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What Attribution Science Can Honestly Say, and Who Gets Quoted Saying Otherwise

 THE HINDU

30 August 2026 ·

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 The Hindu

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GS3

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INTERVIEW ANGLE

"World Weather Attribution can say climate change tripled the odds of a heatwave, but cannot attribute a single thunderstorm. If you were advising a state government after a cloudburst, what would you let officials claim in public, and what would you stop them claiming?"

Source: [Original editorial](#)

The Hindu

 Every fact web-verified against primary sources

THE LIFT LINE

WHY THIS EDITORIAL MATTERS FOR YOUR EXAM

Attribution is now a fixture of GS3 environment questions and of every post-disaster press cycle, including this week's Nepal flood, where scientists have pointedly **stopped short** of attribution. This piece supplies the machinery, the limits and, inadvertently, a lesson in **source criticism**: two of its quoted "experts" are not experts, and spotting that is a transferable exam skill.

BACKGROUND AND CONTEXT

The trigger. After an intense heatwave struck South Asia in April 2026, **World Weather Attribution** found, in a study published in mid-May with the **India Meteorological Department among the co-authors**, that climate change **approximately tripled the probability** of such an event and that it would have been **about 1 degree Celsius cooler in a pre-industrial climate**.

Who WWA are. An international research collaboration founded in **2014** by **Friederike Otto and Geert Jan van Oldenborgh** with Climate Central, now running rapid, peer-review-protocol attribution studies after major events, more than a hundred to date.

The method, in one paragraph. Run climate models for a **counterfactual pre-industrial world**, carbon dioxide around **280 parts per million**, and for the present one, **above 420 ppm and recorded at 432.00 ppm at Mauna Loa in May 2026**. Compare how often and how intensely the event class occurs in each. The output is a **change in probability and intensity**, never a verdict on one storm. As **J. Srinivasan** of the Indian Institute of Science explains through the piece, many simulations and rigorous statistical tests stand behind each estimate.

Detection versus attribution, the IPCC's own split. **Detection** establishes that an event falls outside the range natural variability would produce, **without saying why**. **Attribution** then measures the contribution of specific causes. **Vimal Mishra** of IIT Gandhinagar, the **Vikram Sarabhai Chair Professor**, and note the spelling, his chair is routinely misprinted as “Bikram”, frames the sequence exactly this way.

THE ANALYSIS

Limit one: resolution. Most global climate models cannot capture **fast-changing, small-scale processes**. Hence the confidence gradient: **highest for heatwaves**, large in space and time, **lowest for short-duration, sub-daily events**, intense bursts of rain lasting an hour, thunderstorms, tornadoes. **IPCC AR6 Working Group I, Chapter 10** states that some local phenomena, **land-sea breezes and mountain wind systems**, can only be realistically represented at resolution **of the order of 10 km or finer**, which current global models do not support. This is why a **cloudburst** in the Himalaya cannot honestly be attributed, and why careful scientists this week have not attributed the Nepal disaster.

Limit two: records. Attribution needs a baseline, and baselines need data. Mishra: without **long-term hourly or sub-hourly rainfall observations** for a particular place, “we cannot confidently mark out the range of natural variability for a heavy rainfall event there.” Much of India lacks exactly those series.

Limit three: the meaning of extreme. Mishra's group reconstructed droughts over roughly **1,200 years** and found that some kinds of drought seen in the past **no longer occur**, and that an event appearing extreme on a **10-to-20-year timeline** may look unexceptional against **500 years**. The baseline is a choice, and the choice decides the headline.

Limit four: the courtroom. Attribution now feeds litigation against **carbon majors**, the concept built on Richard Heede's database attributing historical emissions to major producers. **Raghu Murtugudde** of the University of Maryland doubts that counterfactual worlds “will ever be perfect enough” to be accepted without question in court. The record has moved, in the piece's background: in **Lliuya v RWE**, decided at Hamm in 2025, the claim failed on facts but the court accepted **in principle** that a major emitter can bear civil liability proportional to its emissions share; and the **International Court of Justice's advisory opinion of July 2025** held climate obligations to be owed erga omnes, with established causation rules capable of applying to **reparation**. The legal question is no longer whether such claims can be heard; it is what fraction attribution can defensibly assign.

*Alongside these scientists, the piece quotes **Mark Keenan**, styled “a former UN and U.K. government scientist”, writing in *American Thinker*, and a report by **Ralph Alexander for the Global Warming Policy Foundation** calling attribution “deeply flawed”. Check the sources, as this desk did. Keenan is the **self-published author of a book calling climate change a hoax**, with **no peer-reviewed climate publications**; *American Thinker* is a partisan blog with a documented record of failed fact checks; the GWPF is a **climate-sceptic lobby group**, not a scientific body. Quoting them beside IPCC lead authors is **false balance**: the journalistic reflex that every finding needs an opposing quote, regardless of standing. **The scientists in this piece state the method’s limits themselves**. Real scepticism lives inside the science; the imported kind is decoration.*

The constructive close. Subimal Ghosh of IIT Bombay, a **lead author of AR6’s chapter on weather and climate extremes**, redirects the energy: “Our priority should be to develop more effective early warning systems and adaptation infrastructure in order to save more people.” Preparedness does not wait on attribution, because the flood drowns you at exactly the same speed whichever fraction of it was anthropogenic.

DATA AND INSTITUTIONS VAULT

PRELIMS-GRADE FACTS:

World Weather Attribution was founded in 2014 by Friederike Otto and Geert Jan van Oldenborgh with Climate Central.

WWA found climate change roughly tripled the odds of the April 2026 South Asia heatwave, about 1 degree cooler without it.

The India Meteorological Department was among the co-authors of that WWA study.

Attribution compares a counterfactual pre-industrial world near 280 ppm CO₂ with the present above 420 ppm.

Mauna Loa recorded 432.00 ppm of carbon dioxide in May 2026.

Detection establishes an event lies outside natural variability; attribution then apportions causes.

Confidence is highest for heatwaves and lowest for sub-daily events like thunderstorms and cloudbursts.

IPCC AR6 WGI Chapter 10: land-sea breezes and mountain winds need resolution of order 10 km or finer.

Vimal Mishra holds the Vikram Sarabhai Chair at IIT Gandhinagar; drought reconstructions span over a millennium.

Subimal Ghosh of IIT Bombay was a lead author of AR6 WGI Chapter 11 on weather and climate extremes.

The carbon majors concept rests on Richard Heede's database of emissions attributed to major producers.

Lliuya v RWE, decided at Hamm in 2025, accepted proportional emitter liability in principle while dismissing the claim.

The ICJ's July 2025 advisory opinion held climate obligations erga omnes, with causation rules applicable to reparation.

NASEM's committee on extreme event attribution updated the 2016 US assessment with a new report in 2026.

*Never write that WWA "proved climate change caused" an event. Attribution outputs are **probabilistic**: likelihood multiplied, intensity shifted. Equally, never cite "up to 1 degree warmer" for the 2026 heatwave; the study's wording is **about 1 degree**, a central estimate, and "up to" converts it into a ceiling it never was.*

THE DEBATE

The limits vindicate caution. Coarse models, thin records and chosen baselines mean single-event attribution, especially for **convective** events, oversteps; courts should hesitate before converting simulation into liability; and the honest scientists quoted here say all of this themselves.

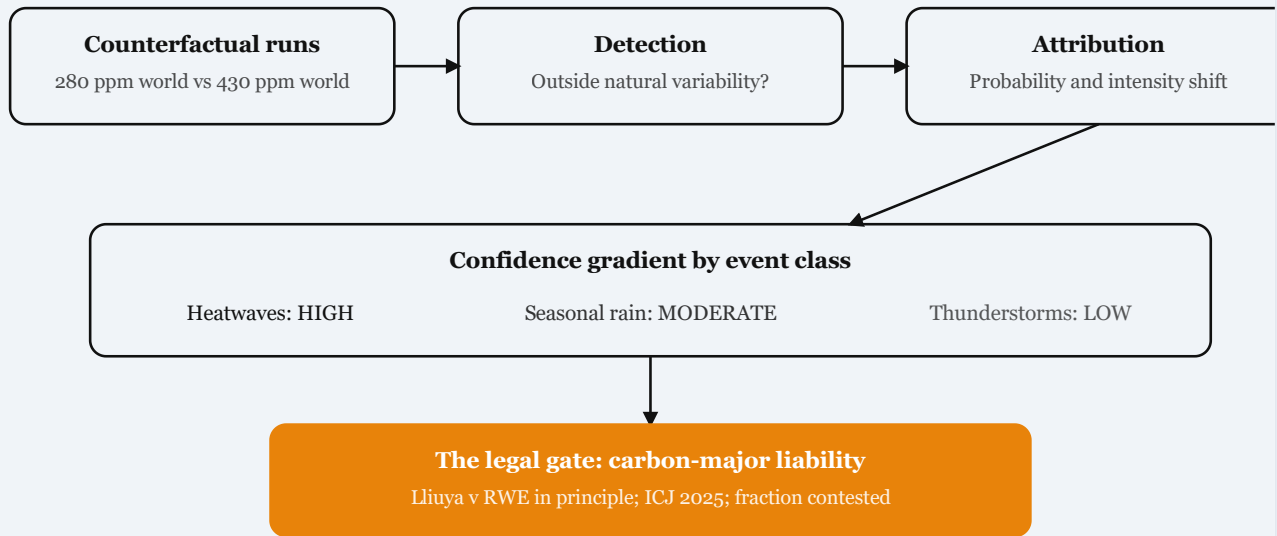
The limits are the frontier, not the verdict. Every stated limit has a research programme attached: kilometre-scale models, densified gauges, longer reconstructions. Heat attribution is already robust, and heat is India's deadliest hazard class. Using thunderstorm-uncertainty to discount heatwave-certainty is a category error, and importing lobby-group voices to widen the doubt is not scepticism but its costume.

Where both land. Ghosh's line. Attribution refines responsibility; preparedness saves lives; the second cannot wait for the first.

HOW TO THINK ABOUT THIS

Build a two-axis mental table: **event class** against **claim strength**. Heatwaves: strong probabilistic claims, safe to cite. Seasonal rainfall shifts: moderate. Sub-daily convective events, cloudbursts, tornadoes: attribution generally unavailable, say so. Then apply the source filter: **is the sceptic inside the peer-reviewed conversation or outside it?** Mishra doubting baselines is science; a hoax author in a partisan blog is not. An answer that demonstrates both filters, event-class and source-class, is doing what the examiner actually wants tested.

DIAGRAM-IN-WORDS



The pipeline is honest about its gradient. Litigation enters at the orange gate, and the contested question is how far down the gradient a court will reach.

TAKEAWAY BOX

Attribution multiplies probabilities; it does not convict storms.

WWA, founded 2014, Otto and van Oldenborgh; April 2026 heatwave about three times likelier, about 1 degree warmer, IMD a co-author; 280 versus 430 ppm counterfactual; detection before attribution; AR6's 10 km resolution caveat; Mishra's millennium-scale drought baselines; Heede's carbon majors; Lliuya v RWE and the ICJ opinion of 2025.

Two filters make the answer: event-class confidence (heat high, convective low) and source standing (peer-reviewed scepticism versus lobby noise). Close with Ghosh: early warning and adaptation cannot wait on attribution.

After a Himalayan cloudburst, a minister asks you whether to blame climate change on camera. Draft the two sentences you would hand them.

Source: What Attribution Science Can Honestly Say, and Who Gets Quoted Saying Otherwise — Ujjiyari.com | Free
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• KEY ARGUMENTS AT A GLANCE

Writing after the 2026 South Asian heatwave, Harsh Kabra assembles the genuine limits of extreme event attribution, coarse models, short records, contested definitions of extremeness, and the gap between statistical and legal causation, and the piece's value survives one flaw: alongside IPCC lead authors it quotes, as if equivalent, a self-published climate-hoax author and a lobby-group report, a false balance an aspirant should learn to detect rather than reproduce.



SUPPORTING

- The method is counterfactual: models run a pre-industrial world at about 280 ppm of carbon dioxide against today's roughly 430 ppm, so for the April 2026 heatwave WWA could state climate change made the event about three times likelier and about 1 degree warmer, probabilistic claims, never single-event certainties.
- Confidence is event-dependent for stated physical reasons: heatwaves are large and long enough for coarse global models, while sub-daily localised events like cloudbursts and thunderstorms outrun model resolution, and IPCC AR6 itself notes land-sea breezes and mountain winds need resolution of order 10 km or finer.
- The definitional critique is real science, not denial: Vimal Mishra's reconstructions spanning over a millennium show droughts extreme on a 20-year view that vanish on a 500-year view, so the baseline chosen decides what counts as unprecedented.



COUNTER

The counter-position is that these limits are the science working as stated, not a scandal: attribution studies publish confidence levels event-class by event-class, the IPCC prints its resolution caveats, and treating stated uncertainty as disqualifying, or platforming hoax authors as the other side, mistakes honesty for weakness.



WAY FORWARD

Kabra's strongest sourced conclusion doubles as the way forward: as Subimal Ghosh argues, preparedness should not wait on attribution, because early-warning systems and adaptation

infrastructure save lives whichever fraction of a given event was anthropogenic, a priority order India's disaster management should formalise.


MAINS ANSWER FRAMEWORK
QUESTION

Extreme event attribution is scientifically strongest for heatwaves and weakest for short-duration localised events. Explain why, and discuss the implications for climate litigation and for India's disaster management priorities. (250 words)

INTRODUCTION

After World Weather Attribution found that climate change made the April 2026 South Asian heatwave about three times likelier and about 1 degree warmer, Harsh Kabra's survey in The Hindu asks the disciplined question: what exactly can such a claim mean, and where does it stop? The answer maps the method's honest boundaries, and one dishonest boundary drawn around it.

BODY

Attribution works by counterfactual: climate models simulate a pre-industrial world, carbon dioxide near 280 parts per million, and the present one, above 420 and touching 432 at Mauna Loa in May 2026, and compare the probability and intensity of the event class in each. Detection precedes attribution: first establish an event lies outside natural variability, then apportion influence.

Three limits follow from the machinery. Resolution: global models cannot capture fast, small processes, which is why confidence is high for a fortnight-long continental heatwave and low for an hour-long cloudburst; AR6 Working Group I notes that land-sea breezes and mountain wind systems are only realistically represented at resolutions of order 10 kilometres or finer, which current global models do not run.

Records: without long-term hourly rainfall series for a location, the envelope of natural variability for a heavy-rain event cannot be confidently drawn, a constraint Mishra states plainly for India. Baselines: reconstruct droughts over 1,200 years, as Mishra's group has, and events that look exceptional on a 10-to-20-year window stop being exceptional, so the definition of extreme is itself a methodological choice. To these Kabra adds the legal frontier: attribution increasingly serves liability claims against carbon majors, where Raghu Murtugudde's scepticism about counterfactual worlds holding up in court meets the 2025 landmark rulings, the Hamm court's in-principle acceptance of proportional emitter liability in Lliuya v RWE and the ICJ advisory opinion, which together make the fraction-of-attribution question justiciable. The piece's flaw is instructive: alongside Srinivasan, Mishra, Ghosh and Diffenbaugh it quotes a self-published author of a climate-hoax book, via a partisan blog, and a Global Warming Policy Foundation report, as if they were part of the same scientific conversation.

They are not, and the reader who cannot tell the difference will copy the false balance into an answer.

CONCLUSION

The honest position, and the scoring one, is double: attribution science is real, quantified and appropriately humble about thunderstorms; and its stated limits are arguments for finer models, denser observation networks and, above all, for Ghosh's priority of early warning and adaptation that saves lives regardless of

the attribution fraction. Scepticism about method belongs inside science; manufactured balance belongs nowhere in an answer.

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