

FRIENDS OF SCIENCE SOCIETY

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May 1, 2014

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BY FAX AND REGISTERED MAIL

Contact Information

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ATTN: Eric Eich, Editor - Psychological Science

Dear Mr. Eich,

RE: Request to retract Stephan Lewandowsky et al (2013): "NASA Faked the Moon Landing - Therefore, (Climate) Science is a Hoax: An Anatomy of the Motivated Rejection of Science"<http://pss.sagepub.com/content/early/2013/03/25/0956797612457686.abstract>

Friends of Science Society respectfully request that the paper *"NASA Faked the Moon Landing - Therefore, (Climate) Science is a Hoax: An Anatomy of the Motivated Rejection of Science"* be withdrawn on grounds of violating the spirit and intent of the Committee on Publication Ethics (COPE) ethical guidelines specifically "1.5 champion freedom of expression."

A review of Stephan Lewandowsky's published papers reveals that *"NASA Faked the Moon Landing - Therefore, (Climate) Science is a Hoax: An Anatomy of the Motivated Rejection of Science"* is the only professional paper by him, to that date in time, with an inflammatory title.

As experts in the area of social psychology, it would seem to have been self-evident that, in the contentious world of climate science, such a title would immediately subject *any* dissenting climate scientist or individual to public humiliation - thus violating the COPE principle of championing freedom of expression from the outset.

However there are other grounds upon which this paper should be disqualified, in our opinion.

We dispute Lewandowsky's findings in that his claims about climate change evidence are incorrect.

Lewandowsky et al claim in their abstract:

"Although nearly all domain experts agree that carbon dioxide emissions are altering the world's climate, segments of the public remain unconvinced by the scientific evidence. Internet blogs have become a platform for denial of climate change, and bloggers have taken a prominent role in questioning climate science."

These statements are incorrect.

- 1) Lewandowsky makes an incorrect assumption of + 90% (typically cited as 97%) consensus on climate change science (specifically Anthropogenic Global Warming). Many domain experts disagree. The cited references within the Lewandowsky study are shown to be far below a 90% consensus. In the Andregg et al (2010) survey only 66% agreed with Intergovernmental Panel on Climate Change declarations on climate change or its causes; 44% disagreed and signed public documents to that effect. In the Doran & Zimmerman (2009) opinion poll only 2.4% self-selected climate scientists (qualifications unknown) explicitly state agreement with two opinion questions that have no empirical parameters about climate factors. See:
http://www.friendsofscience.org/assets/documents/97_Consensus_Myth.pdf
- 2) In September of 2013 the Intergovernmental Panel on Climate change (IPCC) admitted there is a hiatus in global warming of some 16+ years and that despite a rise in carbon dioxide, warming had stagnated. Likewise, these climate experts state in the Sept.27, 2013 Technical Summary on pages 114 and 115 that there is low confidence in any extreme weather trends based on the evidence, which disputes the Somerville (2011) claim that climate patterns are changing. These "Key Uncertainties" are included as the last pages of this document for your convenience. Original source see:
http://www.climatechange2013.org/images/report/WG1AR5_TS_FINAL.pdf
- 3) Dozens of leading, expert scientists (climate scientists, economists, IPCC expert reviewers) use internet blogs to communicate their findings to the public such as the Nongovernmental International Panel on Climate Change, <http://www.nipccreport.org/index.html> (presents in an appendix the names of 31,478 American scientists who have signed a petition saying "there is no convincing scientific evidence that human release of carbon dioxide, methane, or other greenhouse gases is causing or will, in the foreseeable future, cause catastrophic heating of the Earth's atmosphere and disruption of the Earth's climate."), World Climate Report - Patrick Michaels <http://www.worldclimaterreport.com/index.php/about-us/> , Climate Audit - Steve McIntyre <http://climateaudit.org/> , YourEnvironment.ca - Ross McKittrick <http://www.yourenvironment.ca/> , Roger Pielke, Jr <http://rogerpielkejr.blogspot.ca/> , Judith Curry <http://judithcurry.com/> , Sciencebits -NirShaviv <http://www.sciencebits.com/> , and many more. These dedicate scientists use the 'common man's' blog to communicate the complexities of their area of expertise in a timely, readable way for the public and interested colleagues. A social psychologist like Lewandowsky is unqualified to pass judgement on any climate science blogger like these, and the manner and style of his paper lumps 'all' bloggers in as 'rejectionists.' Referring to Lewandowsky's footnote 2 he suggests that the motivation behind climate science blogs is for the '...use of rhetoric to create the appearance of debate where there is none.' Based on the level of scientific expertise of the authors of

the blogs noted above, one cannot say there is no debate about climate science or that bloggers are merely using rhetoric.

- 4) Judith Curry is one such expert scientist who also has a blog. She testified to the US Senate Committee on Environment and Public Works Jan. 16, 2014 that carbon dioxide is likely not a main factor in climate change based on current evidence, therefore Lewandowsky's premise is faulty. See:
<http://www.epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=07472bb4-3eeb-42da-a49d-964165860275>
- 5) The Dutch government is calling for an overhaul of the IPCC to include natural factors, not just focus on human factors affecting climate change - something many dissenting scientists have been calling for over many years - indicating that these demands are not 'rejection' or 'denial' or the ravings of a lunatic blogger - but that there are serious problems with the IPCC and its scientific assessments. See:
<[http://www.knmi.nl/research/ipcc/FUTURE/Submission by The Netherlands on the future of the IPCC laatste.pdf](http://www.knmi.nl/research/ipcc/FUTURE/Submission%20by%20The%20Netherlands%20on%20the%20future%20of%20the%20IPCC%20laatste.pdf)>

Friends of Science Society is a climate science review organization. We are a group of professional earth and atmospheric scientists who have been reviewing climate science literature since 2002.

This past year we were alarmed to read of the Cook et al (2013) claim that there is a 97% consensus on climate science. Therefore we undertook to deconstruct the main surveys cited in support of this statement - that of Oreskes (2004), Doran & Zimmerman (2009), Anderegg et al (2010) and Cook et al (2013).

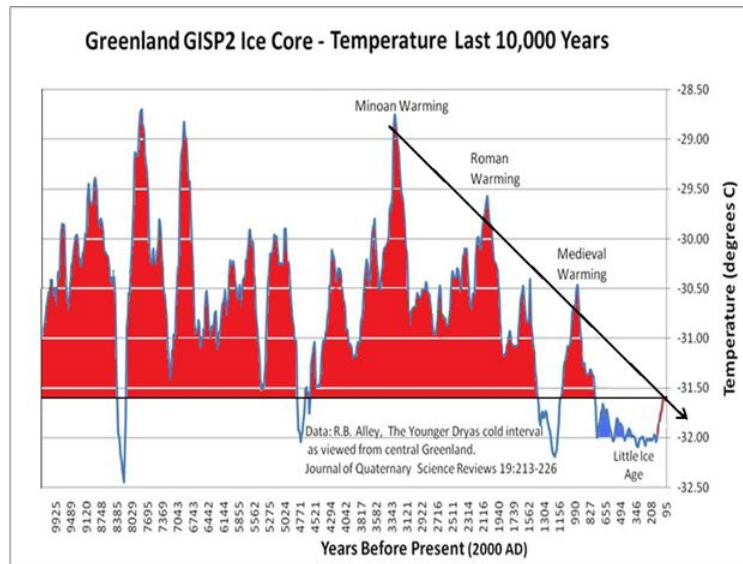
We found that the claim of a 97% consensus is based on math manipulations and that there is no consensus of the kind. In fact, in 3 of the 4 studies (2 of which Lewandowsky cites in his paper as evidence) there are only 1-3% of participants who explicitly agree with the IPCC declarations on Anthropogenic Global Warming; one study cited by Lewandowsky claimed 66% consensus, though terms, definition and parameters were not constant with other studies. Most participants held no position whatsoever. (See attached graphs).

Though we cannot speak to the details, we note that other researchers are also calling for a retraction of the Lewandowsky et al work on other grounds. Steve McIntyre writes "Lewandowsky Ghost-wrote Conclusions of UWA Ethics Investigation into 'Hoax'".
<http://climateaudit.org/2014/03/24/lewandowsky-ghost-wrote-conclusions-of-uwa-ethics-investigation-into-hoax/>

Steve McIntyre and Ross McKittrick are probably best known for their coauthored work deconstructing the infamous "Hockey Stick" graph which alleged that there was very little temperature variation in the past thousand years before 1900 followed by a sharp temperature rise during the 20th century, represented by the 'blade' of the Hockey Stick graph. McIntyre and McKittrick found errors in the computational methods that loaded too much weight on a small set of biased tree ring proxies and understated the uncertainty about

historical climate variability. This effectively eliminated the previously well documented Medieval Warm Period and the Little Ice Age.

This meant the graph showed extreme and unusual warming since the 1900's, when in fact there have been numerous, cyclical cold and warm periods, as is clear from the Greenland Ice Core analysis below. The "Hockey Stick" deconstructed by McIntyre and McKittrick is no longer used by the IPCC.



McIntyre's post Anatomy of the Lewandowsky Scam gives the basic information above the fake responses to Lewandowsky's survey used in the paper.

<http://climateaudit.org/2012/09/08/lewandowsky-scam/>

The post Lewandowsky's Fake Results shows that after removing the most grotesque fake responses, "Only one "skeptic" in the revised dataset purported to believe the Moon conspiracy, while 4 "warmists" purported to believe in it. (All 5 responses are probably fake.)"

<http://climateaudit.org/2012/09/13/lewandowskys-fake-results/>

There are other concerns about the Lewandowsky methods. In this article, Lewandowsky's Fake Correlation, McIntyre shows that the responses from two scammers who claim to believe in all conspiracy theories contributed up to 100% of the Lewandowsky's reported correlations between the conspiracy theories. These statements may be useful in your review, though they are supplemental to our request that the paper be withdrawn.

<http://climateaudit.org/2012/09/18/lewandowskys-fake-correlation>

Regarding social psychology and the influential methods of swaying public opinion, in our 97% deconsensus report, Friends of Science explores the research on 'social proof' as a psychological motivator, based on the work of Robert Cialdini. The work of social affiliation by Stanley Schacter, Irving Sarnoff and Phillip Zimbardo shows how people are more likely to

socially affiliate with a majority - while the work of Kipling D. Williams on the Kiss of Social Death demonstrates how ostracization is the "kiss of social death."

We suspect that Philip Zimbardo would call the Lewandowsky paper a case of manufacturing 'dangerous conformity.' That would seem to be far outside the ethical realm or intent of Psychological Science, Sage Journals, the Association for Psychological Science and COPE, as well as far and away from the APA's Code of Conduct which broadly includes the principles of integrity, justice, and respect for people's rights and dignity.

<http://www.apa.org/ethics/code/principles.pdf>

People have a right to dissent - indeed Lewandowsky et al give a brief nod to this notion saying: *"Rejection of science must be distinguished from true scepticism, which may prompt the revision of a scientific claim on the basis of evidence and reasoned theorizing. Skepticism is not only at the core of scientific reasoning but has also been shown to improve people's discrimination between true and false information (e.g., Lewandowsky, Stritzke, Oberauer, & Morales, 2005, 2009)."*

We believe the evidence presented herein demonstrates that false information forms a large part of Lewandowsky's premise, that many aspects of the paper raise questions, and that his scientific claims about climate science and carbon dioxide (CO₂) are indeed now subject to revision based on the evidence.

Consequently, on these many grounds, we request that you withdraw Stephan Lewandowsky's paper **"NASA Faked the Moon Landing - Therefore, (Climate) Science is a Hoax: An Anatomy of the Motivated Rejection of Science."**

Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Len Maier', is positioned above the typed name.

Len Maier, P. Eng.
President

cc: Sage Journals info@sagepub.com

97% consensus* in 4 surveys ?

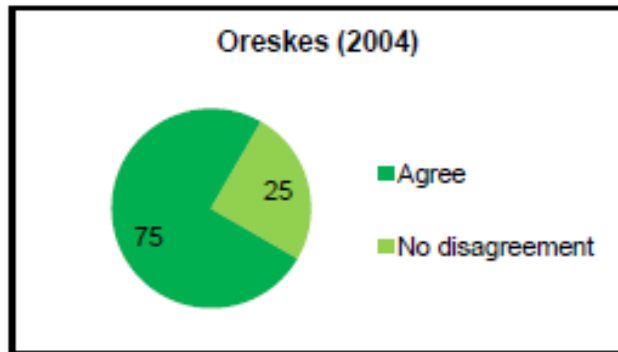
	Oreskes 2004	Doran & Zimmerman 2009‡	Anderegg et al 2010	Cook et al 2013
Database	928	10,000	1,372	12,000
Respondents/Data Used	928	77 Climate specialists that answered question 2.	100 Most published climate scientists	4,010 State a position on AGW
Claim	75% AGW cause most (more than 50%)	97% AGW is "Significant"	97% implicitly agree AGW is significant	97% implicitly agree AGW is significant
Actual	13 of 928 AGW >50%†	75 of 10,000 AGW > 10%	903 of 1372 AGW > 10%	65 of 12,000 AGW > 50%
Actual % of agreement*	1.2%	2.4%	66%	0.54%

NO CONSENSUS - NO SCIENCE

- *The [official Intergovernmental Panel on Climate Change](#)*The official Intergovernmental Panel on Climate Change (IPCC) position is that human activities caused more than 90% of the [warming](#) since the mid-20th century, AGW>90%. The surveys only evaluated if AGW is "Significant" or caused >50% of warming.
- ‡ An opinion poll, not based on empirical evidence and of no scientific value; credentials of 79 unknown.
- † Based on the results of Dr. Benny Peiser's re-run of the Oreskes research in 2005.

Overview of Comparison Charts of the Key Surveys

Figure 3: Oreskes (2004) claims



Naomi Oreskes (2004) claimed 75% agreement and 'no disagreement' [left Figure 3]. Peiser (2005) re-ran her survey in 2005 and found dramatically different results. As shown below [Figure 4], only 13 of 1,117 papers explicitly endorse the alleged "consensus" on anthropogenic global warming.

Figure 4: Peiser (2005) re-run of Oreskes (2004)

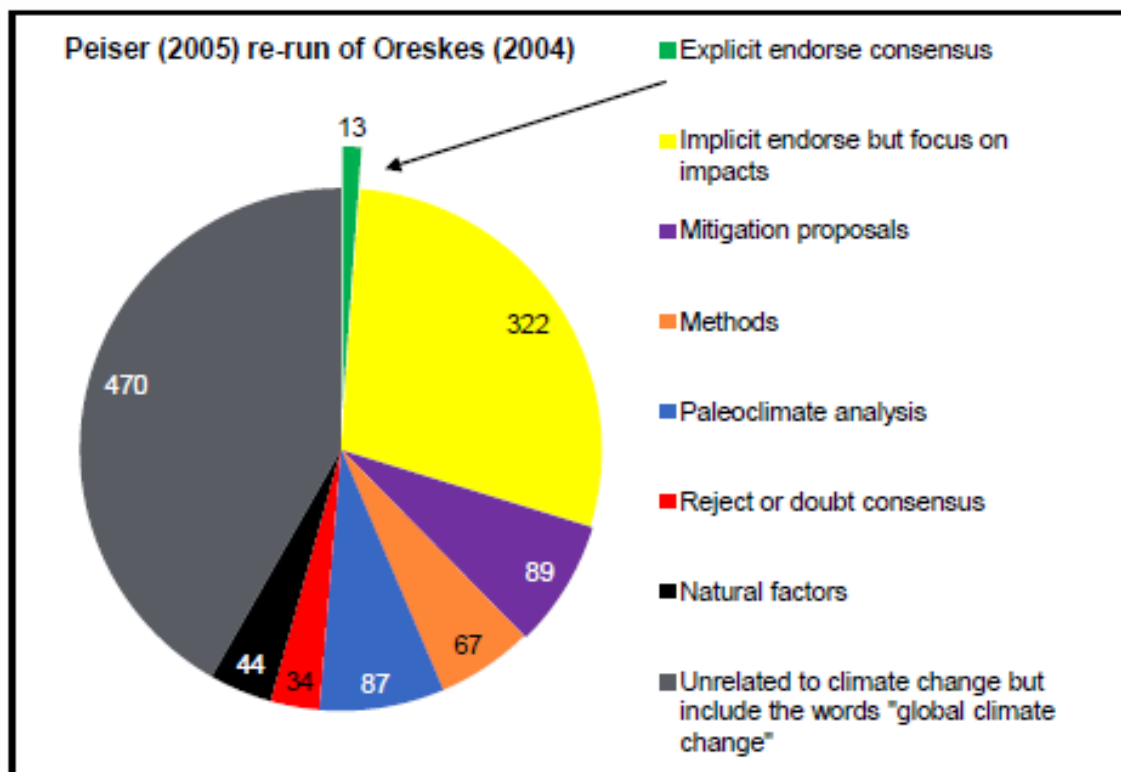
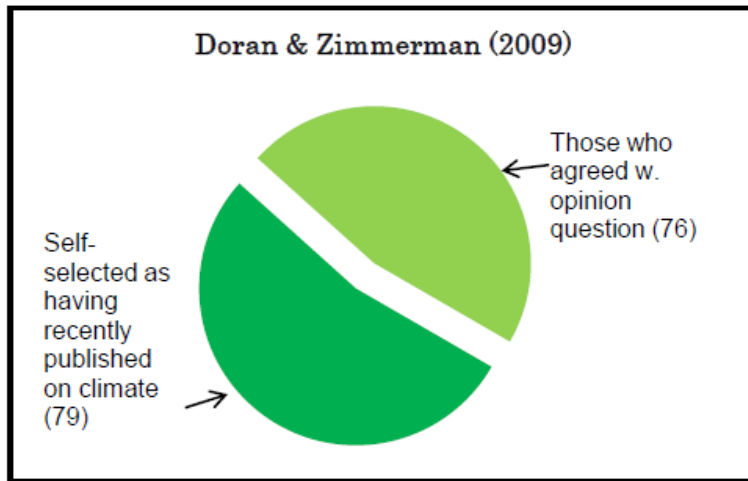


Figure 5: Doran & Zimmerman (2009) claim of 97%



Doran & Zimmerman (2009) relied upon 79 self-selected earth scientists (qualifications unstated) who claimed to have published something on climate change recently [Figure 5]. These were drawn from a field of 3,146 respondents, many of whom protested the style of questionnaire on grounds that it is inherently unscientific to ask an opinion question, with no scientific parameters, on an empirical topic. The actual survey numbers are broken down below. [Figure 6]

Figure 6: Doran & Zimmerman (2009) Breakdown of respondents versus self-selected group

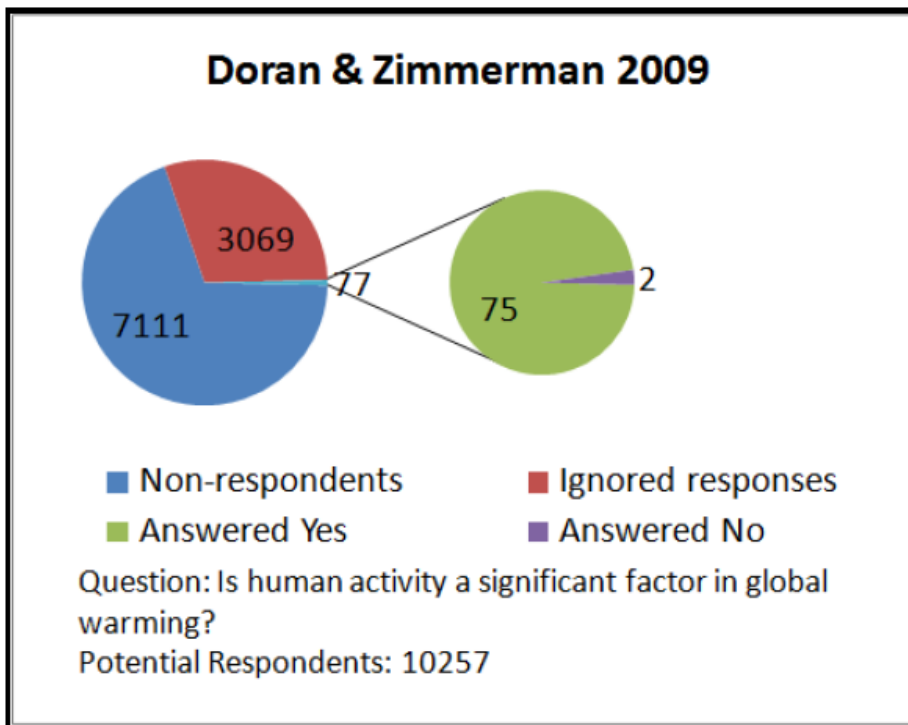
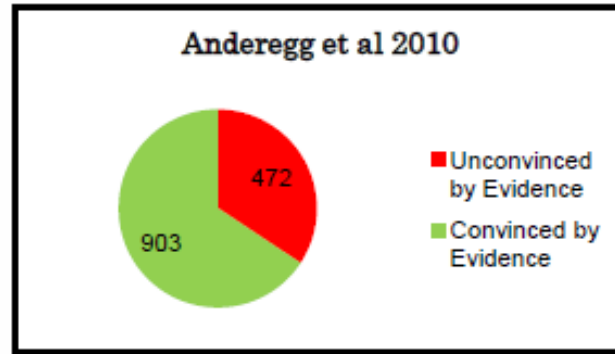


Figure 7: Anderegg et al (2010) found 66% "Convinced by Evidence" (CE)



Anderegg et al (2010) reviewed lists of various climate declarations and IPCC participants and created a division of those "Convinced" or "Unconvinced" by the evidence (IPCC AR4 2007 declaration) [above Figure 7]. They found 66% were "CE – Convinced by the Evidence" – but this does not describe to what extent or what cause convinced these scientists. In part two of their survey, Anderegg et al (2010) reviewed the top 100 most published/most cited researchers [below Figure 8]. They reported that 97% are "Convinced by the Evidence" in support of the IPCC AR4 2007 declaration. However, this is not surprising because papers that support the IPCC position appear to get preferential peer-review approval and research funding, according to scientists whose work challenges the IPCC mandate to explore human-causes of climate change. Dr. Roy Spence [writes](#), "I would guess today's research funding lopsidedness is currently running at least 100 to 1, humans versus nature."

The "Climategate"³³ emails revealed that climate journals are controlled by IPCC affiliated scientists who tend to reject papers skeptical of AGW despite having good technical quality but give only cursory review of papers supporting the IPCC position. This is known as 'confirmation bias'³⁴ in science. Many scientists do not see warming as particularly dangerous; their views are rarely published or cited. In their study, Anderegg et al changed both the declaration (to "*tenets*" – which is a belief or idea, not a definition or declaration) and the term (Anthropogenic Climate Change - ACC): "(i) 97–98% of the climate researchers most actively publishing in the field support the *tenets* of ACC outlined by the Intergovernmental Panel on Climate Change, and (ii) the relative climate expertise and scientific prominence of the researchers unconvinced of ACC are substantially below that of the convinced researchers"

Figure 8: Anderegg et al (2010) Breakdown of CE/UE in 100 Most Published/Most Cited Papers

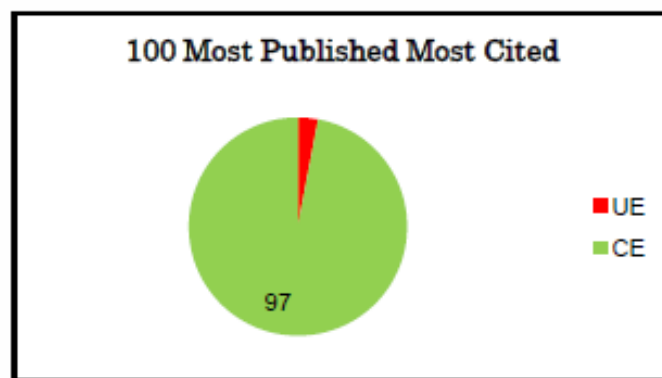
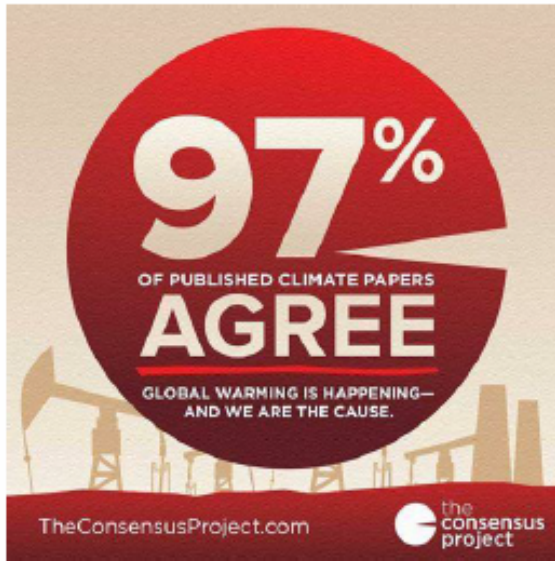


Figure 9: The Cook et al (2013) Dynamic Graphic from "The Consensus Project" web-site

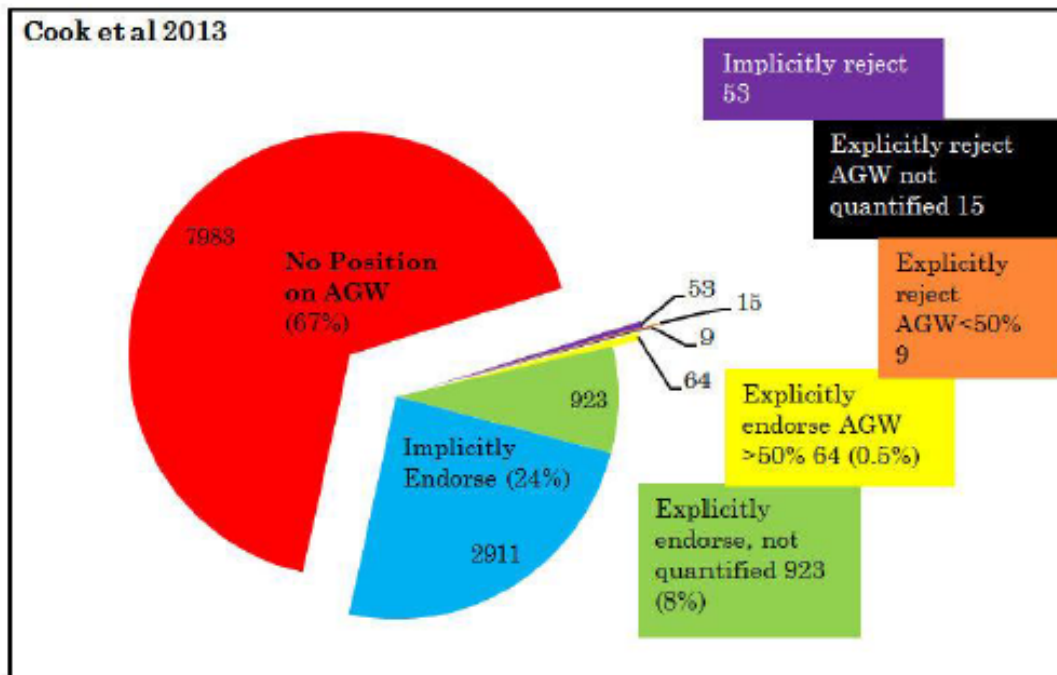


More recently Cook et al (2013) issued "Quantifying the consensus on anthropogenic global warming in the scientific literature" claiming 97% agreement and focusing on fossil fuel use as a cause.[left Figure 9]

However, a detailed review of Cook et al reveals that only 64 papers out of ~12,000 explicitly endorse the AGW declaration that human activity/emissions are more than 50% responsible for recent warming [below Figure 10]. Interesting to note that Cook et al used Houghton's 1996 definition which includes other activities... "human activities, mostly fossil-fuel use, land-use change and agriculture"

Most of the papers held no position on anthropogenic global warming.

Figure 10: A Deconstruction of the Cook et al (2013)



TS.6 Key Uncertainties

This final section of the Technical Summary provides readers with a short overview of key uncertainties in the understanding of the climate system and the ability to project changes in response to anthropogenic influences. The overview is not comprehensive and does not describe in detail the basis for these findings. These are found in the main body of this Technical Summary and in the underlying chapters to which each bullet points in the curly brackets.

TS.6.1 Key Uncertainties in Observation of Changes in the Climate System

- There is only *medium to low confidence* in the rate of change of tropospheric warming and its vertical structure. Estimates of tropospheric warming rates encompass surface temperature warming rate estimates. There is *low confidence* in the rate and vertical structure of the stratospheric cooling. {2.4.4}
- *Confidence* in global precipitation change over land is *low* prior to 1951 and *medium* afterwards because of data incompleteness. {2.5.1}
- Substantial ambiguity and therefore *low confidence* remains in the observations of global-scale cloud variability and trends. {2.5.6}
- There is *low confidence* in an observed global-scale trend in drought or dryness (lack of rainfall), due to lack of direct observations, methodological uncertainties and choice and geographical inconsistencies in the trends. {2.6.2}
- There is *low confidence* that any reported long-term (centennial) changes in tropical cyclone characteristics are robust, after accounting for past changes in observing capabilities. {2.6.3}
- Robust conclusions on long-term changes in large-scale atmospheric circulation are presently not possible because of large variability on interannual to decadal time scales and remaining differences between data sets. {2.7}
- Different global estimates of sub-surface ocean temperatures have variations at different times and for different periods, suggesting that sub-decadal variability in the temperature and upper heat content (0 to 700 m) is still poorly characterized in the historical record. {3.2}
- Below ocean depths of 700 m the sampling in space and time is too sparse to produce annual global ocean temperature and heat content estimates prior to 2005. {3.2.4}
- Observational coverage of the ocean deeper than 2000 m is still limited and hampers more robust estimates of changes in global ocean heat content and carbon content. This also limits the quantification of the contribution of deep ocean warming to sea level rise. {3.2, 3.7, 3.8; Box 3.1}

- The number of continuous observational time series measuring the strength of climate relevant ocean circulation features (e.g., the meridional overturning circulation) is limited and the existing time series are still too short to assess decadal and longer trends. {3.6}
- In Antarctica, available data are inadequate to assess the status of change of many characteristics of sea ice (e.g., thickness and volume). {4.2.3}
- On a global scale the mass loss from melting at calving fronts and iceberg calving are not yet comprehensively assessed. The largest uncertainty in estimated mass loss from glaciers comes from the Antarctic, and the observational record of ice–ocean interactions around both ice sheets remains poor. {4.3.3, 4.4}

TS.6.2 Key Uncertainties in Drivers of Climate Change

- Uncertainties in aerosol–cloud interactions and the associated radiative forcing remain large. As a result, uncertainties in aerosol forcing remain the dominant contributor to the overall uncertainty in net anthropogenic forcing, despite a better understanding of some of the relevant atmospheric processes and the availability of global satellite monitoring. {2.2, 7.3–7.5, 8.5}
- The cloud feedback is *likely* positive but its quantification remains difficult. {7.2}
- Paleoclimate reconstructions and Earth System Models indicate that there is a positive feedback between climate and the carbon cycle, but *confidence* remains *low* in the strength of this feedback, particularly for the land. {6.4}

TS.6.3 Key Uncertainties in Understanding the Climate System and Its Recent Changes

- The simulation of clouds in AOGCMs has shown modest improvement since AR4; however, it remains challenging. {7.2, 9.2.1, 9.4.1, 9.7.2}
- Observational uncertainties for climate variables other than temperature, uncertainties in forcings such as aerosols, and limits in process understanding continue to hamper attribution of changes in many aspects of the climate system. {10.1, 10.3, 10.7}
- Changes in the water cycle remain less reliably modelled in both their changes and their internal variability, limiting confidence in attribution assessments. Observational uncertainties and the large effect of internal variability on observed precipitation also precludes a more confident assessment of the causes of precipitation changes. {2.5.1, 2.5.4, 10.3.2}
- Modelling uncertainties related to model resolution and incorporation of relevant processes become more important at regional scales, and the effects of internal variability become more significant. Therefore, challenges persist in attributing observed change to external forcing at regional scales. {2.4.1, 10.3.1}

- The ability to simulate changes in frequency and intensity of extreme events is limited by the ability of models to reliably simulate mean changes in key features. {10.6.1}
- In some aspects of the climate system, including changes in drought, changes in tropical cyclone activity, Antarctic warming, Antarctic sea ice extent, and Antarctic mass balance, *confidence* in attribution to human influence remains *low* due to modeling uncertainties and low agreement between scientific studies. {10.3.1, 10.5.2, 10.6.1}

TS.6.4 Key Uncertainties in Projections of Global and Regional Climate Change

- Based on model results there is limited confidence in the predictability of yearly to decadal averages of temperature both for the global average and for some geographical regions. Multi-model results for precipitation indicate a generally low predictability. Short-term climate projection is also limited by the uncertainty in projections of natural forcing. {11.1, 11.2, 11.3.1, 11.3.6; Box 11.1}
- There is *medium confidence* in near-term projections of a northward shift of NH storm track and westerlies. {11.3.2}
- There is generally *low confidence* in basin-scale projections of significant trends in tropical cyclone frequency and intensity in the 21st century. {11.3.2, 14.6.1}
- Projected changes in soil moisture and surface run off are not robust in many regions. {11.3.2, 12.4.5}
- Several components or phenomena in the climate system could potentially exhibit abrupt or nonlinear changes, but for many phenomena there is *low confidence* and little consensus on the likelihood of such events over the 21st century. {12.5.5}
- There is *low confidence* on magnitude of carbon losses through CO₂ or CH₄ emissions to the atmosphere from thawing permafrost. There is *low confidence* in projected future CH₄ emissions from natural sources due to changes in wetlands and gas hydrate release from the sea floor. {6.4.3, 6.4.7}
- There is *medium confidence* in the projected contributions to sea level rise by models of ice sheet dynamics for the 21st century, and *low confidence* in their projections beyond 2100. {13.3.3}
- There is *low confidence* in semi-empirical model projections of global mean sea level rise, and no consensus in the scientific community about their reliability. {13.5.2, 13.5.3}
- There is *low confidence* in projections of many aspects of climate phenomena that influence regional climate change, including changes in amplitude and spatial pattern of modes of climate variability. {9.5.3, 14.2–14.7}

TS