

Skeptical Science: Giving facts a fighting chance against (climate) misinformation

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Skeptical Science

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- Introduction
- History
- Rebuttals
- Myth Debunking
- Projects
- Resources



The screenshot shows the Skeptical Science website. At the top, there's a navigation bar with links: Home, Arguments, Software, Resources, Comments, The Consensus Project, Translations, About, and Support. Below this is a search bar and social media icons for Twitter, Facebook, YouTube, and MeWe. A section titled "MOST USED Climate Myths" lists ten common misconceptions about climate change, such as "Climate's changed before" and "It's the sun". To the right, there's a main article titled "Explaining climate change science & rebutting global warming misinformation" by Doug Bostrom and Marc Kodack, dated June 8, 2023. The article discusses the mission of the website to debunk climate misinformation. Below the article, there are three featured sections: "Newcomers, start here", "History of Climate Science", and "The Big Picture". On the right side of the website, there's a sidebar with a cartoon character "Cranky Uncle" and a badge from the Australian Museum Eureka Prize.

Skeptical Science
Getting skeptical about global warming skepticism

Home Arguments Software Resources Comments The Consensus Project Translations About Support

Search... GO

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MOST USED Climate Myths
and what the science really says...

- 1 Climate's changed before
- 2 It's the sun
- 3 It's not bad
- 4 There is no consensus
- 5 It's cooling
- 6 Models are unreliable
- 7 Temp record is unreliable
- 8 Animals and plants can adapt
- 9 It hasn't warmed since 1998
- 10 Antarctica is gaining ice

[View All Arguments...](#)

Explaining climate change science & rebutting global warming misinformation

Global warming is real and human-caused. It is leading to large-scale climate change. Under the guise of climate "skepticism", the public is bombarded with misinformation that casts doubt on the reality of human-caused global warming. This website gets skeptical about global warming "skepticism".

Our mission is simple: debunk climate misinformation by presenting peer-reviewed science and explaining the techniques of science denial, discourses of climate delay, and climate solutions denial.

Skeptical Science New Research for Week #23 2023
Posted on 8 June 2023 by Doug Bostrom, Marc Kodack

Open access notables

Back in April of 2020 Chi Xu et al. captivated some public attention with their paper [Future of the human climate niche](#), which explained a reasonable case for its startling conclusion about routine habitability of large parts of our planet now supporting dense populations. Now come the same researchers along with added talent to refine and extend those results, and the news isn't getting better. [Quantifying the human cost of global warming](#) paints a grim picture. Here are our stakes in play, as reflected in the abstract:

The costs of climate change are often estimated in monetary terms, but this

Cranky Uncle
Critical thinking about climate change

Winner of the 2011 Australian museum Eureka Prize Advancement of climate change knowledge

INTRODUCTION TO SKEPTICAL SCIENCE

Skeptical Science (SkS)

- ... is an international website and non-profit science education organization
- ... was founded by John Cook in 2007
- ... debunks misconceptions and misinformation about human-caused climate change
- ... features a database with more than 200 rebuttals based on peer-reviewed literature
- ... is a team project with volunteers from around the globe
- ... actively contributes to published research, with one of the highlights being the often cited 97% consensus paper published in 2013.

HISTORY OF SKEPTICAL SCIENCE - Part 1



Skeptical Science (SkS) went live with John Cook publishing his rebuttal database in July 2007.



Twenty-something blog posts were published in what John Cook called a pretty boring year.



Skeptical Science became active on Facebook and Twitter. Translations were introduced.



The introduction of three levels of complexity for the rebuttals was pivotal as the author team was born.



More than 580 blog posts were written by 85 authors and SkS won the Eureka Prize from the Australian museum.



SkS increased its reach with research summaries, detailing the history of climate science and more.



Members of the SkS team published a study finding a 97% consensus among papers stating a position on human-caused global warming.



The SkS-team continued publishing research papers and ran the „97hours of consensus“ campaign.

HISTORY OF SKEPTICAL SCIENCE - Part 2



Collaborating with the University of Queensland the MOOC Denial101x gets launched.



SkS receives the „Friends of the Planet award“ from NCSE.



Skeptical Science celebrates its 10th Birthday and daily rebuttal views can be tracked.



Team members contribute to the IPCC 1.5°C report and more myth-debunking resources are published.



Our consensus paper published in 2013 hits one million downloads in July!



Several resources to help with debunking were published with SkS involvement.



The Cranky Uncle game gets launched and several handbook translations become available.



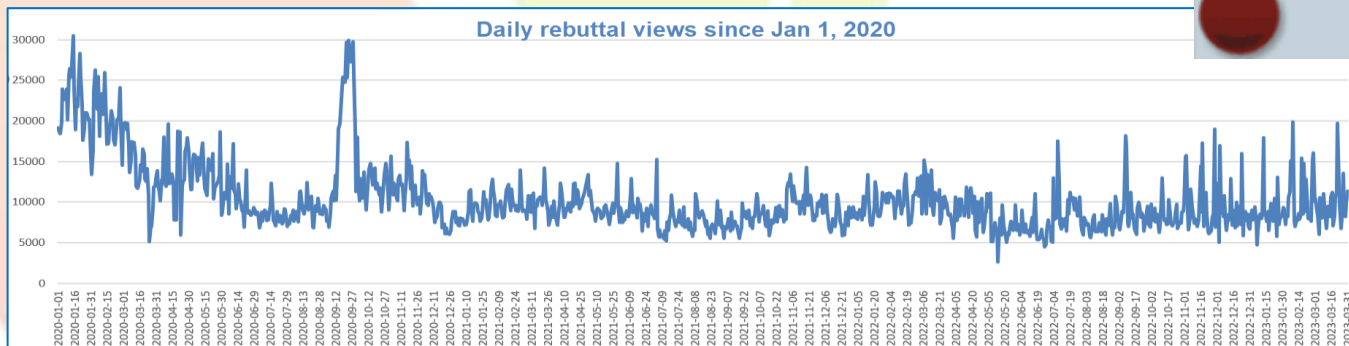
Cranky Uncle „learns“ new languages and conference participations become routine.

REBUTTALS

THE REBUTTALS

Rebuttals

- ... are the backbone of Skeptical Science
- ... tackle common misconceptions about global warming such as "It's not happening", "It's not us", "It's not bad", and "It's too hard".
- ... come with explanations in basic, intermediate, and advanced versions
- ... reference peer-reviewed primary research
- ... are regularly viewed, some more than 10,000 times per month.
- ... are listed by popularity, fixed numbers or taxonomic categories for systematic access.



MOST USED Climate Myths

and what the science really says..

- 1 Climate's changed before
 - 2 It's the sun
 - 3 It's not bad
 - 4 There is no consensus
 - 5 It's cooling
 - 6 Models are unreliable
 - 7 Temp record is unreliable
 - 8 Animals and plants can't tell
 - 9 It hasn't warmed since 1998
 - 10 Antarctica is gaining ice
- [View All Arguments...](#)

Global Warming & Climate Change Myths

Here is a summary of global warming and climate change myths, sorted by recent popularity vs what science says. Click the response for a more detailed response. You can also view them sorted by taxonomy, by popularity, in a print-friendly version, with short URLs or with fixed numbers you can use for permanent references.

Climate Myth	vs	What the Science Says
1 "Climate's changed before"		Climate reacts to whatever forces it to change at the time; humans are now the dominant forcing.
2 "It's the sun"		In the last 35 years of global warming, sun and climate have been going in opposite directions
3 "It's not bad"		Negative impacts of global warming on agriculture, health & environment far outweigh any benefits.
4 "There is no consensus"		97% of climate scientists agree that global warming is happening and caused by humans.

Climate Myths sorted by taxonomy

- **It's not happening**
 - Temp record is unreliable
 - Hockey stick is broken
 - Tree-rings diverge from temperature after 1960
 - Ljungqvist broke the hockey stick
 - Dropped stations introduce warming bias
 - It's Urban Heat Island effect
 - 1934 - hottest year on record
 - It's microsite influences
 - Satellite error inflated Great Lakes temperatures
 - Satellite record is more reliable than thermometers
 - It's cooling
 - We're heading into an ice age
 - It's freaking cold!
 - 2009-2010 winter saw record cold spells
 - Record snowfall disproves global warming
 - Record high snow cover was set in winter 2008/2009
 - Oceans are cooling
 - It hasn't warmed since 1998
 - Phil Jones says no global warming since 1995
 - Global warming stopped in 1998, 1999, 2002, 2007, 2010, 2014, 2017, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 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3835,

CHALLENGES & ISSUES

- Availability of volunteers
- Finding helping hands for specific time-consuming and often rather mundane tasks (like fixing broken links or keeping published materials current)
- Most of the rebuttals were created between 2007 and 2010
- Content of many hadn't been "properly" updated in the last 5 years or more.

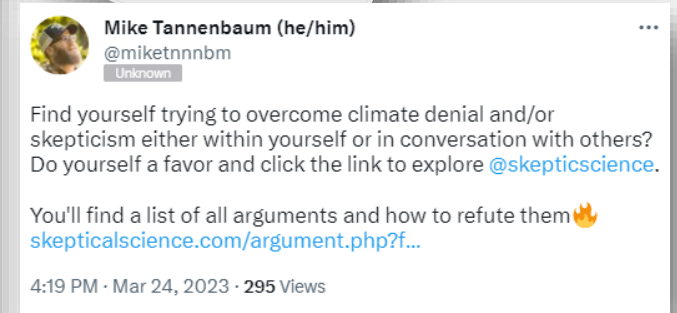
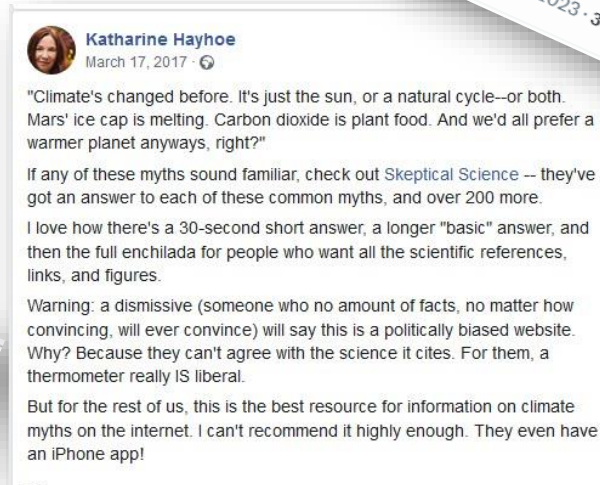
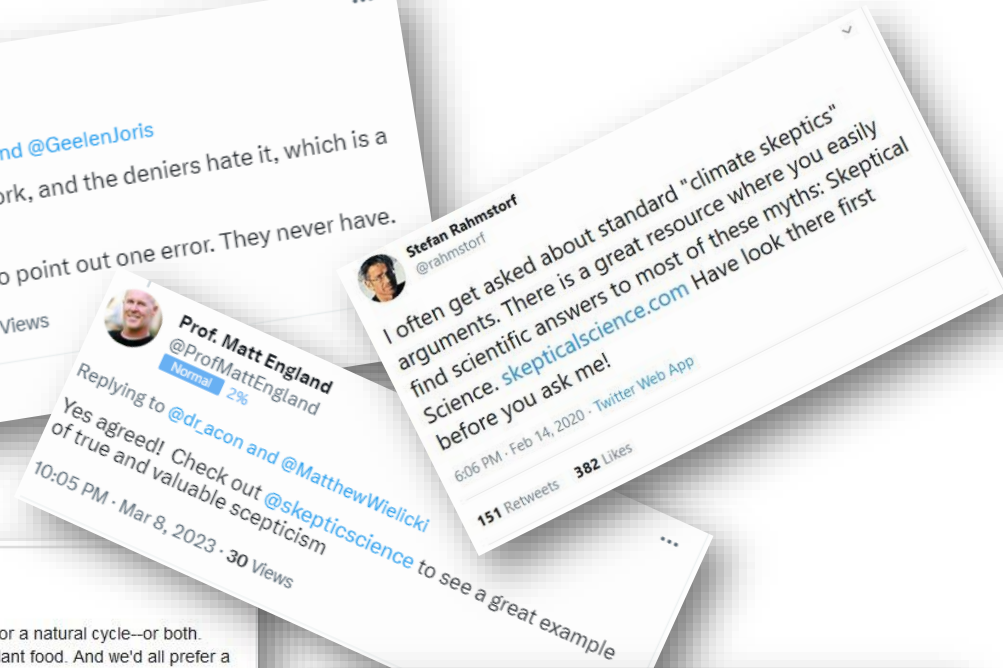
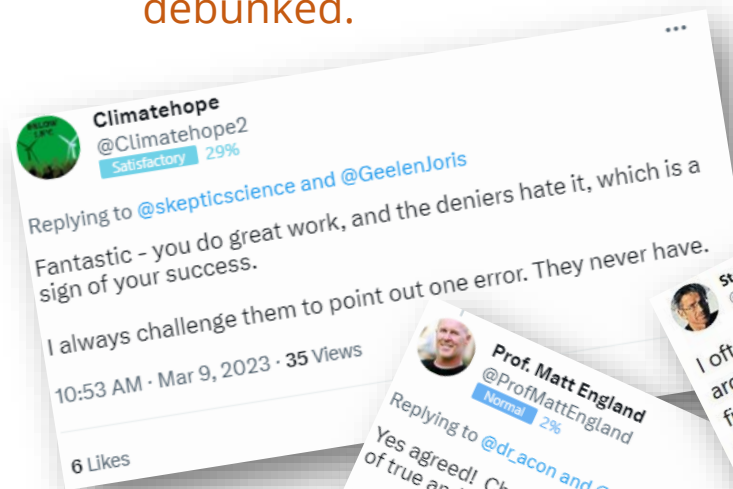
These add up to a rather big issue with rebuttals countering climate myths and misinformation as the information provided should be as current as possible.

Code	Argument Title	Rebuttal Level	Rebuttal Status	Date Created	Last Rebuttal Update
1970s	Ice age predicted in the 70s	Basic	Published	2007-05-08	2015-07-05
1998	It hasn't warmed since 1998	Basic	Published	2007-05-09	2017-09-29
antarctica	Antarctica is gaining ice	Basic	Published	2007-05-21	2020-01-31
climategate	Climategate CRU emails suggest conspiracy	Basic	Started	2009-11-21	2010-08-12
hockey	Hockey stick is broken	Basic	Started	2007-05-08	2010-08-12
lag	CO2 lags temperature	Basic	Published	2007-05-08	2021-04-21
past	Climate's changed before	Basic	Published	2007-05-21	2015-08-06
sun	It's the sun	Basic	Published	2007-05-18	2017-04-02
temp	Temp record is unreliable	Basic	Published	2007-08-11	2017-08-15
thermo	2nd law of thermodynamics contradicts greenhouse theory	Basic	Published	2010-05-19	2017-10-07

RISK TO PERCEIVED CREDIBILITY

Questions regarding updates on social media and via email

Skeptical Science is often cited as the “go to resource” when myths about climate change need to be debunked.



Skeptical Science

UPDATED REBUTTALS

The newly added “At a Glance” section has its own heading and is visibly set apart from “Further Details” via the blue box containing a link to a feedback form.

The “At a Glance” section varies in length depending on the rebuttal’s topic and how much complexity needs to be explained but is ideally under 500 words.

The screenshot shows the Skeptical Science website interface. At the top, there's a navigation bar with links like Home, Arguments, Software, Resources, Comments, The Consensus Project, Translations, About, and Support. Below this is a search bar and social media icons. The main content area is titled "What evidence is there for the hockey stick?" and includes a "What the science says..." section with a "Select a level..." dropdown (Basic, Intermediate). The "At a glance" section is highlighted with a blue background and contains a brief summary of the Hockey Stick myth, its origin, and a link to the full article. The "Further details" section is also visible, providing more in-depth information. The right sidebar features a "Cranky Uncle" cartoon, a "Winner of the 2011 Australian museum Eureka Prize" badge, a "PROTRUTH PLEDGE" badge, and a "Climate Science CROWD SOURCING FUNDING" badge. The bottom of the page has a "FREE COURSE" section titled "Making sense of climate science denial".

The screenshot shows the Skeptical Science website interface. At the top, there's a navigation bar with links like Home, Arguments, Software, Resources, Comments, The Consensus Project, Translations, About, and Support. Below this is a search bar and social media icons. The main content area is titled "What does past climate change tell us about global warming?" and includes a "What the science says..." section with a "Select a level..." dropdown (Basic, Intermediate). The "At a glance" section is highlighted with a blue background and contains a brief summary of the Greenhouse gases myth, its origin, and a link to the full article. The "Further details" section is also visible, providing more in-depth information. The right sidebar features a "Cranky Uncle" cartoon, a "Winner of the 2011 Australian museum Eureka Prize" badge, a "PROTRUTH PLEDGE" badge, and a "Climate Science CROWD SOURCING FUNDING" badge. The bottom of the page has a "FREE COURSE" section titled "Making sense of climate science denial".

TRANSLATIONS

SkS has provided translation capabilities since 2009 and selected content has been translated into 25 languages. The recently updated or soon to be updated rebuttals account for 480 existing translations in 20 languages.

We published a call for help in June to try and get as many translations as possible updated to include the new at-a-glance section. Volunteers for German, Italian, Spanish, Portuguese, Albanian and Macedonian responded thus far.

																								# of languages
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Calling native speakers to help with translating recently updated rebuttals and add the new AT A GLANCE section!

sksto/transl-at-a-glance

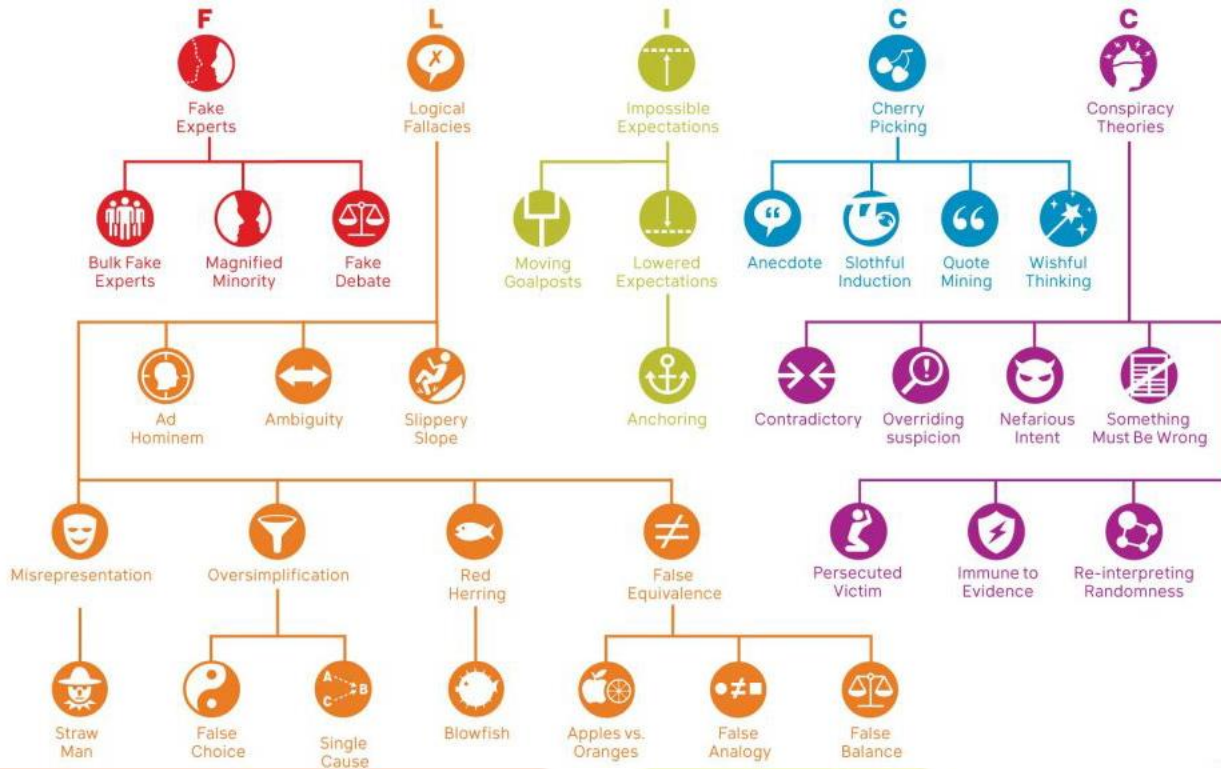


MYTH DEBUNKING



Skeptical Science

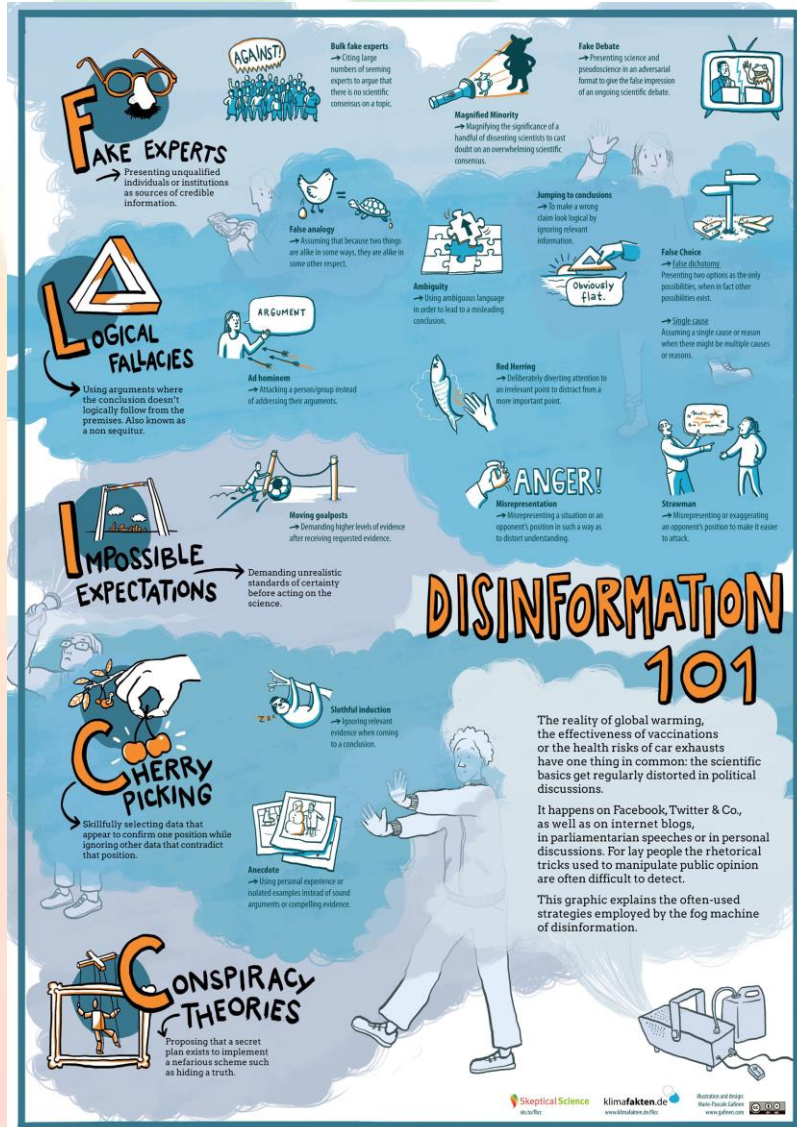
FLICC – THE TECHNIQUES OF SCIENCE DENIAL



- **FLICC** is a framework originally proposed by Mark Hoofnagle in 2007.
- It lists the **five techniques of science denial**:
 - Fake experts
 - Logical fallacies
 - Impossible expectations
 - Cherry picking
 - Conspiracy theories
- John Cook has **expanded the taxonomy** of different techniques used to mislead.
- FLICC became the **underlying framework** for the collaboration between Skeptical Science and the University of Queensland for the **free online course** Denial101x: Making Sense of Climate Science Denial.



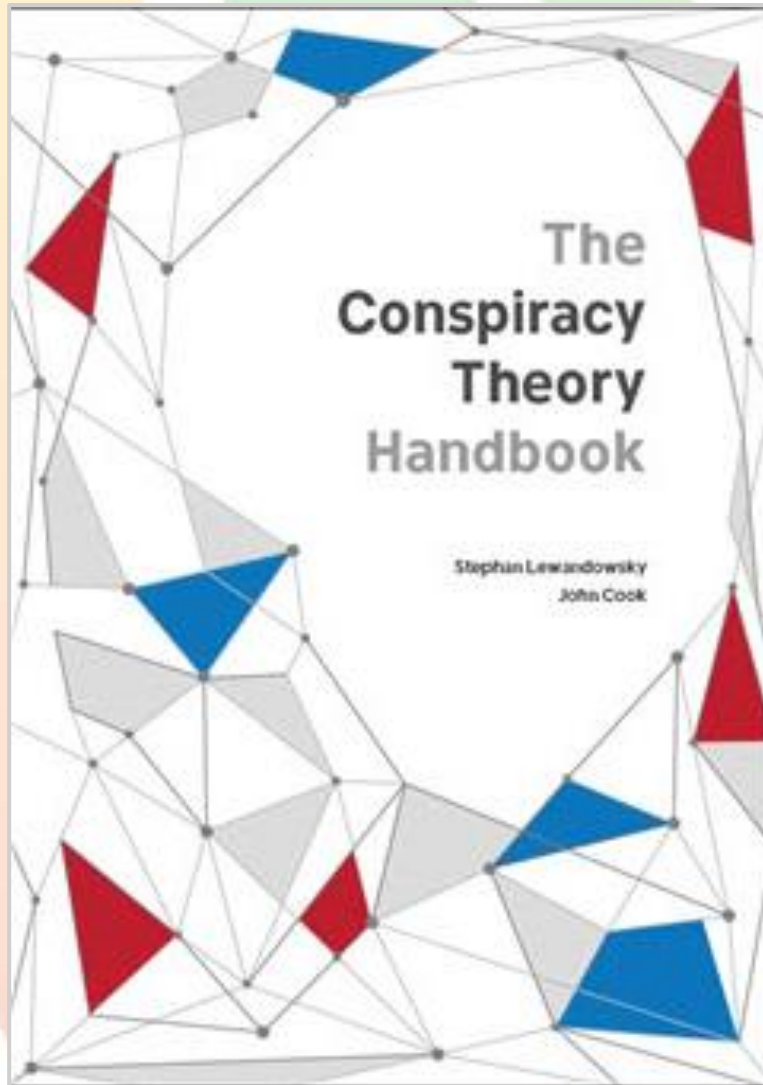
FLICC – THE POSTER



- The **FLICC Poster** is a collaborative effort between Skeptical Science and its German language partner website **klimafakten.de**.
- The poster was initially created in **German (PLURV)**, but there was a decision to create an **English (FLICC)** version as well.
- The poster is also available in several other languages:
 - Dutch (PLOKS)
 - Portuguese (EFEST)
 - Spanish (FRESI)
 - French (FLIPiC)
 - Luxemburgish (FLOKK)
 - Polish (PLOWS)



CONSPIRACY THEORY HANDBOOK



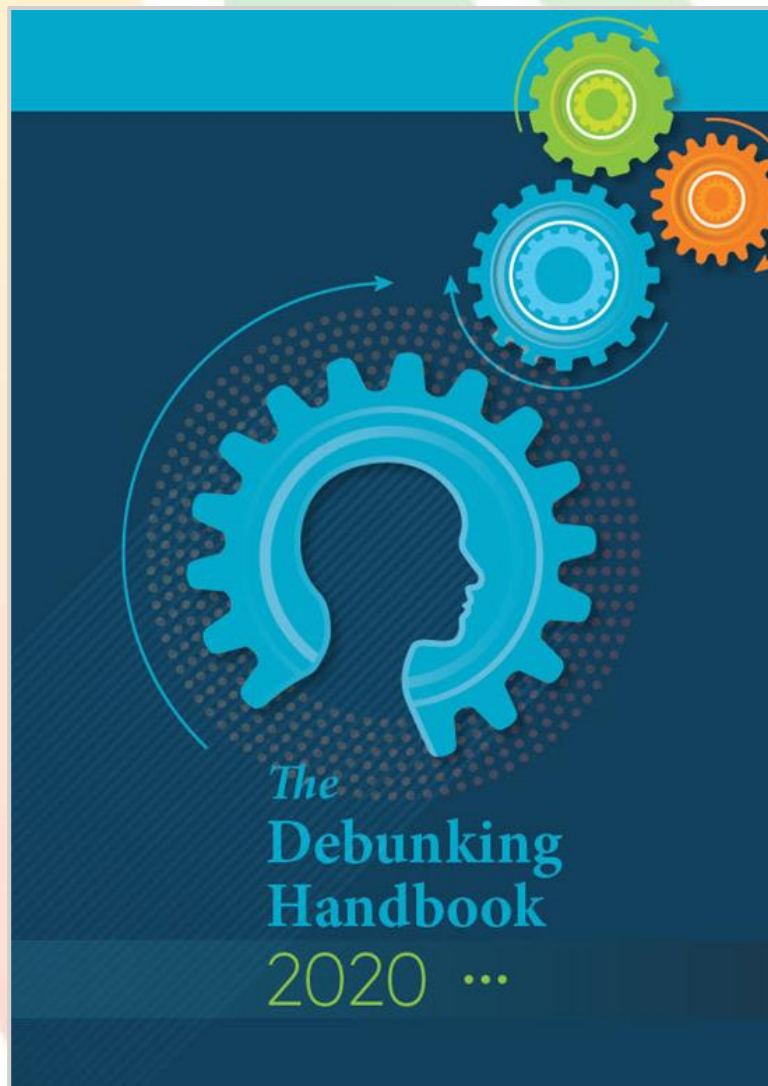
- The **Conspiracy Theory Handbook** was written by Stephan Lewandowsky and John Cook.
- The handbook **explains the popularity of conspiracy theories** and provides **guidance on identifying traits of conspiratorial thinking**.
- It offers effective **strategies to respond** to conspiracy theories.
- The handbook distills important **research findings and expert advice** on dealing with conspiracy theories.
- It introduces the **abbreviation CONSPIR** as a mnemonic to remember the seven traits of conspiratorial thinking.

The handbook has been translated into **18 languages** since its publication:

Albanian, Czech, Croatian, French, German, Greek, Hungarian, Italian, Macedonian, Polish, Portuguese, Romanian, Russian, Serbian, Slovak, Spanish, Swedish, Turkish



THE DEBUNKING HANDBOOK 2020



- The **Debunking Handbook 2020** was written by **19 co-authors**, invited by the lead authors Stephan Lewandowsky, John Cook, and Ullrich Ecker.
- The handbook reflects the **scientific consensus on combating misinformation** and emphasizes its importance.
- **Misinformation** has the potential to cause harm and **tends to persist**, making preemptive action necessary.
- When preempting misinformation is not possible, it should be **debunked frequently and effectively**.
- The handbook provides guidelines on how to **properly debunk misinformation**.

The handbook has been translated into **18 languages** since its publication:

Albanian, BCMS, Bulgarian, Czech, Dutch, Galician, German, Greek, Italian, Macedonian, Portuguese, Romanian, Russian, Slovak, Spanish, Swedish, Turkish, Ukrainian



THE CRANKY UNCLE GAME



- **Cranky Uncle** is a critical thinking game created by John Cook.
- It **builds resilience against climate misinformation**.
- Players gain understanding by **assuming the role of a cranky uncle** themselves.
- The game starts with teaching players the main **FLICC techniques of science denial**.
- Cranky Uncle mentors players on **how to deny science**, explaining his methods and presenting trial questions.
- Players **practice their denial spotting** through cartoon quizzes, **earning cranky points** and progressing through the game.
- As players advance through the cranky levels, their **mood becomes increasingly crankier**.



[sks.to/crankyphone](https://sk.skepticism.org/cranky/crankyphone)



[sks.to/crankyandroid](https://sk.skepticism.org/cranky/crankyandroid)

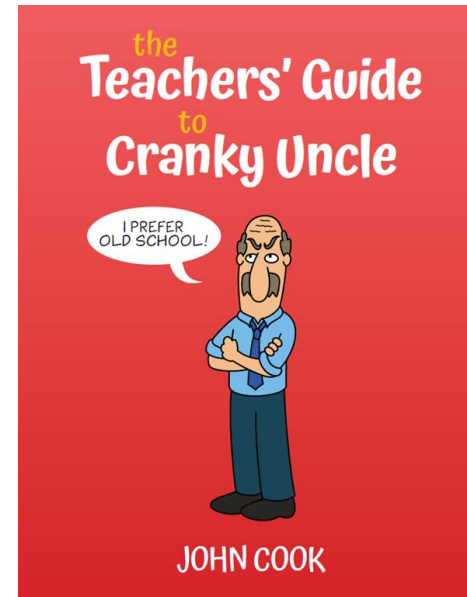


[sks.to/crankybrowser](https://sk.skepticism.org/cranky/crankybrowser)

THE CRANKY UNCLE GAME



- In February 2022 we launched the **multilingual version** of the Cranky Uncle game with two languages: **Dutch and German**.
- In August 2022, **Spanish and Portuguese** versions followed.
- In December 2022, **French, Italian, and Swedish** versions were launched.
- In April 2023, **Turkish** was added.
- More languages are scheduled to be launched soon.



The Teachers' Guide to Cranky Uncle offers background information and classroom activity ideas for educators interested in using the Cranky Uncle game to teach critical thinking in their classes.

English



sks.to/crankyguide

Dutch



sks.to/crankyguide-nl

German

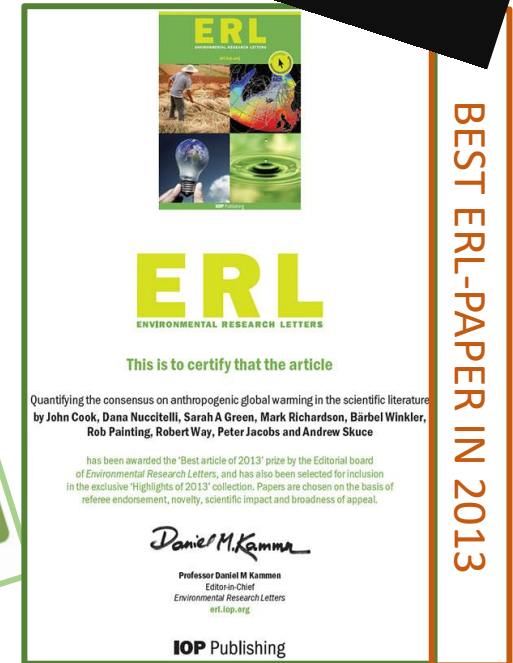


sks.to/crankyguide-de

PROJECTS

THE SCIENTIFIC CONSENSUS

- On May 16, 2013, our study "**Quantifying the consensus on anthropogenic global warming in the scientific literature**" led by John Cook was published in Environmental Research Letters (ERL).
- The study examined over **12,000 peer-reviewed abstracts** on 'global climate change' and 'global warming' published between 1991 and 2011.
- The research found that over **97% of the papers taking a position on the subject agreed with the consensus position that humans are causing global warming.**
- The publication of the consensus study **generated significant attention**, including being tweeted by President Obama's Twitter account and being mentioned in many global media outlets.
- Anticipating criticism, a **project homepage** was created to provide relevant links and FAQs to address concerns.
- In April 2014, **Environmental Research Letters** named the Skeptical Science consensus paper as the journal's **best article of 2013**, a noteworthy achievement for a citizen science project.



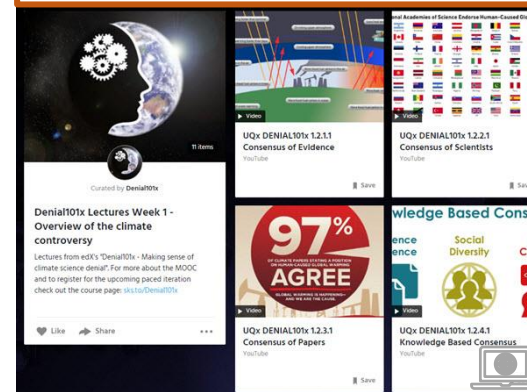
BEST ERL-PAPER IN 2013

Skeptical Science

DENIAL101x – Making sense of climate science denial

- Since 2015, SkS has offered the massive open online course (MOOC) called "**Denial101x: Making sense of climate science denial.**"
- It is a collaboration with the **UQx team at the University of Queensland.**
- It consists of **60 lectures and 40 expert interviews**, covering the fundamentals of climate science and debunking common climate myths.
- Myths addressed in the course include claims like "global warming stopped in 1998," "global warming is caused by the sun," and "climate impacts are nothing to worry about."
- Students learn the **techniques of science denial** and develop **critical thinking skills** to identify fallacies associated with climate myths.
- The course also explores the **psychology of misinformation**, enabling participants to effectively **respond to climate misinformation.**
- As of 2023, the MOOC has attracted over 42,000 participants from more than 180 countries.
- The SkS team members provide **assistance and moderation** in the MOOC's online discussion forum.

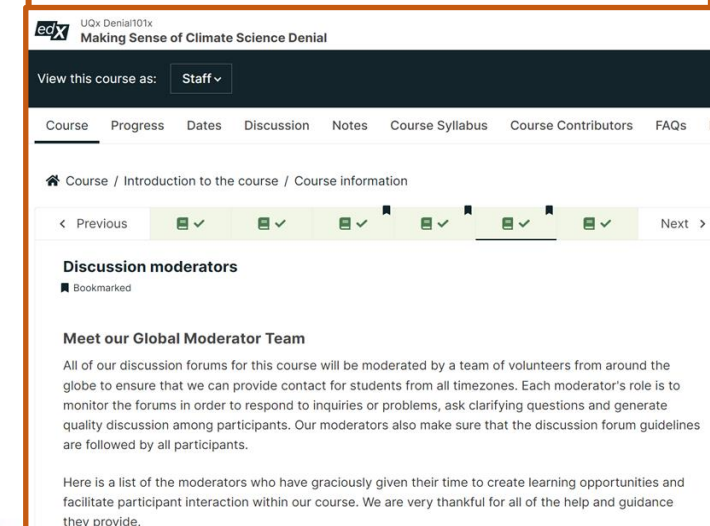
MOOC on EdX



LECTURES by Team Members

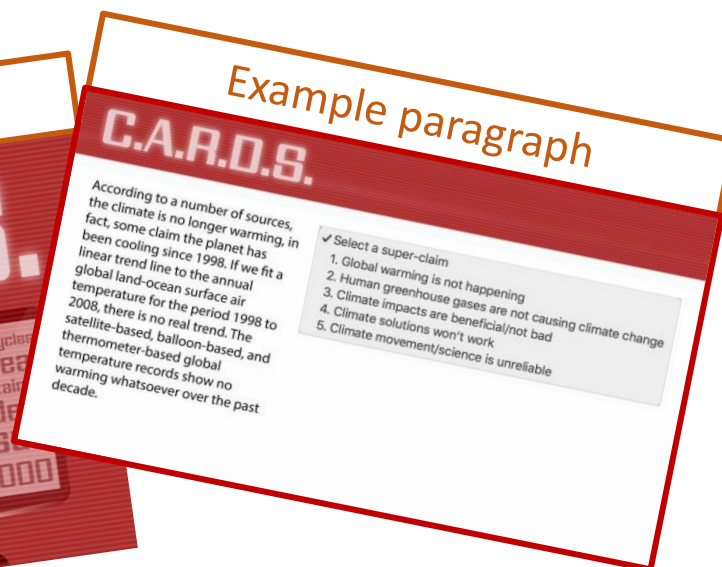


DISCUSSION MODERATORS

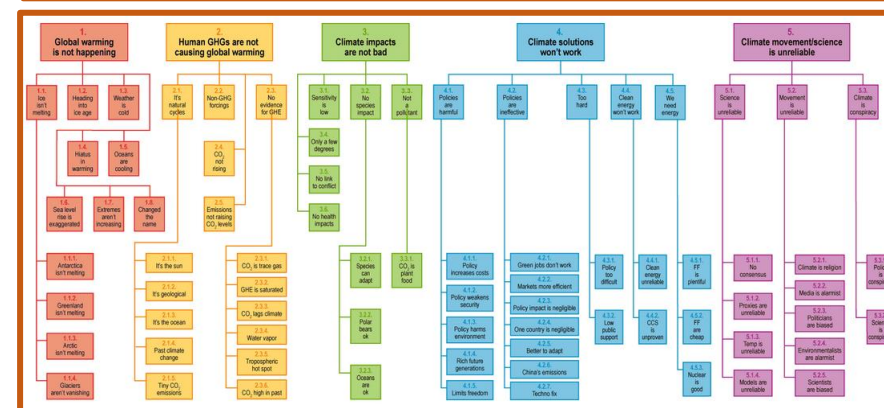


C.A.R.D.S.

- **Automated detection of online misinformation** is highly desired in fact-checking and holds great potential for theoretical insights and practical responses.
- The SkS team worked with political scientists Travis Coan and Constantine Boussalis, and Mirjam Nanko to develop a **taxonomy of climate misinformation**.
- They analyzed a corpus of over 287,000 documents from blogs and conservative think-tank websites.
- **Supervised machine learning** techniques were employed to accurately detect specific skeptical claims about climate change.
- The research enabled the construction of a **detailed history of climate misinformation** spanning 17 years.
- The findings revealed that climate misinformation predominantly focuses on **attacking the integrity of climate science and scientists**, shedding light on a previously understudied aspect.
- This research not only provides a new **approach to understanding and detecting climate science skepticism** but also lays the foundation for developing applications that can help **inoculate social networks against misinformation**.



Taxonomy of climate science denial claims



Skeptical Science

OTHER RESOURCES

BLOG POSTS

- The Skeptical Science team regularly **publishes blog posts** written by team members or reposts from other outlets.
- These blog posts aim to highlight **recent research** and other relevant topics related to human-caused climate change.
- Recurring series exist, such as **explaining climate science through analogies**.
- **New Research articles** are listed on a weekly basis.
- Readers can subscribe to **a daily email** that lists the most recent post(s).

Skeptical Science New Research for Week #13, 2020

Posted on 1 April 2020 by doug_bostrom



46 Articles

Physical science of global warming & effects

Global response of evapotranspiration ratio to climate conditions and watershed characteristics in a changing environment

Greenhouse effect: the relative contributions of emission height and total absorption

Observations & observational methods of global warming & effects

Climate change induced a new intermittent regime of convective ventilation that threatens the Black Sea oxygenation status ([open access](#))

Regional differences in global glacier retreat from 1980 to 2015

Long term trends (1958-2017) in snow cover duration and depth in the Pyrenees

Modeling & simulation of global warming & global warming effects

How could a difference of 0.5°C in global warming modify the mean and extreme climate conditions around Antarctica?

Climate change projections for the Australian monsoon from CMIP6 models

Latest Posts

- Skeptical Science New Research for Week #23 2023
- The little-known, massive advantage that renewables hold over coal
- At a glance - Can animals and plants adapt to global warming?
- What 'The Simpsons' taught '90s kids about climate change
- 2023 SkS Weekly Climate Change & Global Warming News Roundup #22
- Call for help: Update or create translations for updated rebuttals!
- Skeptical Science New Research for Week #22 2023
- Climate Adam: We're NOT about to pass the 1.5 degree climate change limit
- At a glance - How reliable are climate models?
- California bill would hit oil companies with \$1 million penalty for health impacts
- 2023 SkS Weekly Climate Change & Global Warming News Roundup #21
- Skeptical Science New Research for Week #21 2023
- Spring wildfires in the eastern US got off to a roaring start this year
- At a glance - Global cooling - is global warming still happening?
- Can Climate Change spark (zombie) Pandemics?
- 2023 SkS Weekly Climate Change & Global Warming News Roundup #20
- Skeptical Science New Research for Week #20 2023



Skeptical Science09.06.2023

Skeptical Science posts: 8 June 2023 - Sk...

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Skeptical Science08.06.2023

Skeptical Science posts: 7 June 2023 - Th...

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Skeptical Science07.06.2023

Skeptical Science posts: 6 June 2023 - At ...

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Skeptical Science06.06.2023

Skeptical Science posts: 5 June 2023 - W...

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Skeptical Science05.06.2023

Skeptical Science posts: 4 June 2023 - 20...

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Skeptical Science03.06.2023

Skeptical Science posts: 2 June 2023 - Ca...

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Skeptical Science02.06.2023

Skeptical Science posts: 1 June 2023 - Sk...



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Skeptical Science posts: 2 June 2023 - Call for help: Update or create translations for updated rebuttals!

Von: (Skeptical Science)

03.06.2023 um 11:15 Uhr

Newsletter



Skeptical Science posts: 2 June 2023

[Call for help: Update or create translations for updated rebuttals!](#)

By BaerbelW

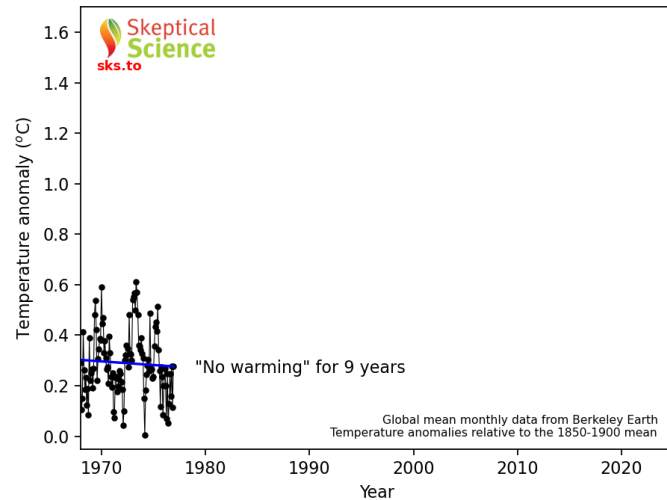
Over the years, we've published several calls for help with translations but most of them were rather generalized in nature [like last year's blog post](#) published in February 2022. This time around, we are asking for help with a quite specific task, namely to update existing translations for the rebuttals included in our ongoing [Rebuttals Update Project](#).

[Read more...](#)

RESOURCES

- Skeptical Science offers a substantial collection of **graphics and animations** which are licensed under Creative Commons, making them easily accessible for reuse.
- The graphics and animations are created by skilled team members to support blog posts, rebuttals, and other materials.
- They have been widely reused in various formats, including books, textbooks, TV documentaries, and government reports.

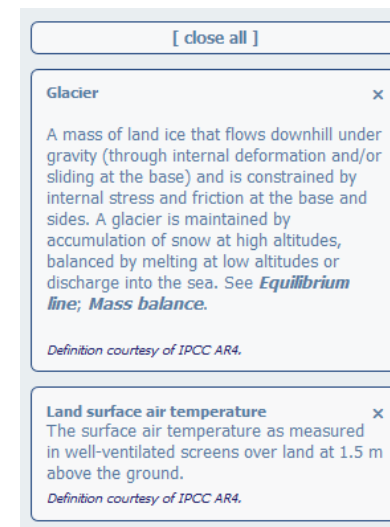
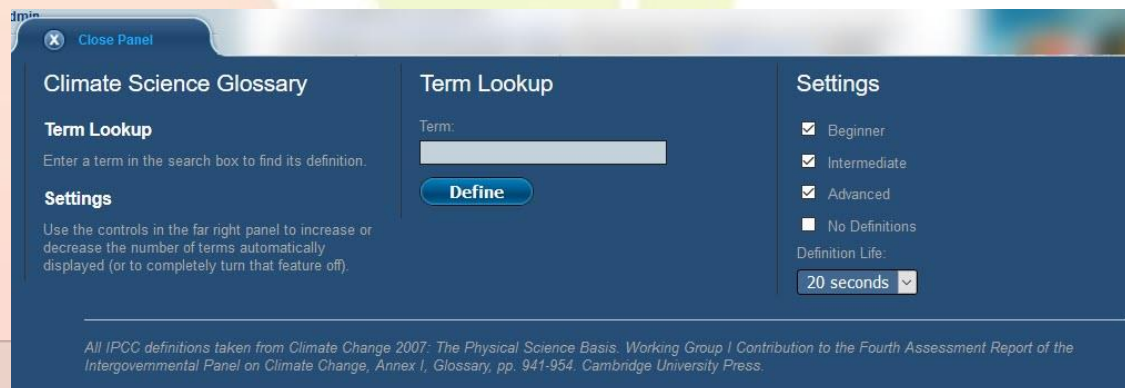
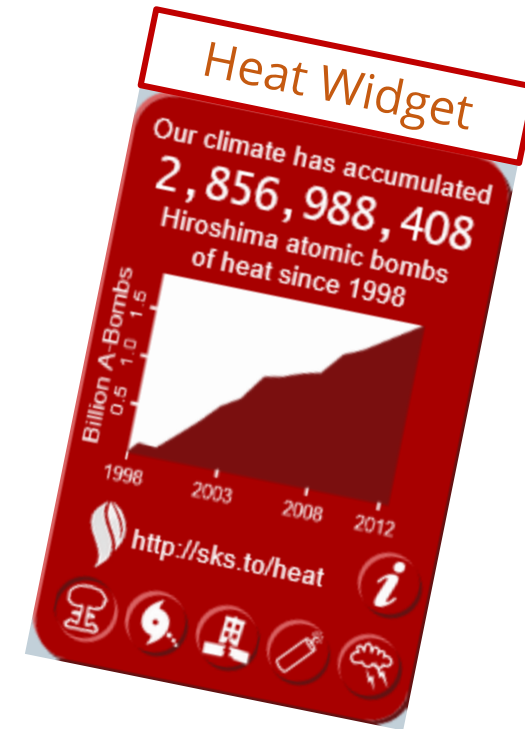
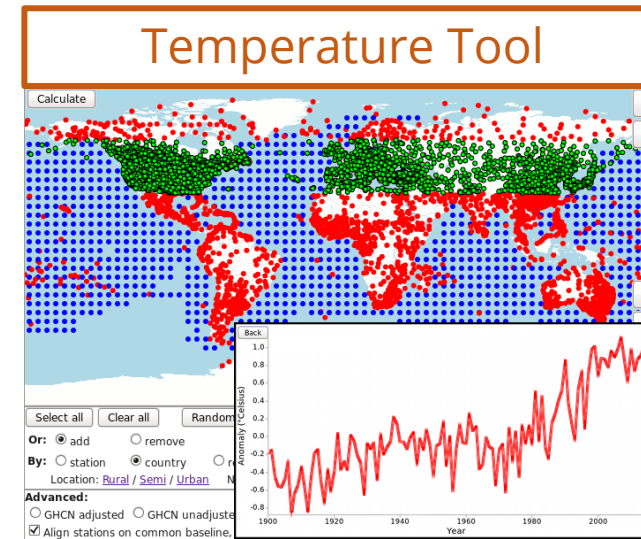
„The Escalator“



TOOLS

The Skeptical Science team has developed **several tools** to provide perspective on climate science:

- The **Temperature Tool** was specifically created for the MOOC Denial101x and helps learners understand climate science concepts.
- The **Heat Widget** is a tool that can be added to other websites to provide climate-related information.
- Since 2013, the **Sks-Glossary** has been available, offering pop-up explanations for **scientific terms** used in blog posts and rebuttals.
- Additionally, the glossary stores and provides **references for scientific papers**.



RECOGNITION & CHALLENGES



Skeptical Science

RECOGNITION

- In September **2011**, the Skeptical Science team won the **Eureka prize from the Australian museum**, which recognizes excellence in scientific research, innovation, leadership, and communication. The Eureka Prize is often referred to as Australia's "Oscars of Science."
- The **National Center for Science Education (NCSE)**, a non-profit organization supporting teachers in the U.S., awarded Skeptical Science the **Friend of the Planet Award in 2016**.
- Skeptical Science is frequently **recommended** by scientists as a **reliable resource** for climate science information and debunking misinformation.
- The website has received **endorsements from numerous scientists**, and a collection of these endorsements can be found on the homepage.

Stefan Rahmstorf
@rahmstorf
I often get asked about standard "climate skeptics" arguments. There is a great resource where you easily find scientific answers to most of these myths: Skeptical Science. skepticalscience.com Have look there first before you ask me!
6:06 PM · Feb 14, 2020 · Twitter Web App
151 Retweets 382 Likes



Katharine Hayhoe
March 17, 2017 · G
"Climate's changed before. It's just the sun, or a natural cycle—or both. Mars' ice cap is melting. Carbon dioxide is plant food. And we'd all prefer a warmer planet anyways, right?"
If any of these myths sound familiar, check out *Skeptical Science* -- they've got an answer to each of these common myths, and over 200 more.
I love how there's a 30-second short answer, a longer "basic" answer, and then the full enchilada for people who want all the scientific references, links, and figures.
Warning: a dismissive (someone who no amount of facts, no matter how convincing, will ever convince) will say this is a politically biased website. Why? Because they can't agree with the science it cites. For them, a thermometer really IS liberal.
But for the rest of us, this is the best resource for information on climate myths on the internet. I can't recommend it highly enough. They even have an iPhone app!



"Skeptical Science is a fantastic resource for debunking misinformation about climate change. The articles and materials are all grounded in the scientific literature, and presented in an approachable and understandable way. It is a particularly helpful resource for helping students and other young people separate the facts from the myths."

Simon Donner

Professor, Department of Geography, University of British Columbia



"I used John Cook's SkepticalScience.com as the student resource for this semester's research papers. As you will see from the [four example papers highlighted on this blog](#), information found at SkepticalScience.com is accessible to the typical college student and likely to the general public."

Scott Mandia

Professor of Global Climate Change, Suffolk Community College



Skeptical Science

CHALLENGES

- Skeptical Science, being a **volunteer-based** organization, faces challenges similar to other volunteer organizations, such as **time constraints** due to other commitments and difficulties in finding help for specific tasks like fixing broken links or keeping content up to date.
- As a prominent resource on human-caused climate change, Skeptical Science has become a **target for various forms of attacks**.
- The team and individual members have been subjected to **ad hominem attacks**, and **conspiracy theories** about the website's funding can be found online.
- In 2012, the Skeptical Science website was **hacked**, and content from the private author forum was posted online.
- The content from the forum has been **quote-mined** by interested parties to portray the team in a negative light.

"SkepticalScience seems to becoming the ringleader for conspiratorial activities by the green climate bloggers."

*"...a well known billionaire is funding the pseudo science blog sceptical science. That billionaire is a multiple convicted felon who worked willingly for the Nazis in WWII. How is **that** not headline news?"*

"I worked out recently it's impossible for one man to turn out a constantly updating and slick as grease website 'in his spare time'. I even went as far as to surmise he may just be a front for the IPCC or Globe International as it would need a team of professionals to create such a site and probably a few PR experts at the head."

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A Hack by Any Other Name — Part 2
Posted on 26 February 2014 by Bob Lacatena

Part 1 recounts the initial step of the hacker, and our initial discovery of his intrusion

Angela: They hack into computers and they cause this chaos.
— *The Net* (1995) —

March 24, 2012 — 1:06 AM AEDT — The Early Conversation
Meanwhile, the real forum suffered through a torrential storm of activity on the "SkS was hacked" thread.

24 Mar 2012, 1:06 AM	SkS was hacked
	It looks like it happened http://tommnelson.blogspot.com/2012/03/bill-mcfibben-on-weirdest-weather.html
grypo	I have downloaded the zip in the 1st comment but it is invalid. It won't take long for whatever is in there to be made valid and put out there. It's 18.5 MB in size Can anyone get it open? Can someone call John immediately?
24 Mar 2012, 1:13 AM	
Alex C	It's 1:00 in Australia...
24 Mar 2012, 1:20 AM	
Alex C	Just downloaded it, what the F**K, all my information is in there, contact and IP~ everyone else's too. It's valid Grypo. It's a whole bunch of what seems like screenshots of everything - but it's strange, the dates span from 2010...

March 27, 2012 — 9:45 AM, AEDT — Nerves
At 9:45 AM John reported yet another SQL injection attack consisting of 49 distinct queries, originating from Jakarta, Indonesia. It was probably harmless, especially considering that we'd already been hacked, but it certainly added to our nerves. We'd also received a foolish, taunting e-mail — one quickly traced to someone in Houston, Texas, someone who hadn't the desire or skill to hide his IP address. It was obviously not from the hacker, but it demonstrated the mind-set of the people who were enjoying the fact that we'd been hacked.

Date: 26 March 2012 2:18:31 AM AEST
Name: Hacked?
Email: Hacked@gmail.com
Message: There is more to come and you will not like it.

A little later — just after midnight in Seattle — Doug also discovered that the SQL injection log file from February 21st was corrupted. Every log file begins with entries on or moments after 00:00:00 on that day, denoting the first activity on a site that is in constant use, around the world and around the clock. But the log file from February 21st started with a query at 12:07 PM. Twelve hours were inexplicably missing from that log file, although the explanation for why the file was incomplete was obvious. The hacker had truncated the file to cover his tracks.

What had the hacker done during those missing twelve hours?
Part 6 describes the methods used by the hacker and details his activity on February 21st.

To be continued...

INTERESTED IN HELPING SKEPTICAL SCIENCE?

- Various translation projects
- Help with rebuttal updates
- Summarizing scientific articles in blog posts
- Creating new rebuttals to counter solution denial

Interested? Please let us know: <https://sks.to/contact>



THANKS!

Bärbel Winkler

<https://sks.to/BaerbelW>



Additional material



Skeptical Science

SKEPTICAL SCIENCE FOUNDER JOHN COOK

John Cook originally earned a Bachelor of Science at the University of Queensland, achieving a First Class Honors with a major in physics. He obtained a PhD in cognitive psychology at the University of Western Australia, with the thesis "Closing the 'consensus gap' by communicating the scientific consensus on climate change and countering misinformation". Currently, he is a Senior Research Fellow with the Melbourne Centre for Behaviour Change at the University of Melbourne, with a research focus on understanding and countering misinformation on scientific issues such as climate change and vaccination.

The roots of Skeptical Science can be traced back to early 2007, when Cook decided to create a private database as a resource to more easily counter the arguments from family members regarding anthropogenic global warming (AGW). He described the backstory in a Guardian article in 2011:



"My exploration of climate change denial began innocuously enough – namely some vigorous discussions with sceptical family members. This provoked me to dig a little deeper into the science (no one wants to lose an argument with their father-in-law), but before I knew it, I had wandered into a bewildering labyrinth of raging online debates and bottomless pits of misinformation. How to make sense of it all?

At this point, my inner-computer geek asserted itself and I began constructing a database of climate 'sceptic' arguments. To cut to the truth of each argument, I made peer-reviewed science the ultimate authority. There's no higher standard than evidence-based research conducted by experts, which is then rigorously scrutinised by other experts. As I began to piece together the various pieces, a clear picture began to emerge."

AUTHOR INFORMATION

Bärbel Winkler
Skeptical Science
BaerbelW[at]skepticalscience[dot]com
Germany



Bärbel Winkler lives and works in Germany. She has always had a lot of interest in environmental issues and has been active as a volunteer at the local zoo and a conservation group for many years. Over time and while learning more and more about it, Bärbel became increasingly aware and concerned about climate change and what it will mean for generations to come. As a means to turn her concerns regarding climate change into something productive, Bärbel joined the Skeptical Science team in 2010 and started translating selected content into German. Since 2013 she has been coordinating the translation efforts for all languages, contributes a blog-post every once in a while, helps with many projects and became co-author of several consensus-related studies the Skeptical Science team has published over the years. She also coordinates the moderation team for the online course “Denial101x – Making sense of climate science denial”.

<https://sks.to/BaerbelW>
<https://twitter.com/BaerbelW>



LIST OF LINKS

INTRODUCTION

Skeptical Science – <https://skepticalscience.com>

Welcome page - <https://sks.to/welcome>

HISTORY 1

2007 – <https://skepticalscience.com/A-look-back-SkS-in-2007.html>

2008 – <https://skepticalscience.com/A-look-back-SkS-in-2008.html>

2009 – <https://skepticalscience.com/A-look-back-SkS-in-2009.html>

2010 – <https://skepticalscience.com/A-look-back-SkS-in-2010.html>

2011 – <https://skepticalscience.com/A-look-back-SkS-in-2011.html>

2012 – <https://skepticalscience.com/A-look-back-SkS-in-2012.html>

2013 – <https://skepticalscience.com/A-look-back-SkS-in-2013.html>

2014 – <https://skepticalscience.com/A-look-back-SkS-in-2014.html>

HISTORY 2

2015 – <https://sks.to/sks2015>

2016 – <https://sks.to/sks2016>

2017 – <https://sks.to/sks2017>

2018 – <https://sks.to/sks2018>

2019 – <https://sks.to/sks2019>

2020 – <https://sks.to/sks2020>

2021 – <https://sks.to/sks2021>

2022 – <https://sks.to/sks2022>

REBUTTALS

Arguments – <https://skepticalscience.com/argument.php>

Fixed numbers – <https://skepticalscience.com/fixednum.php>

Taxonomy – <https://skepticalscience.com/argument.php?f=taxonomy>

BLOG POSTS

Skeptical Science – <https://skepticalscience.com/newsarchives.php>

CONSENSUS

Cook et al. 2013 – <https://iopscience.iop.org/article/10.1088/1748-9326/8/2/024024>

Consensus Homepage – <https://skepticalscience.com/tcp.php?t=home>

97hours – <https://skepticalscience.com/nsh/>

Cook et al. 2016 – <https://sks.to/coc>

One Million downloads – <https://sks.to/tcp-one-million>

DENIAL101x

Making sense of climate science denial – <https://sks.to/denial101x>

TRANSLATIONS

All translations – <https://skepticalscience.com/translation.php>

Helping with translations – <https://sks.to/help-translate>

Rebuttal translations – <https://sks.to/transl-at-a-glance>

Debunking Handbook – <https://sks.to/debunk>

Conspiracy Theory Handbook – <https://sks.to/conspiracy>

FLICC

History of FLICC – <https://sks.to/flicc-sks>

FLICC-Poster – <https://sks.to/flicc-poster>

RESOURCES

Graphics – <https://skepticalscience.com/graphics.php>

Interactive timeline – <https://skepticalscience.com/cshistory.php>

The Escalator – <https://sks.to/escalator>

CARDS

Computed assisted recognition of Denial and Skepticism – <https://cardsclimate.com>

TOOLS

Temperature Tool – https://skepticalscience.com/temperature_tool.html

Glossary – <https://skepticalscience.com/glossary.php>

Heat Widget – <https://sks.to/heat>

CHALLENGES

Conspiracy theories – <https://skepticalscience.com/Conspiracy-theories-Skeptical-Science.html>

Hack – <https://sks.to/hack>

RECOGNITION

Eureka prize – https://skepticalscience.com/Eureka_Prize_Winner_2011.html

NCSE – <https://ncse.com/>

Friends of the Planet – <https://ncse.com/news/2016/05/friend-darwin-friend-planet-awards-2016-0017058>

Endorsements – <https://skepticalscience.com/endorsements.shtml>

JOHN COOK

Dissertation – https://skepticalscience.com/docs/Cook_dissertation.pdf

Guardian – <https://www.theguardian.com/environment/blog/2011/apr/28/climate-change-denial-skeptical-science>

