

Wildfire Lies: A Crash Course in Climate Change Misinformation

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What is Misinformation?

- Information that is false, inaccurate, or misleading (Treen et. al., 2020)
- Information that contradicts best available scientific evidence (Vraga & Bode, 2020; Southwell et. al., 2022)
 - Without proper scientific justification

A Rose(?) By Any Other Name...

- Fake News: misinformation disguised as a news item or article
- Disinformation: misinformation spread with the purpose of misleading the audience

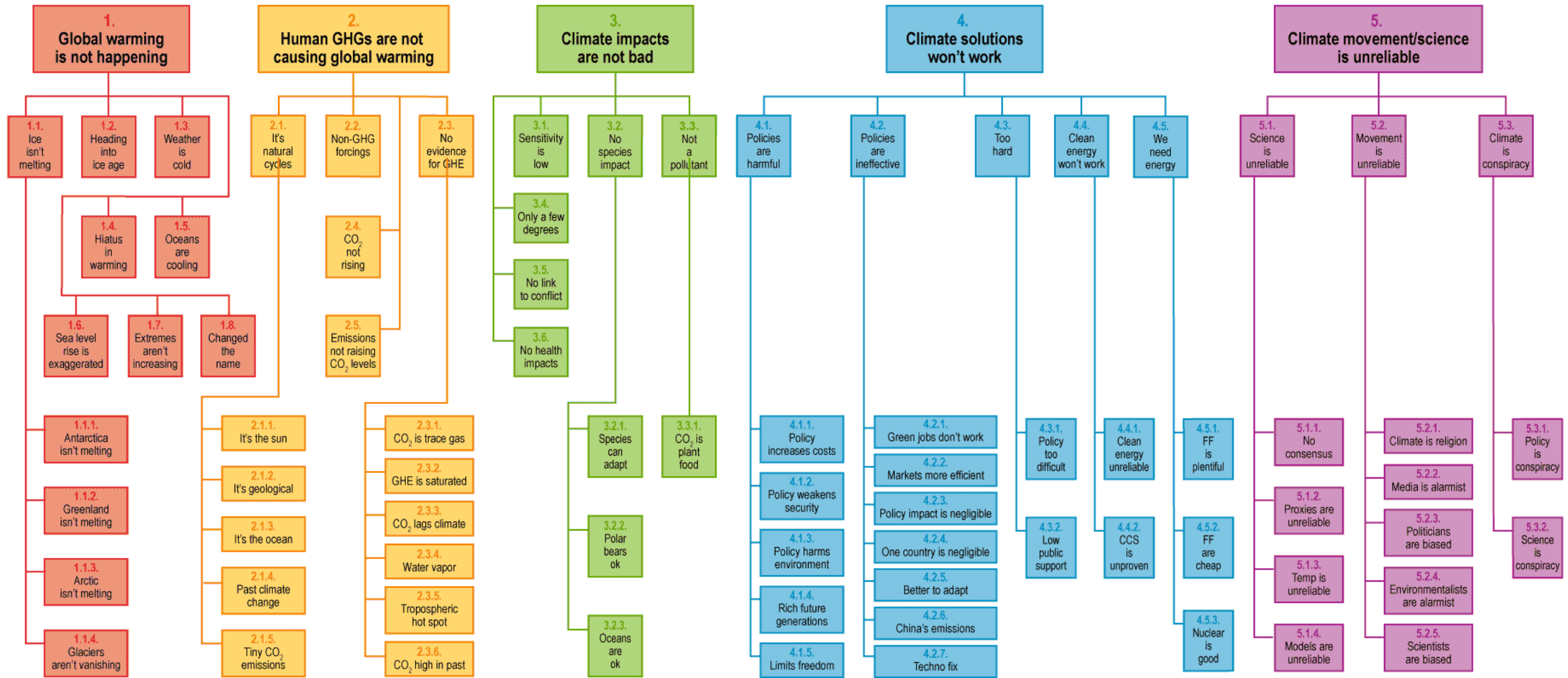


<https://lewisu.libguides.com/c.php?g=626922&p=4455509>

Climate Change in 10 Words (Ed Maibach)

- It's real
- It's us
- It's bad
- Scientists agree
- There's hope
 - If we act quickly

CARDS Taxonomy of Climate Misinformation (Coan et. al., 2021)



Why is Misinformation so Powerful?

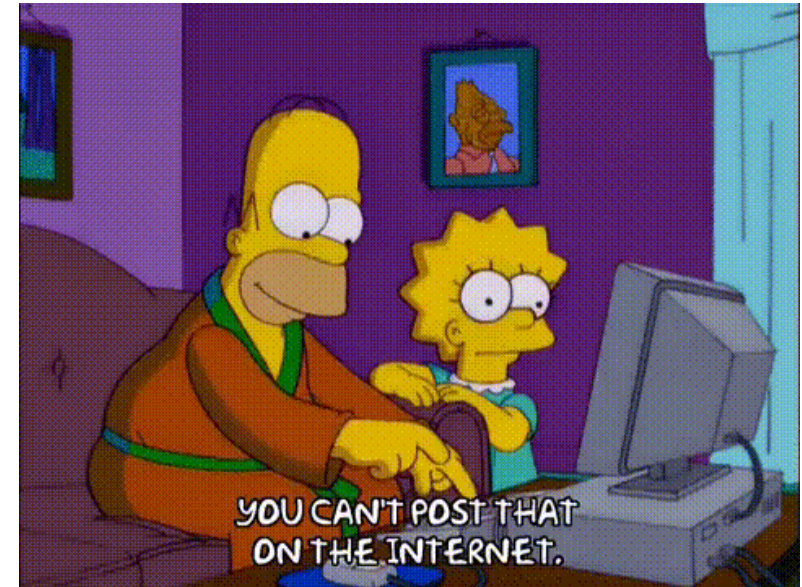
- Lack of “Slow Thinking” (Kahneman, 2011)
- System 1: automatic processing
 - Relies on mental models, existing beliefs
 - Low effort, subconscious
 - “Fast” thinking
- System 2: effortful processing
 - Requires conscious, cognitive effort
 - “Slow” thinking

Why is Misinformation so Powerful?

- Confirmation Bias
 - People are more inclined to believe information that aligns with their existing beliefs
- Credibility Cues
 - People believe information when it is shared by someone they trust
 - Friends
 - Trusted news outlets
 - Trusted media personalities
- Uncertainties
 - When people believe that a situation is uncertain, they are more likely to consider conflicting information
 - *Merchants of Doubt* by Naomi Oreskes & Erik Conway
- Mental Models (more on this later)

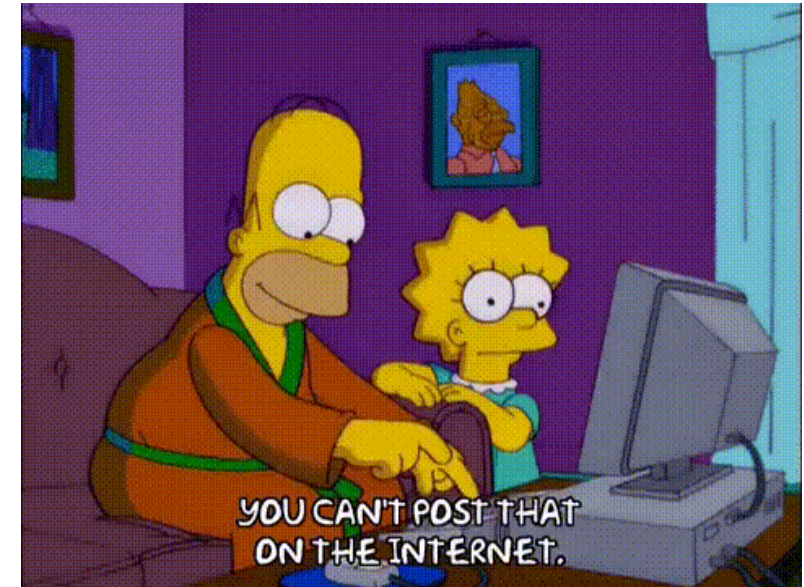
How Does Misinformation Spread?

- Social Media: User Side
 - Posts/information shared by friends automatically viewed as credible (Schwarz & Jalbert in Greifeneder et. al., 2021 p.74)
 - “Interesting if true” sharing (Ecker et. al., 2022)
 - Attention-grabbing headlines spread quickly, easily (Ecker et. al., 2022)



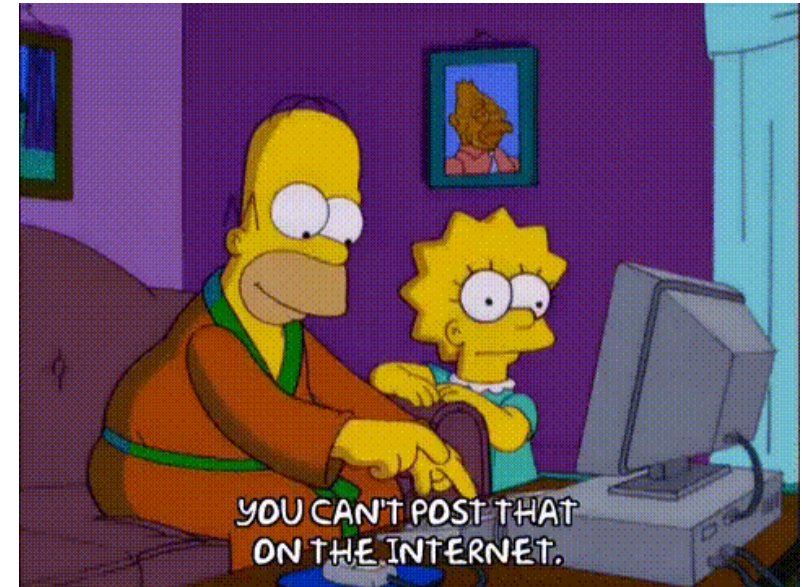
How Does Misinformation Spread?

- Social Media: Technical Side
 - Algorithms (Oyserman & Dawson in Greifeneder et. al., 2021 p.186)
 - Lack of or slow moderation (Cook et. al., 2015)
- "Millions of people can be exposed to viral misinformation in a matter of days, if not minutes" (Van der Linden, 2023)
- People are shown information that reinforces their existing beliefs and interests, and information spreads faster than it can be verified



How Does Misinformation Spread?

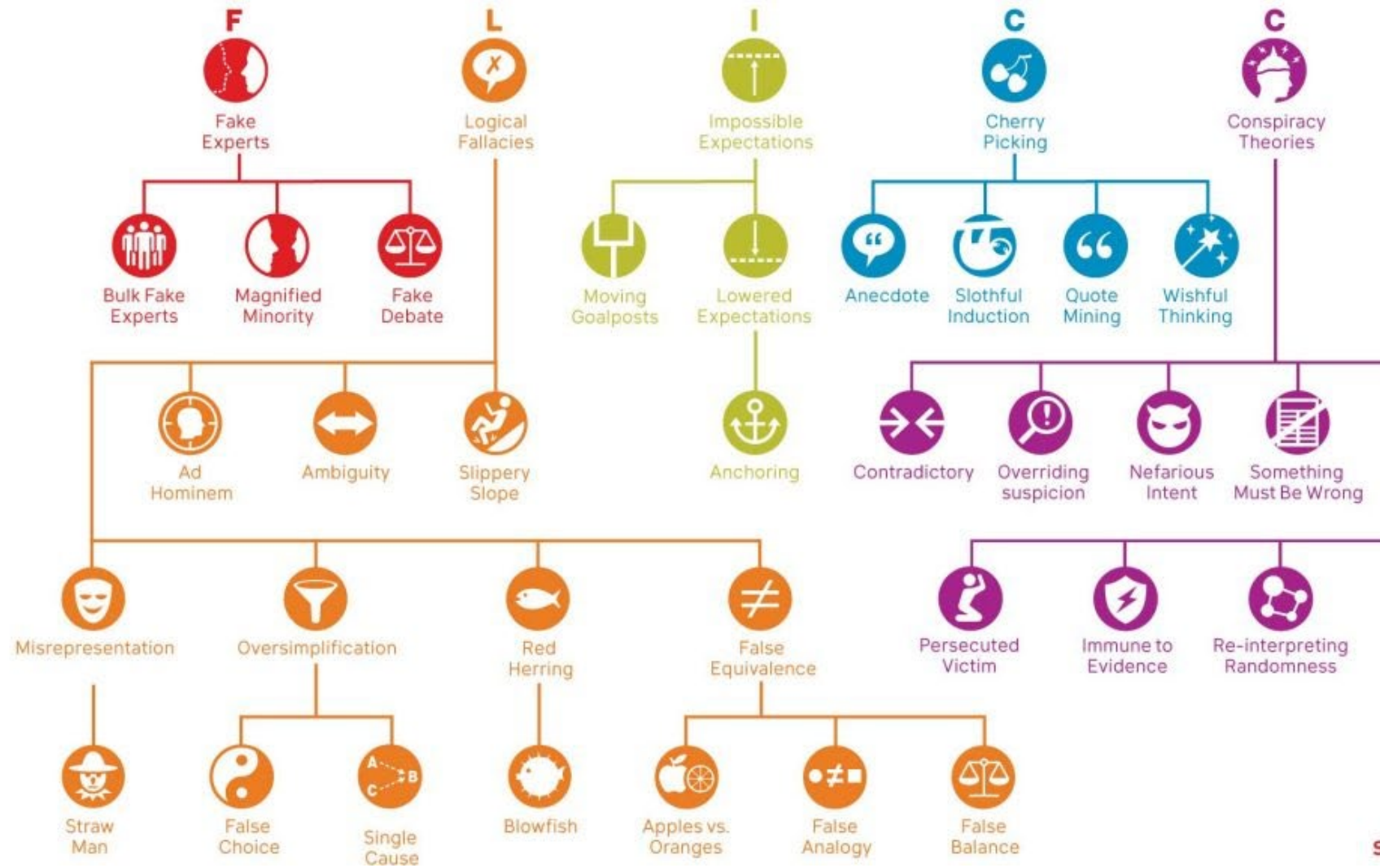
- News Media: False Debate
 - Journalism: ethic of balanced reporting
 - Presenting "both sides" of an issue where there aren't two legitimate sides
 - Ex: a climate scientist and an engineer debating climate science on a news program
 - We don't see this as often anymore, but it has been influential!



How Do We Combat Misinformation?

- Misinformation is viral, so we vaccinate against it!
- Inoculation Theory
- Expose the audience to a weakened form of misinformation
 - Point out that the misinformation is false
 - Explain how it is misleading: explain the logical fallacy at work

FLICC Taxonomy – Misinformation Techniques



sks.to/flicc

Building a “Truth Sandwich”

FACT

Lead with the fact if it’s clear, pithy, and sticky—make it simple, concrete, and plausible. It must “fit” with the story.

WARN ABOUT THE MYTH

Warn beforehand that a myth is coming... mention it once only.

EXPLAIN FALLACY

Explain how the myth misleads.

FACT

Finish by reinforcing the fact—multiple times if possible. Make sure it provides an alternative causal explanation.

“Truth Sandwich” Example

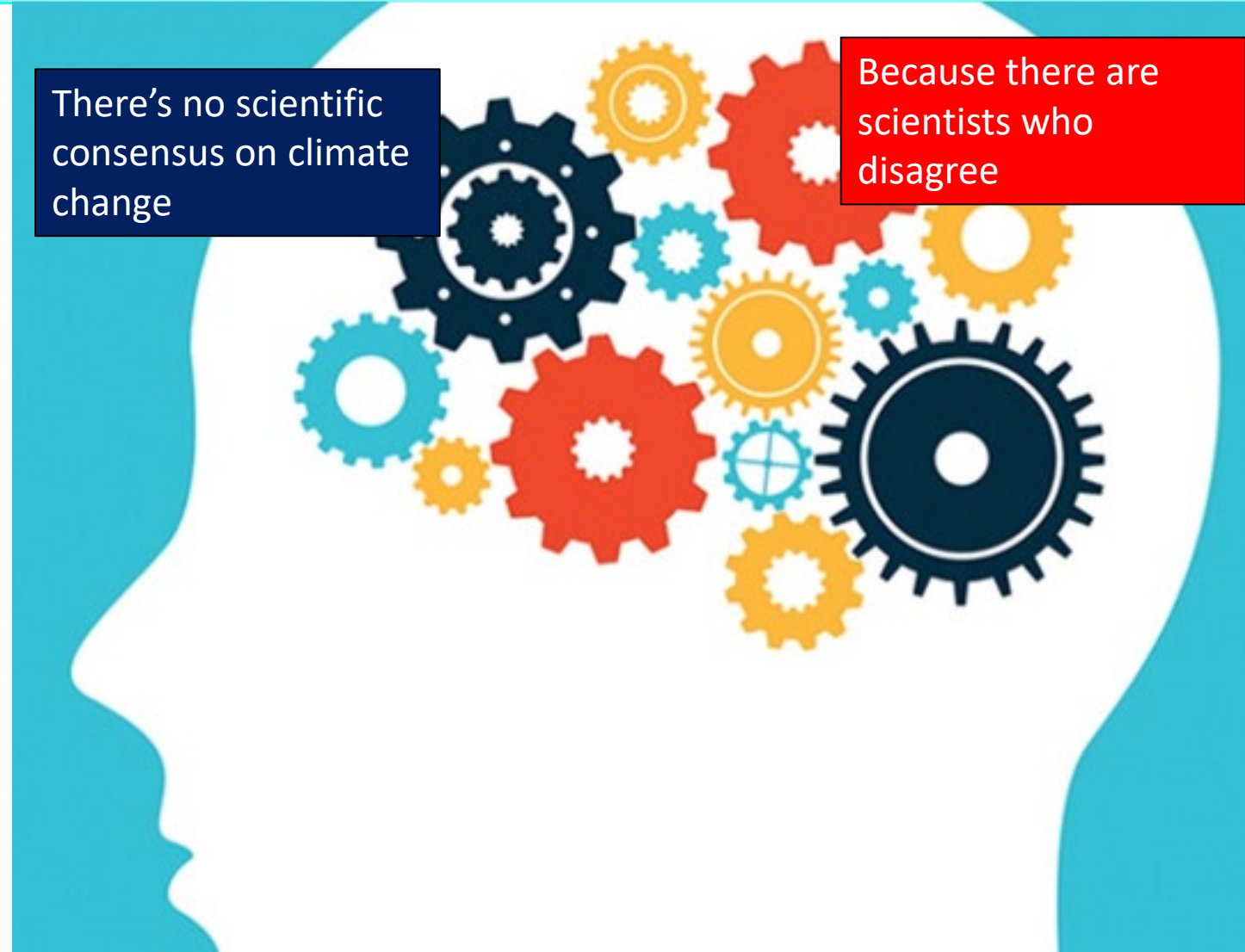
Unfortunately, Earth’s climate is changing too quickly for many species to be able to adapt. You may have heard the myth that plants and animals can easily adapt to current changes in the climate, but this isn’t true. Plants and animals can adapt to slow changes that occur over thousands of years, but today’s climate change is happening much faster. It’s only taking about 100 years. This is too fast for species to adapt to the changing climate.

How Do We Combat Misinformation?

- Breaking and fixing audience mental models

There's no scientific consensus on climate change

Because there are scientists who disagree



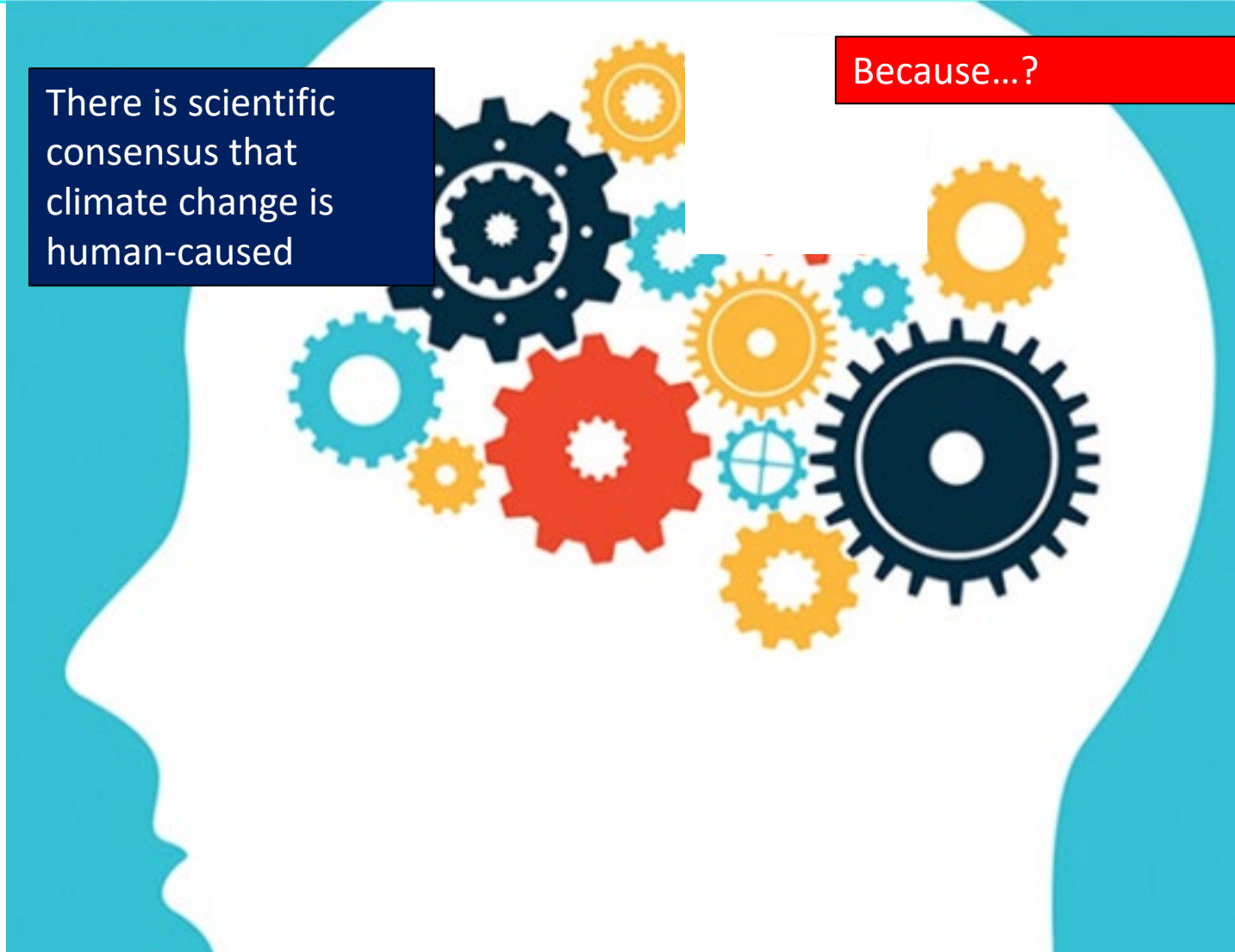
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How Do We Combat Misinformation?

- Breaking and fixing audience mental models

There is scientific consensus that climate change is human-caused

Because...?



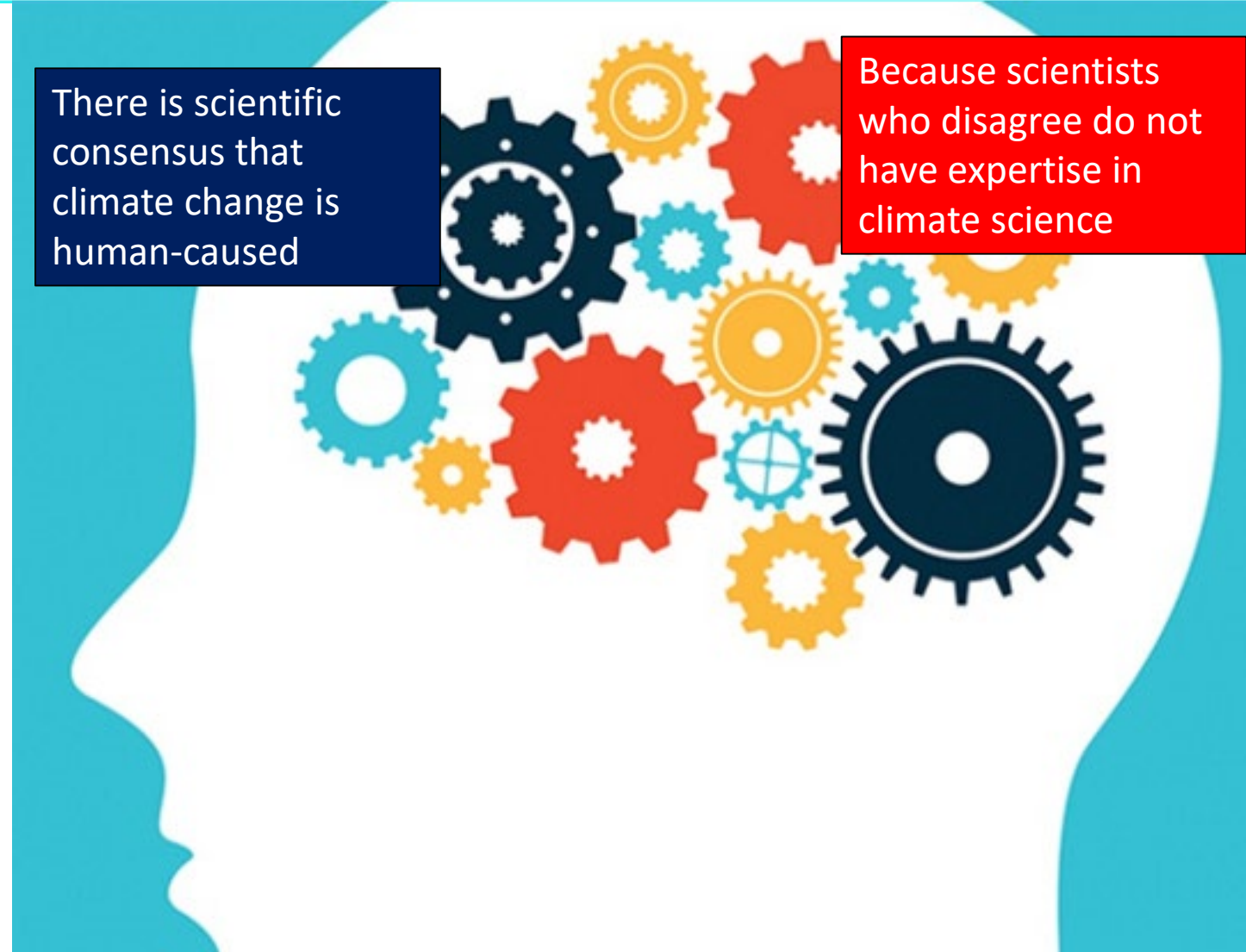
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How Do We Combat Misinformation?

- Breaking and fixing audience mental models

There is scientific consensus that climate change is human-caused

Because scientists who disagree do not have expertise in climate science



https://sravannerella.com/wp-content/uploads/2020/03/1_ICEOpb73OmT6pY-WFWnwBQ-e1584408433393.png?189db0&189db0

How Do We Combat Misinformation?

- Check the sources of information
 - Is the author an expert in the topic/field?
 - If not, what sources do they cite?
 - Who is the publisher or sponsor of the article?
- Read an article before sharing it
 - Is this an “interesting if true” situation?
 - Is the headline clickbait?
- Use fact-checking websites
 - Snopes
 - Skeptical Science (for climate change specifically)

Why Is This Important?

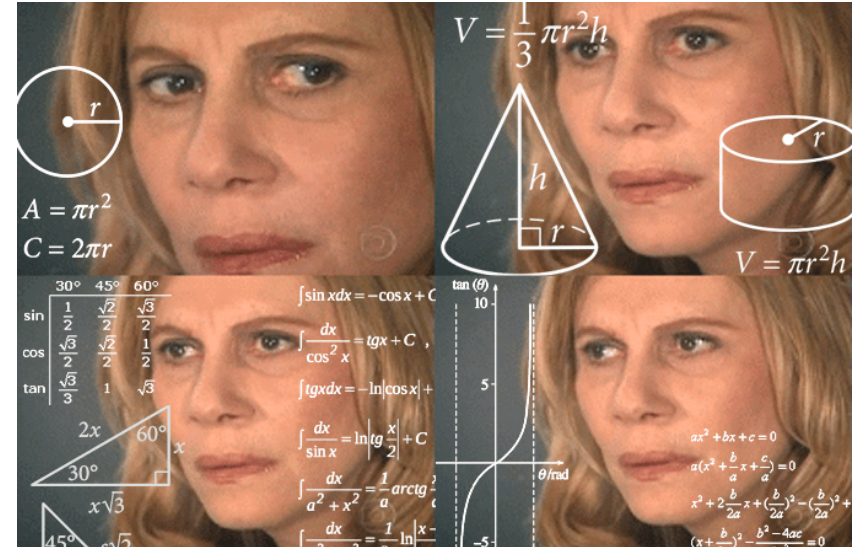
- Misinformation can have far-reaching societal and global consequences
- COVID-19
 - Vaccination
 - Masking
 - Other health/safety practices
- Climate Change
 - Doubts among public, policymakers delay crucial action

Resources

- [Skeptical Science](#)
- [Center for Climate Change Communication Handbook Hub](#)
 - Climate Myth Debunking for Broadcast Meteorologists
 - Debunking Handbook 2020
- [References \(Google Doc\)](#)
- [Cranky Uncle Inoculation Game](#)

Thank You!

- Tom DiLiberto & Katie Poser for inviting me today
- You all for joining
- My Dissertation Committee
 - Dr. Ed Maibach, chair
 - Dr. John Cook
 - Dr. Chris Clarke
 - Dr. Kevin Wright
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I'm happy to answer questions here or via email/Twitter/LinkedIn!