The expert view: how to think about disaster risk
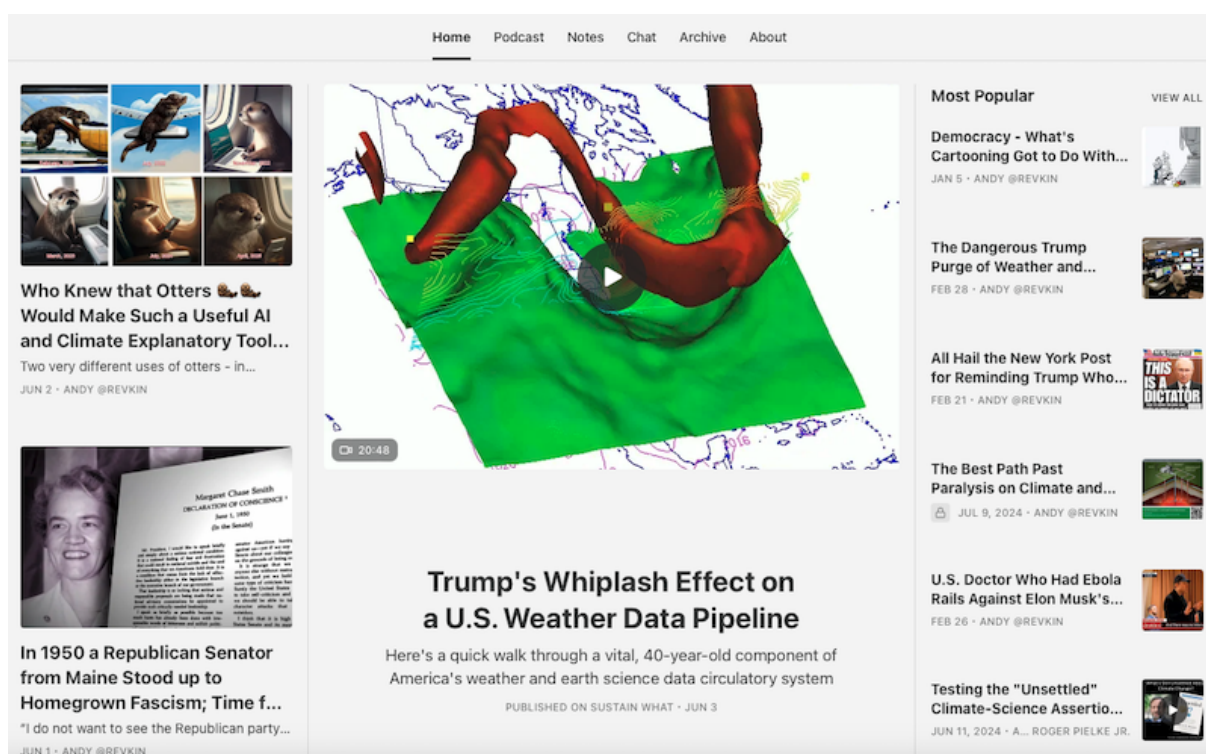
Interviewers: Gareth Byatt – Principal Consultant, Risk Insight Consulting
Ana Prados – Senior Scientist, University of Maryland, Baltimore County (UMBC)

Interviewee: Andy Revkin – Environmental Journalist,
Founder of Sustain What

April 2025

The Sustain What Substack site

Andy,

Thank you for making the time to talk with us about your work. We are looking forward to hearing your views on how disasters and climate change are described in the media, and your suggestions for what can and should be done to ensure disasters are avoided and the right attention is paid to risk and risk reduction.

Can we begin this interview with an overview of your background and your reporting journey which includes your work at the New York Times?

Andy: I wanted to be a marine biologist to begin with. Through a long chain of events, I ended up migrating towards telling the story of science. In the early 1980s, I went to Columbia's graduate school of journalism with a science specialty. I grew up loving science and I started out with science magazines at a time when print journalism was a surging and prosperous enterprise.

In 1984, nuclear winter emerged as a real risk during the Cold War. It was possible that, if you burn enough cities, you'd fill the atmosphere with sun-blocking particles and there would be a catastrophe. The risk of a nuclear winter was my first climate story, in 1985, which won a national award in the US, and it set me on this course towards focusing on the Earth's atmosphere and the climate.

The same models that were being used to assess nuclear winter risk were already being used to assess global warming, as I learned reporting from a supercomputer center in Boulder, Colorado, at the National Center for Atmospheric Research. By 1988, when global warming became a news story partly because of the work of Jim Hansen, a climate scientist at NASA, and others, I was on the case, and I had my first big cover story about it in a print magazine in 1988.

I joined the New York Times in the mid-1990s and began writing about other kinds of risk, along with climate. I was initially hired to cover the regional environment around New York City. A key issue at that time was how to keep the city's water supply safe for over 8 million people. This was my first deep exposure into a systemic risk landscape, where factors like development and agriculture were contaminating water flowing to New York City from northern regions. The city weighed building a billion-dollar filtration system or working with dispersed communities to cut pollution at the source. It was a matter of social science, politics and technology.

I kept going with the climate beat. At the New York Times I was one of the early Internet enthusiasts, which helped me to begin a two-way relationship with my readers. This was very exciting and different from the traditional one-way push writing and publishing model. By 2007 I had developed my blog for the Times called Dot Earth. I often called myself a "selfish blogger" because I was learning so much from it that I would do it even if the readers weren't there! This blog was allowing me to examine challenging issues like climate change from a range of perspectives and to get feedback from readers, and it enriched how I thought about things. I was also writing about other kinds of calamities. For example, in 1996 I was on the team covering the horrific explosion of the TWA Boeing 747 leaving JFK that was first thought to be terrorism, but it turned out to be a very complex set of factors that destroyed the plane. Covering earthquakes was also part of my remit, and a range of things led to some key perspectives in how I think about the news process now.

The original Dot Earth logo (image source: the New York Times, reproduced with permission by A Revkin)

DOT EARTH

Nine Billion People. One Planet

Gareth: I enjoyed reading [your piece about Dot Earth in the Times in 2016.](#) 2,800 posts created over a nine-year period (2007 to 2016).

I wonder whether we could discuss your experience of working with different types of media, starting with print and then the Internet and now social media. One of the points I have seen on [the Sustain What platform](#) is about the danger of overusing narratives. I wonder whether you could unpack your thinking on this.

Andy: Sure. The point about overusing narratives links into how I have evolved my thinking about journalism over the years. Back in the day when I was writing magazine articles and writing for the New York Times, your job was defined as producing stories and narratives – you were rewarded for a great story.

I started to think about problems inherent to this model. When we think about what makes a great story in a newspaper, it's things like conflict, or having a narrative of "good versus bad." It derives from deeply rooted parts of how humans think about the world around them, which comes from how we have evolved by being told a good story which dates back to well before journalism existed.

A good story, as my friend Randy Olson, a science communication guru, has said, has an issue, a turning point and a resolution – like a good movie. This method does not align with most of the things I write about nowadays. Climate change is a result of a wide range of factors, and it is not solvable in the traditional sense. We're building a new relationship with the climate system, hopefully one that's safer, and it has become a two-way relationship, which is a key point to think about.

For most of human history we had a one-way relationship with climate. It did stuff and we either got out of the way, moved or innovated our way around it. Modern climate science has demonstrated that we're changing the climate system while it is changing us. This is a novel idea, and the resolution of this situation is not an end point. It's not a story with a final "hurrah!" We're not going to finish by saying we have solved the climate change problem.

When you consider this and you look at narrative approaches such as demonising the fossil fuel industry or making the whole problem about politics rather than about our relationship with energy, you see these points as components of the problem, and that there is a bigger picture that we need to understand.

To move from thinking that the goal of climate activism is to tell a compelling story, when you know that it's more complicated than that, is important and hard to do.

Gareth: You have talked about "narrative capture" in some of your writing. Can you explain what you mean by this?

Andy: There are two ways to be captured by a narrative. One is external, which is when someone sells you a narrative. The other is internal, where you develop it yourself.

I saw this a lot in newsrooms, where on climate and other issues we develop our own internal definition of a story, which clouds how we look at the data around us. If we are not careful, we ignore data and we don't tell the real story which is usually more complicated.

I came up with the idea of a #narrativecapture tag to use after I kept seeing, over and over again, examples of this happening. The climate discussion has a narrative that I now recognise that I supported through my early reporting. My early reporting was so focused on the change in the climate from greenhouse gases and aerosols and everything linked to this that I was negating other components of what makes the climate system dangerous and / or prone to generating disasters, which links to exposure and vulnerability. It took me too long to realise this in my own writing, to shift from a CO2-centered approach to start to talk more about risk.

Ana: It seems to me that a lot of us made the switch when we found ourselves in a position to question what was happening. I was one of them. I was too focused on a specific narrative in the past. One of the challenges still, however, is that I think a lot of scientists haven't yet made this switch. Many still have a CO2-centered approach, not to mention how disasters are still often described as being "natural."
My own trigger to make the switch came from working with environmental organisations who were only talking about CO2 and did not want to think holistically.

Andy: When I talk with people in the environmental movement and with scientists, my strong sense is they fear that CO2 reduction at the scale we need to slow climate change is very hard to achieve, and that any focus or distraction related to looking at vulnerability reduction on the ground and adaptation strategies is seen as diluting the hyper-focus on the hard work to tackle decarbonisation.

My response to this is that, because you know CO2 reduction at scale is a long, hard process, this is all the more reason to focus on risk reduction.

For anyone born in a vulnerable community between now and 2050, even in 2060, even if you had substantial, effective global decarbonization strategy from now onwards, any climate benefit of these reductions would play out years into the future, starting maybe in 2060, and it would be probably late in this century before we have the data to measure the effect – for example, that the force of a hurricane was modulated because of the reduction we achieved in CO2. Are you going to wait till then to know what difference you are making? What benefit are you providing to developing countries or vulnerable communities in rich countries in the meantime?

We are harming these people by diverting attention to the long-term reality of needing to cut CO2 emissions or stabilise climate in other ways. I can't see much merit to the counter argument. The reality is that decarbonization is a slow journey. I've talked to scientists at institutes who track this trend, and whilst we have been slowly decarbonising in various ways for a few hundred years, it's a long, steady process and it doesn't suddenly change when a framework like the Framework Convention on Climate Change (the UNFCCC) is passed or when a new IPCC report comes out, or even when coal reduction drops because of other energy sources being found and used.

The background rate of decarbonisation is still very slow because many parts of the world are increasing their demand for energy. To me, this reinforces the need for good risk reduction, particularly vulnerability reduction, as a key component of what needs to happen to have a better human relationship with the climate system.

Ana: People talk about needing to reduce CO2 in order to reduce hazards, but this coupling is complicated. A lot of organisations are conflating CO2 reductions and flood risk in a way that isn't really connected to anything tangible because the flood risk reduction may not materialize for 50 years or longer. They're both worthwhile endeavours on their own, but they're not always connected,

How could we (the Disasters Avoided team and professionals including scientists) do a better job at working with the media to convey that disasters are not entirely about the hazard or climate change, that they are more about human decisions that can lead to or avoid disasters occurring?

For example, while we saw some good reporting during the California fires of January 2025, much of the reporting was focused on the severity and characteristics of the fires and the contribution of climate change to them (this came to mind when I was recently listening to [your interview with Professor Mike Hulme of the University of Cambridge](#)).

Andy: The other field of science that has for too long sat in the background is [paleoclimate work](#), particularly relating to extreme events, which I started reporting on when I was at the New York Times – and was another key factor for me in understanding the importance of focusing on risk reduction.

In 2001, I published a story in the Times on what's called Paleo Tempestology ("[Experts Unearth a Storm Past](#)"). It's a clunky term, I know. It's about the history of big storms such as hurricanes. It involves going back in time, looking at sediment records and other proxies that show when a coastline or other land area was hit by a huge hurricane or other storm. Over and over, people involved in this were finding past instances in cooler climates when we have had hyperactive Caribbean and hyperactive Atlantic hurricane situations that were not necessarily a function of sea surface temperature. They're a function of all the other things that go into making hurricanes. Florida is a classic case in this.

I wrote several stories about studies like this. Another one in 2002 ("[Study Finds Storm Cycles Etched in Lake Beds](#)") focused on New England and upstate New York.

Noren, Bierman, Steig and others produced some compelling research using lakebed sediments to show that, for thousands of years, there have been patterns of extreme flooding and storms in the Northeast US with a slight increase in the trend over a multi-century time horizon. One of their concluding points was that it would be difficult to use an attribution analysis and find a global warming signal in future heavy rainfall events in that region, because the dynamic is already there.

In a 2007 story I did for The Times ("Study Finds Hurricanes Frequent in Some Cooler Periods") on strong hurricanes and their frequency in the Gulf of Mexico and in cooler climates, one of the datasets was from Puerto Rico. In 2017, when Puerto Rico was hit by Hurricane Maria, a lot of the headlines from the climate community were about global warming and not about vulnerability. Why was this the case?

Gareth: Andy, you have mentioned vulnerability a few times in this interview, and I want to draw on this some more and make a link to a term that's still frequently used in the media and elsewhere, of "natural disasters" – as if they were bound to happen and people were bound to suffer. As you describe in your writing, this is not the case. Some people are forced into vulnerable situations, and they are exposed to the hazard. Others make a choice of placing themselves somewhere which happens to be in the path of a potential hazard, and they either don't know they are doing this, or they don't realise what the implications of this choice could be for them.

I'd like to hear your thoughts about whether there may be something we could do to clearly explain globally how disasters are made and that they are not natural, so that we all have a common understanding around how risks come about – because of a hazard, vulnerability and exposure factors. Plus, a disaster does not happen out of nowhere in an instant, it's a result of decisions and actions taken over time, sometimes a long time. I'm currently looking at this in the urban context in particular and it is of course relevant anywhere.

Andy: Well, there are some big challenges to tackle, for sure, even though it is clear in the data that the prime drivers of losses in events are exposure and vulnerability – whether it's the case of wildfires such as what happened in the Palisades part of LA or Durban's extreme flooding several years ago, or many other examples we can think of.

People of all types, rich and poor, are affected by events like this. In the example of Durban, marginalised poor people living in flood plains were mostly affected. In the Palisades, many wealthy people living in homes that served as fuel for the fire were affected.

From my discussions over many years with scientists and other researchers in this arena, I have seen that it is harder to put a number on vulnerability than on something like carbon.

We have numbers for temperature and numbers for drought and numbers for factors related to climate, but what creates societal vulnerability is a mixture of dynamics that can be hard to crystallise into a number – and I think it's vital to figure out how to do this.

Some of the early work I've seen that is helping tremendously in this area includes the work of Stephen Strader and Walker Ashley at [Villanova](#) and [Northern Illinois](#) universities. They have put together a methodology for exposure change called "Expanding bullseye." Search for the phrase, expanding bullseye, and you will see many examples of how they illustrate how societal change over time has changed the risk to a given area.

For example, the risk from tornadoes in the US Midwest, or from wildfire or hurricanes in Florida. Strader has created visualisations that I have reposted many times on social media. People have only recently started to talk more about ways to include vulnerability in visualisations of data. It's harder to analyse and map what vulnerability really is than to look at satellite images and note physical changes in the built environment over time such as the prevalence of having more houses built in an area than there used to be.

FEMA (the US Federal Emergency Management Agency) has some good maps which they've been trying to use to map societal resilience and vulnerability factors. Mapping exposure is a good first step.

It's also important to recognise and measure successful outcomes. Bangladesh is a well-known case of a country that has managed to reduce its risk through vulnerability reduction. The mortality rates from cyclones and economic losses have plummeted as a result of focused work, regardless of what impact climate change is having.

Gareth: Not enough of the good news stories and the disasters avoided make the news. The example you mention of Bangladesh is one that we've looked at in all sorts of different ways and we have created a case study about it (amongst others). Despite many challenges that the country has faced and continues to face on a range of fronts, they are continually working to reduce their risk to disasters with practical action that saves lives and protects livelihoods.

Andy: The story of Bangladesh and how it has tackled disaster risk since the 1990s is a great counterexample to illustrate the point that you can do something about it when you try, regardless of the arguments about the extent that climate change is impacting an area.

When I wrote a piece for The New York Times in 2005 titled The Future of Calamity, Roger Bilham and others in the seismology world were talking about inevitable million fatality events from earthquakes. In the last few decades there have been some very powerful earthquakes and tsunamis. Overall, societies are less vulnerable to these mega-sized events than they were 100 or 200 years ago. Mortality statistics from various types of major events are extraordinary when we look at cases 100 years ago.

Solely making that case that vulnerability reduction can happen, as it has in Bangladesh, with or without climate change shows you the human value of having the right focus.

We need to take these good examples and elevate them to catch people's attention, which takes effort and persistence. This includes working with journalists to find ways to tell these stories that are hiding in plain sight. How can we change the mindset that a disaster avoided is harder to illustrate than a disaster that has happened?

I hope this post is of relevance to this point: "When avoiding disaster is the story".

Gareth: We certainly hope we can help to shine a spotlight many times on good news stories of avoiding disasters, Andy. The example of Bangladesh and others we have looked at have helped us create what we call our emerging model for avoiding a disaster. We call it an emerging model because we're always testing it to see if it covers all aspects. We fully recognise that it's just a model, but hopefully it can help to focus people's minds on how to avoid disasters.

The Disasters Avoided model: © G Byatt, I Kelman & A Prados

Andy: In your model, the six pie wedges you have of the right mindset, the right investment funding, good governance, good data, meaningful targets and meaningful benefits make a lot of sense. I'd say that they depend on the definitions used – for example, what is the right mindset to have? This could mean a different thing for different people depending on their perspective.

Making it clear what we're talking about is important, I think. Meaningful targets could perhaps look at aspects of vulnerability and how to tackle them. I'm not saying it is easy to create definitions that can work for most situations, but it can be very helpful. Having meaningful targets is very important, so what should this mean for people in different situations and contexts? Can it be distilled into a definition?

Another of your factors, good data, is obviously vital, so what types of measurements should we be thinking about that can lead to meaningful targets and better outcomes?

Consider the work of Ben Wisner and others on the Pressure and Release (PAR) model for disasters, which was created many years ago. When you look at the factors that build the pressure that results in a disaster there again, they're subject to different definitions.

Gareth: Thanks for these suggestions about adding definitions to our model, Andy. As you know, we have put some detail behind each of the six factors, which is currently factual, to describe elements behind each factor. We will give some further thought to providing definitions that can hopefully work for most people most of the time.

Ana: We will have a think about this, Andy. What we have done largely to date is to show how the model works through examples and case studies. This includes using the model with UNDRR to analyse case studies in their Global Assessment Report Special Report 2024 ([GAR SR 2024](#)).

Gareth: Just continuing with the thread about providing good definitions to support disaster risk and risk reduction, what role do you think global frameworks including [the UN Sustainable Development Goals](#) (the SDGs) and [the Sendai Framework for Disaster Risk Reduction 2015-2030](#), which UNDRR fly the flag for, play here?

As of 2025 these two frameworks are past their halfway points; they are due to be refreshed / replaced in 2030.

Andy: I think the main utility of these global frameworks is to inform people about the right thing to do and why, particularly those who work in agencies, governments and the Nonprofit world. I wonder if and how journalists can be more involved with agencies such as UNDRR.

When I was at Columbia, I spent some time on one of the advisory committees when UNDRR was coordinating updates to the Sendai Framework, and I learned a lot from everyone who was involved with that assessment.

I'd like to think it can permeate into the public arena more fully. To do so, it needs to be uncluttered with UN speak which doesn't feel relevant to someone in a coastal town in Louisiana or Nigeria. I do think there is value in having it permeate in this way and to try to take the focus off the politics around these issues.

Once you get up to the higher strata of the UN or something global such as the IPCC process, the messaging to the public is often oversimplified and it is not focused enough on risk reduction – it's focused on mitigation of emissions and the like.

Regarding the Sustainable Development Goals (the SDGs), I think the conversation around them has been valuable over time. Most of them are hard to measure though.

I would say that if you really distil them, they come down to poverty reduction, advancement in education and getting information to the right people.

As with disasters avoided, it's hard to demonstrate that the SDGs have made a specific difference as distinct from overall development trends, but this doesn't mean they are not important. We can often see multiple benefits from one action, and we see this regularly with the SDGs.

One thing I have realised recently in the adaptation-mitigation arena distinct from the SDGs is, through Lisa Schipper, Geoffrey Dabelko and others I have learned a lot about [maladaptation](link). Maladaptation is where big policies like building a large dam can do more harm than other things when you look at it systemically.

*I have lately been talking about **Mal-mitigation** – which means the existence of [emission-cutting] policies that harm people's capacity to improve their lives and be safe. For example, the big idea of putting an end to finance for all fossil fuel extraction was in my view mal-mitigation. Stopping such finance in developing countries in Africa is wrong, because it impedes people's ability to use cleaner cooking fuels than coal or charcoal or to heat or cool their homes, and it can impede a passage towards better long-term environmental solutions. Naively thinking that rapid renewables deployment can appear from nowhere and is going to sustain the entire energy needs of nations is dangerous, certainly in the short-term. This approach harms people's welfare and livelihoods, and it relates to what we were saying earlier about understanding the balance between adaptation and mitigation. We need to be clear about when mitigation approaches that sound good in theory may actually undermine sustainable development goals (what I call mal-mitigation).*

Gareth: I think this is where systems thinking is very useful, to help us fully think through what is required and to look carefully at options and the consequences of taking different action (including thinking about counterfactuals).

Andy: Different kinds of risks can be reduced through common behaviours. I was struck a few years ago when I learned of a paper by the Michigan State Health Department and the University of Michigan, showing where there is heat vulnerability and cold vulnerability in American cities. I wrote about this in a post "[Climate change and temperature extremes: A review of heat- and cold-related morbidity and mortality concerns of municipalities](link)."

This team found that the remedies for these two seemingly opposite problems are the same. Better and appropriately insulated homes to avoid losing heat in the winter and stop overheating in the summer (especially important in poorer neighborhoods). When the Biden administration launched a website called [heat.gov](link) in the early 2020s I partially criticised it. I noted that whilst a focus on heat is valid, where is "cold.gov"?

Cold still kills more people overall than heat. What we really need is "risk.gov", to understand and tackle the hazards, vulnerabilities and exposures to cut off the tails of the curves for both, for vulnerability to extreme weather. You want a policy and tools to help inform policy and investments to get at both these hazards.

Gareth: I remember some statistics published in 2024 by Our World in Data about [the number of deaths caused by cold rather than heat,](link) and that deaths caused by cold are, according to them, an order of magnitude larger.

We know there are Heat Action Platforms made available by certain organisations, which is good, but we do not see as much focus on Cold Action Platforms.

Perhaps part of tackling these problems comes back to the point we talked about earlier, which is related to people's awareness of risk. To use tools that already exist in a way that allows them to be able to think more holistically – heat and cold, for example, not just heat. You gave the example just now of a paper focusing on cities and how to overcome problems of heat and cold. Do you have any other thoughts and perspectives on urbanisation challenges. Urbanisation is of course increasing rapidly in developing parts of the world, and there remain various challenges in developed parts of the world too.

Andy: Well, there are lots of challenges. Take water and flooding as just one area of focus. One dynamic that people in the climate change community do not review or talk about enough is the reality that populations in flood prone areas are growing faster than flooding is changing from either climate change or landscape change.

I held a conversation with Beth Tellman and others in 2021 after they published an important paper relating to this point. Measures and actions to create sponge cities can help up to a point. At a certain point of hazard size or vulnerability however, different action is required. The same is true for other types of hazards. For wildfire risks and hazards, we know from recent and past experience how deadly wildfire can be to urban areas.

What about after an event happens? For urban areas that are impacted by a major fire or a major flood, or another type of hazard, what is the decision landscape for rebuilding these areas? You're likely to be hemmed in by some troubling realities.

I guess the city resilience and disaster risk question breaks down into two overall areas. In one dimension you have big, established, mature cities like New York. In the other dimension you have emerging, fast-growing cities which are prevalent in developing countries. In cities in rich countries the reality is that much of the infrastructure and much of the buildings that exist will still be there in 20-30 years. It's not like you can rapidly revamp things. Older buildings that are not built to modern specifications are at higher risk.

When you have data showing all the vulnerabilities you face, yet policies and zoning are not aligned to this, it's tough. In this sense developing countries with rapidly changing landscapes and cities might have a better potential to build forwards without making mistakes because their infrastructure is still to be built.

Gareth: Your point about the differences between mature cities and new and fast emerging ones reminds me of discussions I have had with the urbanist, Alain Bertaud, including one in 2023 when we discussed this point.

I have talked with others about opportunities developing cities have to create good urban resilience, if they can grasp it given the means they have available. Perhaps the new cities of today can set a good example for future cities to follow.

Implementing change in established, mature cities is hard and takes time (street networks, for example, are hard to change when they have been established for some time). I do think that focusing on risk management can help.

[I interviewed Wendy Saunders of the Natural Hazards Commission in New Zealand in May 2025](#) and we talked about how to use risk tolerance to help make changes. For example, when new developments are proposed, setting down agreed risk tolerances.

*Andy: One thing that initiatives like yours can do is to foster what I call **crosstalk** amongst different groups that have different perspectives and priorities, so that learning in different contexts can be shared, and applied, around the world.*

There is great value in finding ways for cities to crosstalk, with lessons learned being shared from poorer to rich countries and vice versa. I remember a conversation with someone from Hyderabad some time ago and being struck by the many similarities it has with Phoenix in Arizona, for example.

This point reminds me of a conference (which I didn't attend) that took place at UC San Diego, around 2010, which invited teams to come together from the Himalayas and the Sierra Nevada (California's mountains). They engaged in crosstalk about how to ensure resilient community development in the Himalayas and in the Sierras. For sure, there are distinctions between these mountain ranges, but some similarities also. Finding ways to engage in good crosstalk is valuable.

Another key point we haven't talked about is the need for good education right through and down to primary school level. This is not just about communicating the need to policymakers, it should be about building basic literacy around risk. Examples like teaching the hazard – vulnerability – exposure formula.

[Diana Liverman](#), a geographer from the University of Arizona, joined me on one of my shows one day. She said a crystalline thing that every kid should grow up knowing: "When we talk about climate risk, some people still think, oh, it's the probability of the heat wave. But we need to think about risk not as the probability of the heat wave, but as the probability of harm." It rang a bell with me as a clear distillation of what we need to talk about (which we've been discussing in this interview). Understanding and acting on the probability of harm implicitly links to human factors on the ground. If you are too focused on the hazard, you're missing this. Regarding the hazard, you have to know the history of it. As I said with the example of hurricanes earlier, there must be more incorporation of historic data with what is happening in the world now and what might happen with climate change. Yet people are still moving to dangerous areas – they need to be aware of the risk. The journal Nature in 2009 asked: "Do we need to go to Risk school?" My strong sense is the answer is yes. This begs the question: What should the curriculum be for this?

Ana: Is your sense that people are more open to what we're talking about, to thinking more about risk and the science behind it?

Andy: I think it's working gradually. it is a slow process. You can't expect some rapid "Aha" moment for everyone.

Gareth: Also, Andy, how can we think about good visualisations about what's happening and how to get the message across to people in a compelling way (perhaps to "change the narrative")? Plus, I just want to mention that to your point about similarities between cities, [we have a case study on Hyderabad on our Disasters Avoided website](#), on how it is tackling the hazard of heat (it tends not to get too cold in this city, so we focused on the heat challenge).

I can give you a little example of a success. When Hurricane Florence was heading toward the Carolinas some years ago, [I had already been writing about the "Expanding bullseye" work of Strader and Ashley and pushing their visualizations](#). Strader mentioned to me, or maybe I saw it on social media, a map showing that the area projected for that hurricane was that it could hit something like 10 times more housing that a similar hurricane had in 1950. I pushed it to the New York Times Op-ed team, and he did an Op-ed for the New York Times that got thousands of views, maybe 100,000.

Ways to visualise information are improving. As it happens, the New York Times had a reporter and a data visualiser who did some really good work on heat exposure in American cities a few years ago, related to historic racist real estate trends and a practice called redlining.

Gareth: I remember very well reading [the 2020 Times piece on heat and redlining](#) – it was very good – I still use it as an example of good reporting in my own work on urban development. I can think of other good examples from other media sources, too. The Economist creates some good visualisations of data.

Andy: The story and visualisations about heat and redlining in American cities in the New York Times were based on research that was in the peer reviewed literature. It was a question of getting scientists to talk with journalists and not just putting out a press release.

Having the capacity and space for scientists and communicators, journalists, visualizers, social media folks, and great innovators who are not journalists in the climate space to work together is key. The more crosstalk there is for brainstorming on how to make data meaningful, palpable and part of a decision-making process is key. Social sciences are important too. I did a post in 2022 on "[Big number numbness](#)", which was mostly focused on COVID-19. One way I saw that made the numbers real to people was a woman who had created a really interesting visualisation around the Washington Monument with little flags for all the deaths, and it brought in people doing all kinds of communication around big risks including climate change.

It is sobering to think that there is not a lot of understanding of what changes people's behaviour. Think of [the work of Ed Hawkins, which got on the cover of The Economist and elsewhere](#), with the climate warming stripes of red and blue lines. It was posted onto buses and stuff, but is it changing behaviour? That is the key. There are some examples of where behavioural change has happened, for example with heat exposure and how weatherization of homes can change.

These are all frontiers. Active experimentation, a lot of brainstorming and a lot of crosstalk needs to happen. Then we will see some breakthroughs, through hard effort.

To do this you have to be willing to reach out of your usual sphere, and this issue with climate in the climate community is hard for many reasons, For any research community, the funding is based on outcomes related to your specialty and doing multidisciplinary work is harder and takes more time. I did a session on that years ago on my blog and young Post docs were bemoaning how hard it is to do the kind of work that we're talking about, such as Community-based risk reduction research. Just the research, let alone policy change. Institutions are not set up to foster this.

Gareth and Ana: Thank you very much for your time, Andy. We look forward to continuing to follow your work through the Sustain What blog.