

## **Local Warming? Understanding the relationship between perceptions of weather and climate change concern amongst UK residents**

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**BACKGROUND:** In communicating with the non-expert members of the public about climate change, experts may highlight the threat posed by projected increases in the frequency and severity of hot weather. However, while a link between local temperatures and climate change concern has been found in US studies, not all countries experience frequent unpleasantly warm summers. This raises the question of whether experience of other types of locally salient weather may have a stronger impact on climate change concern in temperate regions such as the UK. In two studies we examined 1) the extent to which UK residents associate different types of weather with climate change, and 2) the casual direction of these relationships.

**METHOD:** Study 1 analysed cross-sectional data from a UK national survey (n=2007), in which participants rated perceived lifetime change in the frequency of different weather (loading onto hot, wet and cold subscales) and climate change concern. In Study 2, a UK national panel sample (n=789) rated perceived lifetime change in hot and wet weather, and climate change concern in Oct 2013, April 2014 and July 2014.

**RESULTS:** Study 1 found that, amongst UK residents, climate change concern was more strongly associated with wet weather than hot weather. This was replicated in each phase of Study 2. Testing the directionality of these associations using a cross-lagged longitudinal structural model we found that that while concern influences perceptions hot and wet weather, only perceived experience of wet weather influences concern.

**CONCLUSIONS:** Our findings suggest that experience of wet weather, but not hot weather, drives concern about climate change amongst UK resident. This may be attributed to the greater salience of rainfall and flooding in this region (availability heuristic), and the positive emotions that UK residents associate with warm weather (affect heuristic). We discuss the implications of these findings for region-specific communications about climate change mitigation and adaptation.