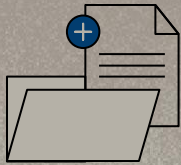


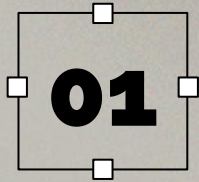
# Susceptibility to MISINFORMATION



By S. Liao, J. Wang, M. Poggio (mentor)

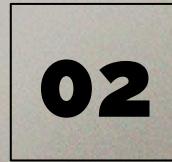


# TABLE OF CONTENTS



## Significance

Why is this important?



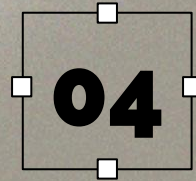
## Background

What have previous studies shown?



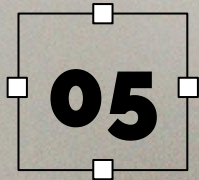
## Methodology

How did we conduct our project?



## Data + Analysis

What results did we get?



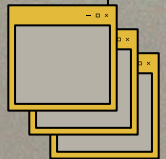
## Conclusions

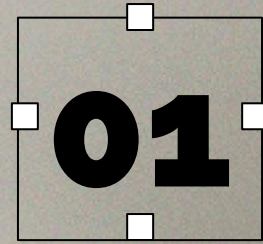
What can we take away from these results?



## Next Steps

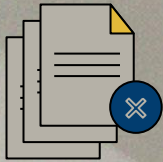
What should be studied next?

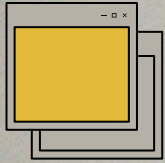




# SIGNIFICANCE

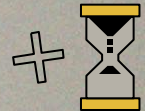
Why is this important?

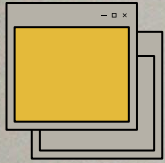




# SIGNIFICANCE

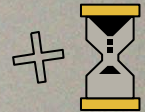
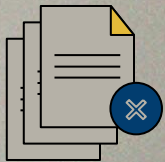
- Partisan bias amplified - people more **likely to dismiss opposing views as fake news**
- Misinformation regarding public health issues, racial stereotypes, and social movements **leads to deadly hate crimes, negative prejudices, and riots**
- Abundance of fake news can cause dismissal of real news
- Platforms group people with like-minded beliefs together, increasing **homophily** (the inclination to seek out people who are similar to oneself) and the **false feeling of expertise and trustworthiness.**





# SIGNIFICANCE

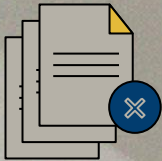
- People think of themselves as **less susceptible** to fake news than the average person, overlooking the dangers of fake news
- Fake news is so prevalent that sites such as **Factcheck.org** were created to help people cross check

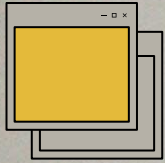


02

# BACKGROUND

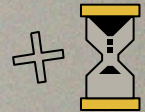
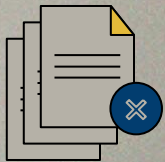
What have previous studies shown?

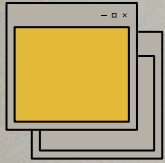




# BACKGROUND

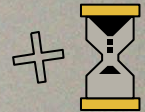
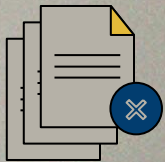
- During the 2020 election, social media companies **blocked out most posts from hashtags** to combat fake news but **negatively impacted content creators**
- Cannot target the spread of the fake news directly because of freedom of speech + billions of articles already in circulation
- Existing filtering systems: neural networks, deep learning, or web mining



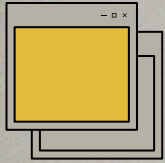


# BACKGROUND

- Current **algorithms** are still **not consistent** enough to fully rely on
  - Unpredictable, **time limitation** (~8 minutes)
- **Human-based** fact-checking resources are **time consuming**, have **limited** resources, and can **backfire**
  - all-or-nothing: whether human-based or algorithm-based, it must be 100% correct and consistently present to have a positive effect
- Stresses importance of having a target segment (most susceptible people) to allocate resources for

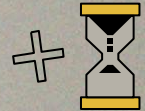
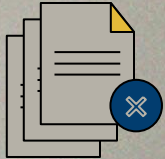


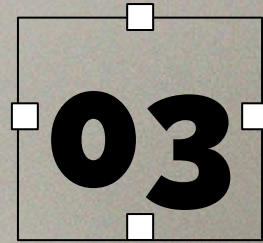




# OUR STUDY

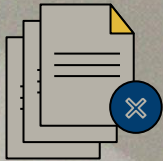
- Aims to find a target segment
- Behavioral factors
- **How likely are people to identify fake news based on their frequency of news exposure, and identification method?**

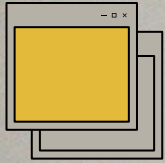




# METHODOLOGY

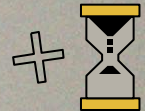
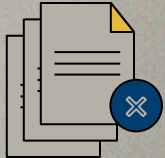
How did we conduct our project?

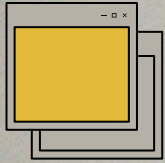




# METHODOLOGY

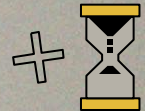
- Case study research with **correlation**
- How likely people are to identify fake news based on their frequency of news exposure and identification method
- **Quantitative** methods in data sampling (counting how many articles people correctly identify and associating their accuracy with their demographics and self-reported behaviors through multiple choice)

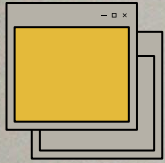




# METHODOLOGY

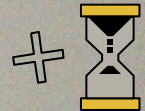
- **Survey with headlines**, some with edited details
  - Method based off of multiple past studies
- There were an equal number of true and false articles, and a **score** of articles **correctly identified** was assigned to each surveyee.
- **Intuition/deliberation** test using time
- Adjustments: no political news, no photos, T/F answers, no formal test for intuition/deliberation

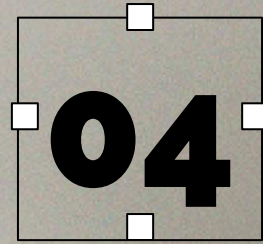




# METHODOLOGY

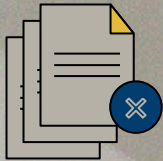
- Primary sources - we collected data from a survey we conducted ourselves.
- Analyzed the data by using correlation, regression, and descriptive statistics.
- All participants consented
- Palo Alto Unified School District Institutional Review Board approved
- Key to fake news quiz provided to give participants feedback

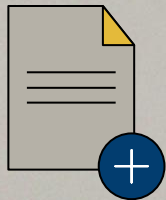




# DATA + ANALYSIS

What results did we get?

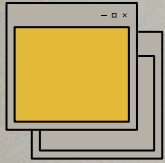




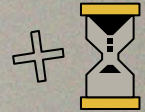
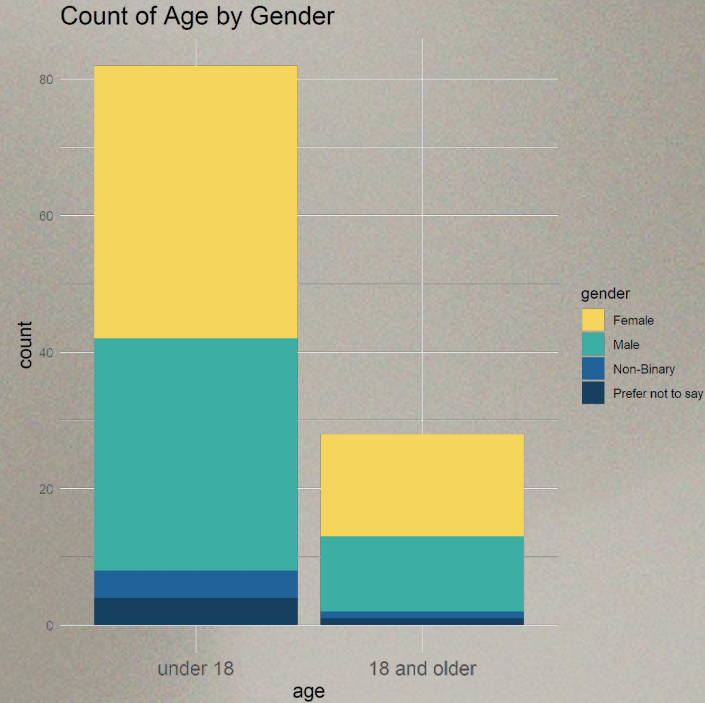
**111**

Total responses!

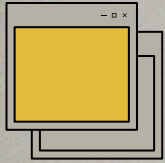




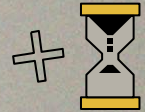
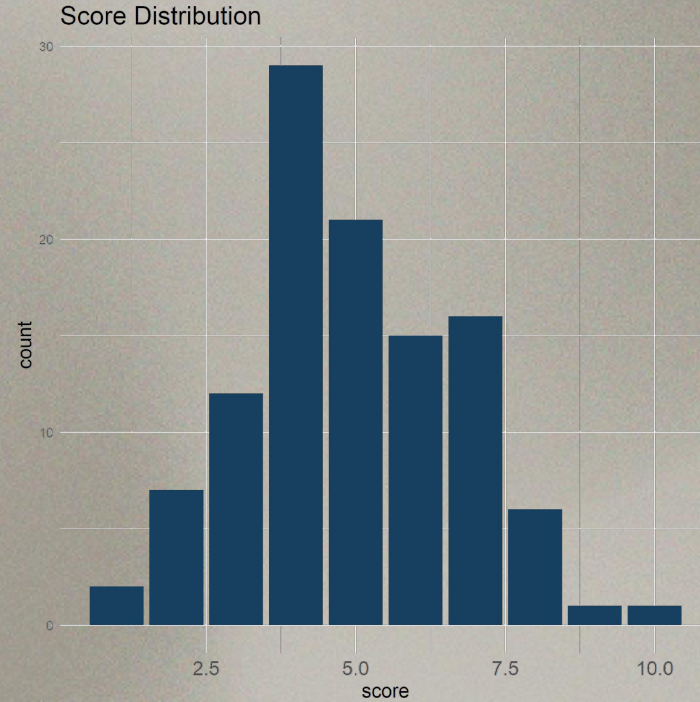
# POPULATION CHARACTERISTICS

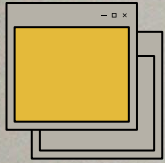






# POPULATION CHARACTERISTICS





# POPULATION CHARACTERISTICS

## Primary News Sources

Podcast/radio

4.5%

TV

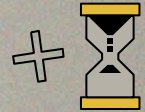
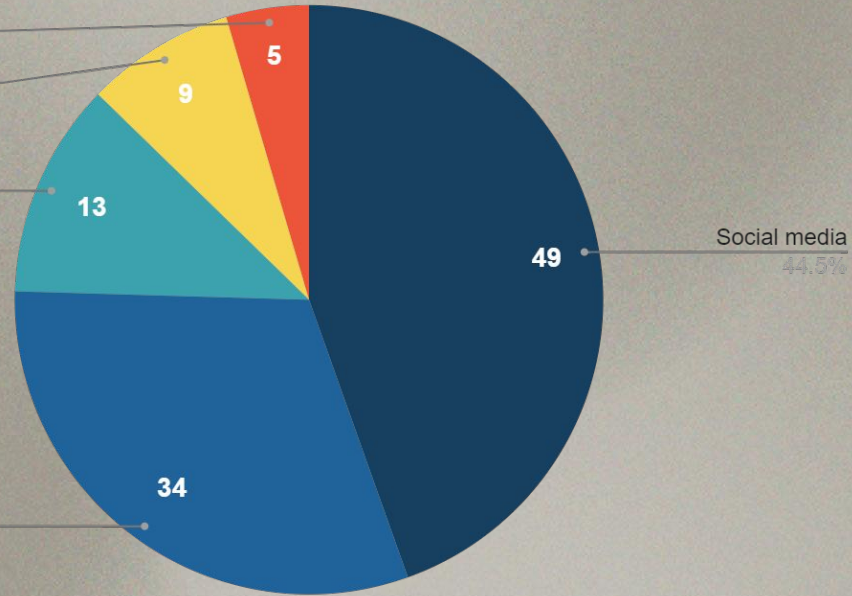
8.2%

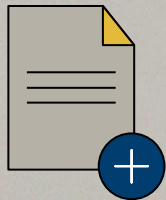
Word of mouth

11.8%

Newspaper

30.8%

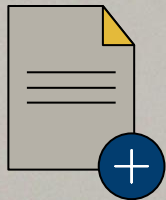




# 88.2%

Believed they were less susceptible than the average American

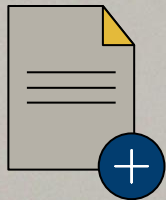




# 5.76

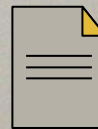
Average number of articles selected as  
misinformation

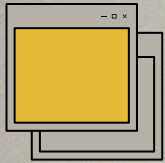




**41%:56%**

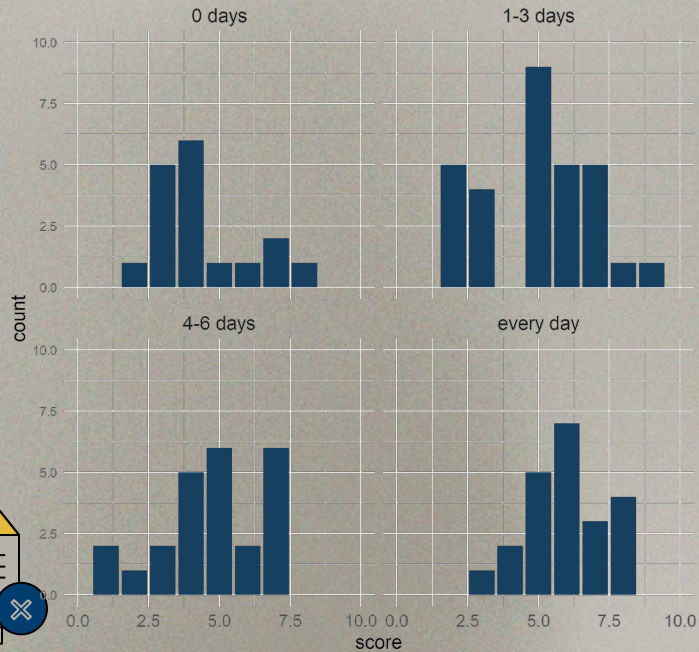
REAL articles to FAKE articles correctly identified



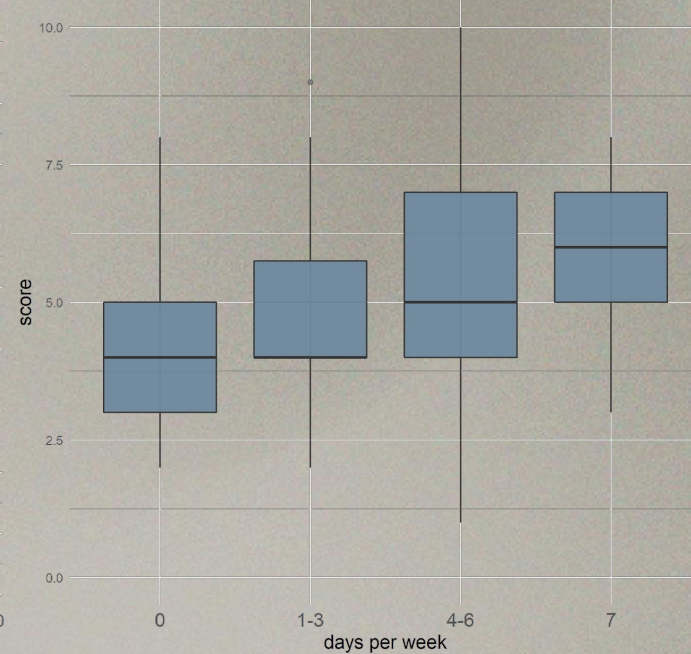


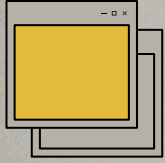
# SCORE V.S. DAYS NEWS EXPOSURE/WK

Score Distribution of Days of News Exposure Per Week



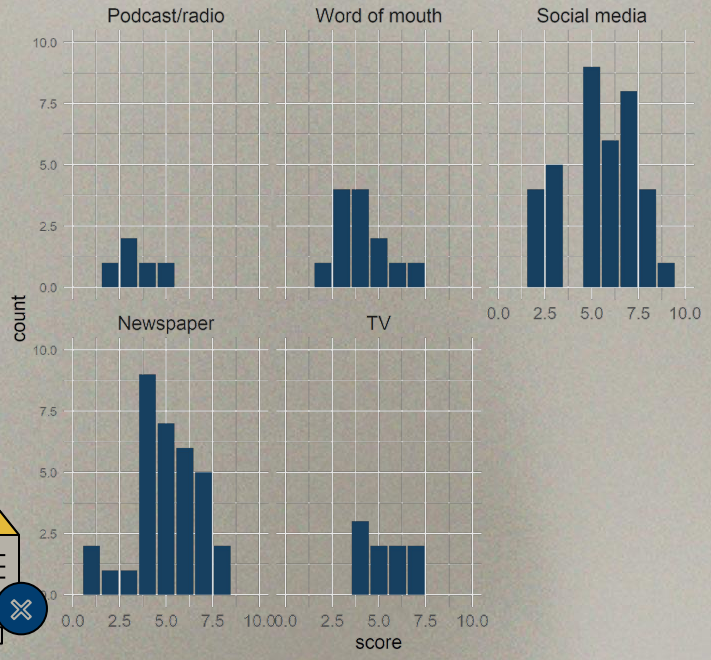
Score v.s. Days of News Exposure Per Week



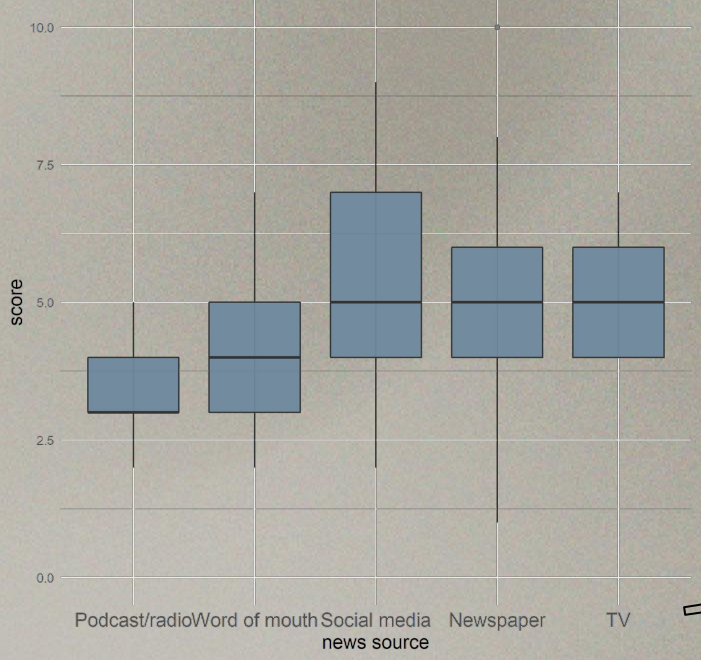


# SCORE V.S. MAIN NEWS SOURCE

Score Distribution of Different News Sources

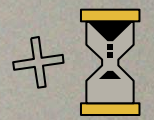
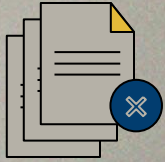
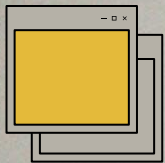
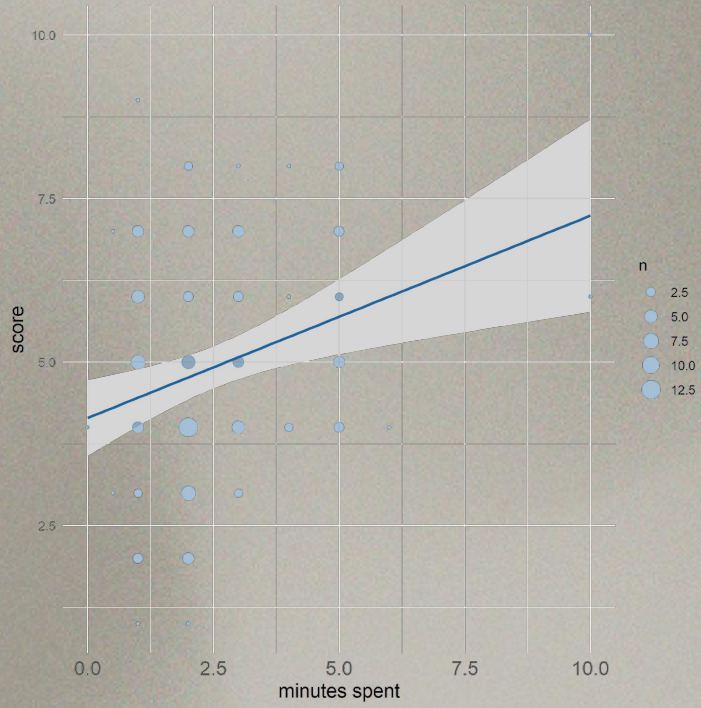


Score v.s. News Source





# SCORE V.S. MINUTES SPENT



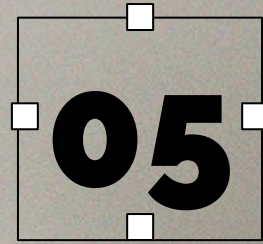




$$\text{score} = -1.3597x_0 - 1.3218x_1 - 0.9532x_2 + 0.2919x_3 + 5.1718$$

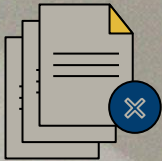
$x_0 = 0$  days/wk,  $x_1 = 1-3$  days/wk,  $x_2 = 4-6$  days/wk,  $x_3 =$  minutes spent

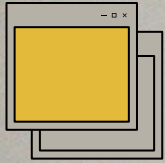




# CONCLUSIONS

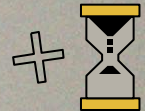
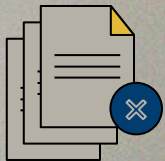
What can we take away from these results?

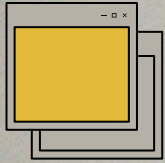




# Conclusions

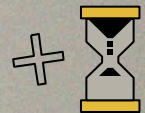
- Behaviors associated with lower susceptibility
  - Spending more **time deliberating** headlines + their validity
  - **Consuming** social media, newspaper, and television
  - **Exposing** oneself to news more frequently
- People are usually overconfident in their ability and are skeptical





# Limitations

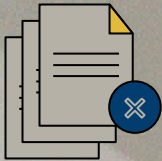
- Mostly affluent, young sample
- People may judge susceptibility by more than just the headlines
- Inability to select none of the headlines
- Survey required Google account, leading to limited responses from older generations.

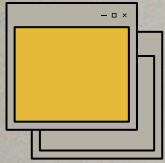


06

# NEXT STEPS

What should be studied next?

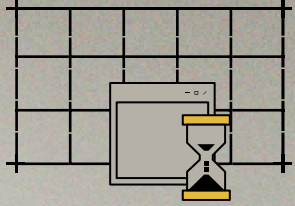




## Next Steps

- Conduct studies on susceptibility to misinformation **by social media platform**
- Confirm **causality** between some of the correlative factors we have found.
  - Discovering whether continual exposure to news over time will help a person decrease their susceptibility to fake news
- Nuance findings with a **better sample**
  - Global participants
  - Diverse social & political backgrounds
- Results will be used to take action to **help groups that have been correlated to be more susceptible** through educational training, awareness, and more.
  - Will inform school districts with our findings and possible steps to alleviate the issue





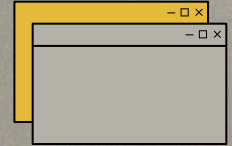
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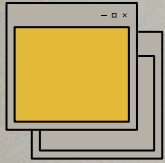
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# QUESTIONS?



+





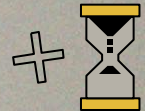
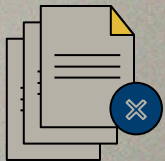
# Citations

Calvillo, D. P., Garcia, R. J. B., Bertrand, K., & Mayers, T. A. (2021, May). Personality factors and self-reported political news consumption predict susceptibility to political fake news. *Personality and Individual Differences, 174*. ScienceDirect.

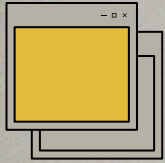
<https://doi.org/10.1016/j.paid.2021.110666>

Cerese, A., & Santoro, C. (2018). From racial hoaxes to media hypes: Fake news' real consequences. In *From Media Hype to Twitter Storm* (pp. 333 - 354). Amsterdam

University Press. <https://doi.org/10.2307/j.ctt21215mo.20>







# Citations

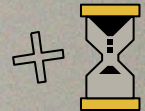
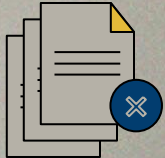


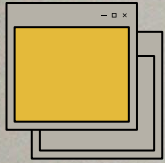
Figueira, A., & Oliveira, L. (2017). The current state of fake news: challenges and opportunities. *Procedia Computer Science*, 121, 817-825. ScienceDirect.

<https://doi.org/10.1016/j.procs.2017.11.106>

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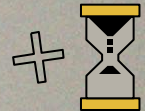
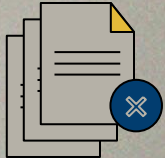
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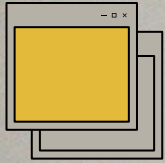
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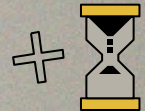
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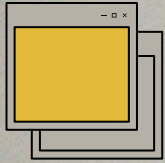
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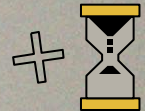
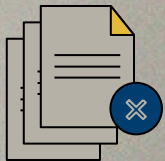


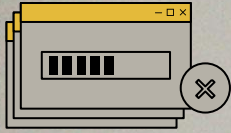


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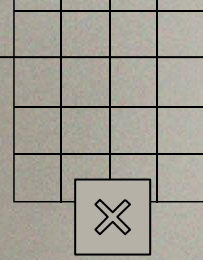
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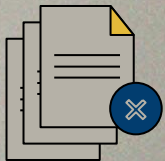


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# THANK YOU!



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