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# By Any Other Name: The Use of “Global Warming” vs. “Climate Change” in the Scientific Literature

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## Survey Methods and Database Descriptions

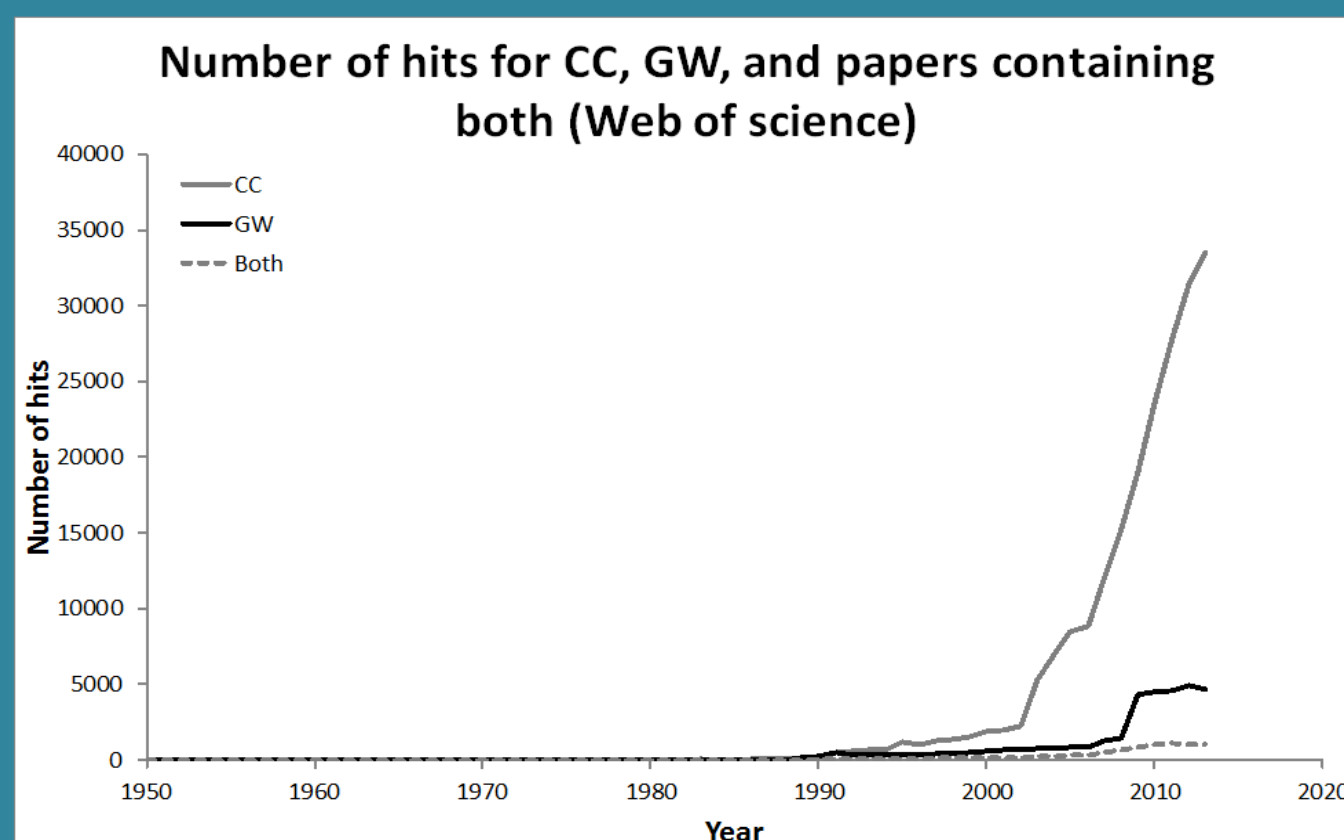
We examined myths relating to climate change terminology.

We used Google Scholar, Scopus (Elsevier), and Web of Science (Thomson Reuters). The search phrases were “climate”, “climate change”, “global warming”, “climate warming”, “global cooling”, “anthropogenic global warming”, “anthropogenic climate change”, “global climate change”, and “climatic change”.

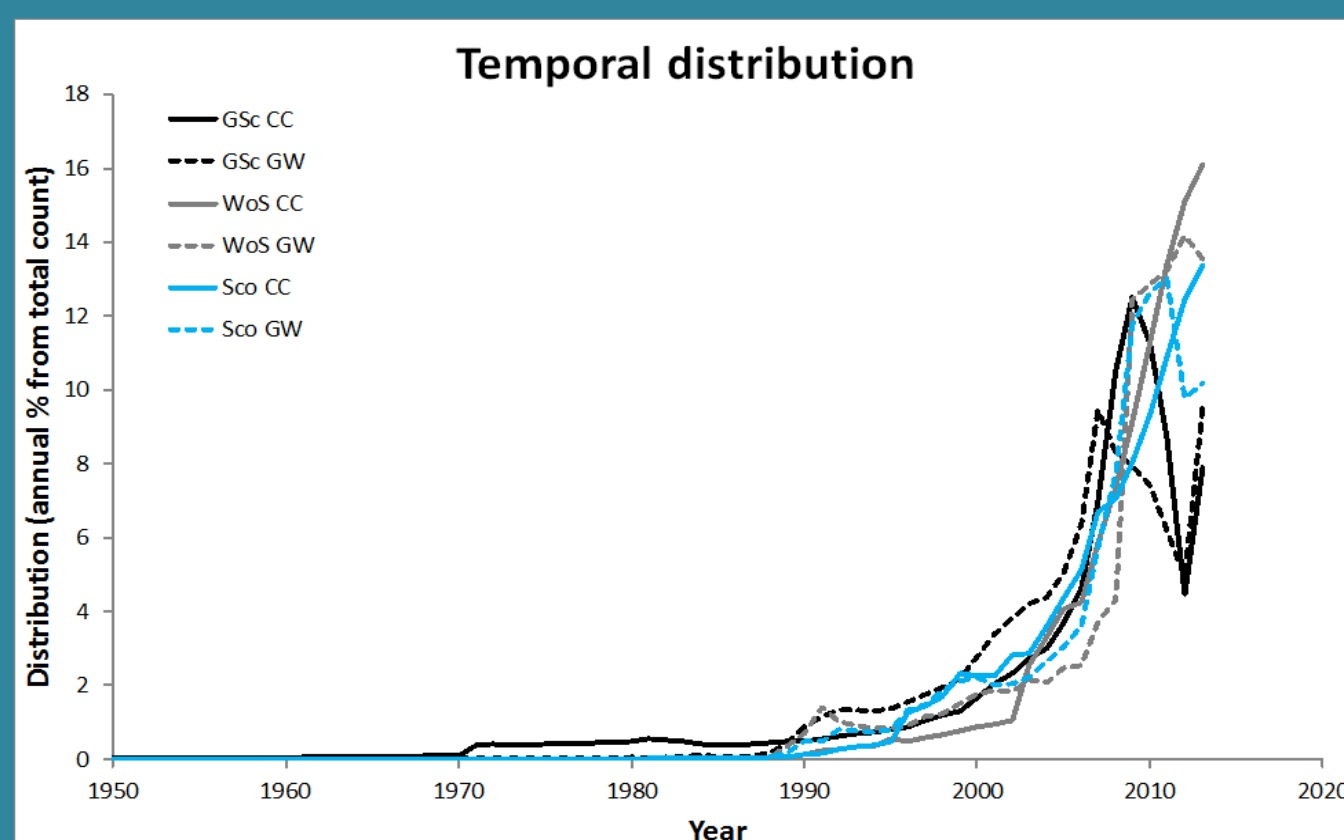
We recorded the returned number of papers for each year between 1950 and 2013, restricting the search to Articles only in Scopus and Web of Science.

We also recorded the number of papers for some additional search phrases which were of secondary importance.

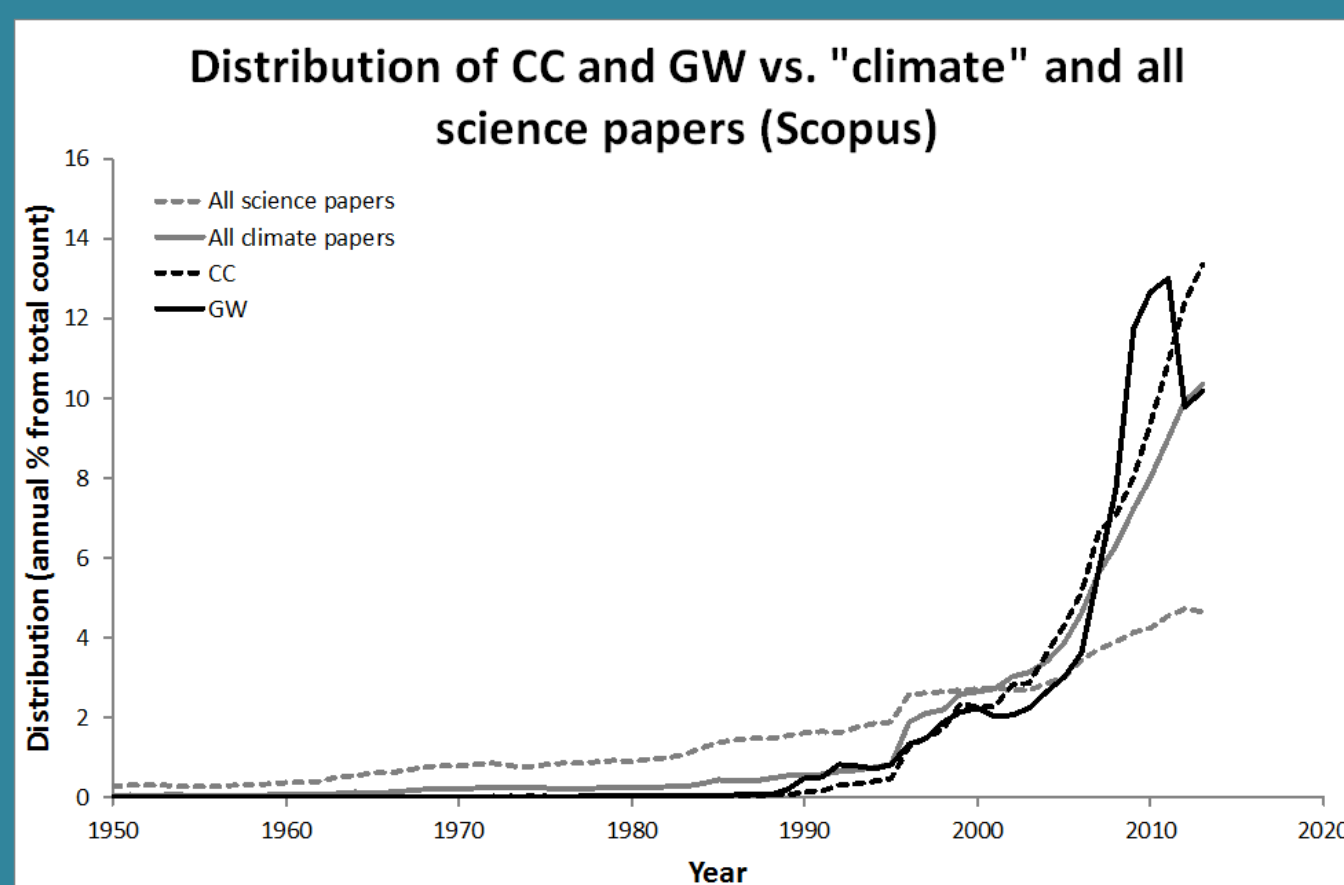
## Use of “Global Warming” and “Climate Change” in the Literature



The total number of papers per year that have "climate change" as a topic has always exceeded the number of "global warming" papers published per year. The number that satisfy both "climate change" and "global warming" has remained relatively low.

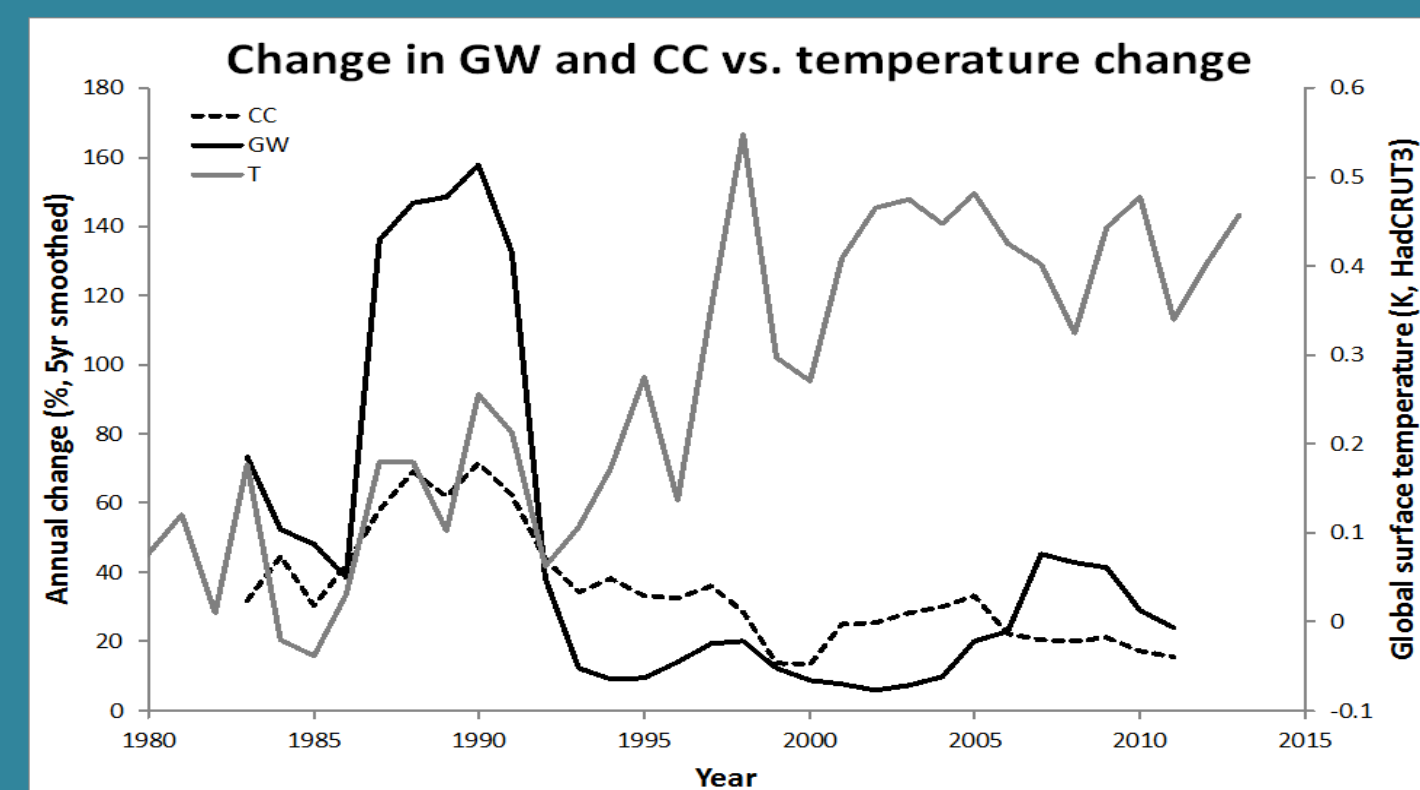


The number of papers per year on "climate change" and "global warming" has increased with time, but the distribution for "climate change" and "global warming" is similar and doesn't appear to depend on the choice of database.



As might be expected, the number of papers per year on "climate", "climate change" and "global warming" has grown at a faster relative rate than the rate at which Scopus indicates that the total number of papers per year has grown.

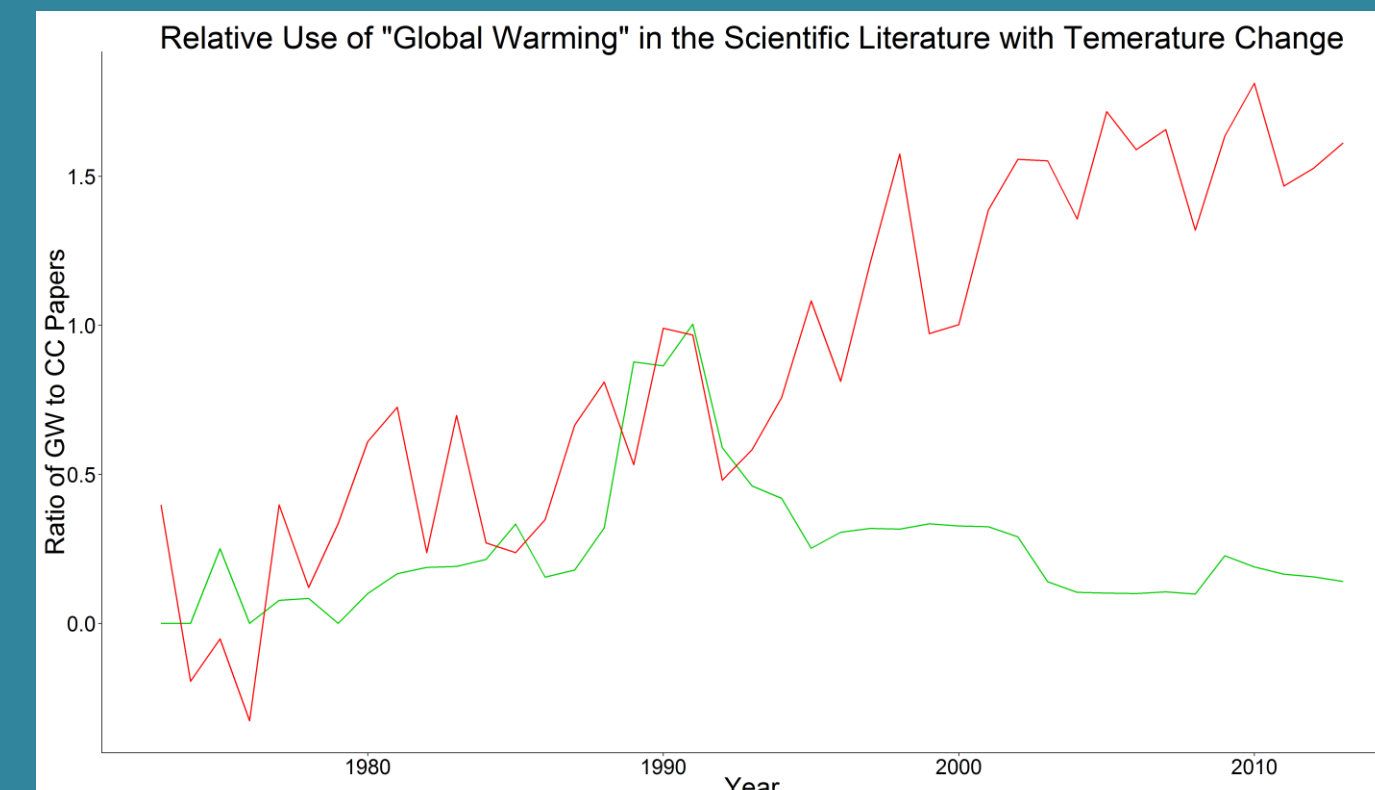
## Was “Global Warming” Abandoned in Favor of “Climate Change” Due to Lack of Warming?



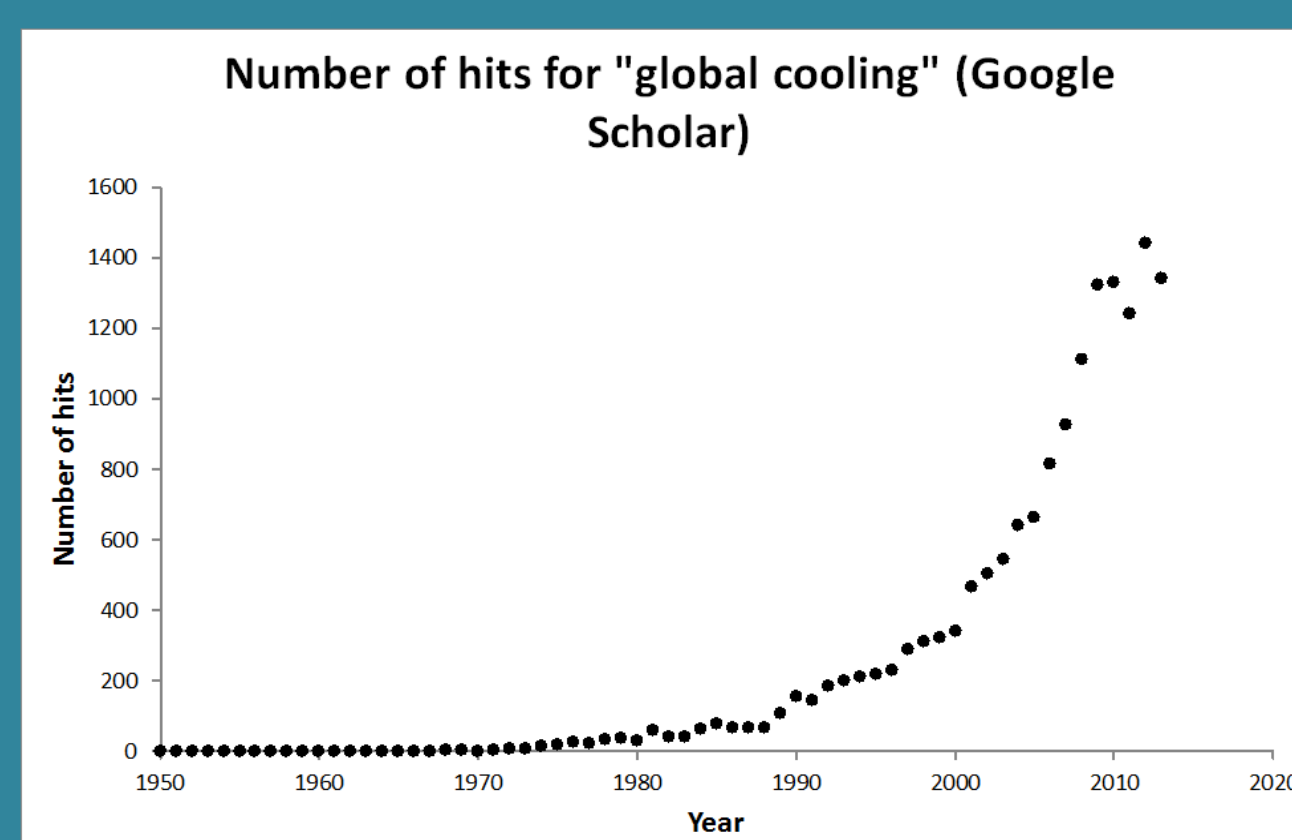
We consider here if there is any evidence to suggest that the terminology changed from "climate change" to "global warming" and if the global temperature evolution has any apparent influence on the number of papers published or on the topic of these papers.

- Left-hand panel: Apart from a temporary spike in the 5-year smoothed annual percentage change in the number of "global warming" papers in the 1980s, there is no evidence to suggest a change in terminology - from "global warming" to "climate change" - in the late 1990s, when the temperature hiatus is supposed to have started.

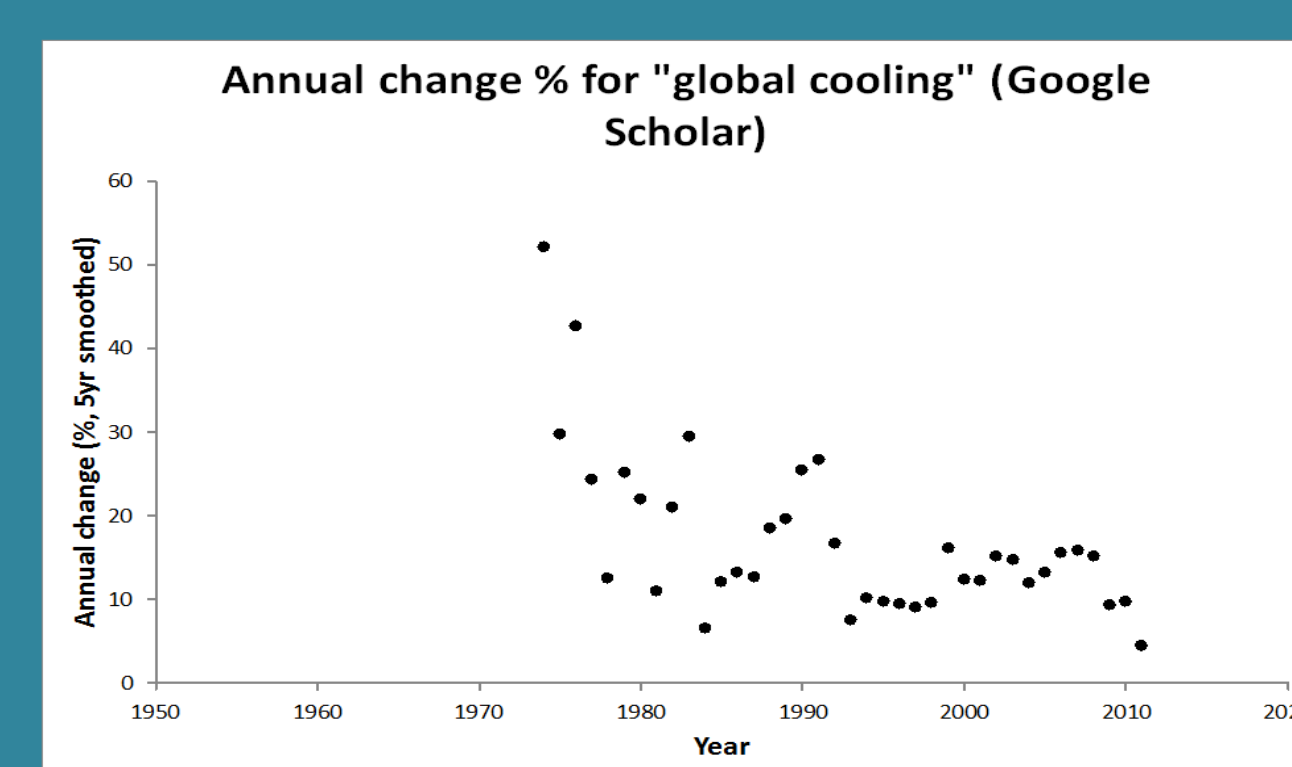
- Right-hand panel: The ratio of "global warming" to "climate change" papers has remained reasonably steady over the last few decades (apart from a temporary spike in the 1980s) and shows no strong correlation with temperature.



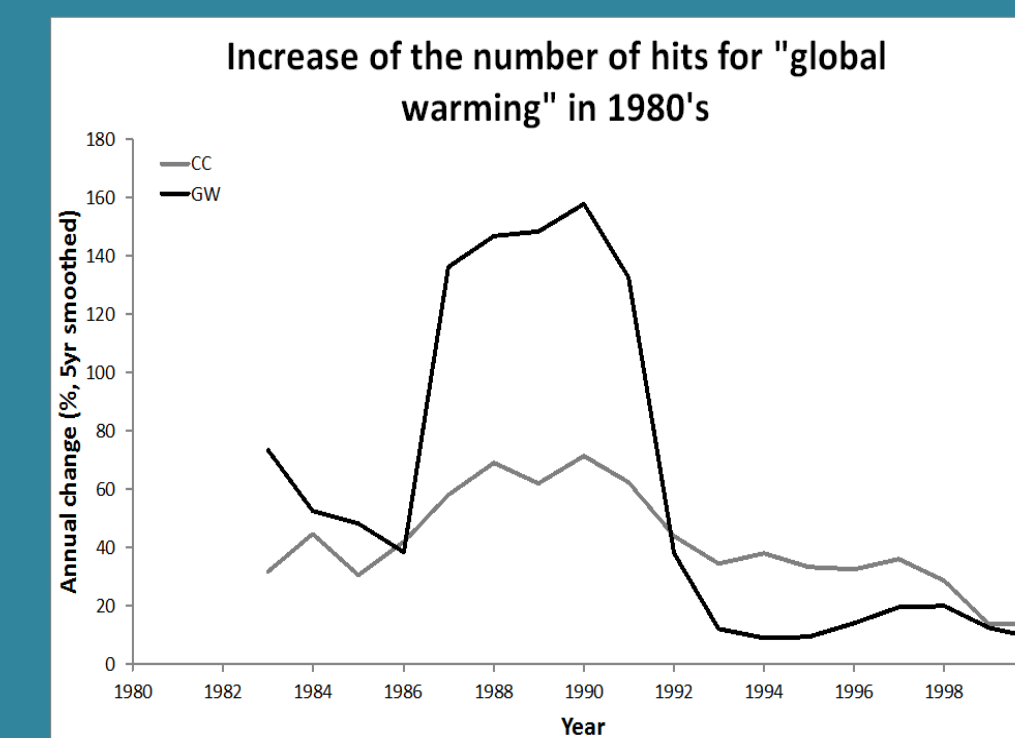
## More “Global Cooling” Papers Since 1998?



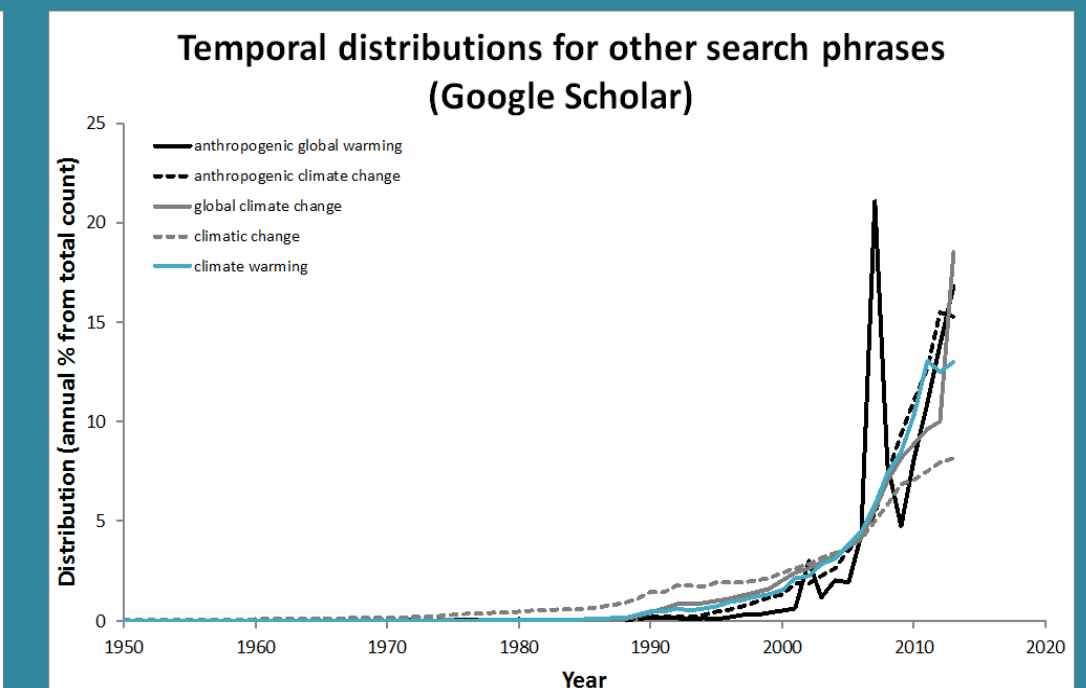
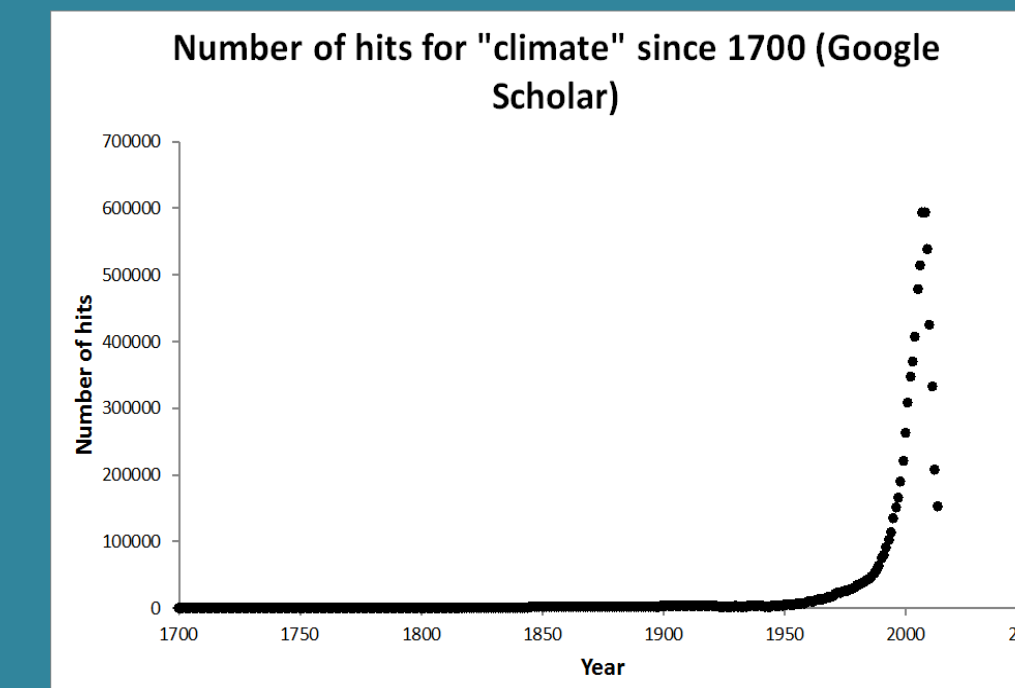
Although there are some papers that address the possibility of "global cooling", the number of such papers is significantly smaller than the number that address "climate change" or "global warming". Also, the rate of growth of such papers does not appear to have been influenced by the global warming "hiatus".



## A Late 1980s Peak for “Global Warming”, and Background Data



Total numbers and percentages:			
	Scopus	Web of Science	Google Scholar
All (1950-2013)	35,060,278	665,960	83,713,000
Climate	222,454	75,163	207,750
Climate change	15,672	8,564	235,945
Global warming	711	1,063	15,753
Both	5,402	9,365	222,776
Global cooling	14,843	10,673	221,591
Global climate change	3,950	4,417	56,957
Climatic change	130	159	16,570
Anthropogenic global warming	763	1,003	21,523
Anthropogenic climate change			



## Who Uses the Phrase “CAGW”?

Not scientists. Despite claims from climate “skeptics” that the consensus view of climate science is “catastrophic anthropogenic global warming”, or CAGW, this phrase was virtually absent from the scientific literature. Although it occasionally appeared in media pieces, these were seldom news articles (rather, they were typically in the form of Letters to the Editor, blog posts, or other opinion pieces), and were virtually all “skeptical” authored.

## Conclusions

We consider here how number of papers on "climate change", "global warming" and other related topics have changed since 1950 and how they might have been influenced by the evolution of the surface temperature record. We find :

- The number of papers on these topics has increased with time but there is no obvious difference in the distribution of those on "climate change" to those on "global warming".
- The number of papers on these topics has, however, grown relatively faster than all papers.
- There is no evidence for a change from "global warming" to "climate change" after 1998, when the surface temperature "hiatus" is supposed to have started.
- There are virtually no papers that directly address catastrophic global warming.
- The rate of increase in the number of papers on "climate cooling" does not change after 1998 and the total number of such papers remains small.

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