

The Merchants of Ambiguity – evolution

Isn't it possible to respect both religious beliefs and scientific theories without conflict?

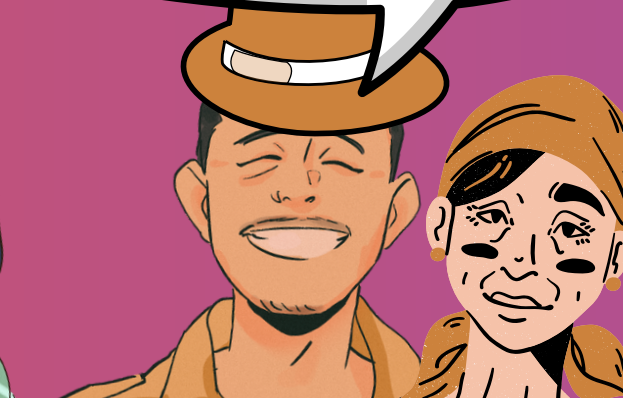
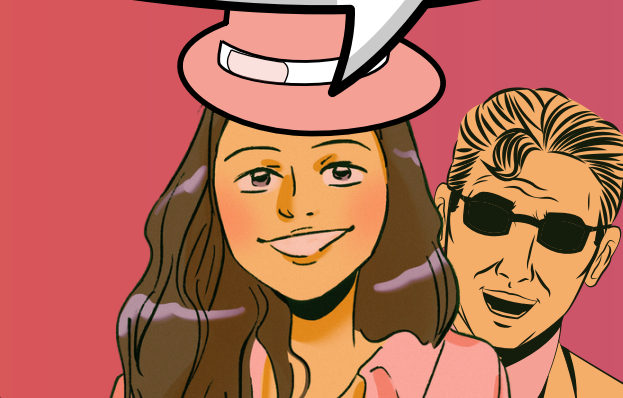
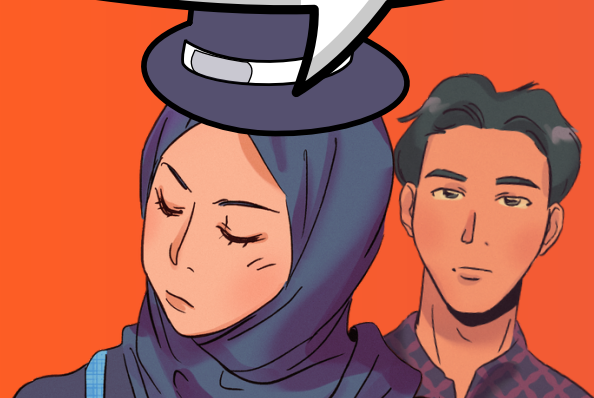
Some scientists are questioning the accuracy of carbon dating. What can we truly know?

Nature is too perfect and complex to be all just a result of mere random mutations

Those who question the dogma of evolution are often marginalized in academic circles

Nobody is allowed to take our freedom to question widely accepted theories.

What about the missing links in the human evolution chain? The Cambrian explosion?



The civility Crusaders

Manipulating through "Weaponized Norms"

Saving face is universally considered polite in social interactions ([Brown & Levinson, 1987](#)). Public face-threatening acts like being "debunked" can elicit negative emotions even in bystanders, which manipulators capitalize on when attacking an opponent's tone, **shifting the focus from the scientific argument** and putting the target on the defensive. Bystanders experiencing perceived breaches of politeness norms may also be more likely to dismiss the target's argument due to cognitive biases such as the horn effect ([Noor et al., 2023](#)).

An extreme version is [DARVO](#), where the manipulator assumes a victimized position and **casts the critic as offender to minimize and distract** from wrong-doing. ([Harsey & Freyd, 2020](#))

The uncertainty Inflaters

Manipulating through "Cherry-Picking"

Our brains avoid uncertainty and rely on quick but inaccurate heuristics ([Gigerenzer & Gaissmaier, 2011](#)). We tend to generalize and attribute complex phenomena to single causes ([Gilovich et al., 2002](#)). **The declaration of uncertainties is a normal and welcome part in scientific studies** that often gets used against them by **undue inflation** of their scope and relevance.

Media manipulators also exploit our **tendency to generalize or oversimplify** by **cherry-picking isolated findings** or alternative theories that **superficially explain a phenomena** but seem to **contradict the scientific consensus** ([Diethelm & McKee, 2009](#)), thereby **downplaying the weight of evidence** and all other relevant factors.

The back-to-nature Zealots

Manipulating through "Intuitive Appeals"

We value many aspects of our natural world, ranging from the experiential to the utilitarian, aesthetic, symbolic, humanistic, or moralistic ([Kellert, 1993](#)). **Our intuitions about purity, perceived health benefits, and a belief in the inherent goodness of nature** shape our emotional connections and ethical responsibilities toward nature, making us receptive to appeals that emphasize natural solutions and products ([Rozin et al., 2012](#)).

By stressing a faux superiority of natural solutions over contemporary, evidence-based methods, behaviors or products, **media manipulators can evoke a sense of "unnaturalness"** within us and thereby cultivate resistance towards unwelcome scientific findings. ([Scott et al., 2016](#) & [Philipp-Muller et al., 2022](#))

The faux-persecuted Truthtellers

Manipulating through "Elite Resentment"

Trusted representatives are essential to believe the explanations provided by public institutions ([Fiske & Dupree, 2014](#)). Media manipulators often create a **false perception of representatives as an oppressive "establishment" or "elite" to cast themselves as the repressed underdog** in an epic battle against the odds, which appeals to our innate sense of fairness, empathy, and desire for excitement ([Vandello et al., 2017](#)).

The shtick of the *'persecuted lone truthteller'* can mobilize conspiratorially motivated audiences against science by exploiting traits such as narcissism and overconfidence ([Cichocka et al., 2022](#) & [Pennycook et al., 2022](#)) or to a desire to be seen as an original freethinker who distinguishes himself from the 'sheeple' ([Imhoff et al., 2017](#) & [van Prooijen, 2019](#)).

The counterfeit Freedom Fighters

Manipulating through "Motivated Reactance"

Freedom is a fundamental human value. Psychological reactance is an emotional reaction which prompts people to resist influence of others and restore their autonomy. **Reactance is based on perception** and occurs when core values or self-identity are challenged ([Steindl et al., 2015](#)). Vicarious reactance occurs when individuals perceive another's freedom to be restricted, and can even be elicited without conscious awareness ([Wellman & Geers, 2009](#), [Chartrand et al., 2007](#)).

Media manipulators often exploit this phenomenon **by portraying scientific guidelines and regulations as infringements on personal freedom**, leading to resistance or rejection of these guidelines in an effort to reassert autonomy ([Laurin et al., 2013](#)).

The gish-galloping Whataboutists

Manipulating through "Red Herring"

Human beings have a strong inherent inclination towards fairness and consistency ([Fehr & Schmidt, 1999](#)). We also have the social expectation that raised points in a discussion should be answered ([Portner, P., 2004](#)).

Rhetorically gifted media manipulators abuse these inclinations by **gish-galloping the audience with rapid-fire "what about..." arguments**, highlighting supposed controversies, past errors, unproven theories or anecdotal findings. Each (commonly irrelevant) whataboutism need not hold up under scrutiny, because the **overall goal of manipulators is to imply hypocrisy** or bias when counter-arguments aren't provided for each point, or to divert **the discussion from the central issue** ([Bowell, 2023](#) & [Andersen et al., 2011](#)).