



NANYANG  
TECHNOLOGICAL  
UNIVERSITY  
SINGAPORE

CC0007 Science and Technology for Humanity

# Artificial Intelligence III (Social Science/ Humanities Aspect)

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# Today's Agenda

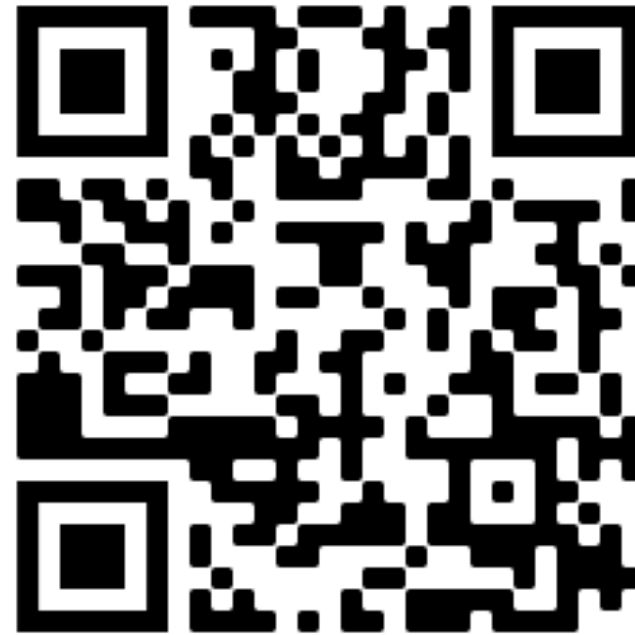
- How social media algorithms promote content
- **Social scientific approach to evidence**
- Ethics and policy: What to do?



# Social Media and Eating Disorders

Social media woven into experience of some people with eating disorders.

Watch this supplementary video, by visiting the external link to abide by copyright protection requirements. Kindly scan the QR code provided on the right:



<https://www.youtube.com/watch?v=uotg530Aa7Q>



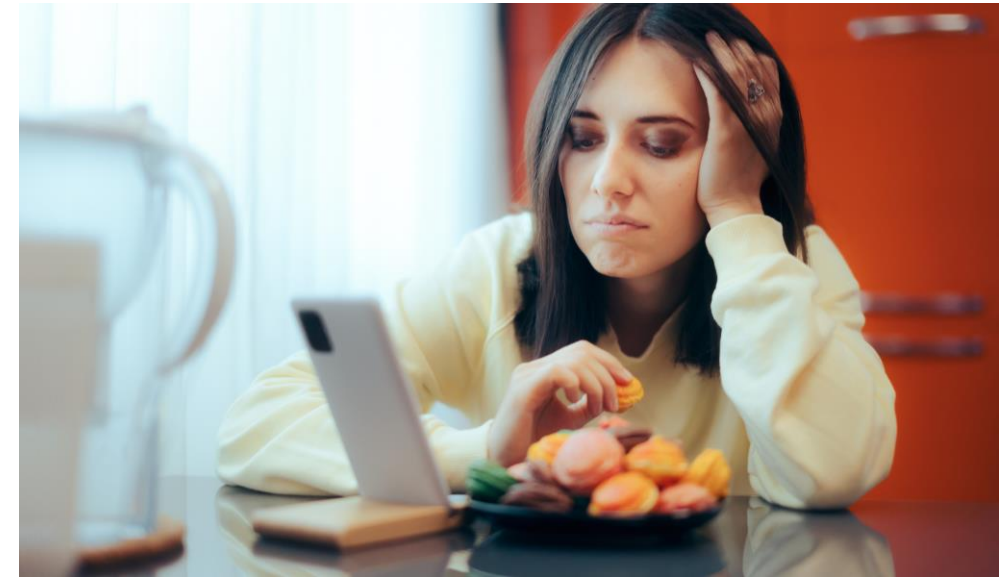
# Some Social Science Questions

- **Social media**—the **cause** of the eating disorder?
  - Or **reinforces** it?
- Or simply behaviour that often **accompanies** an eating disorder?



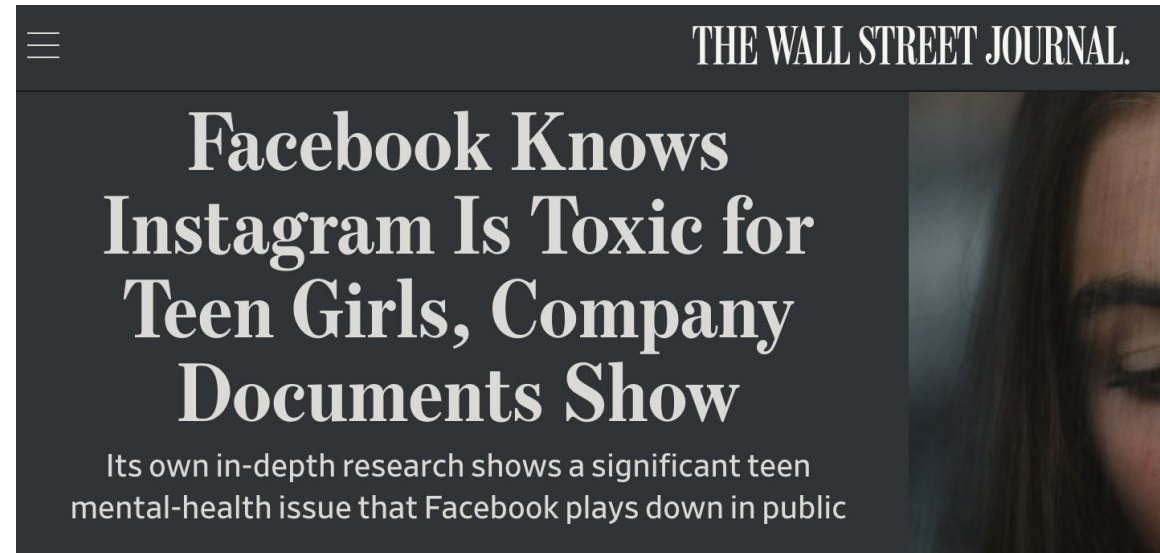
# Evaluating Evidence: The Social Sciences' Specialty

- To answer a **research question**...
  - E.g., is there a relationship between social media use and eating disorders?
- ...**social scientists**...
  - Including psychologists, sociologists, communication scholars (among others)
- ...conduct studies using various **methods**...
  - With standards to evaluate the soundness of the conclusions



# WSJ: “IG Toxic for Teen Girls”

- *The Wall Street Journal* article (2021):
  - Instagram (owned by Meta, formerly Facebook) did **internal research** (2019–20) suggesting that IG use was associated with negative feelings about body image.
- Outrage followed.





# WSJ: “IG Toxic for Teen Girls”

Former Facebook employee **Frances Haugen** leaked FB’s presentations and documents about its internal research to WSJ.

**LEAKED**



# WSJ: “IG Toxic for Teen Girls”: Instagram, in its Staff’s Own Words

- “We make **body image** issues worse for 1 in 3 teen girls”
  - “when they felt bad about their bodies, IG made them feel worse”
- “Teens who struggle with **mental health** say IG makes it worse”
  - “Teens blame IG for increases in...**anxiety** and **depression**”





# WSJ: “IG Toxic for Teen Girls”: Instagram, in its Staff’s Own Words

- Negative “**social comparison**” about **body** and **lifestyle** “is worse on IG”.
  - In contrast to **TikTok** (emphasises on performance) and **Snapchat** (emphasises on jokey filters for face).
  - 40% of **teen boys** said they also experienced negative social comparison.
- Teens reported feeling “**addicted**” to IG.



# WSJ: “IG Toxic for Teen Girls”: The Science

- More nuanced reactions from some social scientists:
  - Summaries of the conclusions was all that was available in the WSJ report.
  - Social scientists want to examine the evidence—to assess the soundness of the conclusions:
    - How the **terms** were defined
    - Details of **methods** of how the studies were done



# WSJ: “IG Toxic for Teen Girls”: The Science

- “These documents were also created for and used by people who understood the **limitations** of the research,
- which is why they occasionally used shorthand language, particularly in the headlines, and do not explain the caveats on every slide.”
  - Meta’s response to WSJ reporting, September 2021



# WSJ: “IG Toxic for Teen Girls”: Interpretive Challenges

- Proving **causal claims** would require **experimental** research, e.g.:
  - Researcher randomly assigns people to **group 1** (exposed social media messages showing very thin people), or **group 2** (no images of very thin people).
  - Research holds everything else constant—remainder of the content both groups is exposed to is the same.
- But such experimental research is impractical—Meta did not do it.

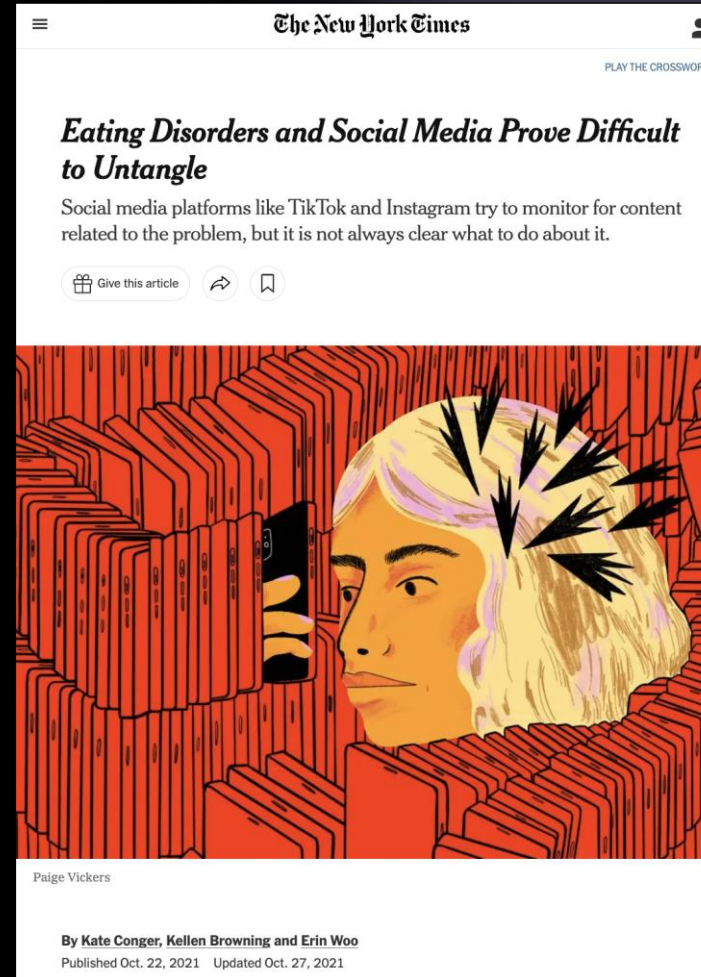




# WSJ: “IG Toxic for Teen Girls”: Interpretive Challenges

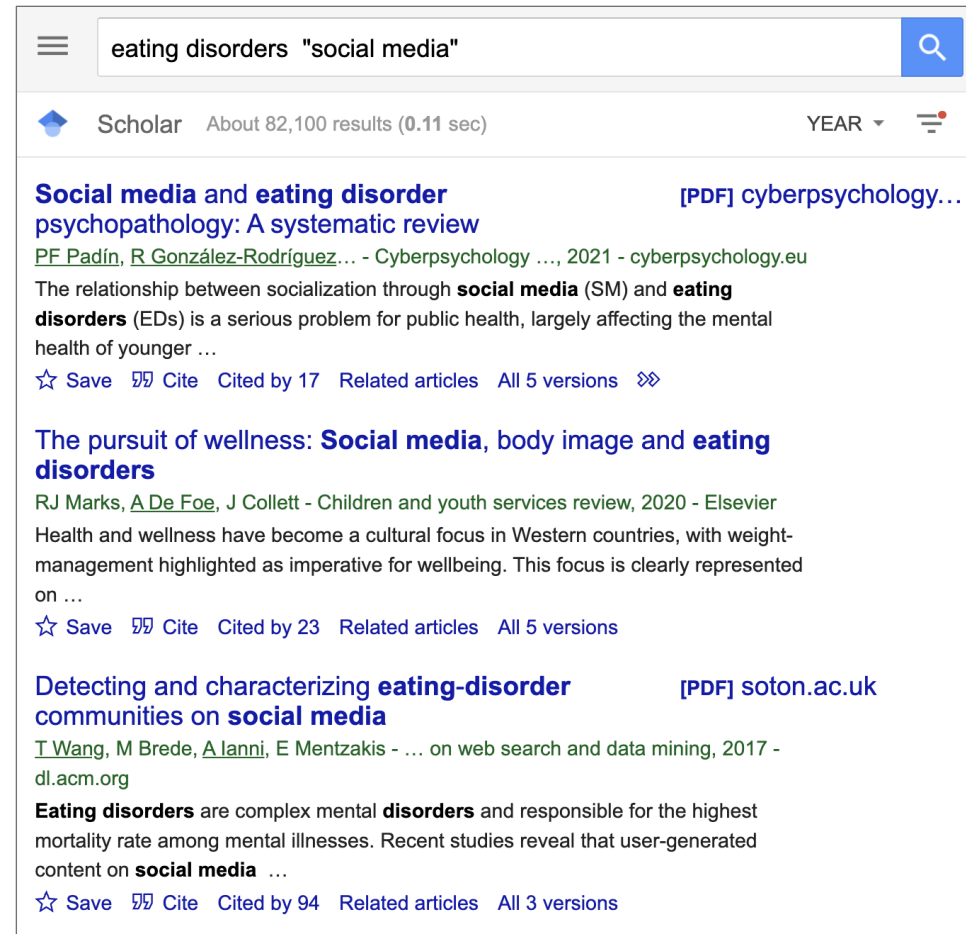
Meta’s research used  
**self-report** data—

- What users reported they experienced
  - E.g., saying you *feel* addicted and *being* addicted (as psychologists define it)



# Social Science on Social Media and Eating Disorders

- Thousands of articles
- Mostly **observational** studies, not **experiments**.
  - Some find **correlations** between social media use and eating disorders.
  - Such studies cannot prove **causation**.



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# Today's Agenda

- How social media algorithms promote content
- Social scientific approach to evidence
- **Ethics and policy: What to do?**



# What to Do About Social Problems?

- Humanities provide frameworks for analysis.
  - E.g., **ethics**, a branch of the humanities
    - Including political philosophy
  - Policymaking often relies on ethics and social science.
- What circumstances trigger obligations to act on social problems?
  - E.g., what constitutes **sufficient evidence** to justify action?
    - **Conclusive** evidence of harm is rare.



# What to Do About Social Problems?

Options for action:

- **Political** action: People acting through their governments
  - E.g., legislation (laws)
- **Industry** action:
  - Social media industry—combating such content
- **Parental or community** action:
  - E.g., education



# Political Action: US Lawmakers' Hearings

Regulate content?

- E.g., government ban on content that encourages eating disorders?



# Political Action: US Lawmakers' Proposed Action

Proposals to make it easier to win lawsuits against social media platforms for content.

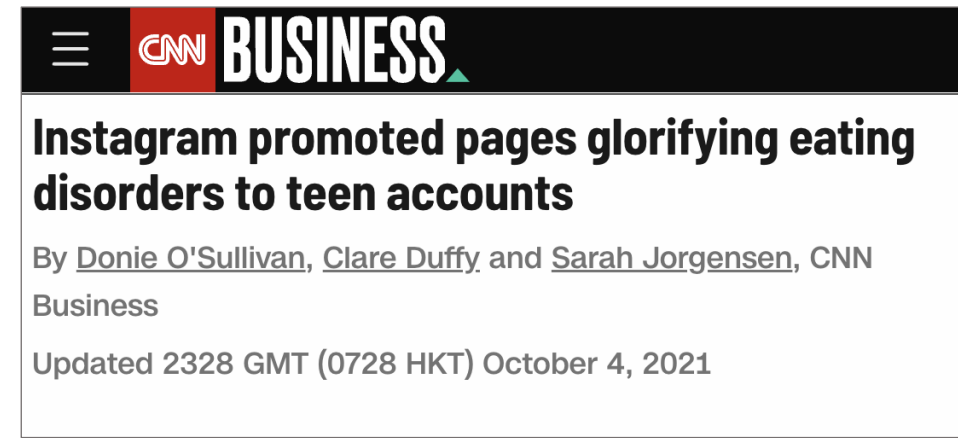
- Currently, they enjoy a high degree of **immunity** under US law.



# Industry Action: Instagram Policies

## Instagram spokesperson (2021):

- “We do not allow content that promotes or encourages eating disorders and we removed the accounts shared with us for breaking these rules.
- We use technology and reports from our community to find and remove this content as quickly as we can, and we're always working to improve.”
- But it is not always successful.



O'Sullivan, D., Duffy, C. & Jorgensen, S. (2021, October 4). *Instagram promoted pages glorifying eating disorders to teen accounts*. CNN Business. Retrieved August 19, 2022 from <https://edition.cnn.com/2021/10/04/tech/instagram-facebook-eating-disorders/index.html>



# Parental or Community Action

- Leave it to **families**
- **Schools:** Educational resources
- **Communities:**  
Celebrate diverse body types



# What to Do About Social Problems?

Must balance other considerations:

- **Freedom of expression** of those with controversial views
- **Responsibility** of viewers of the content



# Recap: Questions on Cases:

## Social Science Question on Evidence

How solid is the evidence that such content is harmful?

- Related personal question:
  - Are you convinced?  
Would you require **scientific certainty** of cause (social media content) and **effect** (eating disorder)?



# Recap: Questions on Cases: Ethics and Policy Questions

- Should **action** be taken to **restrict** such content?
  - Case 1: Eating disorder encouragement
  - Case 2: Extremely thin influencer—some users say she triggers them
- If you believe action is warranted, what **kind** of action, by **whom**?
  - Government
  - Social media platforms
  - Parents, schools, communities



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