

# Cross-cultural Perspectives on Uncertainty in Climate Science: Preliminary Results from DCDC and the Global Ethnohydrology Study

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## Climate change is widely recognized as a real event

Although this is the case, controversy remains among public and lay audiences about the existence of climate change. The degree to which people recognize the existence of climate change as real varies across cultures, geographical locations, and populations with different experiences of climate-related natural disasters<sup>1</sup>. For example, 90% of people in a global study believe that climate change is occurring, while only 52% of people in the United States believe this<sup>2</sup>. Scientific uncertainty around the causes, extent, and long-term implications of climate change is often cited as one reason why lay people deny the reality of climate change<sup>3</sup>.

## We were interested in three questions:

1. How do people who believe climate change is occurring view (un)certainty in climate science?
2. How do lay perceptions of certainty in climate science vary across culturally, geographically, and climatically diverse sites?
3. Are perceptions of certainty in climate science broadly shared or are they closely linked to local climactic conditions?

## The sites were chosen to represent diverse cultural, geographic, and climactic characteristics

Shanghai, China  
Phoenix, US  
London, UK

Viti Levu, Fiji  
Teotihuacan, Mexico  
Wellington, NZ

## Lay narratives of climate science were examined to understand what factors contribute to the perception of climate change as a certainty in six global sites

This research is part of the Global Ethnohydrology Study, a multi-year, multi-site study focused on local ecological knowledge of water and climate. In 2012, we examined perceptions of (un)certainty in climate science. Data were collected from 472 participants in 6 global sites.

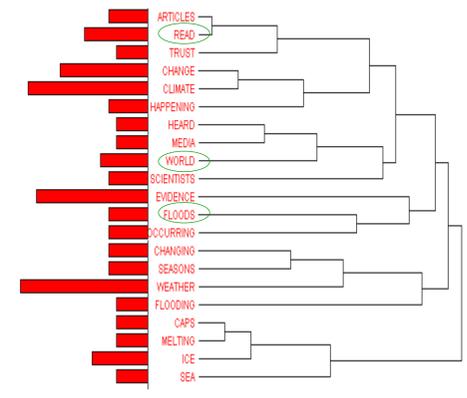
Respondents who expressed certainty in climate change science were asked, "Are you certain/uncertain that climate change is occurring?" Using open-ended narratives collected from each respondent, we conducted word frequency and semantic network analyses using QDAMiner software.

The results shown here are hierarchical clusters of words that co-occurred within individual narratives 4+ times; words that co-occurred more frequently are closely clustered in the dendrogram.

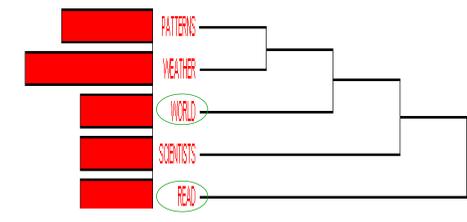
## The pattern of response shows that in sites like the United Kingdom and the United States, people's perceptions of climate science are influenced by the media



United Kingdom, n=143



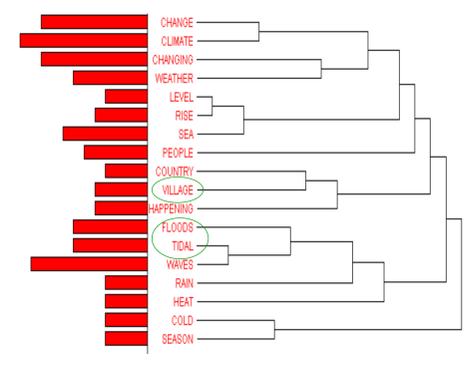
United States, n=62



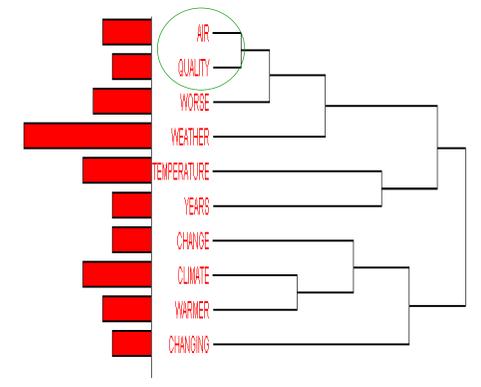
## In places with less media influence, perceptions of climate science are shaped by local experiences



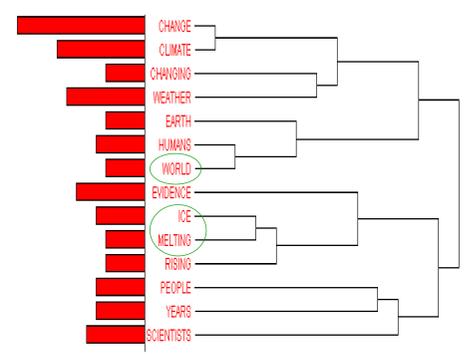
Fiji, n=81



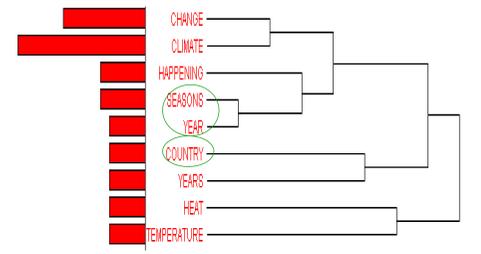
China, n=55



New Zealand, n=75



Mexico, n=56



## Perceptions of climate science seem to be linked to local climatic conditions

The participants in each site, except the United States site, pointed specific events happening in their area: narratives in China focused on the quality of air; in Mexico, people emphasized changes in weather patterns; in Fiji, tidal changes were mentioned frequently; in N. Zealand, the central theme was glaciers melting; and in the U. Kingdom, the narratives focused on floods. This close link to their local climatic conditions might create a barrier for effective communication across sites. Their certainty could encourage participation in creating solutions, however, these are more likely to only address local problems, thus, disregarding the global scale of this issue.

## The Individual's power as an agent

An individual can have a significant impact on decision making, however, their involvement depends on how they perceive the issue. This study points out the need to find how people perceive climate science in diverse settings and look for similarities across the globe that can result in citizen engagement and cooperation to address the problem at a global scale.

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