

Will global warming lead to more war? It's not that simple.

By Brad Plumer, Updated: August 5, 2013

Last week, various news outlets were publishing all sorts of dire headlines about climate change and war. Like so:

The occasion? A [big new study](#) published in the journal *Science*, led by Princeton's Solomon Hsiang and Berkeley's Marshall Burke, which examined the link between higher temperatures and violence. After analyzing 60 previous studies on the topic, the paper found "strong causal evidence linking climatic events to human conflict across a range of spatial and temporal scales and across all major regions of the world."

So does that mean that climate change will make war more common in the decades ahead? Actually, despite all the alarming headlines, that's not so clear. Researchers who work in this field say that this is a complicated subject, and there's not really a straightforward answer here.

At a basic level, it's easy to dream up all sorts of ways that hotter temperatures or other climatic disruptions might make conflict more likely. What if more frequent droughts put various groups in conflict for water resources? What if sea-level rise forces, say, millions of refugees from Bangladesh to flee into India?

But that hardly means that conflict is inevitable in a warmer world. After all, the 2000s were [the warmest decade on record](#), but they also managed to be "[the least conflict-ridden decade since the 1970s](#)."

So clearly there are other things at work here. As [one big 2010 study](#) of East Africa in the 1990s and 2000s found, variations in climate don't do nearly as well at predicting outbreaks of violence as political, economic or geographic factors do. Climate can be a contributor to conflicts, that study suggested. But it's rarely the only factor — or even the most important one.

Indeed, the new *Science* paper seems to agree with that basic premise. Here are two key quotes from the paper itself:

Social conflicts at all scales and levels of organization appear susceptible to climatic influence, and multiple dimensions of the climate system are capable of influencing these various outcomes. ...

However, it is not true that all types of climatic events influence all forms of human conflict or that climatic conditions are the sole determinant of human conflict. The influence of climate is detectable across contexts, but **we strongly emphasize that it is only one of many factors that contribute to conflict.**

The University of South Carolina's Edward Carr, who has critiqued Hsiang's work before, [points out](#) that these nuanced statements are more or less in line with long-standing academic views on the subject. But they're also not exactly earth-shattering, either.

"The Hsiang, et al paper bears little resemblance to the media stories written about it," Carr writes. "It makes very measured, fairly contained claims about climate change and conflict that, if represented accurately in the media, probably would not have made for interesting stories." (Carr's whole post is [worth reading](#).)

The really interesting question, meanwhile, is *why* hotter temperatures or other effects of climate change might contribute to violence — if in fact they do. Does global warming hurt economic productivity, which in turn makes conflict more likely? Does the heat make people more irritable or aggressive? Hsiang and his colleagues list a number of "plausible mechanisms" in their paper, but these are only hypotheses at this point.

Without an answer to that key question, Lauren Morello [writes](#) in *Nature*, plenty of researchers remain wary about making any strong claims on the subject. "[T]he lack of causal mechanisms leaves many political scientists sceptical about the environment's role in conflicts, which they say are driven by a complex array of social factors."

The fact that scientists still don't understand exactly why climate change might lead to violence also means that, for now, there's not much that policymakers can do with this sort of research. Again, here's Carr (who used to work on climate issues at USAID):

Even if I accept the finding [in the Hsiang et al paper] of 14% greater risk of intergroup conflict at one standard deviation of temperature increase, what am I supposed to do about it? Without an explanation for how this temperature rise produces this greater risk, I have no means of targeting programs, diplomacy, or other resources to address the things that create this greater risk.

So, to sum up: This is a worthwhile topic and there's evidence that rising temperatures could well increase the risks of conflict in some cases (though how much is still debated). Yet at this point, researchers don't quite understand exactly why that might be. And, since climate conditions usually aren't the only factors in conflict, it's not quite accurate to say that more war is inevitable in a hotter world.

Update: Marshall Burke [has now written a long post](#) responding to many of the criticisms of their Science paper. It's definitely worth reading for those interested in the subject (as well as the back-and-forth over the study). Here's a passage on whether humans will be able to adapt to a hotter climate in order to minimize conflict:

It is definitely possible that future societies will become much better at dealing with extreme heat and erratic rainfall. However, to just *assume* that this is the case seems to us a dangerous misreading of the existing evidence. As stated above, available evidence suggests that human societies are remarkably bad at dealing with deviations from average climate, be it a short-lived temperature increase or a long-term one. See [here](#) and [here](#) for other evidence on this topic.

And it *has* to be the case that knowing *something* about how yesterday's and today's world respond to climate tells us more about future impacts than knowing *nothing* about how societies have responded to climate. The alternative — that the present world tells us

nothing about the future world – just does not appear consistent with how nearly anybody sees things.

Further reading:

— Edward Carr has a [long, detailed summary](#) of the Hsiang et. al paper. Der Spiegel, meanwhile, [pulls together](#) some less-gentle criticisms of the study (you'll probably have to use Google Translate).

— Keith Kloor [has an excellent round-up](#) of links on the broader subject.

— Andrew Holland also [has a good post](#) putting the study in the broader context of the sometimes contentious debate over the link between climate change and violence.

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