

THE NOT SO CLEAR CONSENSUS ON CLIMATE CHANGE

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Abstract

One of the most heavily and most publicly contested scientific consensus in the last decade has been in the debate concerning climate change, namely if it is the result of natural causes or of anthropogenic activity.). Using evidence from survey questionnaires distributed among climate scientists, the following suggests that consensus among climate scientists might not be as clear as sometimes depicted.

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Scientific consensus seems to be a key word in science to policy transitions, particularly in those cases where uncertainty and risk are high, those issues labeled as post-normal science. [1] One of the most heavily and most publicly contested scientific consensus in the last decade has been in the debate concerning climate change, namely if it is the result of natural causes or of anthropogenic activity. Oreskes [2] claims that evidence suggests that there is indeed a scientific consensus of anthropogenic induced climate change as stated by the International Panel on Climate Change (IPCC). Using evidence from survey questionnaires distributed among climate scientists, the following suggests that consensus among climate scientists might not be as clear as depicted by Oreskes. The inset to Oreskes essay suggests that without substantial disagreement, scientists find human activities are heating the earth's surface. By reviewing 928 abstracts, Oreskes concludes that "Remarkably, none of the papers disagreed with the consensus position". Oreskes goes on to argue that "This analysis shows that scientists publishing in peer-reviewed literature agree with IPCC, the National Academy of Sciences and the public statements of their professional societies. [While on the other hand] Politicians, economists, journalists, and others may have the impression of confusion, disagreement or discord among climate scientists, but that impression is not correct" [emphasis added].

Oreskes main conclusion seems to be that ...there is a scientific consensus on the reality of anthropogenic climate change. Results of surveys of climate scientists themselves indicate the possibility that Oreskes conclusion is not as obvious as stated.

In the results of a survey of climate scientists conducted in 2003 [3] one question on the survey asked To what extent do you agree or disagree that climate change is mostly the result of anthropogenic causes? A value of 1 indicates strongly agree and a value of 7 indicates strongly disagree. Countries, and number of responses from each country are as follows:

USA n = 372;
Canada n = 14;
Germany n = 56;
Italy n = 14;
Denmark n = 5;
Netherlands n = 4;

Sweden n = 5;
France n = 5;
U.K. n = 18;
Australia n = 21;
Norway n = 3;
Finland n = 3;
New Zealand n = 6;
Austria n = 3;
Ethiopia n = 1;
South Africa n = 3;
Poland n = 1
Switzerland n = 7;
Mexico n = 3;
Russia n = 1;
Argentina n = 1;
India n = 3;
Spain n = 2
Japan n = 3;
Brazil n = 1;
Taiwan n = 1;
Bulgaria n = 1

To the question posed above there were 530 valid responses. Descriptive statistics are as follows:

Mean = 3.62; Std. Error of mean = .080; Median = 3.00; Std. deviation = 1.84;
Variance = 3.386

Frequencies:

1 strongly agree 50 (9.4% of valid responses)
2 134 (25.3% of valid responses)
3 112 (21.1% of valid responses)
4 75 (14.2% of valid responses)
5 45 (8.5% of valid responses)
6 60 (10.8% valid responses)
7 strongly disagree 54 (9.7% of valid responses)

These results, i.e. the mean of 3.62, seem to suggest that consensus is not all that strong and only 9.4% of the respondents strongly agree that climate change is mostly the result of anthropogenic causes. This is however, a slight rise in consensus of the same survey conducted in 1996 [4] that resulted in a mean of 4.1683 to the same question (Five countries USA, Canada, Germany, Italy, and Denmark only in 1996 survey, N = 511).

In the 1996 survey only 5.7% of the valid responses strongly agreed that climate change is mostly the result of anthropogenic causes.

In fact, the results of the two surveys even question the Oreskes claim that the majority of climate scientists agree with the IPCC, although this has improved somewhat between 1996 and 2003. In the 1996 survey only 8.2% of the valid responses strongly agreed with the statement that the IPCC reports accurately reflect the consensus of thought within the scientific community while in 2003 the number rose to 22.8%. While there is a shift to a greater level of consensus, the results do not substantiate Oreskes claim. Lacking in Oreskes approach to analysis is any notion of the dynamics of scientific consensus.

References

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2. Oreskes, Naomi. The Scientific Consensus on Climate Change Science Vol.306, 3 December 2004 Vol. 1686
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