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A Blog About Development and Global Change

Sun 4 Aug 2013

[Much ado about nothing new](#)

Posted by Ed under [Climate Change](#), [development](#), [Development Institutions](#), [Food Security](#), [policy](#), [research](#), [Uncategorized](#)
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So, climate change and conflict is back in the media, seemingly with the strength of science behind it. I've been a [rather direct, harsh critic](#) of some work on this connection before, at least in part because I am deeply concerned that work on this subject (which remains preliminary) might disproportionately influence policy decisions in unproductive or even problematic directions (i.e. by contributing to the unnecessary militarization of development aid and humanitarian assistance). So, when CNN, the *Guardian*, and other media outlets jumped on a [new paper in Science](#) (sorry, paywalled) last week, and one of the authors was responsible for the paper I critiqued so harshly before, I felt compelled to read it – especially after seeing Keith Kloor's [great post on the issue](#). After reading it, I feel compelled to comment on it.

My response is lengthy, so for those on a time budget, I offer some takeaway points. The main post, with details, follows.

Takeaway points

- The Hsaing, et al paper in *Science* makes claims that are much more nuanced than what is represented either in the press releases from [Princeton](#) and [Berkeley](#), or in many of the media stories (especially the big outlets) about them.
 - The actual findings of the paper simply reiterate long-held understandings of the connection between climate change and conflict
 - These findings are, in summary:
 - The climate affects many arenas, including food supplies, markets, and employment. The climate affects each of these in different ways in different places.
 - Climate-related changes in one or more of those arenas *could* (but do not always) affect rates of conflict
 - Even when climate-related changes to these arenas do provoke conflict, the provocation can occur in any number of locally-specific ways
 - Therefore, all we can really say is that climate change *might* affect rates of conflict in different ways in different places in the future
 - We already knew all of this
 - The authors' claims (as stated in this [press release](#) from Princeton) that this study was necessary to establish a causal relationship between changing climate conditions and conflict is based on a straw man of “people” who have been skeptical of “an individual

- study here or there.”
- Much of the literature, and those working on this issue, have long accepted the idea of a complex link between changing climate/weather conditions and conflict. The real question is that of *how* climate variability and change contribute to rates of conflict.
 - The paper does not answer this question
- The quantification of increased risk of conflict in the paper is problematic, as the authors appear to assume a constant relationship, year-to-year or season-to-season, between climate conditions and their influence on various drivers of conflict.
 - This assumption has long been discarded in studies of food security and famine
 - This assumption likely introduces significant margins of error to the findings of this paper regarding increased risk of conflict associated with climate change
 - The paper does not address the real research frontier in the study of conflict and climate change because it does not further our understanding of *how* climate variability and change result in increased risk of conflict
 - To the author’s credit, the paper does not purport to explain how observed climate variability and change are translated into conflict
 - The paper merely summarizes existing literature exploring this issue
 - The findings of the paper do not present an opportunity to adjust policy, programs, or diplomacy to avoid future conflicts, as they do not identify specific issues that should be addressed by such efforts.
 - To some extent, this makes the critique under #2 above irrelevant – the “risk of conflict” figures were never actionable anyway
 - Media coverage of this paper amounts to much ado about nothing new

Main Post

The Hsaing, et al paper bears little resemblance to the media stories written about it. 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. That said, the article deserves critical attention *on its own terms* so we can understand what, if any, new information is here.

First, I want to start with the good in this paper. This is a substantially more careful paper than the one I critiqued before, both with regard to its attention to existing work on the subject and to the claims it makes about the connections between climate change and conflict. The authors deserve credit for noting the long history of qualitative work on conflict and the environment, a literature often ignored by those conducting large, more quantitative studies. They also should be commended for their caution in identifying causal relationships, instead of basic correlations.

In my opinion, this much more measured approach to thinking about climate change and conflict has resulted in more nuanced claims. First, as the authors note:

“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.”

But later in the paper, the authors temper this point:

“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.”

And in the end, the big summary (my emphasis):

“The above evidence makes a *prima facie* case that future anthropogenic climate change *could* worsen conflict outcomes across the globe in comparison to a future with no climatic changes, given the large expected increase in global surface temperatures and the likely increase in variability of precipitation across many regions over coming decades”

Every bit of this is fine with me. Indeed, had the reporting on this paper been as nuanced as the claims it actually makes...there probably wouldn't have been any reporting on the paper. The hook “the climate affects a lot of things, and some of those things *could* affect rates of conflict, so climate change *might* affect rates of conflict in different ways in different places in the future” isn't exactly exciting.

And this is where I have to critique the article. My critique has two sides, one intellectual and one from a policy perspective. They are closely linked and blend into one another, and so I present them both below.

Intellectually, I fundamentally question the contribution of this paper. In a nutshell, there is almost nothing new here. Yes, there appear to be some new quantifications of the risk of conflict under different climate situations, and I will return to those in a minute. But overall, the claims made in this paper are exactly the claims that have been made by many others, in many other venues, for a while. For example, the Office of Conflict Management and Mitigation at USAID put out [a report](#) back in 2009 (yes, four years ago) that reviewed the existing literature on the subject and came to more or less the same conclusions as this “new” article. So I was a little bothered by the [Princeton press release for this paper](#) in which quoted lead author Solomon Hsaing several times, because I think his justification for the paper is based on a straw man:

“We think that by collecting all the research together now, we're pretty clearly establishing that there is a causal relationship between the climate and human conflict,” Hsiang said. “People have been skeptical up to now of an individual study here or there. But considering the body of work together, we can now show that these patterns are extremely general. It's more of the rule than the exception.

I'd love to know who the “people” are who think there is no relationship between climate conditions and human conflict. Critiques of the study of this connection (at least credible critiques) have not so much argued that there is no connection, but that the connections are very complex and not well-captured in large-scale studies using quantitative tools. So, when Hsaing goes on to say:

“Whether there is a relationship between climate and conflict is not the question anymore. We now want to understand what's causing it,” Hsiang said. “Once we understand what causes this correlation we can think about designing effective policies or institutions to manage or interrupt the link between climate and conflict.”

...he's really making a rather grand claim for an article that just tells us what we already knew – that there is a connection between climate conditions and human conflict. And he is burying the real lede here...that the contribution we need, now, is to understand how these causal relationships come to be. This argument for “where we should go next” is also a bit grand, seeing as everyone from academics to USAID's Office of Conflict Management and Mitigation have been conducting detailed, qualitative studies of these relationships for some time now **because we already knew a) that there were relationships between climate and conflict and b) we needed to establish what caused those relationships.**

Second, I feel this article suffers from a critical methodological flaw, in that the authors never address the variable coupling of climate outcomes and changes in even those drivers of conflict identified in the

literature. For example, it is not at all uncommon to have market shifts take place seasonally, in a manner that can be either coupled or uncoupled with shifts in climate: that is, sometimes a bad rainy season damages local harvests and drives market prices for food up, while other times it could be a great rainy season and a very productive harvest, but factors on regional or global markets could still generate price spikes that end up limiting people's access to food. In both situations, the people in question would experience a food stress, one closely linked to climate variability, and the other experience a food stress uncoupled from climate. This is why, as I argued back during the Horn of Africa Famine, [drought does not equal famine](#). Famines are far more highly correlated to market conditions than climate conditions. Sometimes climate events like a failed rainy season can trigger a famine by pushing markets and other factors over key thresholds. However, we've also had famines in times of normal or even favorable climatic conditions for agriculture.

Simply put, the authors appear to assume a constant relationship between a conflict driver like access to food and the local/regional/global climate. To be fair, this seems to be a pretty prevalent assumption in the literature. But to the point, this is a bad bet. As best I can tell, the authors have not managed to address the intermittent coupling of conflict drivers like access to food and markets with climatic conditions in their analysis. This, to me, casts significant doubt on their findings that risk of inter-group conflict will rise 14% at one standard deviation of temperature rise – in short, this is far too precise a claim for a study with such large margins for error built into its design. My suspicion here is that the margin of error introduced by this problem is probably larger than their analytical findings, rendering them somewhere between weak and meaningless. And this, to be honest, was the only really original contribution in the paper.

Third (as I begin to pivot from intellectual to policy critique), while the authors claim to have focused on causal relationships (a claim I think should be tempered by my methodological concerns above), they cannot explain those relationships. I've made this point before: in the social sciences, [causality is not explanation](#). Even if we accept that the authors have indeed established causal relationships between climate variability and change and the risk of conflict/rates of conflict, they do not know exactly how these changes in climate actually create these outcomes. This is clear in the section of the paper titled "Plausible Mechanisms", in which the authors conduct a review of the existing literature (much of which is qualitative) to lay out a set of potential pathways by which their observed relationships might be explained. But nothing in this study allows the authors to choose between any of these explanations... which means that all the authors have really accomplished here is to establish, by different means, exactly what the qualitative literature has known for a long time. To repeat:

1. The climate affects many arenas, including food supplies, markets, and employment. The climate affects each of these in different ways in different places.
2. Climate-related changes in one or more of those arenas *could* (but do not always) affect rates of conflict
3. Even when climate-related changes to these arenas do provoke conflict, the provocation can occur in any number of locally-specific ways
4. Therefore, all we can really say is that climate change *might* affect rates of conflict in different ways in different places in the future

We already knew all of this.

At this point, allow me to pivot fully to my fourth critique, which comes from a policy perspective. People tend to see me as an academic, and forget that I served as the first climate change coordinator for the Bureau for Democracy, Conflict, and Humanitarian Assistance (DCHA) at USAID. I was [Nancy Lindborg](#)'s first climate advisor – indeed, it was in this role that I found myself first dealing with issues of conflict and climate change, as I was responsible both for briefing my Bureau's leadership on these issues and guiding

the programming of the Bureau's dedicated climate change budget (some of which I directed into more research on this topic). In short, I do know something about policymaking and the policy environment. And what I know is this: *this paper gives us nothing actionable to address*. Even if I accept the finding 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. In short, this paper tells me what I already knew (that climate variability and change can contribute to conflict risk) without giving me anything concrete I can work on. If I were still briefing Nancy, my summary of this paper would be:

1. There is nothing new in this paper. Its key findings are those of CMM's (four-year-old) report, and are already well-established in the literature
2. The paper does not provide any new information about *how* climate change and variability might contribute to increased conflict risk, and therefore presents nothing new that might serve to guide future policy, programs, or diplomacy
3. I have methodological concerns with the paper that lead me to believe that the rates of increased risk of conflict reported in this paper are likely stated with too much confidence. These rates of heightened risk should not be cited until put under significant scrutiny by the academic and policy community*.

In summary, the supportable parts of this paper are nothing new – it is a reasonable summary of the issues with establishing a connection between climate change and conflict, and a decent (if truncated) review of the existing literature on the subject (I'd suggest that a real review article of this subject would have to go wider and look at the conflict and environment literature more broadly). But it doesn't say anything new that really bears up to scrutiny, and even if the "risk of conflict" figures are correct, the paper provides no information that might guide policy, programs, or diplomacy in a manner that could avoid such conflicts. For that information, we have to return to the qualitative research community, which has long espoused the same general findings as those in this paper.

The press releases from [Princeton](#) and [Berkeley](#), and the more hyped of the media coverage we've seen around this paper (likely driven by those press releases) is much ado about nothing new.

*In my third point I am indeed taking issue with the peer review process that brought this paper to publication. I believe that *Science* wanted this paper for the same reason *Nature* wanted the last one: headlines. Let's see how the findings here stand up to serious scrutiny.

16 Responses to “ Much ado about nothing new ”

1.  *Diana Liverman* says:
[5 August, 2013 at 8:11 am](#)

Great critique Ed. I have had many issues with this project, and the work on climate and refugees. Wrote an editorial on problems with climate and conflict work in *Climate Change* a couple of years ago with Jon Barnett adding insights through a paper in the same issue.

-  *Diana Liverman* says:
[5 August, 2013 at 8:12 am](#)

Forgot to add that I see this as a return to environmental determinism!

-  *Ed* says:
[5 August, 2013 at 3:00 pm](#)

Thanks Diana! The project has all kinds of problems, but really what is stunning is the failure of peer review here. There are lots of good review articles out there that largely obviate the core justification for the study offered by the authors, and the reviewers/editors really should have known this and demanded that the authors demonstrate how this study actually extends our understandings (which, as best I can tell, it does not). Jon gets worked into a steam over this stuff at times (he’s a friend through the IPCC – had a few meals/drinks with him in Bled back in July), so I am quite familiar with his feelings on the matter. And I have seen the pieces you are referring to (and like them).

Basically, we need to recapture the narrative here. I will try in Sept, as I will be up at the Woodrow Wilson Center at an event on this issue – and yes, we need to bury the return to environmental determinism now. What worries me, though, is that I am not sure what our counternarrative really is...that is, I do know how we ought to be studying this issue, but I have difficulty putting that into the sort of narrative that will give us policy traction. It was hard enough when I was face-to-face with the policymakers, much harder by remote control...

2.  *MG* says:
[6 August, 2013 at 9:38 am](#)

Ed,

Your central complaint above is that:

“We already knew all of this: The authors’ claims... that this study was necessary to establish a causal relationship between changing climate conditions and conflict is based on a straw man of ‘people’ who have been skeptical of ‘an individual study here or there.’... I’d love to know who the ‘people’ are who think there is no relationship between climate conditions and human conflict.”

which directly contradicts what you said in your earlier rant about the same author (which you proudly link to above):

“I knew it was going to be a bad day when I opened my email this morning to a message from a colleague that linked to a new study in Nature: ‘Civil conflicts are associated with the global climate.’ Well, that is assertive... especially because despite similar claims in the past, I have yet to see any study make such a definitive, general connection successfully. Look, the problem here is simple: the connection between conflict and the environment is shaky, at best.”

It seems as though Ed Carr (2011) is one of those “people” that you would like to get to know.

An aside:

Your “suspicion” that the existence of heterogenous treatment effects would cause

“[T]he margin of error introduced by this problem is probably larger than their analytical findings, rendering them somewhere between weak and meaningless.”

is incorrect. The actual text of the paper spends a lot of time on this issue.



o [Ed](#) says:

[6 August, 2013 at 9:58 am](#)

I’d suggest you read my whole post on the previous paper. In it, I did *not* say that there was no link between climate change and conflict, but that the link is shaky – that is, we don’t understand it well, and what we do understand suggests is is not constant across time and space. I think my previous post is fully consistent with my current argument, and therefore it seems you might have straw-manned me in just the manner that the authors have straw-manned the wider critical literature on the subject.

While the authors are methodologically cautious in this paper (and should be commended for that), there is *no discussion* of the coupling/decoupling issue that I raise. I read the article more than once looking for it, and it is not there. They deal with a number of heterogeneous treatment effects, but not this one.



3. [Seyyed Mahmoud Hashemi](#) says:

[6 August, 2013 at 3:55 pm](#)

Dear Ed,

Have you seen this publication of Adger et al’s “Climate and war: A call for more research” in Nature?

Just to mention this!

All the best,
Mahmoud

-  [Ed](#) says:
[6 August, 2013 at 7:20 pm](#)

Mahmoud:

Thanks for this – I have seen the piece, and Neil Adger is actually a friend of mine (met him through the IPCC, actually). He’s a great guy, and very smart. I wish more people were reading his stuff, and less of the sensationalistic pieces!

4.  [Matt Collin](#) says:
[7 August, 2013 at 10:16 am](#)

Hi Ed,

“Simply put, the authors appear to assume a constant relationship between a conflict driver like access to food and the local/regional/global climate. To be fair, this seems to be a pretty prevalent assumption in the literature. But to the point, this is a bad bet. As best I can tell, the authors have not managed to address the intermittent coupling of conflict drivers like access to food and markets with climatic conditions in their analysis. This, to me, casts significant doubt on their findings that risk of inter-group conflict will rise 14% at one standard deviation of temperature rise – in short, this is far too precise a claim for a study with such large margins for error built into its design. My suspicion here is that the margin of error introduced by this problem is probably larger than their analytical findings, rendering them somewhere between weak and meaningless.”

This seems to be mostly an argument against linear specifications and against ignoring heterogenous treatment effects. While this does introduce limitations – you should never take the 14% argument and try to use it in a particular context (I would be surprised even if the authors do this), it’s a little bit like arguing “I reject your finding that, *on average* medicine X reduces mortality by Y% because surely it has a different effect for a man aged 20 than a women aged 40.”

Estimating average effects doesn’t “introduce errors”. The authors aren’t arguing that the exact effect is 14%, but that the estimated coefficient of 14%, which might come with a large standard error, but one which is sufficiently small to reject the null of a zero effect.

Your point that the interpretation of that effect might not be terribly useful (and that the piece might not be terribly relevant) stands, but seriously, quit hating on average treatment effects.

(we had a similar disagreement some time ago):

<http://aidthoughts.org/?p=2806#comments>

-  [Ed](#) says:
[7 August, 2013 at 10:31 am](#)

Hi Matt:

Yes, I have issues with the linear specifications here, but mostly because they have very little bearing on reality. It is one thing to introduce such specifications when nothing is known about a relationship, but there is quite a bit of lit arguing that such linear specifications are invalid. This, to me, is sloppy scholarship. I grow weary of quantitative analyses (of anything) that ignore often vast qualitative literatures that could answer a lot of their questions.

Also, while you are absolutely right about average treatment effects – and I fully believe that you and many others (including, perhaps, the authors) would not apply 14% to every place at every time to inform policy. But read the press releases – the authors offer no such caveats *in their public statements*. They are really hyping that average number as “the number”, and this is especially likely to confuse people because they talk about how their findings are robust across time and space. In short, the popular representation of this paper is coming down as “14% more” for everyone (which is not what the authors are really saying in the paper, but what their press releases seem to say). Once we get past the idea that 14% is anything more than an average effect, and start talking about how the effect depends on when and where you are, we are back into “we already knew that” territory, which defeats the purpose of the paper in the first place – and is completely useless for guiding policy and program decisions!

Thanks for this comment – these are important points and I appreciate the opportunity to clarify my arguments.

Best,

Ed



5. *Jimmy Shroff* says:
[14 August, 2013 at 2:36 am](#)

Please do examine conflict and climate relationships by examining if conflict can possibly cause climate change for the worse. Conflict, or more fundamentally, the mental and emotional climate which produces conflict, also causes changes in our mother Earth, not to mention our solar system.

Trackbacks & Pingbacks:

1. [A Controversial Claim: Climate Change = War & Violence - Collide-a-Scape | DiscoverMagazine.com](#) says:
[4 August, 2013 at 11:46 pm](#)
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[5 August, 2013 at 6:28 am](#)
[...] Ed Carr dives into the Science paper. His longish post is respectfully [...]
3. [Will global warming lead to more war? It's not that simple.](#) says:
[5 August, 2013 at 2:51 pm](#)

[...] 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 [...]

4. [*Climate change will lead to more conflict! Well, not exactly | Humanosphere*](#) says:
[6 August, 2013 at 1:00 pm](#)

[...] question the contribution of this paper. In a nutshell, there is almost nothing new here," blogged University of South Carolina geographer Ed Carr after the paper's [...]

5. [*Really delayed Thursday Morning Linkage » Duck of Minerva*](#) says:
[9 August, 2013 at 11:38 am](#)

[...] Ed Carr takes issue with the newness of the findings [...]

6. [*Really delayed Thursday Morning Linkage | Symposium Magazine*](#) says:
[9 August, 2013 at 11:45 am](#)

[...] Ed Carr takes issue with the newness of the findings [...]

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