



Scientists' Views about Attribution of Global Warming

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What do scientists think? That is an important question when engaging in science communication, in which an attempt is made to communicate the scientific understanding to a lay audience. To address this question we undertook a large and detailed survey among scientists studying various aspects of climate change, dubbed "perhaps the most thorough survey of climate scientists ever" by well-known climate scientist and science communicator Gavin Schmidt.

Among more than 1800 respondents we found widespread agreement that global warming is predominantly caused by human greenhouse gases. This consensus strengthens with increased expertise, as defined by the number of self-reported articles in the peer-reviewed literature. 90% of respondents with more than 10 climate-related peer-reviewed publications (about half of all respondents), agreed that anthropogenic greenhouse gases are the dominant cause of recent global warming, i.e. having contributed more than half of the observed warming. With this survey we specified what the consensus position entails with much greater specificity than previous studies. The relevance of this consensus for science communication will be discussed.

Another important result from our survey is that the main attribution statement in IPCC's fourth assessment report (AR4) may lead to an underestimate of the greenhouse gas contribution to warming, because it implicitly includes the lesser known masking effect of cooling aerosols. This shows the importance of the exact wording in high-profile reports such as those from IPCC in how the statement is perceived, even by fellow scientists. The phrasing was improved in the most recent assessment report (AR5).

Respondents who characterized the human influence on climate as insignificant, reported having the most frequent media coverage regarding their views on climate change. This shows that contrarian opinions are amplified in the media in relation to their prevalence in the scientific community. This is related to what is sometimes referred to as "false balance" in media reporting and may partly explain the divergence between public and scientific opinion regarding climate change.