This is the print version of the Skeptical Science article 'Deniers are part of the 97%', which can be found at http://sks.to/fringe.

Contrarian opinions on global warming match the 2–3% fringe minority of peer-reviewed papers

What The Science Says:
If anyone claims to be part of the 97%, it means they disagree with the contrarian argument that humans are having a minimal impact on global warming. Moreover, in order to be part of the 96% expert consensus, they must explicitly agree that humans are responsible for the majority of the global warming over the past half-century

Climate Myth: Deniers are part of the 97%

> "All [contrarians] are part of that 97% because that 97% includes those who think humans have some influence on climate. Well, that's a fairly innocuous statement." (Roy Spencer)

In May 2013, several Skeptical Science contributors published a paper showing that of peer-reviewed climate publications over the past 20 years that take a position on the cause of global warming, 97 percent agree that humans are responsible. Since that paper was published, it's been met with extensive denialism.

The reaction of denial is not surprising, because an expert consensus is a powerful thing. People can't be expert in every subject, so we defer to the consensus of experts on many subjects. For this reason, climate scientists are the most trusted sources of climate science information. As we documented in our paper, research has also shown that when people are aware of the expert consensus on human-caused global warming, they're more likely to accept the science and support climate policy to address the problem.

Hence, those who support the status quo and oppose efforts to reduce greenhouse gas emissions have long engaged in a disinformation campaign to misinform the public about the expert consensus. Their efforts have been successful, as evidenced by the 'consensus gap' whereby the public believe scientists are split on the cause of global warming; a stark contrast to the reality of the 97 percent consensus.

One of the most common contrarian reactions to the results of our paper has been to claim that 'skeptics' are included in the 97 percent as well. For example, in a recent hearing reviewing the UK 4th carbon budget, Labour Party Member of Parliament (MP) Graham Stringer said of the expert consensus on human-caused global warming,

> "somebody like me, who is probably more skeptical than you are about this issue, would be included as a supporter of the consensus, whereas I am not? Many major scientists have complained that, in the review of their papers, they have been included in that consensus."

On CNN *Crossfire*, the conservative think tank Heritage Institute's David Kreutzer said,

> "what they agree on is so innocuous that all of what you call deniers agree with it, as well. That the world is getting warmer, all right? And that some of that warming is due to man, maybe a significant amount."

Similarly, contrarian climate scientist Roy Spencer claimed in Congressional testimony last year that he's included in the 97 percent.

> "There's a recent paper by John Cook and co-authors who looked at thousands of research papers which have been published in the scientific literature to see what fraction support the scientific consensus on global warming. Well, it turns out that the 97% consensus that they found, I am indeed part of and Senator Sessions mentioned he would agree with it too. And my associate John Christy, he agrees with it. In fact, all skeptics that I know of that work in that business. All are part of that 97% because that 97% includes those who think humans have some influence on climate. Well, that's a fairly innocuous statement."

These statements are all incorrect, ignoring a significant part of our research. They are based on one of the categories used in our study regarding "implicit endorsements" of human-caused global warming. A paper that was included in this category:

> "Implies humans are causing global warming. E.g., research assumes greenhouse gas emissions cause warming without explicitly stating humans are the cause"

This particular category doesn't state *how much* global warming humans are causing, and hence climate contrarians claim that because they admit humans are causing some global warming, they should be included in the 97 percent.

However, this argument only considers one of the seven categories used in our study. Another critical category, the "implicit rejections" included any paper that (emphasis added):

> "**implies humans have had a minimal impact on global warming** without

saying so explicitly E.g., proposing a natural mechanism is the main cause of global warming"

Hence for example, one of Roy Spencer's five papers captured by our literature search was put in this category, because it proposes negative feedbacks will minimise future global warming. His other four papers fell into the 'no position' category; therefore, overall Spencer was not included in the 97 percent as he claimed in his testimony to US Congress. Rather, Spencer's research is included in the 2 percent of papers minimizing or rejecting the human influence on global warming (the final 1 percent of papers were uncertain about the cause). Spencer has also said "*I think it is more likely that the warming is mostly natural,*" so his opinion is consistent with the 2 percent.

For those desiring papers with more explicit positions on the cause of global warming, we also used categories that only included papers that explicitly quantified the human contribution to global warming. We asked the scientific authors to rate their own papers, and of the papers in those categories (237 total), 96 percent agreed that humans are responsible for the majority of the current global warming.

Therefore, if anyone claims to be part of the 97 percent, it means they disagree with the contrarian argument that humans are having a minimal impact on global warming. Moreover, in order to be part of the 96 percent expert consensus, they must explicitly agree that humans are responsible for the majority of the global warming over the past half-century (a position the latest IPCC report took with 95 percent confidence).

Those like Spencer, and possibly Stringer and Kreutzer, who believe the human influence on the climate is minimal, hold fringe views that are consistent with just 2 to 3 percent of the peer-reviewed climate science literature.

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Skeptical Science explains the science of global warming and examines climate misinformation through the lens of peer-reviewed research. The website won the Australian Museum 2011 Eureka Prize for the Advancement of Climate Change Knowledge. Members of the Skeptical Science team have authored peer-reviewed papers, a college textbook on climate change and the book Climate Change Denial: Heads in the Sand. Skeptical Science content has been used in university courses, textbooks, government reports on climate change, television documentaries and numerous books.

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