newspaper.”

“It is news reported by Reuters which is one of the best news outlet known for authenticity”

“A trusted site like a Reuters or NPR. The story itself may also be verified but I would also be judgmental of the source itself. This would influence my decision on clicking on something.”

“It's a little shocking and hard to believe, but Reuters is a reputable source, so I'd want to read the details.”

# Questioning Validity

## Internal Validity

Were our tags salient enough? There were many degrees of freedom in their design and placement.

Was the intended meaning applied to them? The data showed that only a small number of people correctly stated the meaning of them.

Verified

Disputed

# Questioning Validity

## Internal Validity

How well did likelihood-to-click act as a proxy people actually clicking?

How likely are you to **click** on this story?

1 - Very Unlikely



2



3



4



5 - Very Likely



# Questioning Validity

## External Validity

Testing one story at a time all by itself is unlike the environment where these stories actually appear. On the actual Facebook news feed these stories are competing with other stories and posts for attention and these tags may have a different effect in such an environment.



# Future Directions

- Larger sample size
- More control over sample characteristics.
- Verify the internal validity of the instrument (e.g. testing with think aloud protocol).
- Increase external validity. Experimental design involving distractors. Place the story in an actual news feed.
- Account for confounding variables (e.g. source credibility).



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