

Drifting word clouds may change perceptions of climate science

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The impact of climate science research on society is likely to depend on regular fashion cycles in the public's use of specific keywords relating to climate change, according to new research from the University of Bristol, published today in *PLoS ONE*.

Professor Alexander Bentley and colleagues found that words commonly used by scientists when discussing [climate science](#) – such as 'biodiversity', 'global', and 'isotopes' – follow fashion cycles in public usage as the usage of such words by scientists diffuses into use by non-scientists. According to the authors, this effect may contribute to the impact of [climate research](#) on societal perceptions.

The researchers used [Google's](#) 'Ngram' database, which at present scans through over five million books published in seven languages since the 1500s, to represent [public discourse](#) (not scientific discourse) concerning climate science. Since the database was only unveiled a couple years ago, this research is among the very first studies of its kind.

They found that, while there is a continual output of climate science, there are pronounced fashion waves in public usage of the main keywords associated with this science. These waves vary in length, but the median duration is about a human generation (2-3 decades).

These fashion waves can be modelled in a very straightforward manner, so they ought to be predictable in some sense. Thus, a simple model of word-usage trends could be used to inform efforts for better

communication, the researchers argue. Recognizing which words are spread by diffusion, along with the ideas they represent, could help campaigns improve social learning, rather than simply expecting an audience to adopt a message because it is scientifically sound.

Professor Bentley said: "Since the impact of climate science is so inherently linked to public acceptance – or denial – of the evidence for [climate change](#), we suggest that our study provides a crucial first step toward gauging public response over the long term.

"Ideally, the methods we present – applied to new sources of 'big data' like Google Ngrams – can be used to prepare for changes in public opinion over the generations on matters of global importance."

More information: 'Word diffusion and climate science' by R. Alexander Bentley, Philip Garnett, Michael J. O'Brien and William A. Brock in *PLoS ONE*.

Provided by University of Bristol

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