What do gorilla suits and blowfish fallacies have to do with climate change?

February 10 2017, by John Cook

Credit: AI-generated image (disclaimer)

A famous psychology experiment instructed participants to watch a short video, counting the number of times players in white shirts passed the ball. If you haven't seen it before, I encourage you to give the following short video your full attention and follow the instructions:

At the end, participants discovered the point of the video when asked if they had observed the gorilla walking through the players. Half the participants didn't notice the gorilla at all. The lesson? When we laser-focus on specific details (like players in white shirts), we can miss the gorilla in the room.

What does this have to do with climate change? I'm a cognitive psychologist interested in better understanding and countering the techniques used to distort the science of climate change. I've found that understanding why some people reject climate science offers insight into how they deny science. By better understanding the techniques employed, you can counter misinformation more effectively.

Every movement that has rejected a scientific consensus, whether it be on evolution, climate change or the link between smoking and cancer, exhibits the same five characteristics of science denial (concisely summarized by the acronym FLICC). These are fake experts, logical fallacies, impossible expectations, cherry picking and conspiracy theories. When someone wants to cast doubt on a scientific finding, FLICC is an integral part of the misinformation toolbox.

Logical fallacies are a broad umbrella, including a number of other misleading techniques. For example, red herring is a term that likely originated from the technique of using strong-smelling fish to throw dogs off a scent. Similarly, irrelevant information or arguments can be used to distract people from important information.

There is a special class of red herring – a specific technique of denial often employed to distract people from important scientific findings. To maintain the fish metaphor, I characterize this as the blowfish fallacy.

This is the technique of laser-focusing on an inconsequential methodological aspect of scientific research, blowing it out of proportion

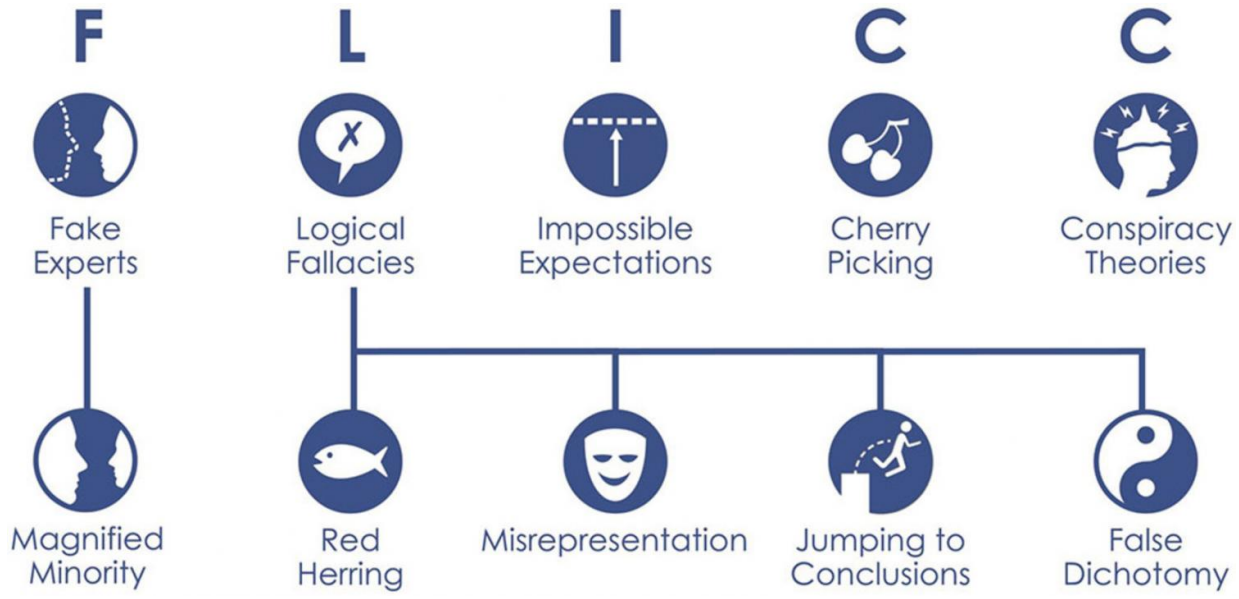
in order to distract from the bigger picture. If you persuade people to focus hard enough on specific details, they can miss the gorilla in the room.

The 97 percent scientific consensus on climate change

One example of the blowfish strategy is the attempt to distract from the scientific consensus on climate change. Study after study, using a wide range of independent methods, has found overwhelming agreement among climate scientists that human beings are causing global warming.

I was the coauthor of one of these studies. We read through 21 years of climate papers, identifying which papers endorsed or rejected human-caused global warming. Among the papers stating a position, 97 percent agreed that humans are causing global warming. Our research has been relentlessly attacked by conservative think tanks, politicians and newspapers. Typically, criticisms of our study focus on tiny methodological details or false assumptions that have little to no bearing on our final result.

Most criticisms fail to acknowledge that our study has been replicated by multiple independent studies. Every criticism of our study has avoided the fact that, even within our own study, we independently replicated the 97 percent consensus result. In addition to categorizing papers ourselves, we also invited the scientists who wrote the climate papers to categorize whether their paper stated a position on human-caused global warming. Among papers self-rated as stating a position, 97 percent endorsed the consensus.



The five characteristics of science denial. Credit: Skeptical Science, CC BY-ND

Replicating the global temperature record

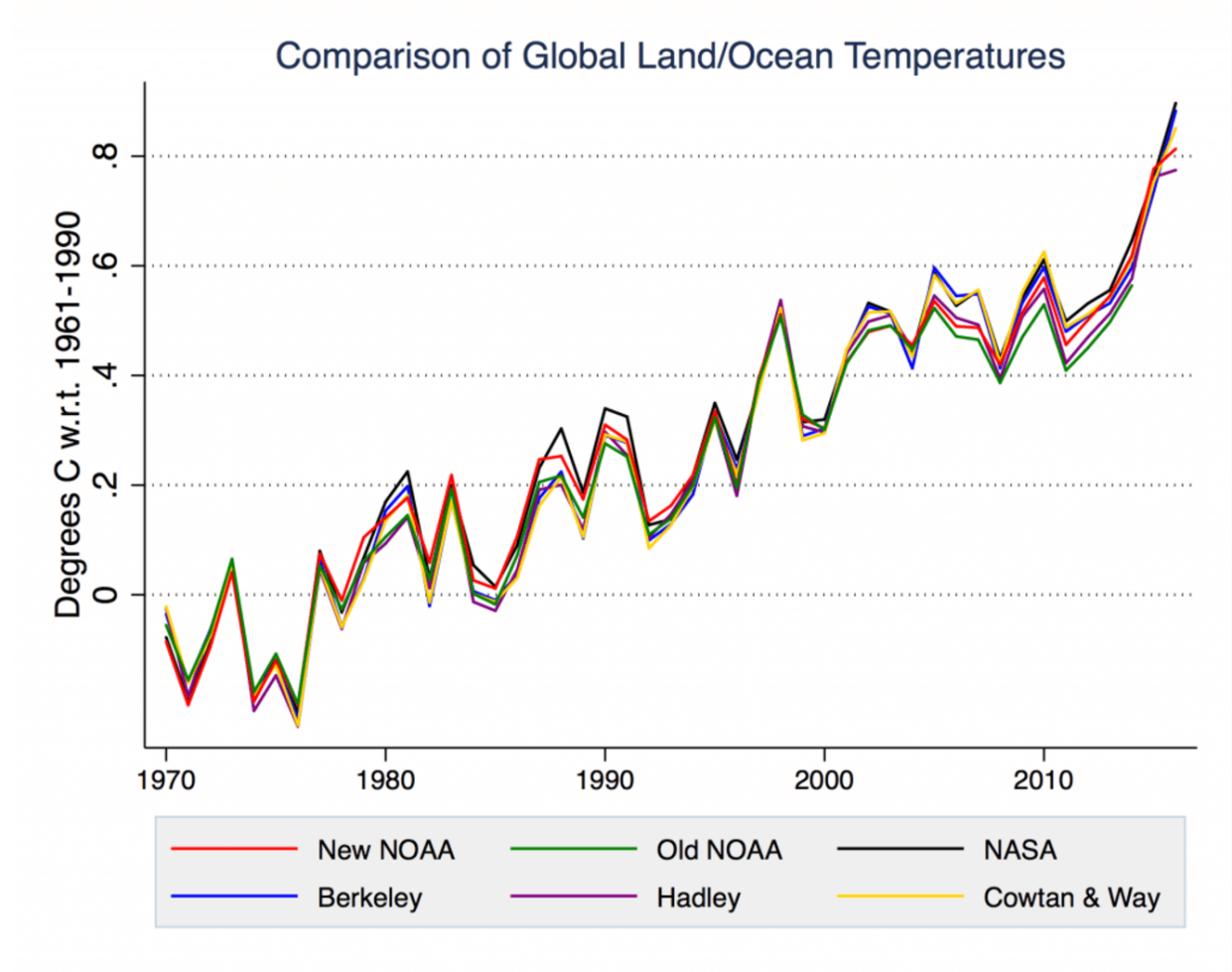
A number of different scientific teams have constructed global temperature records. They are all remarkably consistent with each other, confirming that we are in a period of long-term warming and experiencing record warm temperatures in the last few years. The fact that these basic findings have been replicated by so many different groups of scientists from around the world shows that our understanding of the increase in global temperature is solid.

One way to distract from the strong understanding of how our climate is changing is to resort to the so-called blowfish fallacy. Recently, U.K. journalist David Rose claimed that methodological flaws by NOAA scientists cast doubt on the global temperature record. Rose neglected to acknowledge that the data he was attacking had been independently replicated by a number of other scientific teams.

Rose's misinformation was promptly and comprehensively debunked. Within days, the so-called "whistle blower" who was the source of the article distanced himself from Rose's characterizations. Contrary to Rose's breathless conclusions, data scientist John Bates said there was "…no data tampering, no data changing, nothing malicious."

Rose's out-of-proportion response was best summed up by science writer Scott Johnson:

"…it's not much more substantial than claiming the Apollo 11 astronauts failed to file some paperwork and pretending this casts doubt on the veracity of the Moon landing."



Global temperature records from NOAA, NASA, Berkeley, Hadley and Cowtan & Way. Credit: Zeke Hausfather, Carbon Brief, Author provided

The climate change gorilla

The case for climate change is a loud, unmissable gorilla. Our acceptance that global warming is happening is based on tens of thousands of lines of evidence: not just thermometer readings but melting ice sheets, migrating species, retreating glaciers and rising sea levels, to name just a few.

Similarly, our scientific understanding that human beings are causing modern global warming is based on many independent human fingerprints, observed by satellites, surface measurements of infrared heat and, in fact, the shifting structure of our atmosphere.

To avoid seeing the climate gorilla requires conspiracy theories and distracting techniques such as the blowfish fallacy. Often these arguments are accompanied with the false narrative that our scientific understanding of climate change is like a house of cards – remove one card and the whole edifice topples down.

Science is more like a jigsaw puzzle, with each line of evidence building a more complete picture. Removing one piece doesn't change the overall picture. In the case of humanity's role in causing climate change, we have many pieces and the picture is clear.

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