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# Field Notes from the Climate

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Popular opinion of science is doing poorly. Researchers and engineers used to be role models and superheroes: Einstein, Batman, Professor X, Iron Man, Leonardo (the Italian Renaissance genius *and* his Teenage Mutant Ninja Turtle namesake). But today, science and its practitioners have come under increasing attack, and not just from the radical right. Granted, Republicans opine daily as to the integrity of climate science. At the same time, the political left hosts its own cohort of unbelievers. The paranoia around vaccines causing autism and the unknowable evils of GMOs has left its mark on communities across the country. But while the American left may risk hypocrisy in calling its political other “anti-science,” there is at least this: the aggregate consequences of every far-fetched liberal theory look relatively small compared to the damage done by American climate change denial.

In early 2014, the media announced that Bill Nye the Science Guy and Ken Ham would face off in a debate titled “Is Creation a Viable Model of Origins?” Bill Nye has become the de facto spokesperson for anything science-related in the United States. Ken Ham is a prominent young earth creationist who believes that the planet is roughly six-thousand years old. The event, held at the Creation Museum in Kentucky and moderated by a journalist from CNN, lasted over two hours and has collected nearly five-million views on YouTube. During the event both men stood behind podiums taking their turns speaking. Topics included the stratigraphy of the Grand Canyon and just how many animals could have fit aboard Noah’s Ark. Assisted by cartoonish graphics projected behind them, each made their case for why the Earth was or wasn’t 4.5 billion years old.

It’s easy to notice the handful of similarities between the young earth creationism/old earth evolution debate and the “climate change debate” in the U.S. First among these similarities, and perhaps most important: while both of these issues were once the subject of fierce debate among scientists, few credible researchers today doubt that the Earth is 1) billions of years old or 2) warming due to human activities. The second similarity is the high rate of public denial of these two scientific understandings: 42% for creationism and 40% for climate change, according to Gallup. Third similarity: while there is no shortage of information on either topic, there also exist well-funded (mis)information campaigns aligned against the scientific community. Fourth, and finally, levels of belief about global warming and creationism are closely tied to factors such as education, political values, and religious beliefs.

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Why do individuals deny scientific consensus in the first place? The intuitive answer is that people resist new ideas that threaten their cultural beliefs, like evolution or the heliocentric solar system. Scientific development overhauls existing paradigms and imperils cultural norms. In response, the Old Guard (often the Church) chooses to resist rather than adapt. But what about the vaccine/autism connection or pervasive fear of GMOs? Population clusters in Northern California have underimmunization rates hovering around twenty percent. At the same time, the “Right to Know” movement has won legislative

victories in Maine, Connecticut, and Vermont, while dozens of other states have similar proposed legislation requiring GMO-containing foods to be labeled as such. In these ways the rejection of science has become evident in our laws and even our bodies. Both of these instances of scientific rejection came about largely on their own, and neither defends any kind of tradition or hierarchy. (For frame of reference, the inoculation hysteria began with a 1998 paper, two-hundred years after the development of the Smallpox vaccine.) If anything, both of these beliefs and the movements that champion them are anti-hierarchical: underdogs making improbable gains against boardroom villains in Big Pharma or Big Ag. In these cases, rejection of scientific consensus challenges the status quo, the cultural opposite of the opponents of Darwin who sought to preserve the paradigm. What’s more, these left-wing movements usually assert that their beliefs are well-grounded in science. Indeed, phoney and flawed publications seem to be the lifeblood of liberal paranoia.

For decades researchers have worked to piece together the strange and often-contradictory fabric of the rejection of science. In 1982 Mary Douglas and Aaron Wildavsky proposed the cultural theory of risk. It suggests that individuals (as members of societies) will either ignore or attend to risks that align with their worldviews. The big contribution of what’s come to be known as Culture Theory is that it explains how rejection of science can be proactive instead of only reactive. That is, collectivist Californians or organic food obsessives in Vermont are drawn toward their own far-fetched ideas because they align with values that are already close to home: opposition to big industry, affinity for the “natural” over the synthetic, and likely some sense of geographic and cultural exceptionalism (“we do things differently here”). Meanwhile, Culture Theory fits just as well with creationism and climate change. Young earth creationism conforms to a worldview that maintains that the universe is as ordered and intentional as the New King James Bible. As for global warming, writing it off as a hoax or a natural phenomenon protects individuals from acknowledging that their carbon-intensive lifestyle contributes to global environmental disaster.

**Indeed, phoney and flawed publications seem to be the lifeblood of liberal paranoia.**

Despite the prevalence of Culture Theory, its contributions to social science haven’t made their way into mainstream discourse about scientific consensus. In its place, the “public understanding of science” model dominates the climate debate. It assumes that mistaken beliefs about the natural world result from a lack of knowledge, or “information deficit,” about the issue at hand. It’s the familiar image of Bill Nye or Al Gore standing onstage in auditoriums and gesturing at the graphs projected behind them. It’s the “*if only they knew what I know!*” paradigm. But even people without backgrounds in psychology know that this issue is not nearly so simple. It is not just about putting



the right person in front of the right graph. If there is one lesson from Culture Theory, it is that people believe things well before they sort out the facts and figures that prove their beliefs are true.

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Back to the Creation Museum. Bill Nye explains radiometric dating to the audience (“our good friends Rubidium and Strontium”). Ken Ham—soft-spoken, half-rim glasses, Australian accent—says that there is no way to know that isotopic decay rates are constant over time. Instead, he brings up an animated slide that constructs two pillars side-by-side. On the left, built atop the foundation of “**MAN’S IDEAS: NATURALISM**” rest blocks with names like “**EUTHANASIA**,” “**ABORTION**,” and “**MARRIAGE???**” On the right, above “**GOD’S WORD**” are stacked blocks titled “**MORAL ABSOLUTES**,” “**BIBLICAL MARRIAGE**,” and “**SANCTITY OF LIFE**.” For two hours both men make compelling, impassioned claims, even as they talk right past each other. Ken Ham was no more interested in the fossil record than Bill Nye was in the metaphysical implications of evolution. This much is certain: almost everyone in the audience that day came away feeling more convinced of what they already believed when they arrived. But for a one-line excerpt from the Constitution, Bill Nye made no effort to reach out to conservatives for whom creationism structures their view of the universe. Ken Ham did nothing to try to compel a listener who embraces the vast complexity of scientific narrative. Both debaters instead presented the evidence that would have been most persuasive to themselves rather than to each other.

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The climate change debate is more or less the same. The believers point to “overwhelming evidence”—graphs, always graphs—while the deniers question the methodology and conjure vaguely paganistic images like “sacrifice the economy.” Neither side seems able to communicate with the other on any terms besides their own. The result is a growing divide as each side of the issue becomes more convinced of its own correctness.

There are notable exceptions to the dominant trend. Pope Francis communicates about climate change with unrivaled grace. Rather than try to compel his audience to believe that Earth is warming, he instead addresses the tenets of Christianity, illustrating how climate change can coexist with a conservative and religious cultural worldview. He does not anticipate any rebuttals or comment on IPCC measurements. For Francis, the physical reality of climate change is taken for-granted; his success comes from explaining it in terms that conservatives like Ken Ham can comfortably incorporate into the value structures they already hold.

Francis is rare among effective climate change communicators, but he is not completely alone. George Shultz, U.S. Secretary of State under Reagan, is one of the most prominent Republican iconoclasts embracing climate science. His audience? Hardcore market liberals for

whom government regulation is anathema to prosperity. Here is Shultz in an piece he wrote earlier this year in *The Washington Post*:

We all know there are those who have doubts about the problems presented by climate change. But if these doubters are wrong, the evidence is clear that the consequences, while varied, will be mostly bad, some catastrophic. So why don’t we follow Reagan’s example and take out an insurance policy?

Play it safe, plan for contingencies—good conservative values, tailored for a slightly different audience than Francis’ message.

Years from now, we may reflect on Francis and Shultz as two unlikely pioneers of effective climate change communication. In the meantime, the gap between data and values must yield to a more accessible and inclusive representation of science. Ken Ham was spot-on when he remarked that “Bill Nye and I have the same Grand Canyon,” even if he didn’t realize his own abyssal irony. If people with conflicting worldviews are to believe that climate change is real and demanding of action, each will arrive at that belief differently and in a way that is largely consistent with their basic assumptions about how the world works. And while progress is already being made, there is still plenty of ground left to cover. The end goal? To set aside the Ken Ham/Bill Nye style “climate debate” and move forward with the climate conversation we ought to be having instead. ●



Dorothy Klement