Oreskes, Harvard and the Destruction of Scientific Revolutions

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Guest post by Bradley Keyes

consensus (kənˈsɛnsəs) — n.

general or widespread agreement (esp. in the phrase *consensus of opinion*)

usage Since '*consensus'* refers to a collective opinion, the words '*of opinion'* in the phrase '*consensus of opinion'* are redundant and should therefore be avoided

Source: consensus. *Collins English Dictionary—Complete & Unabridged 10th Edition.*HarperCollins Publishers.

As we all know, The Consensus is Strengthening. It's growing deeper daily, stronger weekly, and more consensual monthly. This is the story of how Professor Naomi Oreskes pulls the trick off.

It would be "remarkable" enough, to use Oreskes' favorite adjective, if more and more scientific papers endorsed AGW every time you sampled the literature. But what's even more remarkable is that you don't actually *need* to do multiple studies.

All you have to do, apparently, is sample the literature *once*, then spend the next decade and a half changing your story about the results.

Professor Naomi Oreskes (pictured) is best known for her discovery that Freeman Dyson is old, so his arguments can't be taken seriously.

But first, the context

c 375,000 ya: *H. sapiens* speciates from *h. erectus*.

c 375,000 ya–present: As social primates, we rely on a combination of popular and expert consensus to ascertain the truth about everything from the divine to the pudendal, with little success. For hundreds of millennia, encyclopaedic ignorance and increasingly-confident delusion will characterize the human condition, leavened only by spasms of understanding.

2,387 ya: In the Platonic dialogue *Theaetetus*, Socrates lays the groundwork of Western epistemology by characterizing knowledge as *justified, true belief*.

2,179 ya: Marcus Aurelius becomes the last of the Five Good Emperors. A keen philosopher with a surprisingly modern voice, he is best loved for the aphorism: "The aim of life is not to align oneself with the majority but to avoid finding oneself in the ranks of the insane[1]."

c 1,000 ya: Arab and Persian proto-scientists begin to understand that *the authority of experts* is worthless as a guide to the workings of nature. Ibn al-Haytham writes that the genuine improver of human knowledge "follows proof and demonstration rather than the assertions of a man whose disposition is marked by flaws and shortcomings of all kinds."
c 500-300 ya: The Scientific Revolution marks the dawn of the Age of Reason and a gradual process of perfecting and enforcing what we recognize today as the modern scientific method.

One of the big ideas that make this revolution possible is Rule Zero of Science Club[2]: **opinion is not a form of evidence**. In the special epistemology of science, *what scientists think* doesn't prove a thing about the natural world. It doesn't mean anything. It doesn't tell us anything.

In Socratic terms, scientific knowledge can only be justified by scientific *evidence*. Expert consensus, majority opinion and unanimous agreement are now topics beneath the contempt of the men and women who call themselves scientists. The only evidence is *evidence*.

That's the idea at any rate. But scientists, being part human, are heir to the weaknesses of the flesh. Of the four Fundamental Forces known to social psychology the laziest and stupidest, of course, is peer pressure. The Aschian need to conform—the fear of being the only person in the room who's right—is ineradicable, even in science. It will always be a retardant of human discovery.

Fortunately, science has certain behavioral norms that mitigate the entropic influence of consensus—norms like *not talking about it.* This taboo is so visceral that even the 'softest' fields internalize it. The ecologist James Lovelock doesn't exaggerate when he says that the very word '*consensus'*

> ***has no place in the lexicon of science****; it is a good and useful word but it belongs to the world of politics and the courtroom, where reaching a consensus is a way of solving human differences. Scientists are concerned with probabilities,* ***never with certainties or consensual agreement.***

—Prof. James Lovelock, PhD,

The Vanishing Face of Gaia: A Final Warning

[My emphasis.]

171 ya: Dr Ignaz Semmelweis makes hand-washing mandatory for obstetricians at Vienna General Hospital. The incidence of puerperal fever, a mass murderer of mothers, drops by 90% overnight, vindicating Semmelweis' hunch that iatrogenic contagion is to blame. His students soon replicate this miracle in maternity wards throughout the Austro-Hungarian Empire and publish their results in the scientific press.

153 ya: Almost two decades have passed since the empirical confirmation of Semmelweis' ideas, but mainstream pathology perseverates in ignoring them, sticking to the ancient and evidence-free consensus on miasmas, 'humoral imbalance' and leeching. Semmelweis himself has been vilified and hounded from his job by the medical establishment, to whom the very suggestion that their hands might be vectors of disease was an affront, coming as it did from a Jew with a low h-index. Unemployed, angry and deeply depressed by the needless deaths of thousands of women a year, Semmelweis is committed to an insane asylum. The guards welcome him with a savage beating. His injuries fail to heal and within a fortnight, at the age of 47, he has died of blood poisoning.

82 ya: The physicist Max Planck, running out of patience with the dead weight of scientific consensus, writes his bitter witticism: "Eine neue wissenschaftliche Wahrheit pflegt sich nicht in der Weise durchzusetzen, daß ihre Gegner überzeugt werden und sich als belehrt erklären, sondern vielmehr dadurch, daß ihre Gegner allmählich aussterben und daß die heranwachsende Generation von vornherein mit der Wahrheit vertraut gemacht ist[3]."

24 ya: Dan Schechtman discovers and publishes proof of quasiperiodic crystals, whose existence flies in the face of the consensus. For the Israeli chemist this finding is about to usher in a decade of condescending derision and ostracism.

It starts when the head of Schechtman's research group suggests that he "go back and read the [undergrad chemistry] textbook again." A couple of days later he asks Schechtman to leave for "bringing disgrace on the team." The great Linus Pauling, darling of the American Chemical Society, tells a lecture hall full of scientists that "there is no such thing as quasicrystals, only quasi-scientists." Schechtman has to fight an uphill battle just to get his colleagues to look down a microscope (or crystallographic diffractometer, as the case may be) and see the evidence for themselves.

Thanks to this so-called Semmelweis reflex, it will take another 17 years for the Nobel Prize Committee to acknowledge Schechtman's breakthrough.
15 ya: Anthropologist and author Michael Crichton is one of the first people to speak out against the recrudescence of consensualist tactics in science.

"Let's be clear: the work of science has nothing whatever to do with consensus," he thunders in his 2003 lecture to the California Institute of Technology, 'Aliens Cause Global Warming.' "Consensus is the business of politics. Science, on the contrary, requires only one investigator who happens to be right. In science, consensus is irrelevant….
"I regard consensus science as an extremely pernicious development that ought to be stopped cold in its tracks."

14 ya: Crichton's warning has fallen on deaf ears. Science By Peer Pressure—whose progress we should have stopped at Munich—officially completes its long march through the institutions in 2004, with the appearance in the December issue of Science of an article called 'The Scientific Consensus on Climate Change.'
The paper, by nobody called Naomi Oreskes of UCSD, doesn't conform to the standards of any academic discipline known to man. (At a grand total of one page long and with all the scholarly rigor one would expect from a manuscript sent back by Gender, it could only have been snuck into Science by the grace of a Special New Section, 'Beyond the Ivory Tower,' which is conveniently exempt from peer review.)

What it *does* do, quite openly, is not just discuss but *quantify* the supposed agreement on AGW among climate scientists. It almost doesn't matter how bad the paper is; merely by getting it published in—or at least *adjacent* to—the peer-reviewed literature, Naomi Oreskes has weaponized the argumentum ad consensum. Science (the magazine, not the thing) has Scientized it under its own prestigious aegis.

Two years later, Al Gore will aerosolize it by citing Oreskes' statistic in *An Inconvenient Truth*, his feature-length infomercial for carbon credits:

> *Isn't there a disagreement among scientists about whether the problem is real or not? Actually, not really. There was a massive study of every scientific article in a peer-reviewed article written on global warming in the last ten years. They took a big sample of 10 percent, 928 articles. And you know the number of those that disagreed with the scientific consensus that we're causing global warming and that is a serious problem[4] out of the 928: Zero. The misconception that there is disagreement about the science has been deliberately created by a relatively small number of people…*
>
> *But have they succeeded? You'll remember that there were 928 peer-reviewed articles. Zero percent disagreed with the consensus.*

Thus is born the foundational myth of the climate movement. And to quote the inimitable Jim Franklin, by 'myth' I mean 'lie.'
[1] Contrary to popular belief, no evidence exists that Marcus Aurelius actually said this. The attribution is nevertheless certain, because everybody thinks so.

[2] If you haven't heard of Rule Zero that's because it's so deeply axiomatic as to be too obvious for words.

[3] Planck's joke sounds better in English: "Science advances one funeral at a time." Not until the great physicist's death in 1947 do scientists finally move on from this depressing paradigm. Despite the occasional regression, many fields of science now advance one discovery at a time.

[4] This last embellishment—"that it is a serious problem"—is Gore's personal lie, but That's OK Because He's Not A Scientist. TOKBHNAS, also known as Rule Zero of Climate Club, was definitively articulated by Richard Müller in his *Physics for Future Presidents*:

> *Al Gore flies around in a jet plane—absolutely fine with me. The important thing is not getting Al Gore out of his jet plane; the important thing is solving the world's problem. What we really need are policies around the world that address the problem, not feel-good measures.* ***If he reaches more people and convinces the world that global warming is real, even if he does it through exaggeration and distortion—which he does, but he's very effective at it—then let him fly any plane he wants.***

[My emphasis.]

The title of Prof. Müller's book is particularly apt given that Barack Obama repeated—or retweeted—Gore's lie in 2013. But that's OK because… well, you know.

Naomi's Science trick to hide the denial

In her career-making paper, Oreskes' main accomplishment was to fail to see any sign of skepticism in the literature from 1993 to 2003. This can't have been easy if skeptical arguments were as ubiquitous as she let slip on Australia's ABC Radio:

> *This thing about the peer-reviewed literature being closed [to skeptics], that's just false. I studied the scientific literature on climate change, and there's all kinds of debate going on.*

In fact, if John Cook's textbook *Climate Science: A Modern Synthesis* is to be believed, *half* the world's climate scientists still weren't convinced of the reality of AGW during the period Oreskes claimed to examine.

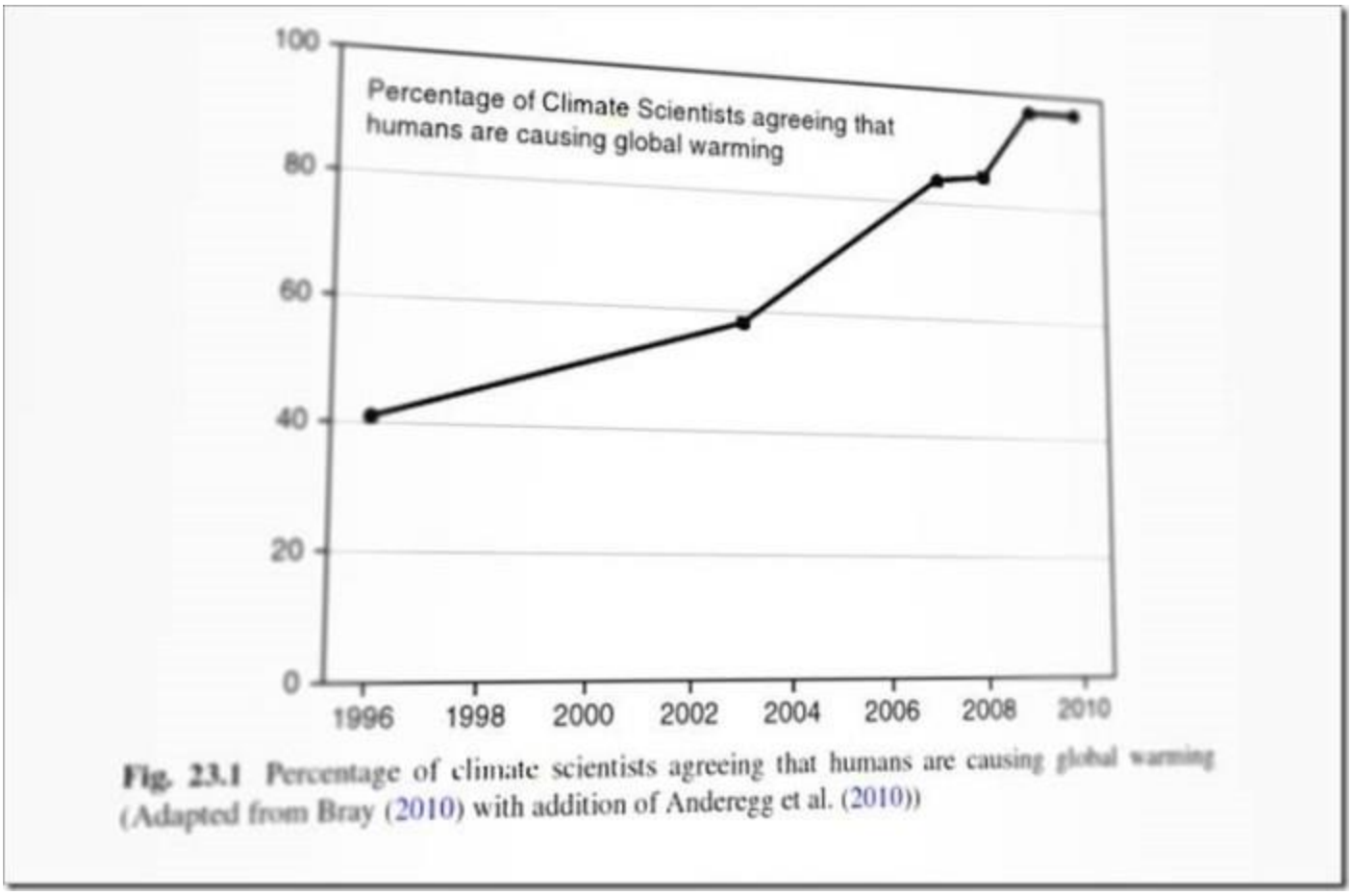


Fig. 23.1 Percentage of climate scientists agreeing that humans are causing global warming (Adapted from Bray (2010) with addition of Anderegg et al. (2010))

This graph, prepared by John Cook for his textbook *Climate Change Science: A Modern Synthesis, Vol. 1* (page 449), implies Oreskes2004 must have missed hundreds of skeptical papers. How could a competent academic have done so? Very carefully, it turns out.

Just as the authors of MBH1998 had to steer clear of the evidence of a Medieval Warm Period, Oreskes had to avoid all evidence of the debate she knew existed. How did she succeed in failing to find any? The good, old-fashioned, climate way: by choosing the right proxy. Meaning the wrong proxy.

Oreskes starts by identifying 'the consensus view' with a pronouncement made by the United Nations' IPCC[1] in 2001:

Human activities… are modifying the concentration of atmospheric constituents… that absorb or scatter radiant energy. …[M]ost of the observed warming over the last 50 years is likely to have been due to the increase in greenhouse gas concentrations.

A lesser historian of science—or a qualified market researcher, opinion analyst or pollster who'd rather not lose her professional standing for malpractice—would probably have *asked* scientists whether they agreed with the UN, disagreed or didn't know.

But that could have backfired by yielding accurate results, so Oreskes divined their thoughts by *papyromancy* instead.

Normally this occult technique involves touching a document someone else has had their hands on, such as an article they wrote, closing your eyes, and receiving an unmediated "vision" of the memories, hopes, fears and skepticisms inside that person's head, by means not yet fully understood. Oreskes' method, however, relied (slightly) less on clairvoyance. She printed out hundreds of climate papers from 1993 onwards—*eight yearsbefore* the UN even made its 'consensus' statement!—and then checked their Abstracts, not for *objections* to said statement, but for *data disproving it*. Et voilà, the headline finding:

***No papers in the sample provided scientific data to refute the consensus position** on global climate change.*

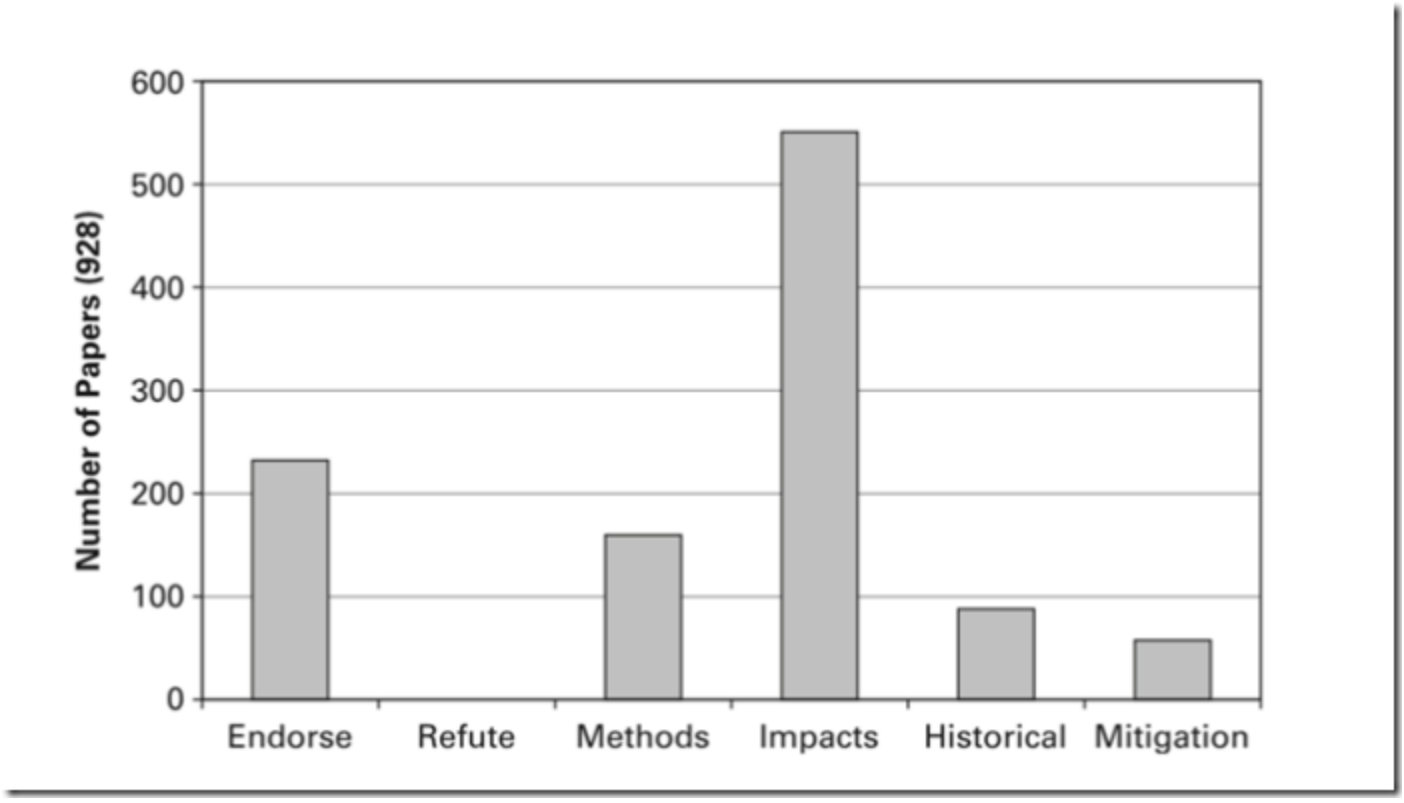
[My emphasis.]

In order to find this result "remarkable," informative or even unforeseeable, you'd have to know literally nothing about what the Abstract of a scientific paper does. In other words, you'd have to belong to the target audience. Meanwhile, to the scientifically-literate rest of us, it hardly needs to be pointed out that *no*, scientists are *not* actually expected to devote their Abstracts to the falsification of any and all climate-related position statements, past *and* future, by political think-tanks with which they disagree, regardless of the subject of their own paper.

You might be forgiven for thinking that in setting a preposterously high bar for papers to count as anti-consensus, Oreskes was guilty of the Fallacy of Impossible Expectations; but of course you'd be wrong. That's something only a climate denier would do.

Having spuriously proven there were no papers that 'disagreed' with the IPCC, the only question left is: how many '*agreed'?* This is where things get weirder.

The only straight answer Oreskes has ever given, to my knowledge, is in an essay she wrote three years after the original paper. It contains this graph:



Here we see the "responses" of the 928 papers on what I have to assume is a Modified Likert, or Lumpert, scale—the instrument developed by Soviet agronomists to compare apples and oranges.

When I look at a dog's-breakfast, false-hexachotomy 'analysis' like this I want to ask the good professor's superiors to consider the statement:

"Naomi Oreskes is a statistical illiterate who shouldn't be allowed within 40ft [12m] of any student currently or prospectively enrolled in a Mathematics, Science, Medical or Veterinary Sciences course."

Do you:

1. Agree

2. Strongly agree

3. Impacts

?

Then I remember there's a method to her madness—it's just not the *scientific* one.

For all its defects, this graph *does* tell us that 232 of 928 papers indicated agreement[2]. If only Oreskes had had the probity to stick to this story, underwhelming as it is, then my fellow CliScep author Geoff Chambers might not have been forced to write her bosses and Research Integrity Compliance Officers at Harvard University. Geoff's complaint, which he emailed three weeks ago, follows.

_____

[1] The initials IPCC stand for The World's Top 2500 Scientists, also known as Ben Santer.

[2] Naturally, Oreskes fails to apply the same (absurd) criterion to Pro papers as to Anti papers. An Abstract *doesn't* have to 'present data proving the consensus position on global climate change' in order to go on the Endorse pile.

The complaint

To: Ara Tahmassian, Evelynn Hammonds, Denise Moody, K. Harding, Matthew Fox

Subject: Academic misconduct by Professor Naomi Oreskes

Dear _____,

Literally ***dozens*** of people all around the world have seen *Merchants of Doubt*, the 2015 film adaptation of the book co-authored by Professor Naomi Oreskes.

In it, there is a false graphical representation of the findings of Prof. Oreskes' seminal 2004 article on the scientific consensus on climate change (an article in which she coded 928 scientific papers according to their Agreement or Disagreement with the view that recent climate change was mostly anthropogenic).
As you see in this screenshot—taken approximately 25 minutes and 50 seconds into the film—an unambiguous claim is made that **all 928 papers in the survey Agreed:**

As Prof. Oreskes admits in her original article, however, this claim is false. Of the 928 papers, she states that

25% dealt with methods or paleoclimate, ***taking no position on current anthropogenic climate change****.*

(My emphasis.)

In fact, two years after the publication of the original article, Prof. Oreskes revealed that "very few" of the 928 papers had Agreed. In point 3 of this article (a rebuttal in which Prof. Oreskes complains, ironically, about a fellow academic "misrepresenting" her results) she admits:

The blog reports of the piece misrepresent the results we obtained. In the original AAAS talk on which the paper was based, and in various interviews and conversations after, ***I repeated [sic] pointed out that very few papers analyzed said anything explicit at all about the consensus position. This was actually a very important result, for the following reason.****Biologists today never write papers in which they explicitly say "we endorse evolution". Earth scientists never say "we explicitly endorse plate tectonics." This is because these things are now taken for granted. So when we read these papers and observed this pattern, we took this to be very significant.*

(My emphasis.)

It goes without saying—and is taken for granted in Prof. Oreskes' rebuttal above—that there is a fundamental difference between "no one disagreed" and "everyone agreed."

To be clear, therefore, the graph in *Merchants of Doubt* involves an unequivocal falsehood, not merely an exercise in artistic license or debatable choice of emphasis for rhetorical purposes.

Moreover, this misrepresentation pertains to, contradicts and obscures what is, by Prof. Oreskes' own admission, "**a very important result**."

Prof. Oreskes accepts responsibility for the deceptive film in her academic CV (p. 15 ff.), where she classifies it as a "scholarly product" and admits having "consulted on all aspects of its production":

SCHOLARLY PRODUCTS: FILM

*Merchants of Doubt, 2015**.** A film by Robert Kenner, produced by Participant Media and distributed by SONY Pictures Classics. (I appear in the film and consulted on all aspects of its production. I also served as a liason [sic] between the film-maker and many of the people featured in the film.)*

***Appearances at Screenings:** Toronto Film Festival; NY Film Festival; Landmark Cinema, Cambridge, MA; Wheeler Opera House Aspen, CO; U.S. Congress, House Energy and Environment Caucus, Washington, DC.*

In closing, it may be useful to recall the definition of research misconduct according to Harvard University's webpage on Research Integrity:

Research Misconduct

The Office of Science and Technology Federal Research Misconduct Policy (2000) defines research misconduct as "**fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results**". The policy acknowledges that research misconduct should be distinguished from honest error or differences of opinion. In recognition of this policy, the University and the Faculty of Arts and Sciences (FAS) have established policies and procedures and created structures to foster a proper research environment, to support and monitor research activities, and to deal promptly and effectively with misconduct or allegations of misconduct in research.

(My emphasis.)

Please keep me apprised of your investigation into Prof. Oreskes' misconduct as a scholar and representative of Harvard University's standards of integrity.

Yours sincerely,

Geoff Chambers

The reply

Dear Mr. Chambers

This is to acknowledge the receipt of your message regarding Professor Oreskes.

I am forwarding your message to the proper office for review and determination. You will be informed of their finding.

Best, Ara

Ara Tahmassian, Ph.D.

Chief Research Compliance Officer

Harvard University

Does Oreskes matter?

Yes.

The open society depends on walls. If Western civilization circa 2018 AD is one of the better times and places to be alive—and I think it is—then it's only because of certain inviolate barriers we take for granted at our peril.

Without a secular wall between Church and State, we lose religious and civil freedoms alike.

Without a semantic wall between *A* and *not-A*, the sleep of logic produces monsters.

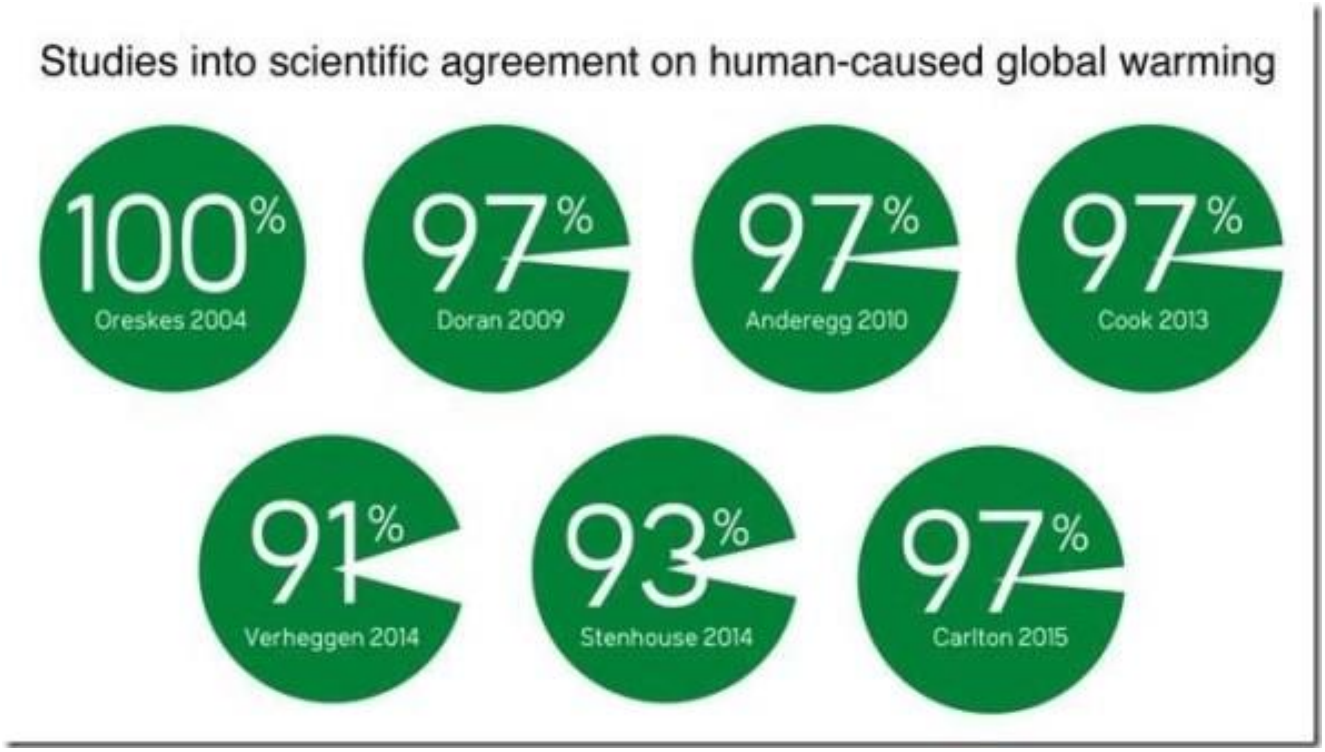
Without a septic wall between feces and drinking water, cities stop working.

Without a skeptic wall between opinion and evidence, science stops working.

When someone with a PhD takes a sledgehammer and puts a fistula in one of these walls, contempt is too good for them. They deserve our hatred and disgust.

Pictured: Francisco Goya's (1746–1828) haunting vision of a world without the Law of Non-contradiction. The boss monsters represent Anomie, Psychosis and War.

As I've mentioned, What Scientists Opine™ has an evidentiary weight of zero point zero to infinite decimal places. Papers on said question are scientifically worthless, by definition, and the act of writing them can therefore only be motivated by an intention to glamor the gullible with gewgaws of pseudoevidence. And yet, since Oreskes2004, publishing such texts has become a cottage industry:



Let me be so clear even a believalist with the IQ of a YouTube commenter couldn't possibly misconstrue me. There's *nothing wrong* with most scientists happening to share the same view on the same topic. In a binary question with no abstentions, the existence of a majority opinion is mathematically inevitable.

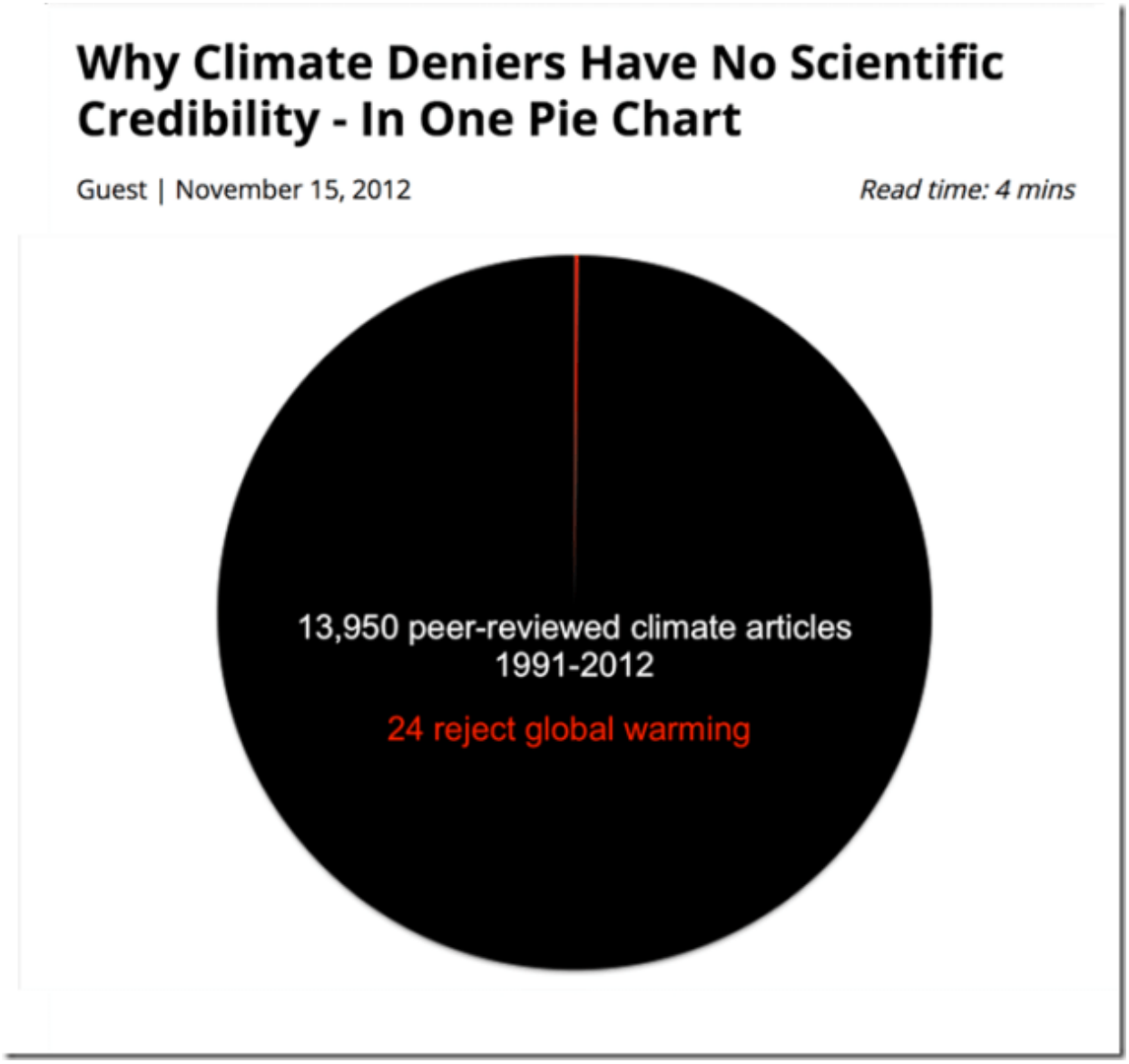
What's *not* so kosher is when the people who hold that opinion use their majority *to persuade*. In the everyday epistemology of the street we'd call this tactic—the argumentum ad consensum—a *fallacy*. Which is not to say you shouldn't use it, or even that your conclusion is wrong, but that you're lying if you try to pass it off as *proof*.

But in the epistemology of science it's worse than that: it's fraud. You're lying just by passing it off as *evidence*. (Remember Rule Zero?)

Yet mankind continues to spew consensus studies into the noösphere like so much plant food into the atmosphere. Nobody has ever offered an innocent explanation for this genre—a challenge from which even the culprits are smart enough to silently back away everysingle time—because there is none.
At the risk of stating the obvious, here's the guilty explanation.

If your mom was anything like mine, I'm sure she raised you to beware of peer pressure and its drug-pushing powers. Climate academics have even referred to acceptance of a consensus as a "gateway belief." Oreskes herself observes that "the likelihood that someone might smoke marijuana increases with the extent to which the person over-

estimates peer-support for the legalization of drugs." In the same paper, she glibly reveals the contrapositive purpose as well: "Pluralistic ignorance is the phenomenon that arises when minority opinion is given too much attention in public discourse, which makes it seem like it represents more people. This makes those in the actual majority assume their opinion represents the minority—**inhibiting them from speaking out**."
Oreskes has raised the Argument by Shaming to a science—or something that looks like one, to people who have no idea what sciences looks like. By lending the legitimacy of a top-dollar graduate school to the exercise, her 2004 Science piece set a cultural change in motion that would, within a few short years, make this kind of anti-intellectual propagandarespectable:



In a classic case of intended consequences, this hate-graph at DesmogBlog is the logical extension of Oreskes' illogic. Most of DeSmog's emissions leave me with a greasy and asthmatic feeling, with snot as black as a graph, but this fallacious filth is bad even by Hoggan's standards. It doesn't matter whether I'm "red" or "black," by the way, and it shouldn't matter if you are either: you should share my revulsion as a matter of principle.

And that's not the worst bit.

Science and its deniance

In order to gain popular forgiveness for her pseudoscientific arguments, Oreskes has to make generations of human beings forget something we all learned in grade school: that science has nothing to do with consensus. To this end she's spent fourteen years, and all the ill-gotten influence at her disposal, *miseducating the public about science itself.*

If you think this is a victimless crime, and that anyone docile enough to take Oreskes seriously has only their own over-educated, under-talented selves to blame, then suppose you had a son who was about to start school. You'd probably take it for granted that he was going to learn the same version of science, more or less, that you and every other school kid has been taught for at least a century. But let's say his Science teacher was a parti-pris warmist. Would you really trust someone like that to explain to your child the irrelevance of consensus in science, in between showings of *An Inconvenient Sequel* and *Merchants of Doubt?*

A WUWT reader, Ken, recently wrote me this comment:

> *December 3, 2018 at 5:04 pm*
>
> *Oreskes is the worst of the worst. Have you seen her TED talk attacking the scientific method? Sickening. It sent Feynman spinning in his grave.*

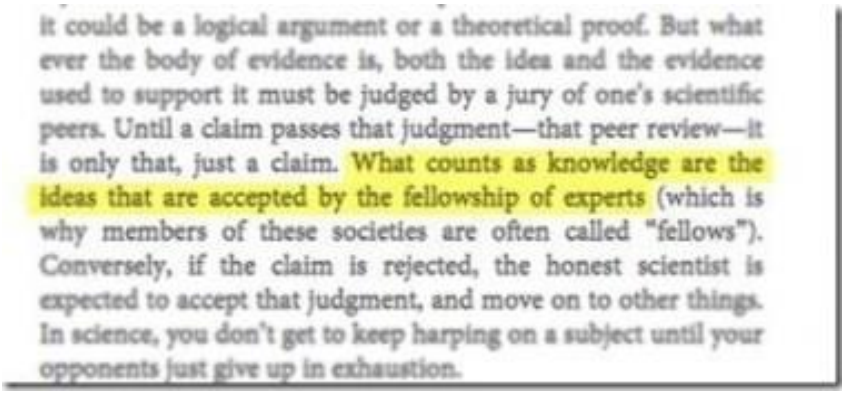
To be honest, I'd tried to forget it. The speech reaches peak psychosis with this:

> *If scientists judge evidence collectively, this has led historians to focus on the question of consensus, and to say that at the end of the day, what science is,* ***what scientific knowledge is, is the consensus of the scientific experts*** *who through this process of organized scrutiny, collective scrutiny, have judged the evidence and come to a conclusion about it, either yea or nay.*
>
> ***So we can think of scientific knowledge as a consensus of experts.*** *We can also think of science as being a kind of a jury, except it's a very special kind of jury. It's not a jury of your peers, it's a jury of geeks. It's a jury of men and women with Ph.D.s, and unlike a*

conventional jury, which has only two choices, guilty or not guilty, the scientific jury actually has a number of choices.

Is this why people go to TED now? To hear unmitigated b*llshit?

I won't insult your intelligence by pointing out that what counts in science is *not* whether other people agree with your hypothesis, but whether *nature* agrees. And Oreskes' rejection of everything science stands for is no slip of the tongue. She peddles the same diseased redefinitions in writing—for instance, in Chapter 10 of *Merchants of Doubt:*



it could be a logical argument or a theoretical proof. But whatever the body of evidence is, both the idea and the evidence used to support it must be judged by a jury of one's scientific peers. Until a claim passes that judgment—that peer review—it is only that, just a claim. What counts as knowledge are the ideas that are accepted by the fellowship of experts (which is why members of these societies are often called "fellows"). Conversely, if the claim is rejected, the honest scientist is expected to accept that judgment, and move on to other things. In science, you don't get to keep harping on a subject until your opponents just give up in exhaustion.

Something funny has happened on the way from the agora to the forum, hasn't it? This excursus would be unrecognizable to Socrates—and not in a good way. Not only has *justification* been reduced to a poor man's social proof, but the *truth* criterion seems to have fallen by the wayside entirely. For Oreskes, truth doesn't even get a look in.

Not content with winding back the Scientific Revolution, she would have us abandon the Western concept of knowledge. And make no mistake: she teaches this misosophical philistinism at Harvard, the cradle of American leadership. Her career as a soi-disant doctor of the history of science represents a systematic assault on 2,387 years of epistemology.

In the 2007 essay in which Oreskes denies the existence of a scientific method, she also denies any recognizable *definition* of science:

This latter point is crucial and merits underscoring: the vast majority of materials denying the reality of global warming do not pass ***the most basic test for what it takes to be counted as scientific—namely, being published in a peer-reviewed journal.***

I guess that rules out pretty much everything published before 1945. So much for Wegener, Arrhenius and Einstein.

Of course I'm kidding—this is just the usual Oreskean copremesis. But infantile simplifications have always appealed to a certain demographic on the left of the bell curve, whose brains hurt when they try to grasp the real logic of science.

From time to time, fake scientists tell us the [insert emergency here] is so emergent that we simply can't afford the luxury of actual science. In the meantime these charlatans always prescribe the same herpetoleum: Post Normal Science.

Here's the problem with it. *There is no science* without the norms established by the Scientific Revolution.

Post Normal Science is therefore Post Scientific Nonsense, and it's no accident that it looks uncannily like pre-scientific stupidity. PNS was the intellectual style of Transylvanian peasants back when nobody could tell you the difference between science and faith, because there was none.

This is not a criticism of religion, not in any sense. It's just that some magisteria weren't meant to overlap. And in the twenty-first century, nobody was supposed to be as scientifically-illiterate as this:

> *So I'm writing an article for a Christian magazine—in that one, I start by referencing scripture about how* ***truth is established by two or more witnesses and showing how science runs on the same principle.*** *I've also drafted something I'll send to the ABC where I start by quoting some skeptics demanding evidence, complimenting that attitude*

If the introductory chronology in this post had ended with the above quote, dear reader, you might have assumed you were going backwards through time. Yet these were the words of John Cook.
In 2011.

AD.

To be sure, Cook isn't exactly Harvard material. On the other hand, he *has* won thousands of dollars' prizemoney for excellence in science communication. And a major US university sees fit to employ him as an educator.

Where did Western civilization go wrong? I'll give you a clue: who would you suppose is John Cook's favorite philosopher of science?

If you're guessing Karl Popper, you're cold.

Does Geoff's complaint matter?

Yes.

Given the sheer scope of Naomi Oreskes' anti-scientific ambitions, fibbing about her findings might appear to be the least of her misdeeds, and it probably is.

On the other hand it's easy to grasp, and impossible to deny, that Oreskes has materially changed her story about the world-famous results of Oreskes2004. Her handlers at Harvard don't have to understand the first thing about the scientific method, statistics or the climate debate to know how she's brought the University into disrepute.

Remember, they got Al Capone on tax evasion. So if Oreskes' downfall is due to a comparatively minor crime against science, so be it.

When Cook, Oreskes and fourteen other mental mediocrities wrote a paper called Consensus on Consensus in 2016, a paper that received the imprimatur of the Institute of Physics—*Physics!*—it would have been the easiest thing in the world to laugh at the sheer decadence of the climate-hyphenated "intelligentsia."
So that's what I did, likening this [waste of] paper to "a Seinfeld paper about Seinfeld papers." It reminded me of the announcement that scientists had successfully created a vacuum containing another vacuum. This time, however, I knew it *wouldn't* turn out to be an Onion headline. (The climate movement crossed into that mirthless horror-land beyond Onionization long ago.)
Consensus on Consensus may be something of an intellectual low-water mark for the human race, setting a record for inanity that stands unbroken two years later, but it doesn't *just* represent joke scholarship. It also makes it official: the believalist mind really is consensuses *all the way down*.

And the bottom turtle is Oreskes2004.

Almost nobody seems to have *read* the monograph for themselves, but that doesn't alter the fact that it's the foundational text of the climate movement.

After all, the Bible has been the most important, but least-read, item on bookshelves in the Western world for many years. One can hardly blame the common folk for being daunted by its thickness, particularly when schools do such a poor job of inspiring a love of poetry—and when the lyricism of the King James Version is all too often lost in translation anyway.

But if Oreskes2004 is the climatists' Bible—or at least their Pentateuch—it's probably not the *word count* that deters them from reading it. Rather, one suspects they've heard the whispers about how slap-dash and fallacious the article is. Why risk discovering for themselves that these rumors are–if anything—polite understatements? What good ever came of seeing how sausages are made? And of all the sausage-links that constitute the alarmist narrative, Oreskes2004 is surely one of the weakest.

Unfortunately, the tricky thing about the individual turtles that make up a totem-pole of tripe is that they still do their job even when they're upside-down, dead as dodos. (Little wonder, then, that the versatile reptiles are often called 'nature's Tiljanders.')

You might say the tessellation properties of a turtle are invariant to transforms such as z-rotation, putrefaction and skeletonization.

So Geoff's Nature trick to topple a tower of truthless testudinal twaddle is to tackle t_0 with feck, not ruth. We skeptics may be short on cash. We may be few in number (though I doubt it). But the Oreskeses of the world have a fatal disadvantage: the inability to keep their stories straight. All Harvard has to do is inspect the foundations. Retract the zeroth story, debunk the bunco at the basis of the entire bunkum, and the whole edifice of artifice might just vanish up its own orifice.
If Geoff's letter reaches one or two retinas sympathetic to reason, it was therefore well worth typing.

Besides, what's the alternative? Spend another decade trying to get it through people's thick skulls that *consensus surveys have no excuse for existing in science in the first place*?

Appendix: Dramatis Personae

Naomi Oreskes is a Harvard-based half-historian, half-geologian, half-science-half-fiction-slash-alt-history-novelist whom William Connolly once described as "wrong." Inexplicably arrogant, she nevertheless manages to suffer herself gladly.

In the words of Tom Wigley, an Adelaide University Professorial Fellow in climate science, Oreskes "doesn't know the field," making her analyses thereof "useless."
Albert A. Gore is a Former Future US President and unrepentant tobacco millionaire who denounces his critics as "merchants of poison."
In 2007 Gore was awarded the Nobel Peace Prize for his rôle in starting the Climate Wars.

Michael Crichton was a Harvard-trained MD, professor of anthropology, writer and filmmaker.

At an Intelligence Squared debate in 2007 he helped make the victory of the motion 'That Global Warming Is Not A Crisis' so decisive that warmists are still too traumatized to debate. Gavin Schmidt has singled out Crichton's "folksy, tall" arguments—as well as the audience's gullibility—for blame in the failure of his own team's average-height, unpopulist rhetoric.
John Cook was the creator of SkepticalScience, the anti-skeptical site for non-scientists, before becoming a henchboy to the punitive psychologist Stephan Lewandowsky. In 2011 he became one of the few males to write a college-level textbook on a subject he'd never attended a single class in.

Catch phrase: "Fake Experts are a key characteristic of science denial."

Ignaz Josep Semmelweis, Alfred Wegener, Joseph Goldberger, Daniel Schechtman, Albert Hermann Einstein, Barry Marshall and Robin Warren—science deniers who rejected the scholarly consensus for unknown psychiatric reasons.