
Book Section:
Castán Broto, V. (2023) Hope in something: An earthly tragedy in five acts. In: Armiero, M., Turhan, E. and de Rosa, S.P., (eds.) Urban Movements and Climate Change: Loss, Damage and Radical Adaptation. Protest and Social Movements . Amsterdam University Press , pp. 35-50. ISBN 9789463726665

https://doi.org/10.5117/9789463726665_ch02

2. Hope in something: An earthly tragedy in five acts

Vanesa Castán Broto

Abstract
This chapter explores the generative potential of the unexpected and the experimental in bringing about transformational change. By reflecting on works of art, personal experiences and scientific literature on climate action and adaptation, Castán Broto brings to the fore the tensions between hope and the compulsion to act, between sense of responsibility and paralysis in the Anthropocene, between disruption and innovation. The demands for rapid changes at scale, while justified in their urgency, risk to lead to dilemmas concerning energy transitions and the issue of who will have to pay for such disruptions. Therefore, an alternative form of reading the crises should move away from a paranoid one toward building a reparative ethos. Castán Broto concludes by proposing reparative climate action.

Keywords: climate change adaptation, reparation, hope, loss, responsibility

ACT I: In which we revisit ideas of immobilism in the Anthropocene

Some books irrupt into your life and force their material presence into your thinking. This is what the beautiful book *Critical Zones: The Science and Politics of Landing on Earth* (Latour & Weibel, 2020) did for me: first, I became obsessed with it, then it shifted my viewpoint. The book arrived by mail, and I was surprised by its size and weight. The cover immediately captured my imagination: I loved the texture of the cover's cardboard, and I was intrigued by Sophie Ristelhueber's photograph, *Sunset Years #2*. It is a picture of craters and disruptions on a mud surface, drying in the sun.

Armiero, M., E. Turhan & S. Paolo De Rosa (eds), *Urban Movements and Climate Change: Loss, Damage and Radical Adaptation*. Amsterdam: Amsterdam University Press 2023
DOI: 10.5117/9789463726665_CH02

It made me think of a mud metaphor I wrote with my colleagues, Harriet Bulkeley and Gareth Edwards, about the role of experiments in social change:

> Within socio-ecological and socio-technical networks, an experiment acts as a source of disturbance which is not confined to a particular place and moment, but rather reverberates through the network with the potential to reconfigure its constituent elements and the circulations of which they are part. An illustration might be found in that of a boiling viscous liquid, such as the mud pools found in Rotorua, New Zealand, where bubbles of air not only disturb the surface but create new patterns, imprints of their passing, which in turn shift the surface topology, creating new patterns, creating new forms of potential. (Bulkeley et al., 2014)

In this quote, we highlight the generative potential of the unexpected. Even tiny bubbles can change the trajectory of such a viscous liquid. That is how social change looked to me at the time: a viscous flow that is impossible to apprehend or control in its totality, where disturbances within the flow determine movement trajectories. This metaphor captured the dynamics of change we observed in cities, where diverse actors—both local government and citizen-led movements—were actively assembling intervention spaces. Or where climate action could form those tiny bubbles that could eventually bring about a transformational change in a society stuck in its old, polluting ways. In a contribution to the edited volume *Innovating Climate Governance*, Harriet and I picked up on the bubbling mud metaphor to analyze the transformative power of experiments through their circulation in urban environments:

> [T]he transformative potential of the experiment is always and already part of the intervention, and its capacity for transformation relates both to the "stickiness" of the regime within which it is inserted and its immanent capacity to assemble, enroll and transform the socio-technical configurations of which it is a part. (Castán Broto & Bulkeley, 2018, p. 75)

These reflections informed the conclusion to the volume, whose editors examine the multiple forms of embedding experiments, including the idea of "circulation" (Turnheim et al., 2018). Circulation is tied here both to a poetic vision of experiments flowing through a "governance milieu" and to a reimagination of experiments as "journeys" (see Carvalho & Lazerini, 2018; Pallet, 2018; Heiskanen & Matschoss, 2018). Action is about movement, about shifting things around. Yes, we do not always know what to do. Should that

paralyze us? No: we can agitate, bring opportunities together, demonstrate what may be possible. We can experiment, both with our lives and with the systems of governance that structure them.

Before I read *Critical Zones*, I had critical questions about experiments, but this large, imposing book forced me to look those questions in the eye. Cracked patterns develop around the craters as the mud dries. These photographs of drying mud,[2] of craters and cracks congealed in it, reflect a state of immobility, becoming even more immobile because of the drying effect of the sun. Looking at this photo, I felt the liquid mud metaphor no longer spoke of shared directions. Does it matter? It does because hope has emerged around the idea of working via the intervention spaces afforded by the mundane and their promise of international impact (Acuto, 2014). These drying mud pictures force a reckoning with the problem of paralysis, the realization that what has been done is far too little and too late.

Latour mocks the current search for an "ecological cure" for the Anthropocene as something that ignores that "there is no cure for the condition of belonging to the world" (Latour, 2017, p. 13). Hope is dangerous, Latour argues. It is better to hope for the time when counting on hope is no longer the most reasonable action. It is indeed a worrying fact that many climate scientists repeat the mantra, "Everything is doomed, but I still have hope." This is a mantra that invokes the possibility of a surprise. Such surprises are never too far from miraculous solutions (geoengineering anyone?), and miraculous solutions are never too far from a swindle. Perhaps this time is, indeed, the time when our hope will serve us no longer—no further than it does the drying cracks in Ristelhueber's photos.

The Whitechapel Gallery in London has a biography of Ristelhueber on its website. It describes her work as a reflection on territory and its history in which "she strives to implement the bare act and the stamp of history on both the body and on the landscape, by rendering visible wounds and scars, veritable memories of the 'acts' of history" (Whitechapel Gallery, 2017). The whole series of photos depicts "climate bombs": craters in the Dead Sea illustrating the devastation caused by the overuse of water from the River Jordan and craters in the asphalt in Paris, macro and micro symptoms of a world in turmoil (L'Œil de la Photographie, 2019). Metaphors of the impasse in climate action. Congealed future memories of climate changed pasts. The photos put the idea of dynamism through bubbling experiments to sleep, drawing a giant question mark in their place. What can we do? Is this the anteroom to paralysis?

2 There is another similar photograph, *Sunset Years #5*, on the back of the book.

ACT II: In which a bird in a storm becomes a symbol for a certain compulsion to act

A book is not its cover, of course. *Critical Zones* offers a journey through multiple ways of confronting, accepting and embracing the Anthropocene. As I was thumbing through it, admiring its illustrations, the book fell open to the essay "The Point of View of the Mountain" by art historian Estelle Zhong Mengual (2020). Her essay discusses Albert Bierstadt's monumental *A Storm in the Rocky Mountains, Mt. Rosalie* as a historical painting that portrays the landscape that already is and the landscape that it will become (due to the storm) (Figure 2.1). Zhong Mengual writes:

> The storm is an internal agent that blends into the mountain as it creates its forms and partially determines the life that can live on it. It is a slow, blind, and fine sculptor that works in tiny strokes to give form to it. Only the mountain has lived long enough to listen objectively to the howl of the storm. (Zhong Mengual, 2020, p. 253)

Alongside the essay, seven illustrations depict the picture and its details. My daughter sensed my excitement and came to ask me what I was reading, and I gave her one of those superficial explanations one offers when wanting to be left alone with a precious book. But my daughter insisted. "Can we take a moment to appreciate the brave little bird flying through the storm?" she said, laughing. And I laughed, too, although it was only then that I appreciated this detail of the painting. The bird is there, floating in the clouds. Once you see it, it is impossible to unsee it; everything in the painting refers to the brave little bird in the storm. There is something compelling about the understated presence of the bird in this painting. It generates many questions that move beyond the point of view of the mountain presented by Zhong Mengual: why is the bird flying as the storm approaches?

Is it escaping from the destructive grasp of the storm? My rationalist mind immediately assumes that the bird's flight has a clear, adaptive purpose. Ethologists have shown that some birds can predict changes in weather conditions using infrasonic cues or because of their sensitivity to barometric pressure. Birds may thus fly ahead of storms or even into them. In this reading, the bird becomes a metaphor for anticipatory action, working in syntony with nature, and having the intuition to respond effectively to the massive changes around us. However, we should remind ourselves that shelter in place is possibly a more common strategy among birds to weather storms.

Figure 2.1. *A Storm in the Rocky Mountains, Mt. Rosalie*, by Albert Bierstadt, 1866.

Of course, this is just a painting, not an actual storm, an actual mountain and an actual bird. Bierstadt may have only put the bird in the painting because he just saw it passing by. An accident immortalized. Nevertheless, it is a particularly odd occurrence that is not frequently repeated in his other paintings. Regardless of why the bird found its place in this painting, its flight is not one that can easily be read in consequentialist terms. My daughter used the words, "brave little bird," and I would suggest that her choice of words was not accidental. She did not see a bird that was clever, perceptive or efficient. Instead, the bird in the picture appears to engage in the futile action of traversing the storm. It represents a certain form of useless heroism that matches the romantic tones of the painting. Will something change because of the bird's flight? What will it change and for what purpose? Zhong Mengual's essay suggests that we must pay attention to the multiple biotic and abiotic processes woven into the history of a landscape for which the storm is no more than a heartbeat. However, the one thing that sets apart the bird in this landscape is its deliberate flight against the elements and its loneliness in the middle of the cloud. And the bird itself carries the weight of its history and all the places where it has flown.

The bird stands for me as a metaphor for the current moment of transition. Perhaps a new metaphor, in place of the lost one about the shifting mud. The bubbles in the mud are part of a broader process of change and create a sense of collective direction; the bird less so. The current need for change is most often imagined as a flight into the storm, anticipating the risks, being cleverer than the looming danger. I do not deny that this is sometimes

how social change feels. However, significant changes are often made up of myriads of futile, daring actions whose actual impact may escape our senses. What is common to all those interpretations is a compulsion to act, a need to react and show movement—this is also an action that must be performed and made visible to count in the broader landscape of climate politics. In the face of existential fright, we may feel like little birds battling our wings in the storm. Is this a futile plight?

There is a certain contradiction embedded in an Anthropocene that recognizes humans as a geological force while also highlighting humanity's absolute loneliness and sense of impotence. It generates a sense of responsibility as much as it paralyzes us.

ACT III: In which possibilities of transition have turbulent consequences

Humanity is operating in crisis mode. The climate emergency has led to panicked responses. Declarations of emergency have swept institutions, following a youth-led social movement that has built momentum for radical transformation. Promises of radical transformation proliferate in academic discourse, both from the natural and social sciences. Transformation thinking seeps into policy and practice with promises of large-scale changes in how we live and how we understand ourselves—prescriptions for large infrastructure investment programs such as the Green New Deal, which in Europe has crystallized into a continent-wide plan for action, contain the promise of a government-led global transformation.

In February 2021, the Secretariat of the UN Framework Convention of Climate Change (2021)[3] published a synthesis of climate action ambition as contained in countries' new or updated nationally determined contributions (NDCs) up to December 2020. The message was clear: some progress, but not enough. For example, the report highlights that the quality of NDCs, including data on mitigation targets, has clearly increased. The implementation of the plans is addressed much more comprehensively, making linkages to relevant national planning, regulatory and legislative processes.

The synthesis report struggles to reconcile the estimated needs for carbon reductions with the promises embedded in the NDCs. Renewed calls for urgency have followed. These calls for urgency echo social movements,

3 This is how the UNFCCC's website refers to it. See: https://unfccc.int/news/updated-ndc-synthesis-report-worrying-trends-confirmed.

especially the youth movement Fridays for Future, and the spread of declarations of climate emergency to almost 2,000 governmental bodies worldwide. There is an apparent demand to shift our societies away from social and economic models that do not support a resilient and equitable future. The 2021 United Nations Climate Change Conference (COP26), held in Glasgow, Scotland, "requested" that parties improve their efforts in 2022, but there is skepticism about whether they will step up their efforts (Carbon Brief Staff, 2021).

These transformations, however, will necessarily be turbulent: evidence is mounting about how transformations exacerbate vulnerabilities and create misery by leading to arbitrary decisions about whose lives will be valuable enough to preserve (Schipper et al., 2021). Maladaptation is a ghost haunting climate adaptation (Eriksen et al., 2021). Disruptions and experiments drive transformations, but always at a price. Radical climate action can also be linked to a new politics of death or necropolitics (Mbembe, 2019), in which value is assigned to different segments of populations. Who you are determines whether you survive or not. Not surprisingly, many voices rage against the uncritical adoption of such assumptions in climate action.

Disruptions are integral to theories of transitions, a field that has influenced current transformations thinking. In studies of sustainability transitions, a transition happens when disruptive innovations find their way into the dominant regime, forcing a realignment of social and material components. These analyses are crucial because disruption can be seen as a "prerequisite of system reconfiguration," rendering the disruptive dynamic indispensable to transition processes (Kivimaa et al., 2021). Change is not always disruptive, but the rapid change required for a transformation of this kind will need disruption.

In business studies, disruptive innovations are those that alter a given market and technological context radically. Disruptive innovation was championed by economist Clayton Christensen, in contrast to sustaining innovations that introduce change incrementally. Disruptive innovations are low-cost, accessible technologies that produce sweeping and fundamental changes across markets. Disruptively innovative entrepreneurs and inventors become agents of change in industries and society. Their efforts establish new value propositions, change consumer behaviors and displace incumbent firms (King & Baatartogtokh, 2015, p. 77).

Building on this thinking, transition scholars argue that disruptive innovation fosters sustainability transitions. For example, renewable energy technologies are frequently framed as disruptive innovations that challenge fossil fuel-dependent production and consumption systems. Disruptive

innovations in solar energy may include customer-oriented solutions for solar systems, but the range of disruptive innovations in the current infrastructure regime is varied, ranging from hydrogen fuel cells to sharing economy solutions. In summary, there is no question that disruptions drive large-scale changes. Transitions require disruption (Kivimaa et al., 2021).

The discourse of urgency and its translation into ideas of disruption raises eyebrows, especially among those concerned with the unequal distribution of vulnerabilities to climate impacts and climate action. In their recent edited volume on the dilemmas of energy transitions in the Global South, Ankit Kumar, Auke Pols and Johanna Hoffken write:

> While urgency is crucial for energy transitions in a climate-changed world, we need to be wary of haste. We must be cautious of conflating goals and processes of sustainable development and enquire what urgency means for due process. Justice needs thought, participation and deliberation.... Taking the space and time in which these transitions take place into account is critical in thinking through these dilemmas. (Kumar et al., 2021, p. 182)

Their words, emerging from concerns about the practical implementation of energy transitions in the context of deep, entrenched inequities, contrast with the demands from within social movements for rapid changes at scale. Transitions will take place at a price, and it is highly likely that this price will be paid by further marginalization and exclusion by those who are already most vulnerable. Not only do we need to be wary of the possibilities for social change embedded in experiments and disruptions, but we also need to foreground the potential negative impacts that such action can have on different vulnerable groups, incidentally groups who are rarely recognized as active agents in low carbon, resilient transitions, despite their visibility on the streets.

ACT IV: In which a reparative impulse provides the means to rethink low carbon transitions and climate action

Are there alternatives to disruptive innovation? In a recent paper, the LOACT[4] team (Castán Broto et al., 2021) argues in favor of thinking climate

4 LOACT (Low Carbon Action in Ordinary Cities) is the project that funded this research. See: https://www.loactproject.com/.

innovation differently through a "reparative" approach. Reparations are linked to the act of "making good," whether it is putting a broken object back to use or salvaging a broken relationship. Our primary source of inspiration is Eve Kosofsky Sedgwick (1997), who calls for a different reading of a broken world. As a cultural theorist, Sedgwick is mainly concerned with the act of reading texts and situations. Sedgwick's essay criticizes a particular form of critical reading that focuses on anticipating negativity, a paranoid reading of the world. For example, critical political economy perspectives on climate action often suffer from paranoia when they anticipate that any attempt at climate action will be doomed. Such readings take a privileged vantage point beyond the reader, a point of view that aims to anticipate surprises and foreground the dire state of circumstances to avoid being lost. Sedgwick refers to this point of view as critical omnipotence. What good is knowing better without a response? For this reason, such paranoid readings come close to attempts at solutionism and are tied to the politics of hope, whether hope resides in technology, political action or revolution.

Sedgwick suggests that an alternative form of reading world crises exists and argues that moving away from paranoid reading is the first step to building a reparative ethos. Here, reparation means engaging with how to make small worlds to provide sustenance. In this vein, a reparative reading is always tied to action. Discussing Sedgwick's work, Wiegman (2014) speaks of the need for reparative work because a reparative perspective is indissoluble from reparative action. Embracing the reparative is a way of responding with affirmative richness to every life encounter: it means allowing oneself to be surprised by the horror of life. Weighing in on this debate, Hanson (2011) proposes accepting a world that is damaged and dangerous and live within that world in an attempt to build alternative sets of relations.

The focus on "making amends" in a reparative reading relates to our relationship with others and other things. It requires recognizing that something is wrong, and that payback or compensation may be needed for those people and things that have been wronged. Theories of restoration and reparative justice can support a reparative reading of the climate crisis. Philosopher Margaret Walker (2010), for example, has argued that reparation implies remedial action to address the wrongs of the past. Walker explains that thinking about reparative justice is different from thinking about corrective justice. In the context of climate change, reparative justice calls for examining the history of climate change as a problem, as a means of assigning responsibilities for reparation. Climate change is a profoundly traumatic event, particularly considering human culture's continuity. Reparation will be a necessary but not sufficient part of healing from trauma.

By embracing reparative innovation in climate action, I seek to bring these insights into approaches that address human vulnerabilities through knowledge-making and innovation. To develop a reparatory reading of the climate crisis that, instead of rushing for disruptive action, seeks to engage with multiple means of making amends. When facing an uncertain world, the question is whether we can embrace a reparative impulse and develop positive attachments even within a heteronormative society that prioritizes the protection of some over others, that sees some lives as inherently more valuable. Against critical analysis that seeks to anticipate the hidden meaning of everything, reparative readings situate the object of knowledge within a material history of multiple experiences and attachments.

Confronting the trauma of the climate crisis also requires a reparative impulse that accepts the horrors of climate change and provides hopeful responses. One hopes that these reparative impulses are widespread, but in reality, most reparative responses have developed out of necessity. Transforming an impulse into an innovation depends on linking action and context in the hope of activating change. One of the best examples of reparative innovation I have encountered is the collaboration between researchers at Makerere University (Uganda) and urban communities in Kampala (Lwasa et al., 2020). Collective forms of waste management are essential when municipal waste collection may not reach the most disadvantaged settlements where waste accumulates (Lwasa, 2019). The innovation in question relates to briquette-making. Briquettes are compressed blocks of combustible materials. In this case, briquette-making is an opportunity to transform combustible waste into a household fuel, a commercial product that can support small businesses. In Kampala, communities organize themselves to sort their neighborhood waste to select the fraction that can be carbonized into briquettes (Kareem & Lwasa, 2011).

Briquette-making in Kampala is a reparative innovation because it involves, first of all, appropriating cityscapes by challenging accepted meanings, in this case, provoking instability in current management systems and rethinking what waste is. Briquette-making involves the collaboration of community-based organizations with university partners and other institutions that can frame this activity as innovation, so there is a tricky dependency between who is allowed and who is not allowed to produce innovative knowledge. Reparative innovation, however, requires collaborations that facilitate a process of urban reclamation from which communities can also benefit. Communities thus engage with the fundamental material characteristics of the waste. Such material agencies of objects are central to any process of social change (Liboiron, 2016). However,

these material agencies cannot necessarily be controlled. For example, the communities in Kampala have raised concerns about pollution in the briquette-making process. That has motivated further innovation in their work with Makerere University, from the selection process of waste to the combustion methods used. Reparative innovation requires accepting uncertainty: uncertainty in political processes and knowledge attribution, but also material uncertainty.

Discarded resources can be mobilized for the community, attaching new instrumental value to discarded resources and spaces. Due to the lack of attention to such resources elsewhere, people facing exclusion gain access to resources. In doing so, they can build new markets. Briquette-making also transgresses boundaries between the public and the private by facilitating the development of a social economy that involves the collective production of a shared good that can be "privatized" to sustain the most disadvantaged groups within the community. Scholars at Makerere University have long worked with communities to understand responses such as briquette-making and foreground it in debates on sustainable urbanism, for example, in helping redefine the circular economy. I see their work as an example of how to engage practically with the realities of urban life in the lives of academic-activists: not by dictating the course of action, but by understanding the myriad ways in which people attempt to repair their lives. However, since the world's reserves of environmental injustices are inexhaustible, reparative innovation may call for scaling up, multiplying and accelerating action beyond existing capacities, in a call for infinite responsibilities that may eventually make people so tired that they give up (Dave, 2017). Naisargi N. Dave explains that the generation of infinite responsibility robs people of the will to persevere and calls for alternative immanent ethics that extracts determination and persistence not from the future, but from the present (ibid.).

In the end, reparative innovation stands in the boundary between social innovation (generating new solidarity networks) and technological innovation (mobilizing the material agency of waste). Reparative innovations may support social movements capable of claiming the community's political interests beyond a specific project by facilitating a mobilization process, but that is not why they take place. Like the bird flying in the storm, reparative innovation requires engaging with small, sometimes wild, possibilities. The assumption is that even the smallest actions will bring some form of urban change. In sum, reparative innovation endorses an alternative reading of the change process, one that recognizes radical change as the unexpected product of long-term, uncoordinated shifts.

In the infrastructural context of less-developed urban areas, reparative innovation calls for positive imaginations of collective urban futures that acknowledge difficult histories of colonial exploitation and resource extractivism.

ACT V: In which we explore alternative points of view to generate a new sense of hope

I called this chapter a tragedy because, even if reparative innovation can become a workable alternative to deliver just transitions, it generates more questions than answers: Who will lead reparative innovation? How will it happen, and with what consequences? The possibility of having unintended effects always hangs over innovation, whether we call it reparative or otherwise.

Many climate change experiments have a reparative component. Nevertheless, they face the indictment of being localized and not having enough impact. There is indeed a question about the extent to which reparative innovation will be an acceptable option in the context of urgency and what political possibilities may generate.

Reparative innovation is a means of examining what kinds of social innovation will lead to social change that will enable reparations to those who suffer the most—people and the world. As a provisional, workable alternative, one that engages with the practical possibilities for climate action, reparative innovation may work effectively as a counterpoint to disruptive innovation, helping us to reimagine transition not as a directional process of disruption encapsulated in the mud example, but as a multifaceted, plural process where directions may be accidental. Based on the literature on restorative and reparative justice, the following principles can help to identify forms of reparative innovation (Castán Broto et al., 2021):

- They recognize the wide range of impacts that climate change has on people's lives, from direct effects to psychological and cultural effects.
- They amplify and broadcast the voices of those who suffer most from climate change impacts and climate change action.
- They mobilize for forms of compensation, for example, through co-benefits.
- They create new social relationships between those who bear the brunt of the responsibility for carbon emissions and those who suffer its impacts.

However, this is not a call to generate and reproduce reparative innovation: reparative innovation is already happening, shaping the lives of people in an unwelcoming world. The bottom line is not only whether a reparative engagement with innovation is possible, but also whether such reparative imaginations will cast the transition as a response to the trauma of climate change. The reparative links to history, in this case, the environmental histories that have shaped the drivers of climate vulnerability and the infrastructure histories that have locked in carbon emissions in contemporary societies.

Where to fly to save ourselves in the middle of the storm is the plight of the bird in Bierstadt's painting. In her essay on the painting, Zhong Mengual asks us to find an alternative point of view to observe the storm unfolding in front of our eyes. She writes: "The imminence of the storm contains all of the immemorial moments of the dynamics of erosion" (2020, p. 251).

It is a painting of the history of that landscape, not as could be read in its geology, but as reflected in minute ephemeral moments in which multiple simultaneous actions conform to the landscape. The point of view of the mountain may embrace its passivity through the ages as much as the micro-moments in which change takes place. However, Zhong Mengual also calls the storm a "slow, fine sculptor" shaping the mountain in tiny strokes. Miller has argued that Bierstadt used the landscape aesthetic as a means to "escape history." His paintings cannot be understood as anything else than a tool at the service of moral, religious and national meanings: a mythic world sealed off from history (Miller, 2001).

As Zhong Mengual (2020, p. 250) observes, everything in Bierstadt's painting is "hurtling down" at great speed. They are specks of dust in the painter's brush. Only the bird flies in the opposite direction. It is a temptation to see every little reparative action as a futile effort in the eye of the storm. Yet, this painting offers little more than a fantasy through colonizing eyes. Not everything runs down in an organized, aesthetically pleasing way. The nature of change is chaotic, hence the fundamental fear it inspires. The question is whether a fragmented landscape of climate action will add up to a common direction of travel, as the bubbles in the mud of Rotorua seem to be doing. I like the bird's gesture because it matters in itself rather than because it has a guaranteed synergy with everything else in the mountain.

There is evidence of "reparative" forms of climate action. The reparative element is not incompatible with existing attempts at delivering social innovation, where there is an explicit acknowledgment of the historical legacy of exclusion and oppression. There is a little—perhaps even a lot of—hope in the possibility that we can mend the climate trauma. We hope

for the time when hope no longer serves us. In the meantime, even brave little birds will shape the mountain. Minuscule actions sometimes translate into social change. Sometimes the time is ripe for change. Yet, no action is too small to catalyze change. Like the brave little bird, action's imprint on the landscape cannot be entirely discounted.

References

Acuto, M. (2014). Everyday international relations: Garbage, grand designs, and mundane matters. *International Political Sociology, 8*(4), 345–362.

Bulkeley, H. A., Castán Broto, V. & Edwards, G. A. (2014). *An urban politics of climate change: Experimentation and the governing of socio-technical transitions*. Routledge.

Carbon Brief Staff. (2021, November 15). COP26: Key outcomes agreed at the UN Climate Talks in Glasgow. Carbon Brief. https://www.carbonbrief.org/cop26-key-outcomes-agreed-at-the-un-climate-talks-in-glasgow

Carvalho, L., & Lazerini, I. (2018). Anchoring and mobility of local energy concepts: The case of community choice aggregation. In B. Turnheim, P. Kivimaa, & F. Berkhout (Eds.), *Innovating climate governance: Moving beyond experiments* (pp. 49–68). Cambridge University Press.

Castán Broto, V., & Bulkeley, H. (2018). Realigning circulations: How urban climate change experiments gain traction. In B. Turnheim, P. Kivimaa, & F. Berkhout (Eds.), *Innovating climate governance: Moving beyond experiments* (pp. 69–84). Cambridge University Press.

Castán Broto, V., Westman, L., & Huang, P. (2021). Reparative innovation for urban climate adaptation. *Journal of the British Academy, 9*(s9), 205–218. https://doi.org/10.5871/jba/009s9.205

Dave, N. N. (2017). Something, everything, nothing; or, Cows, dogs, and maggots. *Social Text*, 35(1), 37–57.

Eriksen, S., et al. (2021). Adaptation interventions and their effect on vulnerability in developing countries: Help, hindrance or irrelevance? *World Development, 141*, 105383.

Hanson, E. (2011). The future's eve: Reparative reading after Sedgwick. *South Atlantic Quarterly, 110*(1), 101–119.

Heiskanen, E., & Matschoss, K. (2018). Evaluating climate governance experiments: Participants' perspectives on low-carbon experiments in Finland. In B. Turnheim, P. Kivimaa, & F. Berkhout (Eds.), *Innovating climate governance: Moving beyond experiments* (pp. 182–200). Cambridge University Press.

Kareem, B., & Lwasa, S. (2011). From dependency to interdependencies: The emergence of a socially rooted but commercial waste sector in Kampala City, Uganda. *African Journal of Environmental Science and Technology, 5*(2), 136–142.

King, A. A., & Baatartogtokh, B. (2015). How useful is the theory of disruptive innovation? *MIT Sloan Management Review, 57*(1), 77–90.

Kivimaa, P., Laakso, S., Lonkila, A., & Kaljonen, M. (2021). Moving beyond disruptive innovation: A review of disruption in sustainability transitions. *Environmental Innovation and Societal Transitions, 38*, 110–126.

Kumar, A., Höffken, J. I., & Pols, A. (Eds.). (2021). *Dilemmas of energy transitions in the Global South: Balancing urgency and justice*. Routledge.

Latour, B. (2017). *Facing Gaia: Eight lectures on the new climatic regime*. Polity Press.

Latour, B., & Weibel, P. (2020). *Critical zones: The science and politics of landing on Earth*. MIT Press.

Liboiron, M. (2016). Redefining pollution and action: The matter of plastics. *Journal of Material Culture, 21*(1), 87–110.

L'Œil de la Photographie. (2019). Sophie Ristelhueber—Sunset years. https://loeildelaphotographie.com/en/sophie-ristelhueber-sunset-years-en/

Lwasa, S. (2019, September 2). Uganda offers lessons in tapping the power of solid waste. *The Conversation* https://theconversation.com/uganda-offers-lessons-in-tapping-the-power-of-solid-waste-119728

Lwasa, S., Kisembo, T., Mbabazi J., Namuli, H., Johnson, C., & Castán Broto, V. (2020). Integration of small-scale waste businesses into the urban economy. KNOW Policy Brief #1. Urban Action Lab, Makerere University. https://www.urban-know.com/policy-brief-1

Mbembe, A. (2019). *Necropolitics*. Duke University Press.

Miller, A. (2001). Albert Bierstadt, landscape aesthetics, and the meanings of the West in the Civil War era. *Art Institute of Chicago Museum Studies, 27*(1), 40–102.

Pallet, H. (2018). Understanding public dialogue as an embedded democratic innovation in UK climate governance. In B. Turnheim, P. Kivimaa, & F. Berkhout (Eds.), *Innovating climate governance: Moving beyond experiments* (pp. 85–102). Cambridge University Press.

Schipper, E. L. F., Eriksen, S. E., Fernandez Carril, L. R., Glavovic, B. C., & Shawoo, Z. (2021). Turbulent transformation: Abrupt societal disruption and climate resilient development. *Climate and Development, 13*(6), 467–474.

Secretariat of the UN Framework Convention of Climate Change. (2021). Nationally determined contributions under the Paris Agreement: Revised synthesis report by the Secretariat. Conference of the Parties serving as the meeting of the Parties to the Paris Agreement. Third session, Glasgow, October 31 to November 12, 2021. FCCC/PA/CMA/2021/8/Rev.1.

Sedgwick, E. K. (1997). Paranoid reading and reparative reading; or, You're so paranoid, you probably think this introduction is about you. In E. K. Sedgwick (Ed.), *Novel gazing: Queer readings in fiction* (pp. 1–38). Duke University Press.

Turnheim, B., Kivimaa, P., & Berkhout, F. (2018). Experiments and beyond. In B. Turnheim, P. Kivimaa, & F. Berkhout (Eds.), *Innovating climate governance: Moving beyond experiments* (pp. 1–26). Cambridge University Press.

Walker, M. U. (2010). *What is reparative justice?* The Aquinas Lecture, Marquette University.

Whitechapel Gallery. (2017). Sophie Ristelhueber—In conversation with David Company https://www.whitechapelgallery.org/events/sophie-ristelhueber-talk/

Wiegman, R. (2014). The times we're in: Queer feminist criticism and the reparative "turn." *Feminist Theory, 15*(1), 4–25.

Zhong Mengual, E. (2020). The point of view of the mountain. In B. Latour & P. Weibel (Eds.), *Critical zones: The science and politics of landing on Earth*. MIT Press.

About the author

Vanesa Castán Broto is Professor of Climate Urbanism at the Urban Institute, University of Sheffield. She leads the ERC project Low Carbon Action in Ordinary Cities (LoAct) and the GCRF project Community Energy and Sustainable Energy Transitions (CESET). She is the author of *Urban Energy Landscapes* (Cambridge University Press, 2019) and *Urban Sustainability and Justice* (with Linda Westman, Bloomsbury, 2020) and coeditor of the volumes *Climate Urbanism* (Palgrave, 2021) and *Inclusive Urban Development in the Global South* (Routledge, 2021).