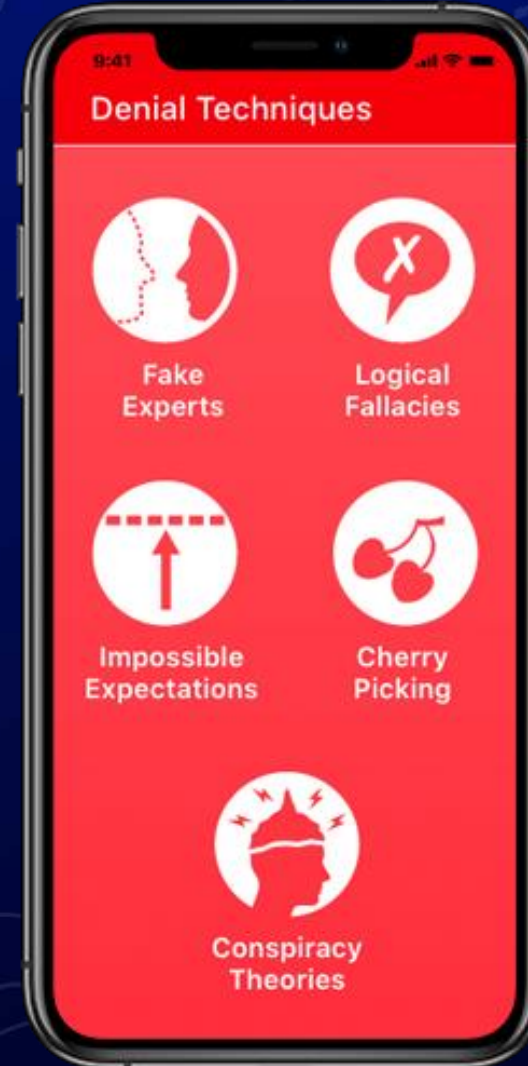


# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

Bärbel Winkler and John Cook – EGU 2022 – EOS1.3 – Wednesday, 25<sup>th</sup> May 2022



# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

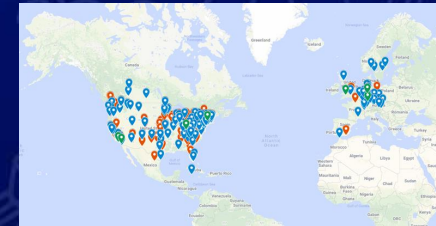
## The Cranky Uncle game



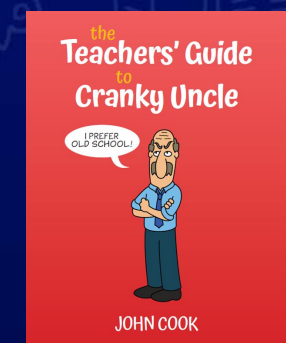
## Science of Cranky Uncle



## Cranky Educators



## Teachers' Guide



## Cranky Cartoons



Click images to learn more!

## Translations



## Where to play the game



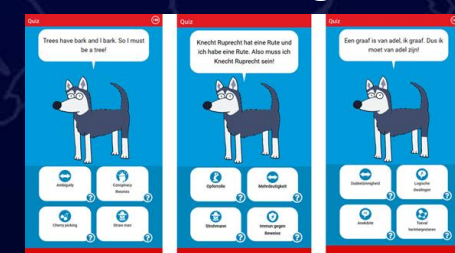
## Publications



## Science Denial Techniques



## Fun with ambiguities

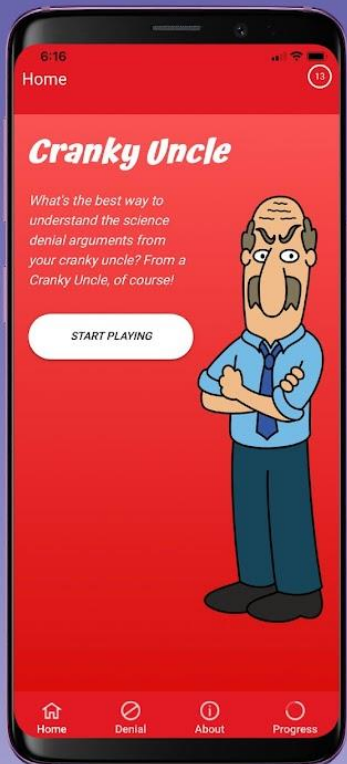




# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## How the game works (1)

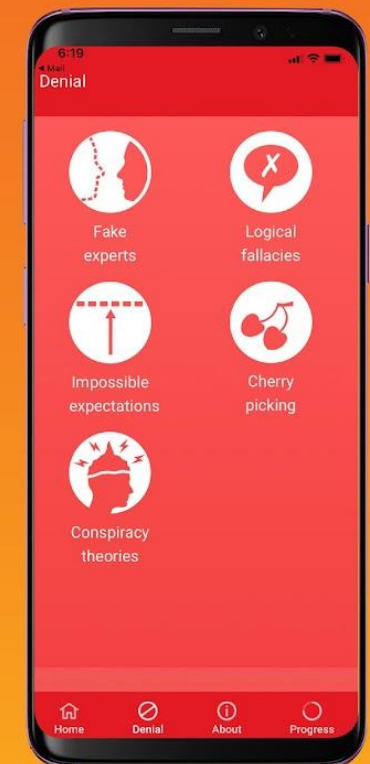
Understand cranky uncles by becoming a cranky uncle



The game helps players to understand cranky uncles by becoming cranky uncles themselves.

To begin with, players learn the techniques of science denial: fake experts, logical fallacies, impossible expectations, cherry picking and conspiracy theories. These can be easily remembered via the abbreviation FLICC.

Learn techniques of science denial



# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## How the game works (2)

Cranky Uncle mentors players on how to deny science. He does this by explaining how he goes about doing just that and by posing some trial questions.

Once players have learned one of the denial techniques they can practice their denial spotting with the help of cartoon quizzes and other forms of quiz questions.

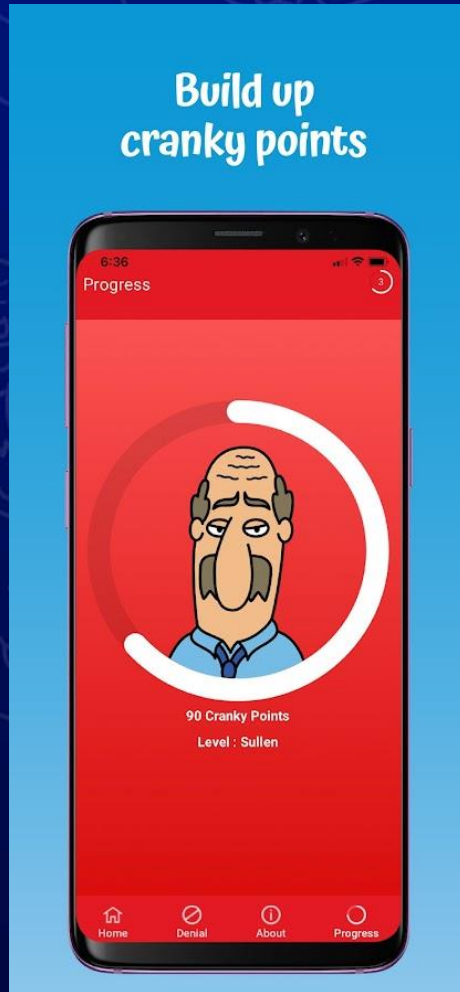




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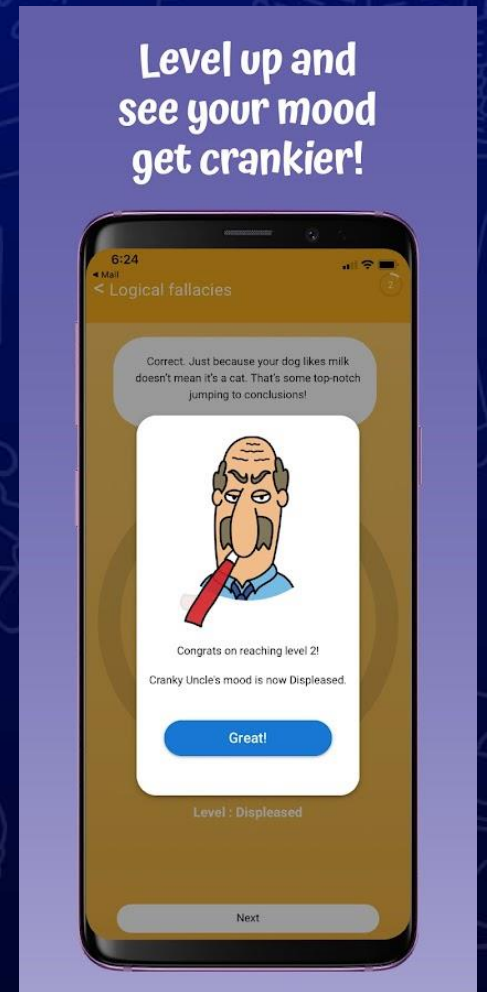
## How the game works (3)

Whenever players answer quizzes correctly, they earn and build up their cranky points, making it rewarding to stick with the game.



Whenever a threshold of cranky points is passed, players go up one cranky level and their mood gets ever crankier.

Level up and see your mood get crankier!



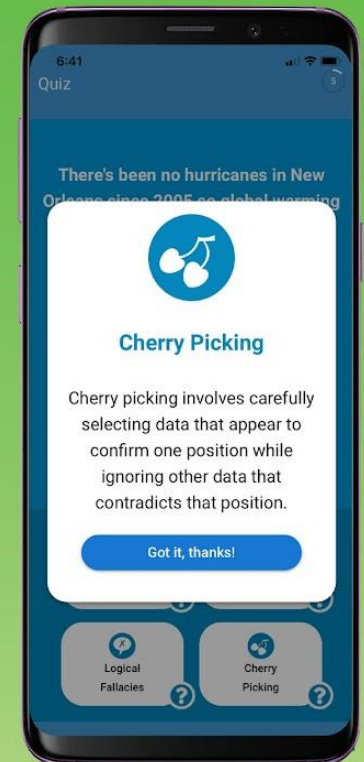
# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## How the game works (4)

Once a player has learned the initial five techniques, further denial techniques become available “below” logical fallacies (7), cherry picking (2) and conspiracy theories (7).

Definitions of each denial technique at your fingertips

Unlock new denial techniques



Definitions for the fallacies are readily available as pop-ups in the multi-fallacy quizzes.





# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## Teachers' Guide

### the Teachers' Guide to Cranky Uncle

I PREFER  
OLD SCHOOL!



JOHN COOK

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](https://sks.to/crankyguide)

Dutch



[sks.to/crankyguide-nl](https://sks.to/crankyguide-nl)

German



[sks.to/crankyguide-de](https://sks.to/crankyguide-de)



# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## Cranky cartoons as FLICC examples



[sks.to/flicc-cartoons](https://sks.to/flicc-cartoons)

A collection of cranky cartoons – each representing a different logical fallacy from the FLICC taxonomy – are available in 1920 x 1080 JPEGs. Each image also links to a high-resolution PDF so you can print out the cartoons.



# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## The Science of Cranky Uncle video series

### The Science of Cranky Uncle

Part 1.  
Why we can't ignore  
misinformation



### The Science of Cranky Uncle

Part 2.  
Inoculation  
theory



### The Science of Cranky Uncle

Part 3.  
Fighting misinformation  
with critical thinking



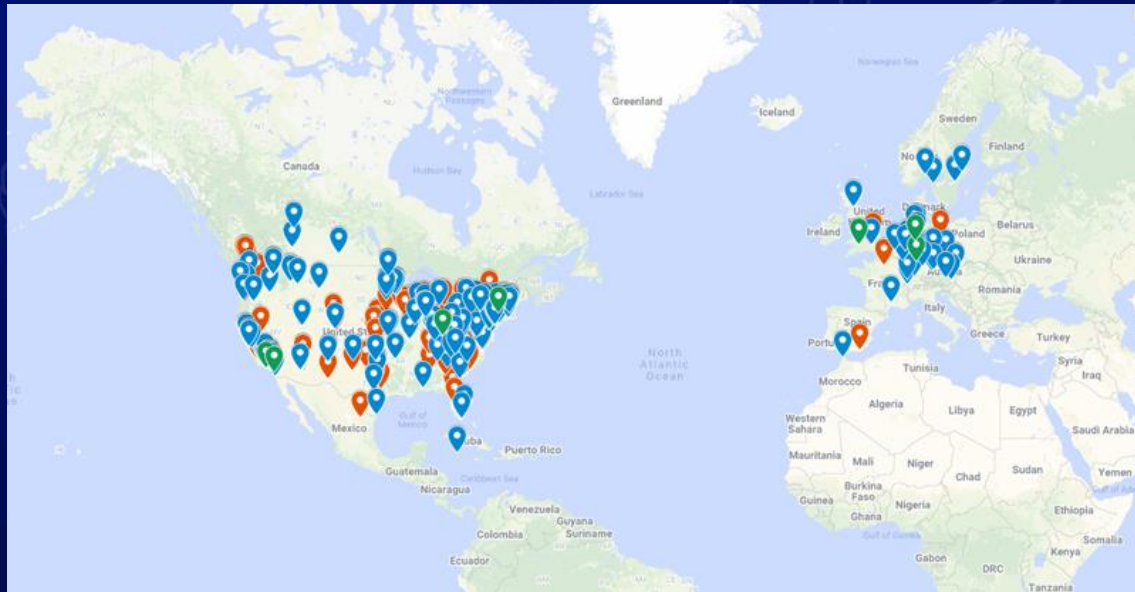
The video series titled “The Science of Cranky Uncle” explains, why we can’t ignore misinformation, examines research into the different ways misinformation does damage, looks at research into how inoculation theory offers an approach for building public resilience against misinformation. It also explains how critical thinking can be used to deconstruct misinformation and identify misleading reasoning fallacies and rhetorical techniques.



[sks.to/crankyscience-vids](https://sks.to/crankyscience-vids)

# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

Educators from many countries are already using the Cranky Uncle game



[sks.to/crankyclass](https://sks.to/crankyclass)

Teachers can [sign up for a group code](#) making it quick and easy for students to anonymously enter the game (avoiding the need to enter an email to play the game). So far, teachers have signed up from 40+ U.S. states and 16 other countries.





# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## Translations of the game (1)

In February 2022 the multilingual version of the Cranky Uncle game was launched. The first two languages available are Dutch and German! Additional languages are already in the works and we expect to soon have Cranky Uncle “speak” Italian & Spanish as well!



[sks.to/crankyml](https://sks.to/crankyml)

# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## Translations of the game (2)

If you'd like to get involved with the translations of the Cranky Uncle game, please fill out the form at [sks.to/crankytranslationfrm](https://sks.to/crankytranslationfrm) to let us know.

Already available: Dutch and German

Soon available: Italian and Spanish

In process: French, Polish, Portuguese,  
Romanian, Swedish



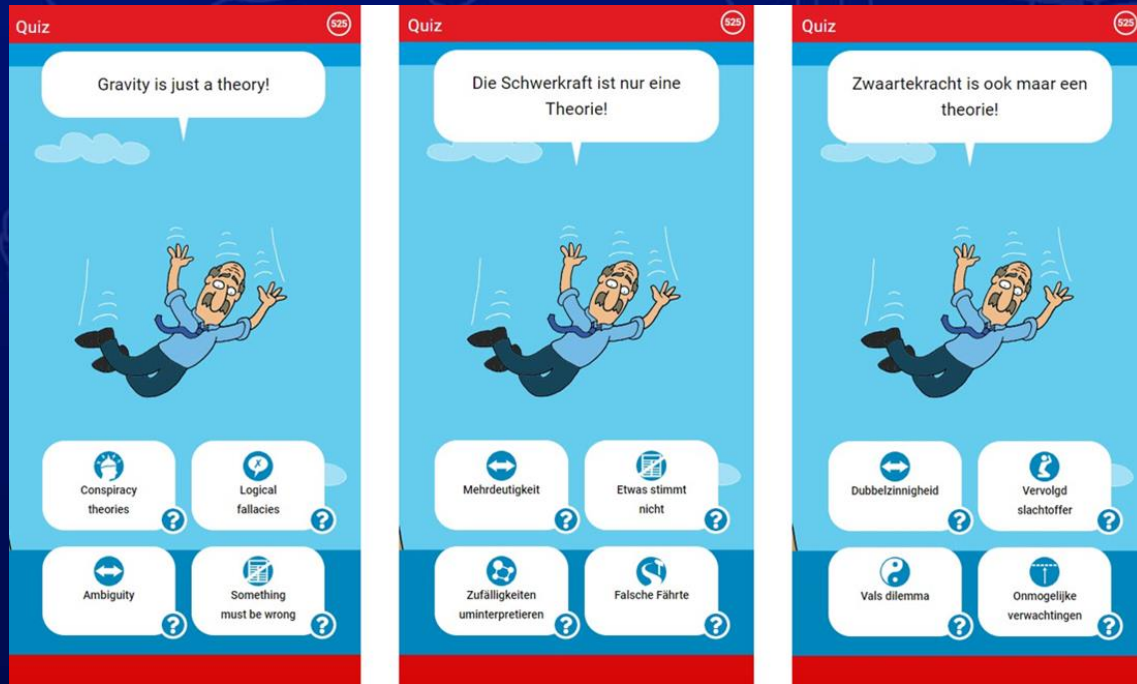
[sks.to/crankytranslationfrm](https://sks.to/crankytranslationfrm)





# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## Translation fun with ambiguities - simple



The really hard to resolve issues for the translation teams were those related to the 'Ambiguity' fallacy where one word has different meanings for scientists and lay people which then gets exploited by science deniers. Not all are as easy as the word "theory" which translates 1:1 into other languages and also has the same meaning scientifically on the one hand and in everyday language on the other.

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## Translation fun with ambiguities – tricky (1)



Here is an example from the English version of the game where the quiz displays a dog:

“Trees have **bark** and I **bark**. So I must be a tree!”

Run this through a translator and you get this for German:

"Bäume haben eine **Rinde** und ich **belle**. Also muss ich ein Baum sein!"

...and this for Dutch:

“Bomen hebben **schors** en ik **blaf**, dus ik moet een boom zijn“





# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## Translation fun with ambiguities – tricky (2)

**Quiz**

Knecht Ruprecht hat eine Rute und ich habe eine Rute. Also muss ich Knecht Ruprecht sein!

Opferrolle  
Mehrdedeutigkeit  
Strohmann  
Immun gegen Beweise

**Quiz** 140

Een graaf is van adel, ik graaf. Dus ik moet van adel zijn!

Dubbelzinnigheid  
Logische dwalingen  
Anekdote  
Toeval herinterpreteren

The direct translation loses the ambiguity present in the English text with the word “bark” because “Rinde” and “belle” are two obviously completely different words in German as are “schors” and “blaf” in Dutch. We eventually came up with this:

German

“Knecht Ruprecht hat eine Rute und ich habe eine Rute. Also muss ich Knecht Ruprecht sein!” (This translates back to “Knecht Ruprecht [he’s accompanying Santa Claus in Germany] has a rod and I have a tail. So I must be Knecht Ruprecht!”)

Dutch

“Een graaf is van adel, ik graaf. Dus ik moet van adel zijn!” (This translates back to “A “count/earl” is of nobility, I “dig”. So I must be of nobility!”)



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FLICC – the five main techniques of science denial



## Fake Experts

Presenting an unqualified person or institution as a source of credible information.



## Logical Fallacies

Arguments where the conclusion doesn't logically follow from the premises. Also known as a non sequitur.



## Impossible Expectations

Demanding unrealistic standards of certainty before acting on the science.



## Cherry Picking

Carefully selecting data that appear to confirm one position while ignoring other data that contradicts that position.



## Conspiracy Theories

Proposing that a secret plan exists to implement a nefarious scheme such as hiding a truth.





# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## History of FLICC – the techniques of science denial

When John Cook led a 2015 collaboration between the [University of Queensland](#) and [Skeptical Science](#) to develop the free online course [Denial101x: Making Sense of Climate Science Denial](#), he made FLICC the underlying framework of the entire course. An important component of their debunking of the most common myths about climate change was identifying the denial techniques in each myth. Which is exactly what the Cranky Uncle game now teaches!



sksto/flicc

# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

Game is available for iPhone, Android and Browser



[sks.to/crankyiphone](https://sks.to/crankyiphone)



[sks.to/crankyandroid](https://sks.to/crankyandroid)



[sks.to/crankybrowser](https://sks.to/crankybrowser)



# Cranky Uncle - a multi-lingual critical thinking game to build resilience against climate misinformation

## Related publications

- Cook, J. (2021). Cranky Uncle: a game building resilience against climate misinformation. *Plus Lucis*, 3(2021), 13-16.
- Cook, J., Ellerton, P., and Kinkead, D. (2018). Deconstructing climate misinformation to identify reasoning errors. *Environmental Research Letters*, 11(2).
- Vraga, E. K., Kim, S. C., & Cook, J. (2019). Testing Logic-based and Humor-based Corrections for Science, Health, and Political Misinformation on Social Media. *Journal of Broadcasting & Electronic Media*, 63(3), 393-414.
- Cook, J. (2020). Deconstructing Climate Science Denial. In Holmes, D. & Richardson, L. M. (Eds.) *Edward Elgar Research Handbook in Communicating Climate Change*. Cheltenham: Edward Elgar.
- Lewandowsky, S., Cook, J., Ecker, U. K. H., Albarracín, D., Amazeen, M. A., Kendeou, P., Lombardi, D., Newman, E. J., Pennycook, G., Porter, E. Rand, D. G., Rapp, D. N., Reifler, J., Roozenbeek, J., Schmid, P., Seifert, C. M., Sinatra, G. M., Swire-Thompson, B., van der Linden, S., Vraga, E. K., Wood, T. J., Zaragoza, M. S. (2020). The Debunking Handbook 2020. DOI:10.17910/b7.1182



Bärbel Winkler



[baerbelw@skepticalscience.com](mailto:baerbelw@skepticalscience.com)  
<https://sks.to/BaerbelW>

John Cook



[john.cook@monash.edu](mailto:john.cook@monash.edu)  
<https://sks.to/JohnCook>