



Cranky Uncle - a critical thinking game to build resilience against climate misinformation in multiple languages

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Misinformation about climate change does damage in multiple ways. It causes people to believe wrong things, polarizes the public, and reduces trust in scientists. Climate misinformation reduces support for climate action, delaying policies to mitigate climate change. One of the most insidious aspects of misinformation is that it can cancel out accurate information. When people are presented with fact and myth but don't know how to resolve the conflict between the two, they may disengage and believe neither. Consequently, an effective way to counter misinformation is to help people resolve the conflict between facts and myths. This can be achieved through inoculation theory, a branch of psychological research that applies the concept of vaccination to knowledge. Just as exposing people to a weakened form of a virus develops resistance to the real virus, exposing people to a weakened form of misinformation builds immunity to real-world misinformation. In other words, rather than getting lost in details, you explain the misleading rhetorical techniques and logical fallacies used in misinformation. Inoculation has been found to be effective in neutralizing misinformation casting doubt on the scientific consensus on human-caused global warming. However, there are many misinformation techniques and inoculating people against them all is a communication and education challenge. Games offer engaging tools for incentivizing people to repeatedly perform misinformation-spotting tasks in order to build up their critical thinking skills. Games that are fun to engage with while serving a useful educational purpose are known as serious games, and are already being explored as a tool for building resilience against misinformation, using an approach known as active inoculation. Typically, inoculation interventions are passive, with messages received in a one-way direction from communicator to audience. In contrast, active inoculation involves participants in an interactive inoculation process – having them learn the techniques of science denial by ironically learning to use the misleading techniques themselves. The *Cranky Uncle* game adopts an active inoculation approach, where a “cranky uncle” cartoon character mentors players to learn the techniques of science denial. *Cranky Uncle* is a free game available on iPhone and Android smartphones as well as web browsers and can already be played in eight languages. The player's aim is to become a “cranky uncle” who skillfully applies a variety of logically flawed argumentation techniques to reject the conclusions of scientific communities. By adopting the mindset of a cranky uncle, the player develops a deeper understanding of science denial techniques, thus acquiring the knowledge to resist misleading persuasion attempts in the future. The game is available in several languages and creating the translations involved some creative problem solving to come up with suitable

alternatives where the English content couldn't simply be translated directly. For example, some terms were ambiguous in one language but the ambiguity was "lost in translation", actual people mentioned in quiz questions were not known outside of the US, or a fallacy was named differently in another language, requiring a new icon.