

Open the Box

Climate change denial as a subject of geographical education

An expert interview with Dr Lee McIntyre

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Abstract:

It is a proven fact that the current climate change is real, anthropogenic and will have serious consequences in the future. Nevertheless, there are still many deniers who disagree. In an interview, expert Lee McIntyre explains the background to climate change denial and calls for this topic to be covered in class.

Keywords: Climate change, climate denial, science denial, geographical education

Abstrakt:

Es gilt als gesichertes Erkenntnis, dass der gegenwärtige Klimawandel real und anthropogen verursacht ist sowie künftig schwerwiegende Folgen mit sich bringt. Trotzdem gibt es noch viele Leugner*innen, die diesbezüglich anderer Ansicht sind. Der Experte Lee McIntyre zeigt in einem Interview die Hintergründe der Klimawandelleugnung auf und appelliert, dieses Thema im Unterricht zu behandeln.

Schlagwörter: Klimawandel, Klimaleugnung, Wissenschaftsleugnung, geographische Bildung

Lee McIntyre is a research fellow at the Centre for Philosophy and History of Science at Boston University. His main topic of interest is the defence of science and rationality. In recent years he has written books on post-truth, the definition of science, science denial and disinformation. In an interview, Lee McIntyre explains what characterises climate denial and why geography lessons should address it.*

Dr McIntyre, what is climate change denial?

Climate change denial is just another form of science denial, and it follows the same blueprint as all of them do. Modern science denial started back in the 1950s when the tobacco companies decided to “fight the science” which said that smoking caused lung cancer. In doing so they created a blueprint that has been followed by all other science deniers ever since. In recent years cognitive scientists John Cook and Stephan Lewandowsky have identified this pattern as: (1) cherry pick evidence, (2) engage in conspiracy theories, (3) engage in illogical reasoning, (4) rely on fake experts, (5) insist that science has to be perfect to be credible (see Box 1). So I think it is important to realize that climate change denial is not unique – though it is particularly high stakes for what it portends about human survival – and is just another form of science denial. This means that it can be fought just like all the others.

Why do people deny climate change?

There are various reasons, some of which have shifted over time, but climate denial started with economic interests. Like the tobacco companies, the big fossil fuel companies realized early on that the reality of climate change was a threat to their business. Given this, they too started

to “fight the science” by suggesting that there weren't enough definitive studies, that we needed more data, that it really wasn't happening, that there was no consensus, etc. For decades they gave money to “think tanks” which were devoted to promoting this bogus public relations type message, under the guise of serious science. Then things got worse. Fossil fuel companies are major donors to political campaigns and after they put leverage on (mostly Republican) politicians to defend them, this whole issue got politicized. Once climate denial became ideological, things got much worse, because now people were polarized. It wasn't even vaguely about science anymore. It was pure ideology. Whether these people actually believe that climate change is real or not, once they are on the opposition team it is very hard to get anything done.

(How) Do climate change deniers differ from each other?

I think of it this way: There are the liars and the ones being lied to. Both are responsible but the first category is much more dangerous. The people who lie about climate change – like the fossil fuel companies – are actually the least likely to believe that global warming isn't real. But they *say* it is because this serves their interests. That is to say they *know* they are lying. Does this make them deniers? I think it does. But they deny climate change not because they don't believe it's true, but because they have an economic incentive to get others to believe it's not true. I think that this is a form of denial. Then there are the believers. These are the people who are taken in by the disinformation and propaganda put out by the liars. Ironically, even though most of the believers get nothing out of it, they are the ones who are most likely to genuinely believe

that climate change is not real, because they trust the people on their “team” who have told them so. I think of these folks as victims. They too are deniers, and there are probably many more of them than the “liars” at the top, but they are pawns of the special interests who create disinformation because it serves their economic and ideological interests.

What do the different types of climate deniers have in common?

They feel themselves to be on the “other team” than those who take the science of climate change seriously. This is dangerous.

What influence do climate deniers have on society and climate change research?

The politicization of climate research is one of the great tragedies of our era. Good scientists keep churning out study after study, thinking that more and more facts will finally convince everyone, but it is not about facts. This is sad. We now exist in an era where reality itself has become a political battlefield and it is not quite clear how all this will turn out. Global warming is a terrible existential threat to human life, and if we break the 1.5 C cap before 2030, I fear that the consequence of climate change will lead to societal and cultural chaos. There will be mass die offs, starvation, water wars, mass migration. The terribly sad thing is that there is still time to do something about this! The latest IPCC panel report makes it clear that we have the tools and know how to do something. But the institutional and geopolitical barriers make it highly unlikely that we will.

(How) Can statements by climate deniers be effectively refuted in and outside of social media?

Yes, they can. As Philipp Schmid and

Cornelia Betsch (2019) have discovered, there are two methods that work. One is called “content rebuttal” and this is when you’re an expert on the topic and can provide the facts. Facts don’t always work, but they do sometimes, and they work best in the hands of someone who knows the subject inside and out. And then there is also something called “technique rebuttal” which is based on the earlier idea that there are five tropes of flawed reasoning behind all science denial (see question 1; Box 1). Once you’ve mastered these you can talk to science deniers not about what they believe but why they believe it. And as it turns out, this is just as effective as talking to them about facts. This means that you don’t have to be an expert on the particular topic of their denial (like climate change) to convince them to give it up. So there are two great methods to push back against science deniers.** Keep in mind, however, that you can’t change someone’s mind for them, just create an environment in which they *might* change their own mind.

But let’s return now to the issue of “refutation” and admit that there are some people who simply will not change their minds. Right now, in Congress in the USA there are about two dozen politicians who are standing in the way of meaningful efforts by the USA to lead the way on doing something about global warming. But all the research in the world will not convince them. Why not? Because they are more interested in keeping their jobs – and keeping the flow of money from their donors – than about the suffering of others or future generations. Don’t get me wrong. I believe that we *should* keep refuting the ridiculous arguments put forth by climate deniers and amplify them enough that it makes it clear how *wrong* they are on the science. But in addition to this I think there

are two more things that we need to do. One is to increase public awareness of how science actually works. It isn't about proof and certainty. Scientific beliefs are based on warrant and probability given the evidence. But does the public know that this is how science works? That we have to make policy even without proof and certainty, just as we do on hundreds of other topics? So we need more of this. The second thing we need to do is go after the biggest climate polluters on an economic and political basis. A few years ago, there was a study which found that 71% of global emissions were being made by just 100 companies. These are being run by nameable individuals. Why aren't we naming and pursuing them on a daily basis with world-wide boycotts and public shaming on social media?

(Why) Should climate denial be a topic in geography lessons?

Because it is part of science. When we teach evolutionary biology, I think it is perfectly respectable to show why evolution deniers are wrong and have no serious intellectual credentials. I'm not saying denialist "theories" should be taught as serious contenders in the biology classroom. But students should be made aware that non-scientific forces are at work to try to undercut scientific findings. This should be done about climate denial in the geography classroom too.

What should be considered when addressing climate denial in the classroom?

That climate change is not a matter of serious debate among scientists. That climate denial is motivated by special interests that are beyond science. There was a terrific article in Reuters (Doyle, 2019) a few years back which showed that the

scientific consensus on anthropogenic climate change was so strong that it was a million to one chance that the deniers were right. Why not trumpet this? And talk about those cases in which deniers have changed their minds too? We can have some influence on this debate if we publicize it. My book "How to talk to a science denier" (McIntyre, 2021) talks about how to do this. We should be empowering our students not just to learn about climate change, but to learn how to fight back against the people who spuriously question the science on non-scientific grounds.

* A German translation of the interview can be requested from Marvin Schlamelcher.

** Schlamelcher and Fögele (2023) have developed a teaching sequence to promote the ability to rebuttal content. The FLICC scheme (in German: PLURV) for technique rebuttal was prepared for geography lessons by Betz (2021) and is freely available at doinggeoandethics.com.

Box 1 | FLICC – Five argumentation techniques used by science deniers

<p>Fake experts: Relying on individuals who are not scientists or lack expertise in the area being disputed.</p> <p>Logical fallacies: Drawing false conclusions or making connections where none exist.</p> <p>Impossible expectations: Demanding that scientific statements must be 100% verified. The existence of error rates is viewed as a sign of a lack of scientific rigor.</p> <p>Cherry picking: Supporting arguments only with facts that align with one's views, while ignoring or concealing research findings that contradict those views.</p> <p>Conspiracy theories: Suggesting that scientists or politicians have secretly conspired to achieve certain collective goals.</p>

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