

## Violence in Humans Likely to Increase as Climate Shifts, Study Says

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Violence in humans is likely to increase as climate shifts, a study says. The comprehensive study was published Thursday in Science.

Researchers from the University of California, Berkeley and Princeton University looked at 60 previous studies from all major regions of the world. They found that even minor aberrations in climate can greatly escalate the risk of violence. They concluded that violence is linked to shifting climate. They said that the results of their study suggested that changes such as drought, flood, and high temperatures strongly augment the risk of clashes.

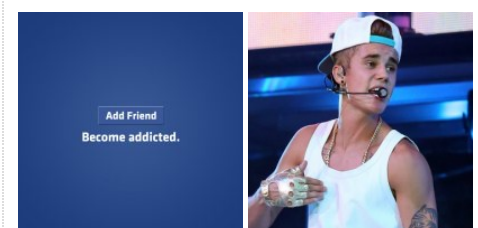
“This is a relationship we observe across time and across all major continents around the world. The relationship we find between these climate variables and conflict outcomes are often very large,” Marshall Burke of UC Berkeley and co-lead author of the study said.

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Researchers found even minor shifts from the norm in climate increased the risk of violence. For example, just slight changes in normal temperatures and rainfall resulted in violence in several parts of the world. Scientists used examples of domestic and personal violence as well as larger conflicts such as ethnic struggles in Europe and civil wars in Africa to reach their conclusions.

In India, researchers said, there was an increase in domestic violence during recent droughts. In the US, assaults, rapes, and murders spiked during heat waves.

According to researchers, the major factor in this causal relationship between climate change and violence is rising temperatures. Of the 27 modern studies the researchers looked at, they found all the 27 had a strong correlation between higher temperatures and violence.

“We found that a one standard deviation shift towards hotter conditions causes the likelihood of personal violence to rise four percent and intergroup conflict to rise 14 percent,” Burke said.

The scientists say that with the current projected levels of climate change, the world is likely to become a more violent place. They predicted that an increase in global temperature of just 2 degrees Celsius could augment the risk of intergroup clashes such as civil wars by over 50 percent. Such a hot temperature rise could also result in rise in personal crimes by 15 percent.

Climate change experts have projected that temperatures will rise to that level by 2040.

Edward Miguel of UC Berkeley and co-author of the study said, “We often think of modern society as largely independent of the environment, due to technological advances. But our findings challenge that notion.”

However, researchers also sounded a note of caution.

“We want to be careful, you don’t want to attribute any single event to climate in particular, but there are some really interesting results,” Burke said.

Researchers are trying to fathom why this relationship between violence in humans and shifting climate exists.

“The literature offers a couple of different hints,” Burke said.

“One of the main mechanisms that seems to be at play is changes in economic conditions. We know that climate affects economic conditions around the world, particularly agrarian parts of the world. There is lots of evidence that changes in economic conditions affect people’s decisions about whether or not to join a rebellion, for example.”

Burke added physiology could also play a part. He pointed to some studies that have suggested that hot temperatures make people more aggressive. He said future research needs to tackle that issue.

“It is a major priority for future research to distinguish between what is going on in each particular situation.”

Dr. Stephan Harrison from the University of Exeter said this was a “timely study.”

“What they have found is entirely plausible... For example, we already know that hotter and drier weather causes an increase in urban violence. Likewise, during cooler and wetter weather people tend to stay indoors, and the threat diminishes.”

However, other researchers have criticized the research and expressed skepticism on the claims the study makes on causal relationship between violence and climate change.

Dr. Halvard Buhaug, of the Peace Research Institute Oslo, Norway, in work published in the Proceedings of National Academy of Sciences said that climate was not to be blamed for African civil wars. Rather, he said, the conflict was the result of other factors such as high rates in infant mortality, proximity to international borders and crowded local population density.

Of the latest study that projects that human violence is linked to climate change and is likely to increase as climate shifts, Buhaug said, “I disagree with the sweeping conclusion... I believe that their strong statement about a general causal link between climate and conflict is unwarranted by the empirical analysis that they provide.

He added, “I was surprised to see not a single reference to a real-world conflict that plausibly would not have occurred in the absence of observed climatic extremes. If the authors wish to claim a strong causal link, providing some form of case validation is critical.”