In perceiving climate change, feeling the heat counts

January 24 2013, by Eric Gershon

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(Phys.org)—Human beings around the world are observing and accurately detecting changes in their local climates, according to a new study led by Yale University researchers. The finding provides the first global evidence for the phenomenon and could have meaningful implications for attempts to combat climate change, they said.

"We wanted to see if people have accurately detected the signal of a changing climate through their own local experience," said Peter D. Howe, a postdoctoral associate at Yale and lead author of the study. "We found that many have noticed local changes, which may influence public responses to climate change in coming years."

Published in *Nature Climate Change*, the study is based on Gallup World Poll surveys of about 91,000 individuals in 89 countries on five continents.

They were asked: "Over the past five years, would you say that the average annual temperatures in your local area have gotten warmer, colder, or stayed about the same?" Researchers at Yale, Columbia, and Princeton Universities then matched responses to the survey with data on respondents' local climate conditions.

The researchers found that perceptions tended to match reality—people who reported that their local area was getting warmer were indeed experiencing temperatures over the previous 6 to 12 months that were relatively higher, on average, than those experienced by people who reported that their local area was getting colder or had stayed the same.

The study also found that respondents' perceptions were influenced by recent weather. If surveyed during the local warm season, people were 11 to 19 percent more likely to believe that local temperatures were rising over the long term than they were when questioned during a cool period.

Even after controlling for geographic, demographic, and seasonal effects, however, the study found that an increase of 1 degree Celsius above the long-term local average was associated with a 7 to 12 percent increase in the likelihood that people would report that their local area was getting warmer.

The paper appeared in *Nature Climate Change* in December. The Gallup World Poll was conducted in 2007 and 2008.

Researchers said they could not definitively show a causal relationship between local climatic conditions experienced by respondents and their perceptions. But they concluded that "the logical direction of the effect of changes in temperature on perception, and the lack of an alternative variable that would predict both actual and perceived temperature change suggests that changes in temperature are a causal influence on perceptions."

Provided by Yale University

Citation: In perceiving climate change, feeling the heat counts (2013, January 24) retrieved 16 April 2024 from https://phys.org/news/2013-01-climate.html

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