

Giving Facts a fighting chance against misinformation

Bärbel Winkler and John Cook

vEGU21 – EOS7.10 – Tuesday April 27, 2021



Why resources to fight misinformation are needed



To counter the facts about human-caused climate change we are being bombarded with a massive wave of misinformation about climate change. Vested interests, political polarization, the global nature of climate change, and misinformation add up to a perfect psychological storm, preventing people from accepting the reality of climate change.



Recognising this problem provides the answer to how to respond to misinformation. We need to help people discern the difference between fact and fiction when faced with conflicting information. We can do this by explaining the techniques used to distort the facts. This is like exposing the sleight of hand behind a magician's trick. Once people see the technique behind a misleading argument, that misinformation loses its influence.

Index to Resources



Skeptical Science



History of FLICC



MOOC Denial101x



FLICC Poster



The Conspiracy Theory Handbook



The Debunking Handbook 2020



Cranky Uncle

Skeptical Science

<https://skepticalscience.com>

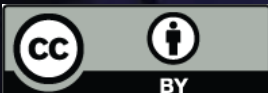


Skeptical Science (SkS) is a website and registered non-profit science education organization with international reach founded by John Cook in 2007. The main purpose of SkS is to debunk misconceptions and misinformation about human-caused climate change and features a database that currently has more than 200 rebuttals based on peer-reviewed literature. SkS has evolved from a one-person operation to a team project with volunteers from around the globe. The Skeptical Science team also actively contribute to published research, with one of the highlights being the often cited 97% consensus paper published in 2013.

For detailed information about Skeptical Science please check the display presented at EGU2020

<https://sks.to/egu2020-display>

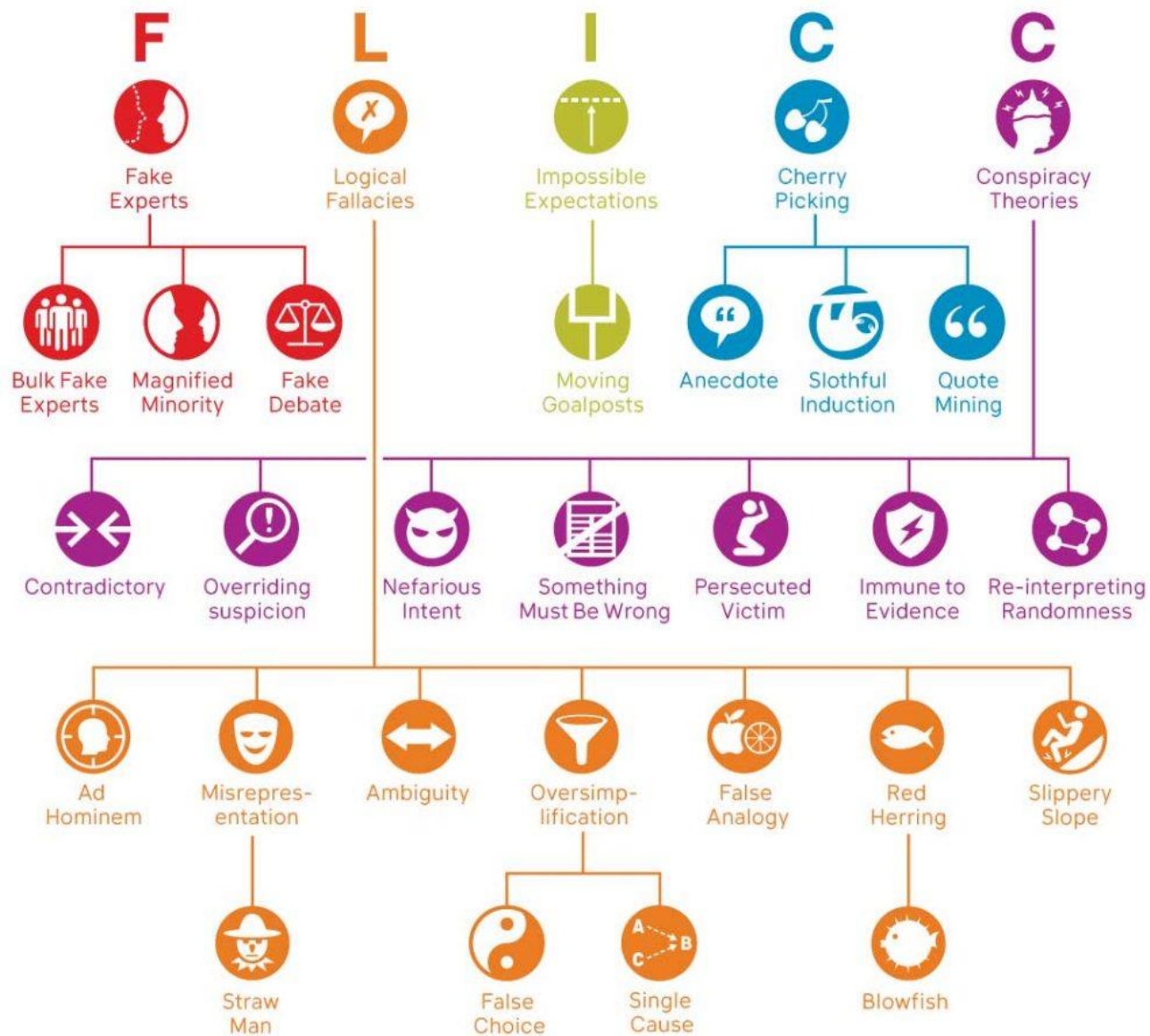
[Main Index](#)



FLICC – the techniques of science denial

<https://sks.to/flicc>

Techniques of Science Denial



FLICC is a framework originally proposed by Mark Hoofnagle in 2007 who listed the five techniques of science denial: fake experts, logical fallacies, impossible expectations, cherry picking and conspiracy theories. These five main techniques are however just the tip of the iceberg and John Cook has gradually been building up a landscape of different techniques used to mislead. In 2015 FLICC became the underlying framework when Skeptical Science collaborated with the University of Queensland to develop the free online course Denial101x: Making Sense of Climate Science Denial.

Main Index

Denial101x – Making sense of climate science denial

See session: Bärbel Winkler and John Cook - vEGU21 – EOS3.2 – Abstract 8576 Monday April 26, 2021

Lectures follow the Fact-Myth-Fallacy structure of effective debunking

Interactive exercises which often trigger discussions in the forums

Massive Open Online Course



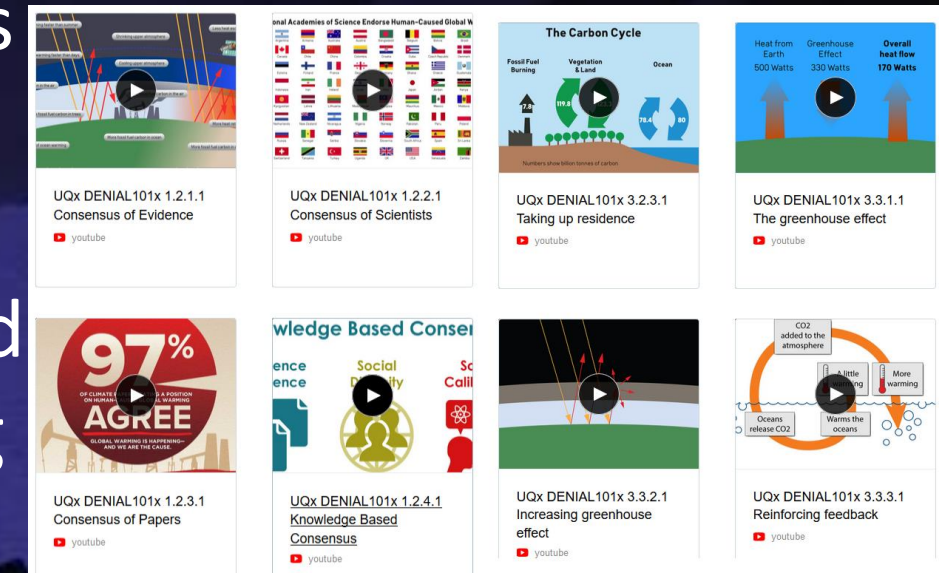
40.000+ participants from 180+ countries since 2015



40 expert interviews to go along with the lectures
Main Index



60 lectures about climate science and debunking misconceptions



3 ELEMENTS TO AN EFFECTIVE DEBUNKING

FACT
Replace the myth with a factual alternative that meets all the causal requirements left by the myth. Ideally, the fact is more compelling and memorable than the myth.

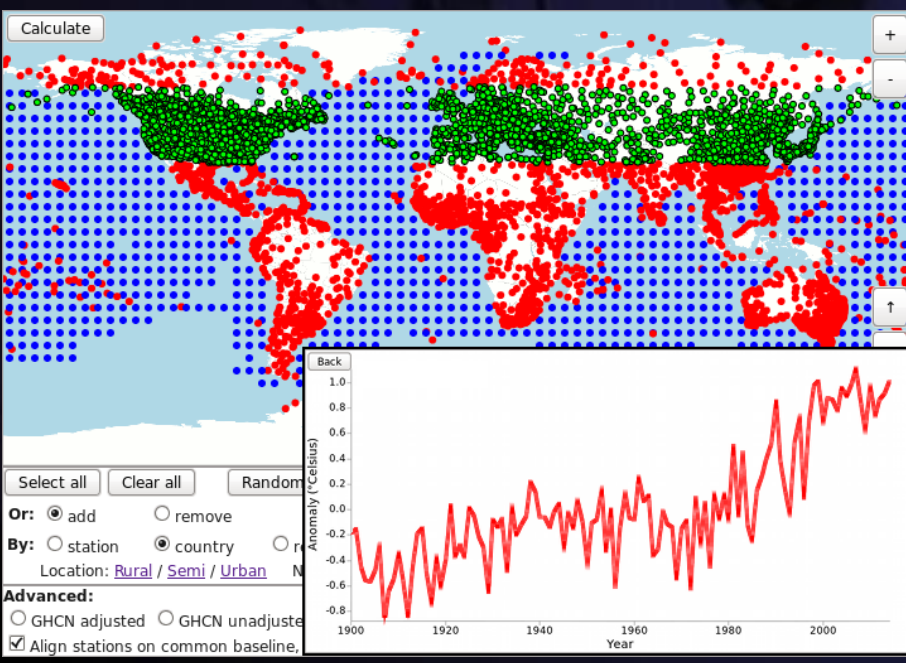
THE GOLDEN RULE OF DEBUNKING
Fight Sticky Myths... With Stickier Facts

MYTH/MISCONCEPTION
Mentioning the myth risks a familiarity backfire effect. Here are three techniques to reduce the risk of a backfire effect:

- Emphasise the fact rather than the myth
- Warn people before mentioning the myth
- Explain the myth's fallacy

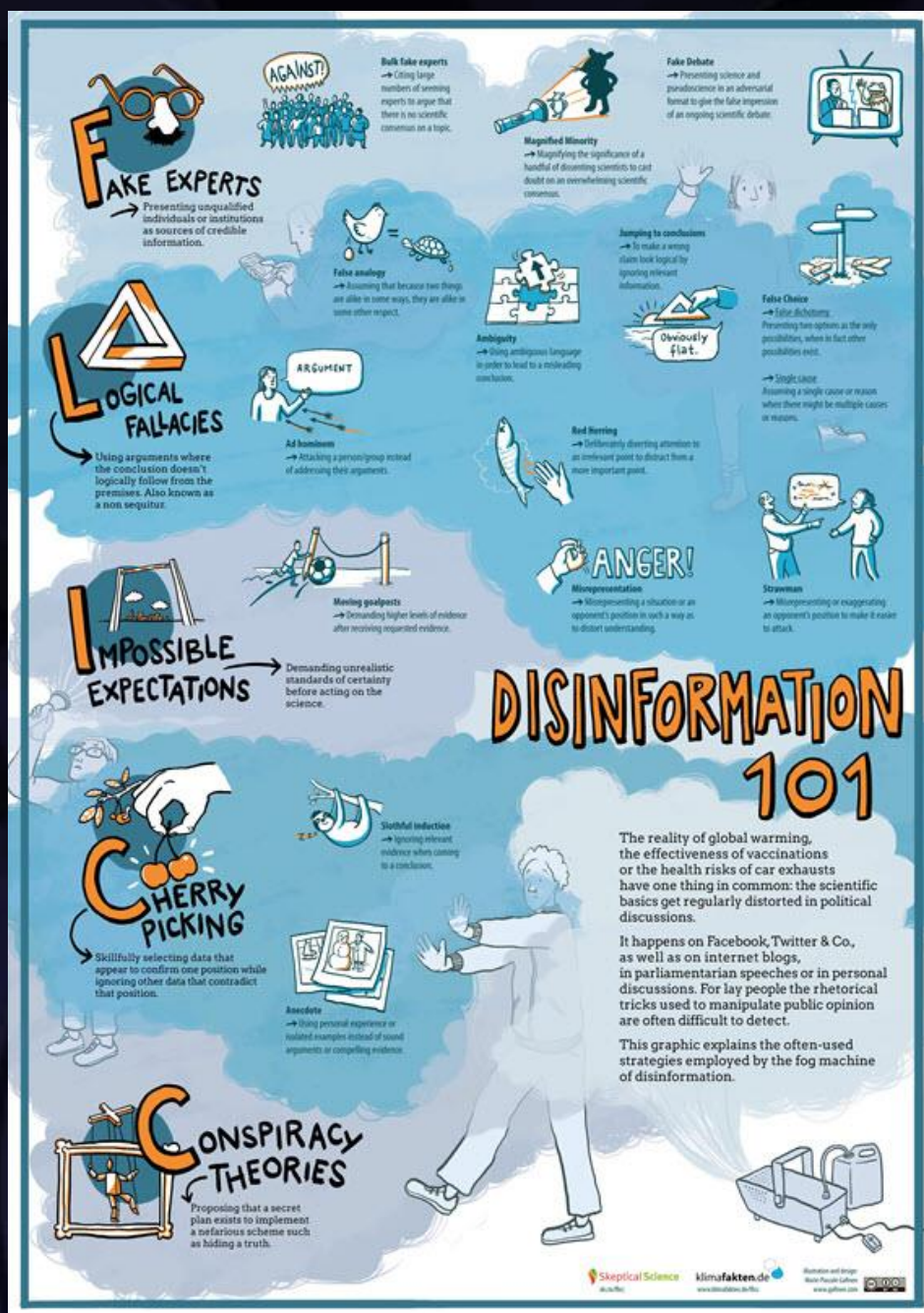
FALLACY
Explain the technique used by the myth to distort the fact. This enables people to reconcile the fact with the myth.

- F: Fake Experts
- L: Logical Fallacies
- I: Impossible Expectations
- C: Cherry Picking
- C: Conspiracy Theories



The FLICC Poster

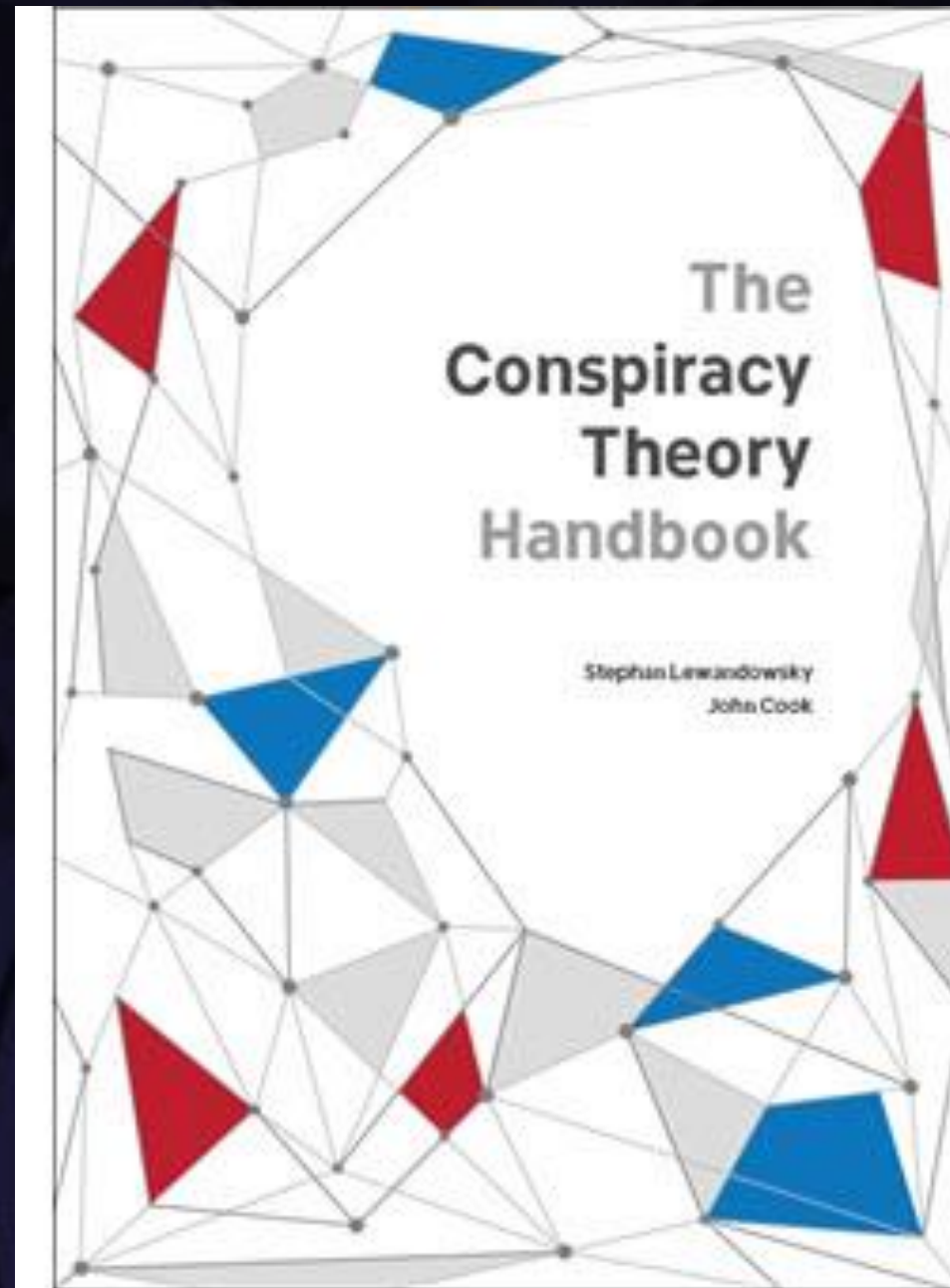
<https://klimafakten.de/FLICC>



The FLICC Poster is the result of a successful collaboration between Skeptical Science and its German language partner website klimafakten.de. The poster's first version was in German but the idea to also create an English version soon came up. This however involved more than simply translating the text as some terms are different and what is "cherry picking" in English, is called "picking raisins" in German. The poster can be downloaded from klimafakten.de in various formats and it can also be ordered free of charge as a DIN A2 printout. For more about the creation of the poster please check <https://sks.to/FLICC-poster>.

The Conspiracy Theory Handbook

<https://sks.to/conspiracy>



Conspiracy theories attempt to explain events as the secretive plots of powerful people. While conspiracy theories are not typically supported by evidence, this doesn't stop them from blossoming. Conspiracy theories damage society in a number of ways. To help minimise these harmful effects, The Conspiracy Theory Handbook written by Stephan Lewandowsky and John Cook explains why conspiracy theories are so popular, how to identify the traits of conspiratorial thinking, and what are effective response strategies.

The Handbook distills the most important research findings and expert advice on dealing with conspiracy theories. It also introduces the abbreviation CONSPIR which serves as a mnemonic to more easily remember these seven traits of conspiratorial thinking.

[Main Index](#)

The seven traits of conspiratorial thinking

TRAITS OF CONSPIRATORIAL THINKING



Contradictory



Conspiracy theorists can simultaneously believe in ideas that are mutually contradictory. For example, believing the theory that Princess Diana was murdered but also believing that she faked her own death.³⁰ This is because the theorists' commitment to disbelieving the "official" account is so absolute, it doesn't matter if their belief system is incoherent.

Overriding suspicion



Conspiratorial thinking involves a nihilistic degree of skepticism towards the official account.³¹ This extreme degree of suspicion prevents belief in anything that doesn't fit into the conspiracy theory.

Nefarious intent



The motivations behind any presumed conspiracy are invariably assumed to be nefarious.³¹ Conspiracy theories never propose that the presumed conspirators have benign motivations.

Something must be wrong



Although conspiracy theorists may occasionally abandon specific ideas when they become untenable, those revisions don't change their overall conclusion that "something must be wrong" and the official account is based on deception.^{24,30}

Persecuted victim



Conspiracy theorists perceive and present themselves as the victim of organized persecution.²⁹ At the same time, they see themselves as brave antagonists taking on the villainous conspirators. Conspiratorial thinking involves a self-perception of simultaneously being a victim and a hero.

Immune to evidence



Conspiracy theories are inherently self-sealing—evidence that counters a theory is re-interpreted as originating from the conspiracy.^{31,32,33} This reflects the belief that the stronger the evidence against a conspiracy (e.g., the FBI exonerating a politician from allegations of misusing a personal email server), the more the conspirators must want people to believe their version of events (e.g., the FBI was part of the conspiracy to protect that politician).

Re-interpreting randomness



The overriding suspicion found in conspiratorial thinking frequently results in the belief that nothing occurs by accident.³⁴ Small random events, such as intact windows in the Pentagon after the 9/11 attacks, are re-interpreted as being caused by the conspiracy (because if an airliner had hit the Pentagon, then all windows would have shattered³⁵) and are woven into a broader, interconnected pattern.

The Debunking Handbook 2020

<https://sks.to/debunk2020>



The Debunking Handbook 2020 is a consensus document that was created by an innovative process that involved a series of predefined steps, all of which were followed and documented and are publicly available. 19 co-authors were invited by the three lead authors Stephan Lewandowsky, John Cook and Ullrich Ecker based on their scientific status in the field, and they all agreed on all points made in the handbook. They therefore believe that the new Handbook reflects the scientific consensus about how to combat misinformation. The next slides provide summaries of the key findings as well as excerpts published on Skeptical Science.

Main Index

The Debunking Handbook 2020 (1)

<https://sks.to/debunk2020-part1>



Misinformation is false information that is spread either by mistake or with intent to mislead. When there is intent to mislead, it is called disinformation. Misinformation has the potential to cause substantial harm to individuals and society. It is therefore important to protect people against being misinformed, either by making them resilient against misinformation before it is encountered or by debunking it after people have been exposed.

Fact-checking can reduce people's beliefs in false information. However, misinformation often continues to influence people's thinking even after they receive and accept a correction—this is known as the “continued influence effect”¹. Even if a factual correction seems effective—because people acknowledge it and it is clear that they have updated their beliefs—people frequently rely on the misinformation in other contexts, for example when answering questions only indirectly related to the misinformation. It is therefore important to use the most effective debunking approaches to achieve maximal impact.

[Main Index](#)

The Debunking Handbook 2020 (2)

<https://sks.to/debunk2020-part2>



**Prevent mis-
information
from sticking
if you can**

Because misinformation is sticky, it's best preempted. This can be achieved by explaining misleading or manipulative argumentation strategies to people—a technique known as “inoculation” that makes people resilient to subsequent manipulation attempts. A potential drawback of inoculation is that it requires advance knowledge of misinformation techniques and is best administered before people are exposed to the misinformation.

[Main Index](#)

The Debunking Handbook 2020 (3)

<https://sks.to/debunk2020-part3>



The elusive backfire effects

“On balance, recent evidence provides no reason to avoid debunking for fear of a backfire effect. Debunking is likely to be at least partially effective, except for some limited circumstances when people’s worldviews are being challenged.”

Ten years ago, scholars and practitioners were concerned that corrections may “backfire”; that is, ironically strengthen misconceptions rather than reduce them. Recent research has allayed those concerns: backfire effects occur only occasionally and the risk of occurrence is lower in most situations than once thought.

Do not refrain from attempting to debunk or correct misinformation out of fear that doing so will backfire or increase beliefs in false information

[Main Index](#)

The Debunking Handbook 2020 (4)

<https://sks.to/debunk2020-part4>



**Debunk often
and properly**

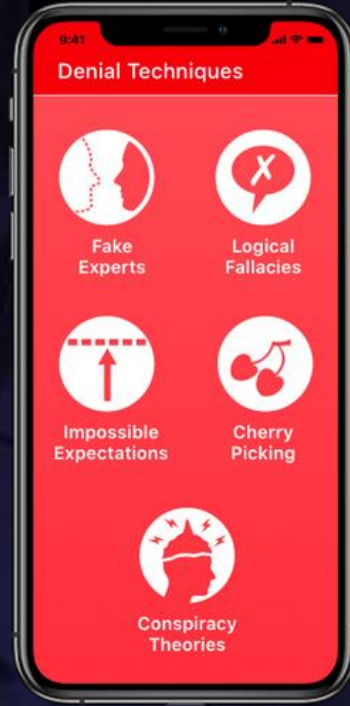
If you cannot preempt, you must debunk. For debunking to be effective, it is important to provide detailed refutations. Provide a clear explanation of (1) why it is now clear that the information is false, and (2) what is true instead. When those detailed refutations are provided, misinformation can be “unstuck.” Without detailed refutations, the misinformation may continue to stick around despite correction attempts.

Simple corrections on their own are unlikely to fully unstuck misinformation. Tagging something as questionable or from an untrustworthy source is not enough in the face of repeated exposures.

[Main Index](#)

Cranky Uncle App

<https://crankyuncle.com/game>



John Cook's research into inoculation against misinformation led him to develop the Cranky Uncle game which builds public resilience against misinformation by explaining the techniques of science denial.

The way the game works, is that a cranky uncle basically mentors players into how to become a science denying cranky uncle by explaining all the different techniques that he uses to reject science.

Cranky Uncle goes through each denial technique and says "well here is one way that I deny science" and then he use a lot of analogies and a lot of cartoon examples as a way of explaining those logical fallacies.



Main Index



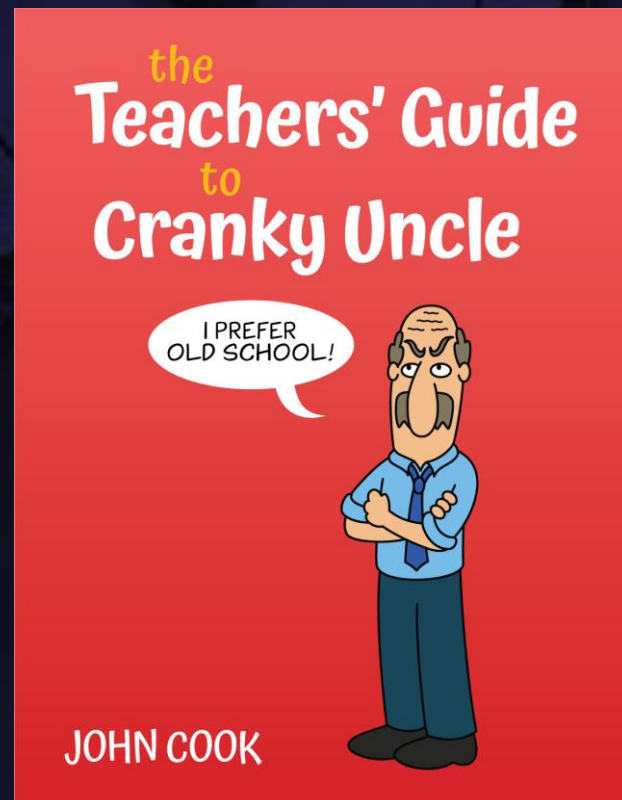
Cranky Uncle App

<https://crankyuncle.com/game>



Then the game gets people practicing critical thinking. It shows them examples of misinformation and then they have to try to identify which fallacy or denial technique is in that example. The idea of the game is, that once they have learnt a denial technique, to practice that knowledge through repeated quizzes. Because of elements of gameplay, like scoring points or leveling up, it incentivizes players to practice more - and the more they practice the more inoculated they get against misinformation.

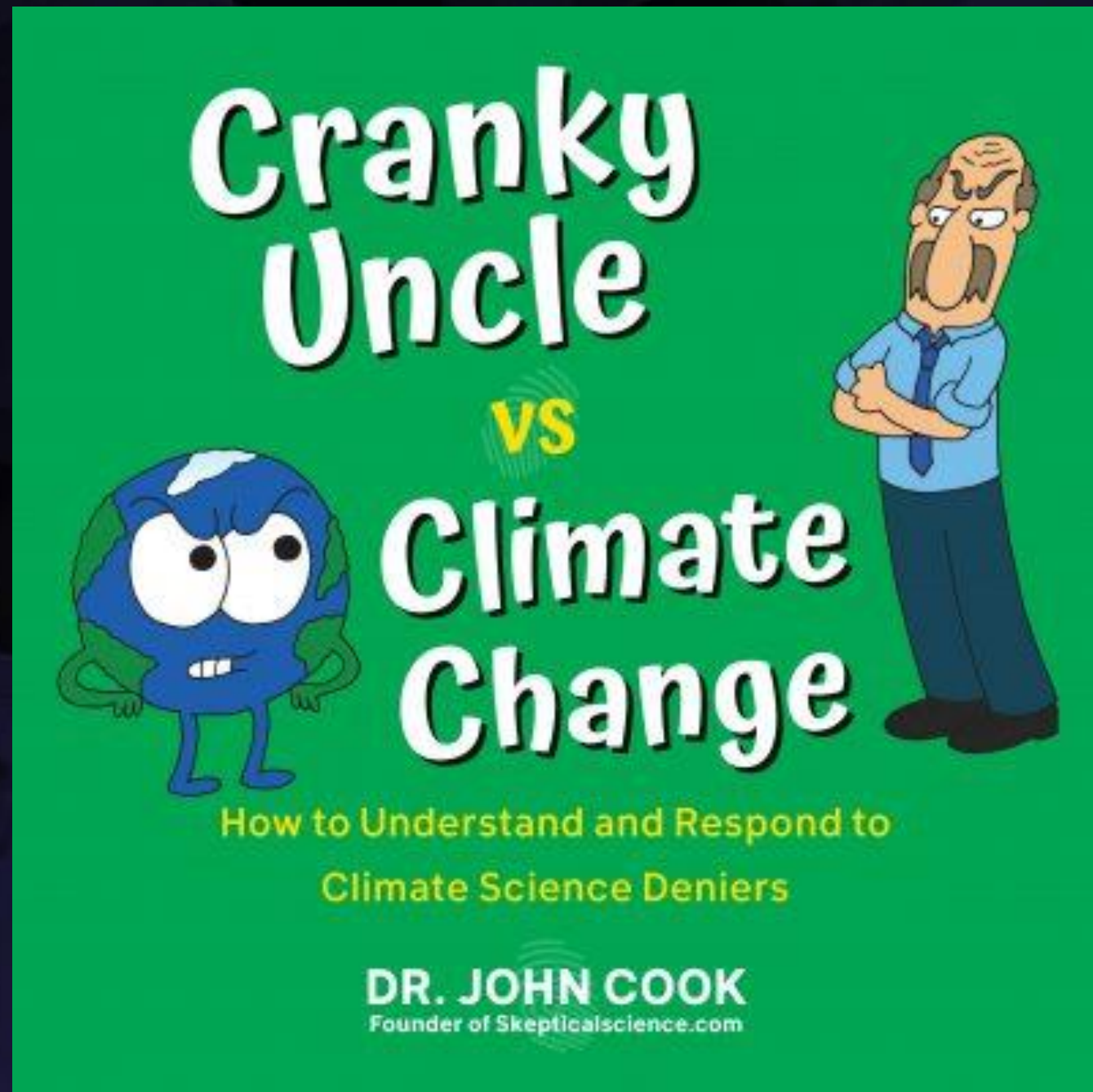
The Teachers' Guide to Cranky Uncle explains the science behind the game and contains resources for various class activities. You can sign up for a group code at <https://sks.to/crankyclass>



[Main Index](#)

Cranky Uncle Book

<https://crankyuncle.com/book>



CRANKY UNCLE vs. CLIMATE CHANGE: How to Understand and Respond to Climate Science Deniers helps climate leaders explain to science deniers – like the proverbial cranky uncle – how we got to this point, how to spot the telltale characteristics of science denial and how to counter them.

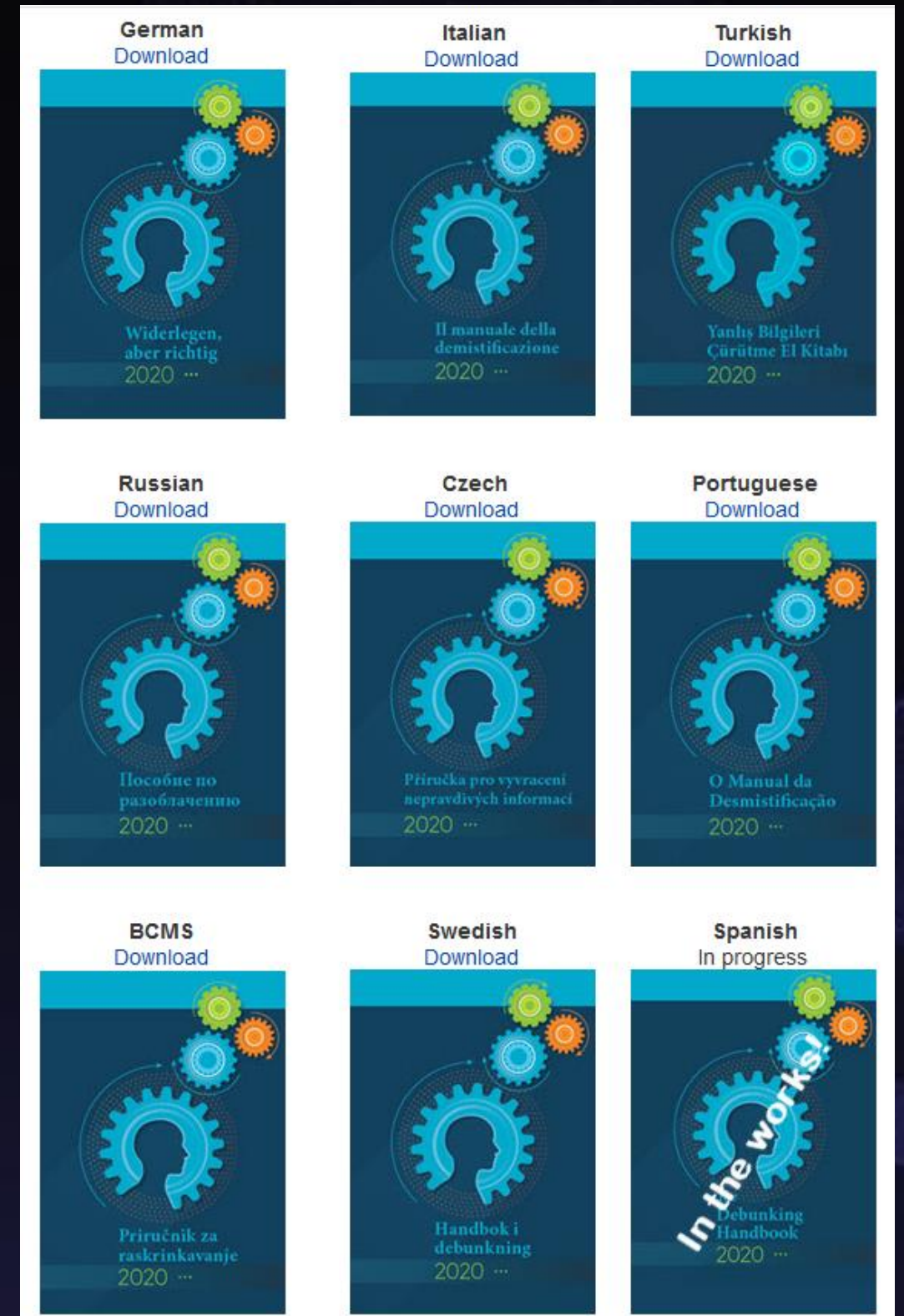
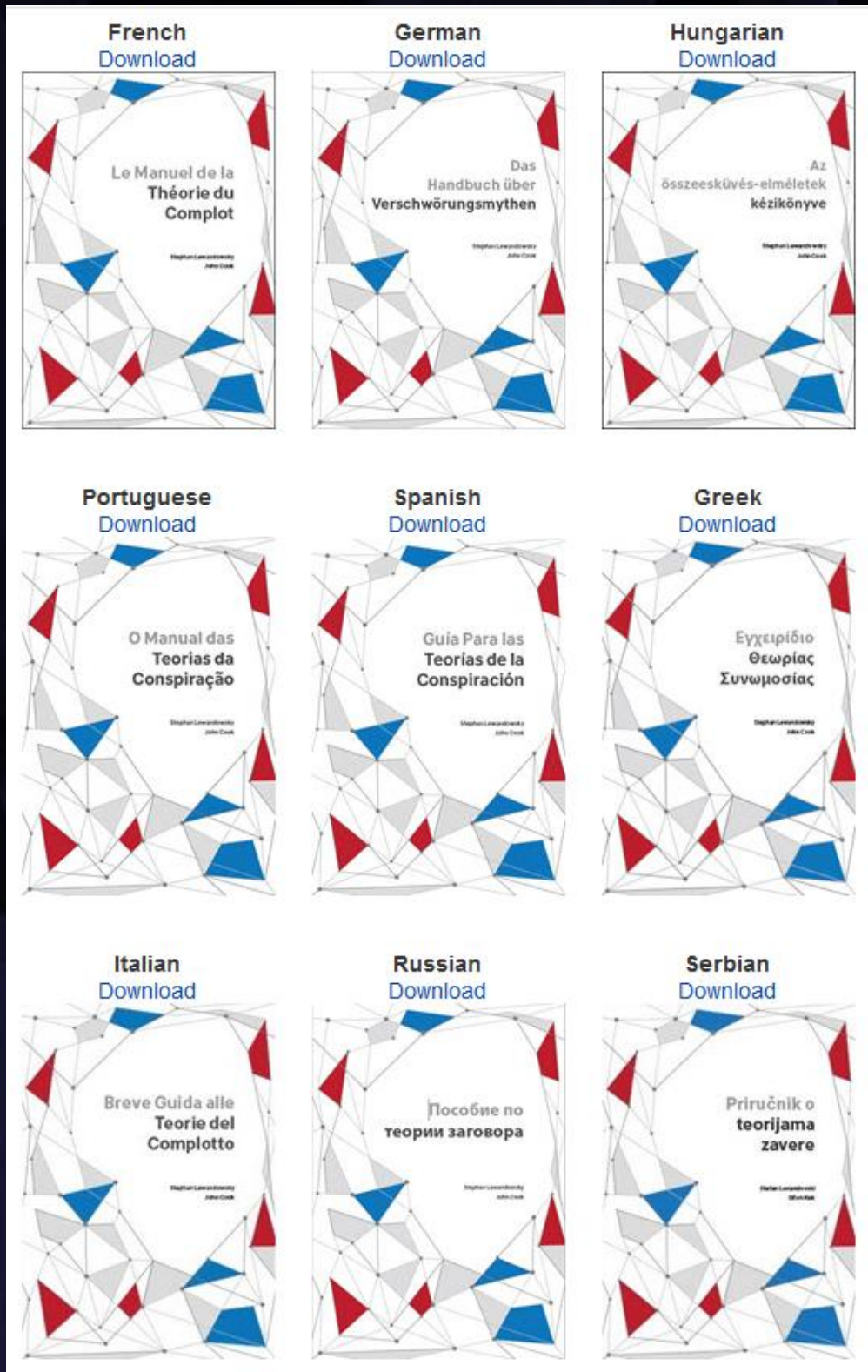
The book is an ingenious blend of John Cook's skills as a cartoonist, his Ph.D in the cognitive psychology of misinformation, and reams of data to create a unique book that will help you spot myths and fallacies to counter science and solutions deniers.

[Main Index](#)

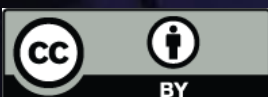
Translations

Thanks to volunteer translation efforts around the globe, The Conspiracy Theory Handbook as well as The Debunking Handbook 2020 are available in many languages already. More translations are currently in the works. We also plan to create translated versions of the Cranky Uncle game and hope to get this underway later this year.

If you are interested to help with translations, please get in touch with us via our contact form at <https://sks.to/contact> and pick “Enquiry about translations” from the drop-down list.



Main Index



QR-Codes to some resources



Website Skeptical
Science



John Cook's Cranky
Uncle website



MOOC Denial101x



The Debunking
Handbook 2020



The Conspiracy
Theory Handbook



History of FLICC



FLICC Poster

Main Index

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[Main Index](#)

Resources & References

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Main Index