

The Moral Climate of Melting Glaciers

Andean Claims for Justice at the Paris Climate Change Summit

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Confronted with melting glaciers that threaten to destroy his livelihood, the Andean farmer and mountain guide Saúl Luciano Lliuya filed a lawsuit against the German energy company RWE¹ in November 2015. He demanded the firm take responsibility for its contribution to global warming and help alleviate climate-change impacts in Peru. In taking on one of the largest greenhouse-gas emitters in Europe, this is the first case of its kind and is ongoing as of 2021. This civil suit could make legal history – if Saúl wins, it could create a precedent that would make other polluting companies vulnerable to climate-change litigation. The lawsuit not only has the potential to disrupt climate ‘politics as usual’ (de la Cadena 2010) but raises fundamental questions about how we should conceptualize human relations and responsibility in a time of increasing planetary transformation.

Quechua-speaking farmers like Saúl have long faced discrimination by Spanish-speaking urban Peruvian elites (Poole 2004). National discourses of development take little account of rural Andean political and social concerns. Facing climate change in a context of historical marginalization, Saúl sought legal redress from a foreign polluter. Yet the international discourses of climate change in science and politics say little about those who live with the worst impacts. Growing up in the Cordillera Blanca region of the Peruvian Andes, Saúl has witnessed glaciers melting and weather patterns changing, but as a layperson, he can contribute little to technical discussions.

Those who do participate in these discussions often conceptualize climate change in terms of scale, differentiating between global processes

and local impacts (Tsing 2005: 104). This ‘scalar politics’ sets the terms for what is considered to be reliable knowledge and who can contribute to broader discourses (MacKinnon 2011). Scientific approaches may conceptualize particular forms of knowledge as global and universal, while designating other knowledges as local (Turnbull 1997), thereby excluding laypeople from the production of global knowledge (Wynne 1998). When only scientific experts have a licence to make trustworthy public statements about the climate, laypeople are epistemically marginalized to the local sphere – even if they face the devastating impact of climate change in their everyday lives.

Building on a scalar approach, analysts and policy-makers have sought to quantify processes, impacts and possible responses related to climate change. For example, *The Stern Review* made a groundbreaking argument for political action by describing the potentially disastrous economic impacts of climate change (Stern 2007). Such approaches conceptualize climate change in terms of quantifiable impacts. Applying a ‘logic of equivalence’ (Li 2015), they propose technical solutions that ameliorate measurable effects. Saúl’s lawsuit relies on this approach, connecting RWE’s historic industrial emissions with measurable impacts in the Peruvian Andes. It alleges that RWE contributed to glacial melting that led to an increased risk of flooding for Saúl’s house from the glacial lake Palcacocha. The lawsuit seeks ‘to determine that the defendant is liable, proportionate to its contribution towards impairment (share of global greenhouse gas emissions), to cover the costs of appropriate safety precautions in favour of the claimant’s property from a glacial flood from Lake Palcacocha’.² But the logics of scale and equivalence exclude what is not quantifiable, such as social and cultural displacement caused by water scarcity. Saúl fears he will lose his way of life because of global warming. Even if his lawsuit relies on a scalar model that leaves out non-experts, it has given him a platform to demand justice based on his personal experience of climate change.

Drawing on an ethnographic account of Saúl’s struggle for climate justice in the Peruvian Andes, the German court system and the 2015 Paris Climate Change Summit, I will trace how scalar assumptions in scientific and political discussions have excluded non-experts from the production of knowledge on climate change. When Saúl came to the international stage of climate politics, he encountered a ‘technopolitics’³ that addressed the quantifiable impacts of climate change, but that had difficulty accounting for his experiences when they did not fit into scientific models. Through his lawsuit, he strategically deployed a technopolitical approach to make a broader claim that calls into question fundamental assumptions at the heart of many political and public discussions on

climate change.⁴ Drawing on his lived experience of a changing Andean environment in the Cordillera Blanca, his claim invites us to go beyond limited technical conceptualizations and consider climate change as a moral issue involving translocal relationships.

This contributes a new perspective on recent discussions of the ‘Anthropocene’, a controversial name for a new geological epoch in which humans are decisive in shaping the planet’s environment. While the term can imply that a universal humanity is to ‘blame’ for climate change, critics point out that contemporary anthropogenic transformations of the planet are deeply intertwined with the rise of industrial capitalism (Tsing 2015). With his claim, Saúl argues that responsibility arises out of the relationships involved in the creation and impact of global warming. This echoes Donna Haraway’s argument that responsibility arises out of two entities’ ability to respond to one another (Haraway 2008). In public discussions, anthropologists can approach the Anthropocene as a ‘planetary and temporal imaginary’ that shapes how people conceptualize the world and its processes (Moore 2016: 41). While we might start by questioning the notion of universal culpability, anthropology can go further and contribute ethnographic perspectives that point to the specific relations among people, industry and the environment that more appropriately characterize the causes and impacts of climate change and other contemporary transformations.

The Politics of Scale: Climate Change as Global Knowledge

High up in the Peruvian Andes, above the city of Huaraz, lies the dangerous glacial Lake Palcacocha. In 1941, a large piece of ice dislodged from the glacier above the lake and fell into the water, causing a massive flood that broke the lake’s natural moraine dam. This produced an avalanche of water, mud and boulders that left much of the area below in ruins and killed around 1,800 people in Huaraz (Carey 2010; Wegner 2014). Saúl’s father, a baby at the time, avoided death because his family lived on higher ground outside the city. Glaciers in the Cordillera Blanca have undergone a long process of retreat since the nineteenth century (Schauwecker et al. 2014; Stansell et al. 2013). When the glacier above Palcacocha shrank, it created space for the lake to grow. The lake reached a dangerous volume once again in 2009 (see Table 6.1). If the events of 1941 repeat themselves, a glacial lake outburst flood could threaten thousands of lives downstream (Somos-Valenzuela et al. 2016).

The two dams built in the 1970s are no longer sufficient to protect against disaster. Since the 1990s, Peru has undergone a neoliberalization



Figure 6.1. Lake Palcacocha in February 2017 (photograph taken by Noah Walker-Crawford)

and decentralization process that has greatly reduced the state authorities' capacity to build and maintain infrastructure. Budgets have been cut and, in some cases, the reforms led to ambiguities about which state agencies were responsible for particular issues (Pinker and Harvey 2015). In Huaraz, this contributed to reducing the authorities' capacity to handle glacial risks (Carey 2010), leaving thousands at risk of a flood from Palcacocha. Since 2009, the Peruvian authorities have planned to decrease the flood risk by pumping water out of Palcacocha and building a new dam. Plagued by limited budgets, infighting and corruption scandals, government agencies had yet to implement these measures as of 2021. Authorities installed temporary siphons in 2011 to reduce the water level, but experts have warned that only a new dam will sustainably mitigate the risk.

If Palcacocha floods the valley, Saúl will be among the first to face the deadly wave. His house lies in Nueva Florida on the outskirts of Huaraz, a district populated primarily by rural farmers who moved to the city to pursue economic opportunities. He divides his time between the city and the nearby village of Llupa, where his family tends to their fields. For Saúl, the government's inability to address the flood risk at Palcacocha is yet another manifestation of the authorities' unwillingness to support their most vulnerable populations: 'We receive no support, no development from the state.'⁵ Other ethnographies have described a sense of state abandonment among rural Andean Peruvians. Authorities promise support and development, but often fail to provide meaningful social and economic opportunities (Harvey 2005; Rasmussen 2015). Saúl has argued that politicians hail grand investments in industrial development but give little priority to agriculture.

Such political promises fall within a broader narrative of progress and development. This promotes a politics of scale that celebrates national economic growth and marginalizes farmers who have little to contribute in monetary terms. Scale in this context figures as a measure of significance. Theorizing the politics of scale, MacKinnon argues that powerful social actors can legitimize social control by associating themselves with

Table 6.1. The evolution of Lake Palcacocha (sources: Somos-Valenzuela et al. (2016); Portocarrero Rodríguez (2014); Cochachin and Salazar (2016))

Year	1941 pre-flood	1974	2003	2009	2016
Volume (m ³)	10–12 million	0.5 million	3.8 million	17.3 million	17.4 million

'higher' scales, such as the national scale. At the same time, they may disempower subaltern groups by confining them to the 'local' (MacKinnon 2011: 24). This reflects the discursive separation between experts and laypeople as the latter are usually relegated to the disempowered local scale. Recent multinational mining operations in the Peruvian Andes have led to significant growth in macroeconomic terms but have provided limited benefits to rural populations whose concerns are rarely taken into consideration (Bebbington and Bury 2009; Li 2015). For many rural Peruvians, scalar politics promoted by the urban elite have become a measure of exclusion and abandonment.

In this context, Saúl faces a dramatic environmental shift that he came to associate with climate change. He first encountered the latter concept through the media, public discussions, and conversations with tourists through his work as a mountain guide. He has lamented that in addition to the visible recession of glaciers, annual rain cycles are increasingly imbalanced. His community used to expect heavy rains at the end of the dry season in August, which made it possible to plant crops, but now they often wait weeks or even months for the rains to come. Unlike those in previous decades, rains are now more often torrential, causing damage to crops. New agricultural pests such as fungi and moths have appeared. Extreme-weather events are more frequent, with early-morning frosts threatening entire harvests in the dry season.⁶ Locals are concerned that glacial retreat might threaten tourism by climbers, an industry that provides significant income for rural farmers in the area. Glacial meltwater feeds the rivers that farmers rely on for drinking water and irrigation. Saúl has expressed fear that the area might dry up if glaciers disappear, making agriculture impossible.⁷ As the Andean environment becomes increasingly unstable, these changes exacerbate the marginalization and vulnerability that Saúl and many of his compatriots already feel. According to scientific conceptions that Saúl and others in the area have begun to adopt, climate change is a global process that encompasses the planet and is mainly caused by industrial emissions and contamination across the world.

I first met Saúl in late 2014 when I was working with the German nongovernmental organization (NGO) Germanwatch. After attending the United Nations (UN) Climate Summit in Lima, we travelled to Huaraz, where a mutual friend introduced us to Saúl. For the people at Germanwatch, he was an exemplary person facing the challenges and injustices of climate change. As he wanted to make a public claim against the polluters he considered to be responsible for destroying his mountain environment, the NGO put Saúl in contact with the German environmental lawyer Dr Roda Verheyen, who was at the forefront of

international discussions about climate litigation. She saw an opportunity under German law to make a company responsible for its greenhouse-gas emissions in relation to climate risk in Peru. Thanks to its operation of coal-fired power plants since it was founded in 1898, the energy company RWE is the largest German emitter. Germanwatch offered to collect donations and foot the bill for all costs related to mounting a legal case. With this support, Saúl decided to file the civil suit against RWE for its contribution to the risk of floods at Palcacocha, which threaten his property in Huaraz.

As the legal claim progressed, I facilitated contact between Saúl and his lawyers, and accompanied him on visits to Europe. In addition, I contributed to the lawsuit's scientific argumentation. Later, I left Germanwatch and began an ethnographic investigation of people's engagement with climate change around the city of Huaraz. As I conducted fieldwork in Saúl's village and neighbouring areas, I remained in close contact with him and continued to accompany him on his travels as an interpreter and advisor.

Drawing on a scientific study (Heede 2014), the lawsuit claims that RWE produced 0.47 per cent of historic industrial emissions. Accordingly, Saúl requested that the company contribute 0.47 per cent of the costs for the government project to reduce the volume of the water and to build a new dam at Palcacocha. This amounts to around US\$20,000, which Saúl would receive if he wins. He has pledged to contribute the money to the regional government's lake safety project. This is small change for a large company, but the precedent could have immense repercussions. If he wins, millions of other plaintiffs affected by climate change could potentially seek compensation in the German courts. In addition, this could set the basis for similar lawsuits in other jurisdictions. Past emissions would become an immense economic liability.

Saúl's lawsuit draws on scientific publications to argue that a causal link exists between RWE's emissions in Germany and flood risk at Palcacocha in Peru. Describing the general processes of global warming, it relies on reports from the UN's Intergovernmental Panel on Climate Change (IPCC) that summarize and synthesize academic research on climate change.⁸ Regarding the Cordillera Blanca, the lawsuit cites recent scientific studies to argue that 'increased rates of glacial melting are caused by global climate change and the risk of a glacial lake outburst flood is hence increased'. It draws on further studies and Peruvian government reports to argue that Saúl's property in Huaraz faces an imminent flood risk from Palcacocha. Though a potential flood would affect thousands in Huaraz and surrounding areas, the legal framework prescribes an individualizing perspective that focuses on Saúl rather than on the collective.

Making the Local Legible

Couched in scientific and legal terminology, the lawsuit presents evidence that differs greatly from Saúl's experience of climate change in his daily life. While the lawsuit describes how industrial greenhouse-gas emissions likely contributed to measurable glacial retreat in the Peruvian Andes, climate change for Saúl means that his life is steadily turning upside down: as the glaciers above his home rapidly retreat, he can no longer rely on regular rainfall for agriculture. This speaks to a broader issue. Marino and Schweitzer warn of an epistemological politics that haunts climate-change discussions and gives precedence to scientific insights over experiential knowledge (Marino and Schweitzer 2009: 216). According to the IPCC, research on climate impacts and vulnerability has insufficiently considered interlinked social, economic and cultural factors (IPCC 2014: 11). Nygren argues that traditional scientific approaches often posit a dichotomy between scientific and local knowledge. Within this framework, science is seen as the only valid form of universal knowledge (Nygren 1999). Such an approach inadvertently but systematically suppresses 'local' knowledges because laypeople typically cannot contribute to scientific insight (Wynne 1998). In the 1950s and 1960s, rural Andeans in the Cordillera Blanca faced exclusion from scientific discourses when government officials mapped the development of glacial lakes. Rather than relying on local Quechua names, they gave each lake a number. 'For engineers and government officials, the supposedly objective quantification of physical environments often demonstrated the efficacy of Western science and engineering over local folk knowledge' (Carey 2010: 85).

Saúl's lawsuit builds on a scientific conception of climate change as a global issue with varying local impacts.⁹ This scalar approach draws attention to measurable scientific conceptions of environmental change while excluding perspectives – such as Saúl's experience of a shifting environment – that do not fit into the dominant framework. The act of scaling can impose a particular perspective in order to identify and study different features of our social world and environment (Hastrup 2013). Scaling simplifies complex social relations and transnational linkages by ordering discourses and phenomena into different categories of varying significance (Strathern 2005). According to Anna Tsing, general-circulation models that represent the global climate rely on a scalar framework whereby the 'global scale is privileged above all others' (Tsing 2005: 102). The German court system draws on such a framework to set the standards of epistemological legitimacy: it privileges scientific knowledge over contributions from Saúl based on his engagement with the Andean environment. Saúl could merely provide anecdotal knowledge that exemplifies scientific insights.

In recent decades, scientific researchers have sought to integrate local perspectives into studies of the environment. In the field of natural resource management, academics and practitioners have incorporated 'traditional ecological knowledge' into scientific frameworks (Cruikshank 2005). Seeking to participate in scientific discussions, anthropologists and other researchers have drawn on ethnographic insights to produce data that is legible for natural scientists and can therefore be included in their climate models and scientific studies of climate (Roncoli, Crane and Orlove 2009: 104).¹⁰ Finan (2009: 176) argues that these contributions can provide a 'human face' to climate-change research. However, drawing on an ethnography of Sami farmers in Lapland, Ingold and Kurtilla suggest that such approaches may involve a conflation of concepts. Describing a research project that sought to determine how scientific data on climate change relates to local experience, they found that scientists talked about climate while locals were concerned with weather: 'Climate is an abstraction compounded from a number of variables ... that are isolated for purposes of measurement. Weather, by contrast, is what it feels like to be warm or cold, drenched in rain, caught in a storm and so on' (Ingold and Kurtilla 2000: 187). Cruikshank argues that if researchers seek to integrate local approaches, they risk subordinating them to dominant scientific frameworks. Through synthesizing and systematizing knowledge, we may lose the human experience at its base. Local insights become an 'object for science rather than [being] intelligence that could inform science' (Cruikshank 2005: 257; see also Nadasdy 1999). According to this scalar framework, laypeople can merely provide local examples – such as weather data – relating to broader phenomena.

Recognizing that scientific models cannot capture the full meanings of people's engagement with weather and the environment, anthropologists have sought to contribute critical perspectives in climate-change discussions: 'our responsibility is to interrogate and challenge prevailing scientific views and perspectives, rather than to bring a perspective on social, cultural, and economic life that merely confirms them' (Crate and Nuttall 2009: 396). Emerging out of situated practices, scientific knowledge claims universality through its discursive framework (Wynne 1998). Recognizing this, we can study, ethnographically, how people draw on different knowledges to make sense of environmental change. In her ethnography of climate-change discourses among scientists, policy-makers and activists, Callison (2014) traces how different groups translate climate change into terms that are meaningful and relevant for them. These often relate to moral and ethical concerns about how humans should interact with each other and their environment. In this context, facts gain legitimacy and significance from varying epistemological frameworks.

Accordingly, she argues for a conception of climate change that accounts for its many possible meanings (Callison 2014)

As suggested above, Saúl's lawsuit draws on a scalar notion of climate change that privileges a global perspective over local insights. His conception of climate change is based both on scientific accounts and his engagement with the Andean environment – what Ingold and Kurtilla might call 'weather'. While Saúl's opinion had a subordinate standing in the courtroom, the lawsuit gave him a platform to make a broad argument for climate justice based on multiple forms of knowledge.

Addressing Climate Change: Technopolitics in the Courthouse

In November 2015, Saúl travelled with his father to Germany to submit the lawsuit. He was nervous about the prospect of leaving Peru for the first time. On a freezing morning in the city of Essen, where RWE has its headquarters, he approached the regional courthouse. The press had been alerted and a television film crew awaited him. He had come to face



Figure 6.2. Saúl at the courthouse in Essen (photograph by Alexander Luna, used with permission from the photographer and Saúl Luciano Lliuya)

a powerful company to defend the glaciers that gave him life and threatened death. Feeling a mixture of excitement, fear and determination – as he later told me – he submitted his lawsuit to the court. At a press conference later that day, he explained his motivations: ‘I’m presenting my case here in Germany because this is an issue of justice. RWE should be held accountable for its pollution.’

After filing the lawsuit in Essen, I accompanied Saúl with a Germanwatch delegation to Paris, where we attended the UN Climate Summit. While these summits revolve around technical negotiations between national delegates, they also involve numerous side-events staged by NGOs and activists trying to make their voices heard. As thousands of delegates ran about the conference grounds and campaigners vied for attention, Saúl fed the media’s and general public’s appetite for human stories representing the complex processes of climate change. For many, his struggle gave a face to the countless people confronting the injustices of global warming. Exemplifying the UN summit’s inherent scalar politics, Saúl came to epitomize the local ‘victim’ of climate change.

While he made a strong moral argument for climate action, Saúl had difficulty engaging with technical and political discussions around climate change at the conference. This became evident in a panel discussion on companies’ accountability for climate change. The event took place at a school, where activists had organized an alternative People’s Summit. He arrived at a classroom in which four panellists sat in front of a small audience. The speakers were notable scientists and environmental lawyers at the forefront of legal and scientific discussions on climate justice.¹¹ They were delighted to have Saúl in the room. As one of the first people to take legal action against a major corporation over climate change, Saúl was a rising star in the world of climate justice.

The panel discussion revolved around scientific and legal strategies to hold major greenhouse-gas emitters accountable for climate change. According to the panellists, climate change raises ethical questions of responsibility. One of the speakers was Richard Heede, a natural scientist who had spent more than a decade quantifying this ethical dimension in terms of major companies’ proportionate emissions. Such studies provide lawyers with an evidential basis to develop legal claims against emitters. Saúl’s lawsuit, which became a major issue of discussion on the panel, follows this approach.

Though his claim was at the forefront, Saúl felt he had little to contribute. He followed the discussion through an interpreter and possessed limited technical knowledge of the issues at stake. Soon, he began to doze off. As some of the world’s top climate scientists and environmental lawyers discussed his lawsuit’s strategy and its political ramifications, he

struggled to keep his eyes open. He later explained that while scientists did valuable research and handled statistics about climate change, they might not always grasp how communities experience these processes. Every place has its own beliefs, practices and histories that are interwoven with past and contemporary environmental change. For Saúl, the mountains gave his community life. 'In a scientific sense', he told me in an interview, 'the mountains conserve water which people, animals and plants depend on, but they're something more than that as well.' For him, the snow-capped mountains surrounding his village were beings that he respected.¹² He worried what would happen to these beings when the glaciers melt and the snow disappears. At the panel discussion in Paris, his experiential knowledge of climate change seemed out of place – it was merely a nonscientific 'local' example in a 'global' scientific discussion.¹³

In the following days, Saúl gave numerous interviews to the international press and spoke at several events. Delegates at the conference talked about climate change, but in a way that he could not easily engage with. The climate negotiations involved a 'technopolitics' that sought to keep the ongoing transformation of the planet's environment under control. Timothy Mitchell defines the term 'technopolitics' in reference to scientific projects in colonial and postcolonial Egypt to harness the powers of nature. In practice, these projects often failed when the environment did not fit the scientific conceptions, but offered unexpected resistance (Mitchell 2002). At the UN Climate Summit, thousands of delegates had gathered to discuss endless minute details pertaining to the draft agreement. When they spoke in meetings and press conferences, they discussed climate change in terms of how many hundreds or thousands of megatons of greenhouse gases a country emitted, how much money governments should contribute to international climate funds or to which overall degree global warming should be limited. Saúl found it difficult to relate to these technopolitical discussions, which spoke little to his own experience of watching glaciers disappear and feeling rain patterns change. The negotiations revolved around a technopolitics that hailed a grand project to limit the extent and impact of global warming, but that largely excluded local and subnational perspectives that did not meet scientific standards of evidence.

Technopolitical terminology serves policy-makers as a means to quantify and document climate processes in their search for effective solutions. Quantifying problems can create an impetus to offset a measurable loss by offering benefits of an equal value. For example, economic losses in a particular area due to climate change can be balanced by creating new economic opportunities. This involves a 'logic of equivalence'. Fabiana Li defines the latter concept in her ethnographic research in the northern

Peruvian Andes, where conflicts between farmers and mining companies often involved claims of equivalence. When the expansion of mining led to the contamination of farmers' water sources, the company offered to provide treated water and compensation payments. Many farmers rejected this logic of equivalence, which emerged from a scientific understanding of the environment and disregarded alternative knowledges and forms of value attributed to the landscape (Li 2015).

Legal cases often involve claims of equivalence, which can turn political debates into technical discussions that ultimately turn on a monetary calculus. Antina von Schnitzler describes a lawsuit in South Africa by five Soweto citizens against their government over the constitutional right of access to water. The authorities had installed prepayment water meters to combat widespread nonpayment for public services. With the meters, households received 6,000 litres of free water every month, but had to pay if they wanted to use more. The claimants argued that this amount was insufficient for large families and thus violated their human dignity. The court had to determine what amount of water equated to the abstract value of human dignity (von Schnitzler 2014).

In a similar vein, Saúl's lawsuit demands that RWE contribute a share of the costs of reducing flood risk at Palcacocha proportionate to the company's historic contribution to anthropogenic climate change. It builds on a scalar approach that invokes climate change as a global process with both local causes and local impacts. Building on a scientific quantification of RWE's historical emissions, it draws a line of causation from the company's factories in Europe to climate-change impacts in Peru and then translates this relation into the sum of US\$20,000. According to von Schnitzler, legal cases usually depend on expertise to set the parameters for an issue, showing the court what is relevant and where it can intervene. This often produces a 'legal technopolitics' that turns political questions into legal-technical issues (von Schnitzler 2014: 340). Saúl's lawsuit involves a technopolitics that turns the broad issue of who should assume responsibility for climate change impacts into a legal-technical question of how much RWE should pay Saúl in proportion to its emissions. At the UN, negotiators framed the political question of engaging climate change as a technopolitical issue of equivalence when they proposed technical solutions to problems that are made visible through scientific measurement.

As we spoke one day at the Paris summit, Saúl expressed his worry that policy-makers might come up with misguided solutions if they insufficiently addressed people's concerns with climate change impacts. He explained that political decisions in Peru were usually made by civil servants who are not familiar with the livelihoods they shape through

their actions. Sometimes they made bad decisions because they did not know the reality of rural life. He feared the same could occur with decision-makers and scientists at the Paris summit. They had scientific facts and statistics, but these did not tell the full story of climate change. Every area had its own problems. Reading scientific reports was useful, he said, but to truly know a problem, you must live it. For him, the elites of the international climate circuit typically lacked this intimate and crucial knowledge of climate change.

Climate-adaptation projects may offer misguided solutions if they do not consider climate-change impacts in relation to people's situated conceptions of value and significance in their engagement with the environment. Saúl's lawsuit reduced his broad concerns to a claim of equivalence. If RWE pays him because of a court decision, it absolves itself of its legal responsibility in relation to him for this particular case. For Saúl, climate change concerns much more than US\$20,000 or any other quantifiable sum – it involves not only the risk of flooding, but also his fear that glaciers will disappear and agriculture may no longer be viable. The figure distorts his aspiration that RWE should take responsibility for obstructing his lifeworld. However, he was not concerned about winning US\$20,000 – even if he does, he would not benefit personally, as the money would go to regional authorities in Peru to finance flood safety works at Palcacocha. However, he did consciously mobilize the claim to make a symbolic argument that trumped monetary considerations. He employed a logic of equivalence to create a platform for his broader moral claim. According to Marisol de la Cadena, mainstream Peruvian 'politics-as-usual' disregards rural conceptions of a sentient Andean environment – for example, politicians do not consider earth beings to be valid participants in mining disputes (de la Cadena 2010). At the UN, climate politics-as-usual excluded ideas about climate change that did not fit into the scalar framework of technopolitics. Countering climate politics-as-usual, Saúl intervened in the wider discussions at the Paris summit with his claim for climate justice by strategically deploying multiple meanings and knowledges of climate change.

Tracing 'Response-ability'

Saúl's claim produced a strong resonance among many climate activists at the Paris summit. One evening, he joined several hundred people at an event promoting climate justice in a Parisian church. Speakers from a wide variety of countries spoke at the gathering, arguing that governments should finally act to stop global warming and help those who are

worst affected. Saúl was asked to address the crowd; so nervous his hands were shaking, he overcame his fear of speaking in front of other people and stood up. He told the gathering that he came from the Peruvian Andes, where he could see the effects of climate change. Melting glaciers had caused a lake to fill up with water and it was now threatening to flood his house. Because he was not responsible for this situation, he had decided to file a lawsuit against RWE. The people applauded. For many in the audience, most of them European activists, Saúl projected a strong emotional force. Numerous spectators approached him in the following days to offer congratulations and encouragement, boosting his confidence and motivation. Following his public appearances and media attention, he became a climate-justice celebrity at the Paris conference (Avila 2015; Endres 2015; Seidler 2015; WCEL 2015).

At the church, Saúl no longer faced the difficulty of engaging with technopolitical discussions as a layperson. For the activist crowd, his experience of climate change legitimized his moral commitment to make emitters responsible. He gave numerous interviews to the press, which reported on his perspective in international media outlets. This points to an epistemological ambiguity in public discussions on climate change: even if political decision-making relies on scientific expertise, non-experts can make compelling moral arguments in an attempt to shift the debate. In his public remarks at the Paris summit, Saúl combined scientific evidence with his experiential account of climate change. This allowed him to make a claim that has the potential to unsettle climate politics-as-usual by asserting a relationship of responsibility between himself and RWE. Transcending the local and global scales, he drew a link between those who contribute to climate change and the people who face its consequences in the first instance.

For Saúl, this link implied that RWE was responsible for helping him address the impacts of climate change. His assertion is reminiscent of Donna Haraway's argument that if two entities are able to respond to each other, they are involved in a relationship of responsibility. She presents this as an ethical framework for shaping relations between people and animals (Haraway 2008: 71). Gregg Hetherington builds on Haraway's notion of 'response-ability' in his article about Paraguayan farmers' struggles against soy-bean cultivators. He argues that agriculture is based on a mutual responsiveness between farmers and crops. If farmers are attentive to their plants' needs and respond with appropriate interventions, crops will have higher yields. In much the same way, he describes, farmers have responsive relations with each other, chemicals, crop pests and soy-bean cultivators. These relations of responsiveness are usually dynamic and unpredictable (Hetherington 2013).

Over the course of his life, Saúl has engaged in responsive relations with his Andean environment. As a farmer, he responds to the needs of his fields and crops. When he guides tourists on climbing tours, he heeds the mountain's warnings. But in recent years, the environment has begun to respond in new and unexpected ways. As crop yields have decreased and weather patterns have shifted, farmers struggle to respond to unprecedented ecological instability. Faced with this situation, Saúl felt a responsibility to protect 'his' mountains and compatriots.

Haraway uses 'response-ability' as an ethical framework: if we can respond to one another, our responsibility is to treat each other well. Her approach can also serve as an analytical framework for capturing Saúl's understanding of climate change and responsibility. Scientific approaches often posit a nonpersonal 'objective' notion of causality, which obscures the agency of the Earth and its inhabitants (Latour 2014). Drawing on the notion of responsiveness, we can account for active engagements between people and environment. Rather than stratifying the world in terms of global processes and local events, this highlights the complex, cross-scale and cross-level interrelationships that bring about social and environmental change.

Climate change entails a process of responses between humans and other beings, environments and materials. In response to an ever-increasing demand for commodities, mobility and energy, organizations and individuals have extracted and burned fossil fuels, releasing more and more greenhouse-gas emissions into the Earth's atmosphere. The atmosphere responded by increasingly insulating the sun's rays as the increased concentration of greenhouse-gas particles prevented more of the energy from escaping. Many regions of the Earth slowly became warmer in response to the increased energy kept within the atmosphere. Glaciers in the Cordillera Blanca responded by melting and receding at unprecedented rates. Witnessing such dramatic shifts across the planet, governments and activists initiated an international process under the auspices of the UN in 1992 to negotiate a political response. In 2015, facing governments' continued failure to find adequate solutions, Saúl Luciano Lliuya responded to the ever-increasing threat of climate disaster by suing RWE. From the company, he sought to elicit a response to help him and his community. He wanted to make RWE assume its share of responsibility.

Transcending the restrictions of a strict scalar interpretation of climate change, this approach provides an enticing perspective on recent discussions in the natural and social sciences about humans' impact on the planet. In August 2016, a group of scientific experts at the International Geological Congress took a controversial step when it argued that the

Earth should officially be considered to have entered the Anthropocene, a new geological epoch in which humans are shaping the planet's environment more than any other factor (Carrington 2016). The concept of the Anthropocene arose from scientific discussions over the past decades on humankind's impact on the planet's material layers. As social scientists picked up on the debate, the historian Dipesh Chakrabarty argued that humanity has now become a geological agent – determining the planet's present and future (Chakrabarty 2009). According to Bruno Latour, the Anthropocene exemplifies humans' intertwinement with an Earth that possesses a forceful transformative agency (Latour 2014).

The Anthropocene sets a discursive framework that shapes how we think about the world and the possibilities we see for it (Moore 2016). Taking the Anthropocene at face value, we might find that all of humanity (or at least all of it since the Industrial Revolution) is responsible for glacial retreat in the Peruvian Andes. This involves a scalar notion of global processes and local impacts. But for Saúl, humanity as a whole should not be held accountable: industrial greenhouse-gas emitters are more responsible than most individual people and institutions. Critics argue that the Anthropocene implies a universalist notion of humanity, implicating all people in contemporary planetary transformations (Macfarlane 2016). These transformations are not an inevitable development for humans as a species, but emerged out of particular contingent histories of modern capitalism, which entailed an increased exploitation of diverse landscapes and ecologies (Tsing 2015). Saúl's claim points to the fundamental inequalities at the heart of these processes. Driven by demand for industrial products, a small number of companies and countries have produced an inordinate share of greenhouse-gas emissions, while those – largely at the margins of the global economy – who suffer the worst impacts have contributed little to the Earth's pollution. Saúl's argument invites us to re-examine universalist notions of humanity and responsibility in discussions of the Anthropocene. Overcoming a restrictive scalar framework, we can trace the planet's contemporary transformations by following the responsive relationships between particular actors and environments.

Conclusion

The Paris Climate Change Summit ended in December 2015 with a celebrated agreement that seeks to limit global warming to 1.5–2°C, but that does not legally bind governments to implementing specific measures. Saúl travelled back home to his community in Peru, which continues

to face the challenge of living in a deteriorating environment. While the lawsuit against RWE sought to help Saúl's region mitigate climate risk, it also set a standard of evidence that privileged a scalar framework of scientific knowledge. This granted little standing to those who lack academic credentials but can feel the environment changing around them. It also individualized the issue by focusing on Saúl, hiding the challenges his wider community faces. Reflecting a broader political discourse, the lawsuit proposed technical solutions couched in a logic of scale and equivalence. Such technopolitical approaches fail to account for the complex understandings of climate change that Saúl and others have gathered through engaging with their environment. Nevertheless, Saúl's lawsuit gave him a platform to contribute to public discussions in Germany and beyond, where epistemological legitimacy is often ambiguous and contested. He drew on different forms of knowledge to argue that responsibility for climate change should arise from the relationships that bring about environmental change. A focus on these links calls into question the politics of scale in climate discussions – it turns climate change from a global issue to a matter of translocal relationality.

After the conference, Saúl returned to his village in Peru as a celebrity. The news spread to his home via newspapers, social media and word of mouth. While some supported his efforts, others were more critical: where were the practical benefits? How would this help people in their daily lives? At the same time, malicious rumours of Saúl engaging in the cause for his own personal benefit began to spread. Some even claimed that he went to Germany to sell Lake Palcacocha. While many have come to see Saúl as a climate-justice hero on the international stage, his position in his own community was much more ambivalent.

As ethnographers, we are well equipped to study how people engage with contemporary environmental transformation. The example of Saúl's claim demonstrates that climate change has multiple and entangled meanings. Anthropologists not only contribute local data to scientific research; they also point to the fact that the issues at hand may be more complex than scalar frameworks and technopolitical approaches suggest. Drawing on ethnographic insights, we can highlight which aspects might be neglected in scientific and political discussions of climate change.

If the Anthropocene becomes an increasingly popular concept for describing our contemporary predicament, we will require critical discussions in national and transnational contexts about what responsibility should entail in an age marked by human transformation of the environment. Recognizing that the idea of the Anthropocene can shift people's understanding of global transformation, sociality and environment (Moore 2016), anthropology can provide a critical perspective on the

diverse epistemological approaches and contested notions of responsibility that emerge through social engagements with climate change and the Anthropocene. Such analyses must account for the conceptual limits of the Anthropocene and should consider how it may deploy a scalar politics that excludes particular insights. This can contribute to broader scientific and public discussions that seek political responses to contemporary transformations.

In its legal reply to the claim, RWE deployed extensive legal and scientific arguments to deny the applicability of climate change as a causal link for responsibility. After the case was dismissed by the lower court in December 2016 on the basis of legal technicalities, the Higher Regional Court in Hamm allowed a hearing for the lawsuit in November 2017. In a landmark decision, the judges argued that RWE could be held responsible for climate-change impacts if the facts held up.¹⁴ As of June 2021, the lawsuit had entered the evidentiary phase, with the court examining, on the basis of scientific expertise, whether RWE's contribution to climate risk in Huaraz could be traced and quantified. RWE's representatives surely realized that the lawsuit involved much more than US\$20,000 – it could set a legal precedent that may redefine the meaning of responsibility in climate politics. 'The lawsuit is a good beginning to stop global warming and glacial retreat', said Saúl. 'The big companies need to be conscious of the damage they're causing. But what we really need to do is change the economy; to come up with an economy that's clean and ecological. That's something we all need to work for.'

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Noah Walker-Crawford completed his Ph.D. in Social Anthropology at the University of Manchester. His work focusses on the knowledges and notions of responsibility at stake in discussions about climate change. His research follows climate justice claims between the Peruvian Andes, German courts and UN Climate Summits, exploring how legal activism reframes climate politics.

Notes

1. The acronym derives from 'Rheinisch-Westfälisches Elektrizitätswerk' (Rhenish-Westphalian power station), the company's official name until 1990.
2. See p. 2 of the redacted version of the lawsuit (*Saúl Ananías Luciano Lliuya v RWE AG*, Reference Number 2 O 285/15 at Landgericht Essen [Regional Court Essen]) available at <https://germanwatch.org/sites/default/files/announcement/20822.pdf>. All citations are translations by the author from the original German. For further court documents, including unauthorized English translations, see germanwatch.org/en/huaraz.
3. 'Technopolitics' refers to a 'politics based on technical expertise' and excludes non-scientific perspectives (Mitchell 2002: 41).
4. Saúl's assertions relate more closely to ongoing discussions about climate change and justice in small-island developing nations (see Kelman 2010).
5. All quotations from Saúl are the author's translation from Spanish.
6. For discussions of the impacts of climate change on small-scale agriculture in the region, see Heikkinen (2017); Mark et al. (2017).
7. See Bury et al. (2013) for a discussion of climate change, glacier runoff and water use in the region.
8. It draws in particular on the reports of Working Group I ('The Physical Science Basis') and Working Group II ('Impacts, Adaptation, and Vulnerability') of the IPCC's Fifth Assessment Report (the reports are available at www.ipcc.ch/report/ar5).
9. The lawsuit draws on IPCC reports that only integrate peer-reviewed scientific research, making it difficult for non-experts such as Saúl to contribute.
10. For example, Green, Billy and Tapim 2010; Nyong, Adesina and Osman Elasha 2007; Riedlinger and Berkes 2001.
11. The panellists included the scientists Peter Frumhoff (the Union of Concerned Scientists) and Richard Heede (Climate Mitigation Services) as well as the lawyers Carroll Muffett (the Center for International Environmental Law) and Andrew Gage (West Coast Environmental Law).
12. For a discussion of people's relations with earth beings in the Peruvian Andes, see de la Cadena (2015).
13. Marisol de la Cadena presents a similar case in which protestors involved in a mining conflict in the southern Peruvian Andes were concerned that a proposed project would affect mountain beings, but they chose to emphasize scientific environmental concerns when approaching state authorities so as to lend their claim more legitimacy (de la Cadena 2015: 275).
14. An unauthorized English translation of the decision is available at: <https://germanwatch.org/sites/default/files/announcement/20812.pdf>.

References

- Avila, M. 2015. 'Peruvian Farmer takes Climate Change Fight to European Courts', *Phys.org*, 8 December. Retrieved 10 March 2021 from <https://phys.org/news/2015-12-peruvian-farmer-climate-european-courts.html>.
- Bebbington, A.J., and J.T. Bury. 2009. 'Institutional Challenges for Mining and Sustainability in Peru', *Proceedings of the National Academy of Sciences of the United States of America* 106(41): 17296–301.

- Bury, J. et al. 2013. 'New Geographies of Water and Climate Change in Peru: Coupled Natural and Social Transformations in the Santa River Watershed', *Annals of the Association of American Geographers* 103(2): 363–74.
- Callison, C. 2014. *How Climate Change Comes to Matter: The Communal Life of Facts*. Durham, NC: Duke University Press.
- Carey, M. 2010. *In the Shadow Of Melting Glaciers: Climate Change and Andean Society*. New York: Oxford University Press.
- Carrington, D. 2016. 'The Anthropocene Epoch: Scientists Declare Dawn of Human-Influenced Age', *The Guardian*, 29 August. Retrieved 10 March 2021 from <https://www.theguardian.com/environment/2016/aug/29/declare-anthropocene-epoch-experts-urge-geological-congress-human-impact-earth>.
- Chakrabarty, D. 2009. 'The Climate of History: Four Theses', *Critical Inquiry* 35(2): 197–222.
- Cochachin, A., and C. Salazar. 2016. *Plan Batimétrico de la Laguna Palcacocha Perfil Longitudinal y Transversal*. Huaraz: Autoridad Nacional del Agua.
- Crate, S.A., and M. Nuttall. 2009. 'Epilogue: Anthropology, Science, and Climate Change Policy', in S.A. Crate and M. Nuttall (eds), *Anthropology and Climate Change: From Encounters to Actions*. Walnut Creek, CA: Left Coast Press.
- Cruikshank, J. 2005. *Do Glaciers Listen? Local Knowledge, Colonial Encounters, and Social Imagination*. Vancouver: UBC Press.
- De la Cadena, M. 2010. 'Indigenous Cosmopolitics in the Andes: Conceptual Reflections Beyond "Politics"', *Cultural Anthropology* 25(2): 334–70.
- . 2015. *Earth Beings: Ecologies of Practice Across Andean Worlds*. Durham, NC: Duke University Press.
- Endres, A. 2015. 'Mit juristischen Waffen gegen den Klimawandel', *Zeit Online*, 9 December. Retrieved 10 March 2021 from <http://www.zeit.de/wirtschaft/2015-12/rwe-klage-klimawandel-peru-germanwatch>.
- Finan, T. 2009. 'Storm Warnings: The Role of Anthropology in Adapting to Sea-Level Rise in Southwestern Bangladesh', in S.A. Crate and M. Nuttall (eds), *Anthropology and Climate Change: From Encounters to Actions*. Walnut Creek, CA: Left Coast Press, pp. 175–85.
- Green, D., Billy, J. and A. Tapim 2010. 'Indigenous Australians' Knowledge of Weather and Climate', *Climatic Change* 100(2): 337–54.
- Haraway, D.J. 2008. *When Species Meet*. Minneapolis: University of Minnesota Press.
- Harvey, P. 2005. 'The Materiality of State-Effects: An Ethnography of a Road in the Peruvian Andes', in C. Krohn-Hansen and K.G. Nustad (eds), *State Formation: Anthropological Perspectives*. London: Pluto Press, pp. 123–41.
- Hastrup, K. 2013. 'Scales of Attention in Fieldwork: Global Connections and Local Concerns in the Arctic', *Ethnography* 14(2): 145–64.
- Heede, R. 2014. *Carbon Majors: Accounting for Carbon and Methane Emissions 1854–2010: Methods & Results Report*. Climate Mitigation Services. Retrieved 10 March 2021 from <http://www.climateaccountability.org/pdf/MRR%209.1%20Apr14R.pdf>.
- Heikkinen, A. 2017. 'Climate Change in the Peruvian Andes: A Case Study on Small-Scale Farmers' Vulnerability in the Quillcay River Basin', *Iberoamericana–Nordic Journal of Latin American and Caribbean Studies* 46(1): 77–88.

- Hetherington, K. 2013. 'Beans before the Law: Knowledge Practices, Responsibility, and the Paraguayan Soy Boom', *Cultural Anthropology* 28(1): 65–85.
- Ingold, T., and T. Kurtilla. 2000. 'Perceiving the Environment in Finnish Lapland', *Body & Society* 6(3–4): 183–96.
- IPCC. 2014. 'Summary for Policymakers', in C.B Field et al. (eds), *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press, pp. 1–32.
- Kelman, I. 2010. 'Hearing Local Voices from Small Island Developing States for Climate Change', *Local Environment* 15(7): 605–19.
- Latour, B. 2014. 'Agency at the Time of the Anthropocene', *New Literary History* 45(1): 1–18.
- Li, F. 2015. *Unearthing Conflict: Corporate Mining, Activism, and Expertise in Peru*. Durham, NC: Duke University Press.
- Macfarlane, R. 2016. 'Generation Anthropocene: How Humans Have Altered the Planet for Ever', *The Guardian*, 1 April. Retrieved 10 March 2021 from <https://www.theguardian.com/books/2016/apr/01/generation-anthropocene-altered-planet-for-ever>.
- MacKinnon, D. 2011. 'Reconstructing Scale: Towards a New Scalar Politics', *Progress in Human Geography* 35(1): 21–36.
- Marino, E., and P. Schweitzer. 2009. 'Talking and Not Talking About Climate Change in Northwestern Alaska', in S.A. Crate and M. Nuttall (eds), *Anthropology and Climate Change: From Encounters to Actions*. Walnut Creek, CA: Left Coast Press, pp. 209–17.
- Mark, B.G. et al. 2017. 'Glacier Loss and Hydro-social Risks in the Peruvian Andes', *Global and Planetary Change* 159(Supplement C): 61–76.
- Mitchell, T. 2002. *Rule of Experts: Egypt, Techno-politics, Modernity*. Berkeley: University of California Press.
- Moore, A. 2016. Anthropocene Anthropology: Reconceptualizing Contemporary Global Change', *Journal of the Royal Anthropological Institute* 22(1): 27–46.
- Nadasdy, P. 1999. The Politics of TEK: Power and the "Integration" of Knowledge', *Arctic Anthropology* 36(1–2): 1–18.
- Nygren, A. 1999. 'Local Knowledge in the Environment-Development: Discourse from Dichotomies to Situated Knowledges', *Critique of Anthropology* 19(3): 267–88.
- Nyong, A., F. Adesina and B. Osman Elasha. 2007. 'The Value of Indigenous Knowledge in Climate Change Mitigation and Adaptation Strategies in the African Sahel', *Mitigation and Adaptation Strategies for Global Change* 12(5): 787–97.
- Pinker, A., and P. Harvey. 2015. 'Negotiating Uncertainty: Neo-liberal Statecraft in Contemporary Peru', *Social Analysis*, 59(4): 15–31.
- Poole, D. 2004. 'Between Threat and Guarantee: Justice and Community in the Margins of the Peruvian State', in V. Das and D. Poole (eds), *Anthropology in the Margins of the State*. Santa Fe: School of American Research Press, pp. 35–65.

- Portocarrero Rodríguez, C.A. 2014. *The Glacial Lake Handbook: Reducing Risk from Dangerous Glacial Lakes in the Cordillera Blanca, Peru*. Washington DC: United States Agency for International Development.
- Rasmussen, M.B. 2015. *Andean Waterways: Resource Politics in Highland Peru*. Seattle: University of Washington Press.
- Riedlinger, D., and F. Berkes. 2001. 'Contributions of Traditional Knowledge to Understanding Climate Change in the Canadian Arctic', *Polar Record* 37(203): 315–28.
- Roncoli, C., T. Crane and B. Orlove. 2009. 'Fielding Climate Change in Cultural Anthropology', in S.A. Crate and M. Nuttall (eds), *Anthropology and Climate Change: From Encounters to Actions*. Walnut Creek, CA: Left Coast Press, pp. 87–115.
- Schauwecker, S. et al. 2014. 'Climate Trends and Glacier Retreat in the Cordillera Blanca, Peru, Revisited', *Global and Planetary Change* 119: 85–97.
- Seidler, C. 2015. 'Jetzt zahl mal, RWE', *Spiegel Online*, 8 November. Retrieved 10 March 2021 from www.spiegel.de/wissenschaft/mensch/peruanischer-bauer-verklagt-rwe-a-1066581.html.
- Somos-Valenzuela, M.A. et al. 2016. 'Modeling a Glacial Lake Outburst Flood Process Chain: The Case of Lake Palcacocha and Huaraz, Peru', *Hydrology and Earth System Sciences* 20(6): 2519–43.
- Stansell, N.D. et al. 2013. 'Proglacial Lake Sediment Records of Holocene Climate Change in the Western Cordillera of Peru', *Quaternary Science Reviews* 70: 1–14.
- Stern, N.H. 2007. *The Economics of Climate Change: The Stern Review*. Cambridge: Cambridge University Press.
- Strathern, M. 2005. *Partial Connections*. Oxford: Rowman Altamira.
- Tsing, A.L. 2005. *Friction: An Ethnography of Global Connection*. Princeton: Princeton University Press.
- . 2015. *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton: Princeton University Press.
- Turnbull, D. 1997. 'Reframing Science and Other Local Knowledge Traditions', *Futures* 29(6): 551–62.
- Von Schnitzler, A. 2014. 'Performing Dignity: Human Rights, Citizenship, and the Techno-politics of Law in South Africa', *American Ethnologist* 41(2): 336–50.
- WCEL. 2015. *Talking Climate Justice in Paris*. Retrieved 21 March 2021 from <https://www.wcel.org/blog/talking-climate-justice-paris>.
- Wegner, S.A. 2014. *Lo Que el Agua se Llevó: Consecuencias y Lecciones del Aluvión de Huaraz de 1941*. Lima: Ministerio del Ambiente.
- Wynne, B. 1998. 'May the Sheep Safely Graze? A Reflexive View of the Expert-Lay Knowledge Divide', in S. Lash, B. Szerszynski and B. Wynne (eds), *Risk, Environment and Modernity: Towards a New Ecology*. London: SAGE.