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Authors

Porter, Libby
Rickards, Lauren
Verlie, Blanche
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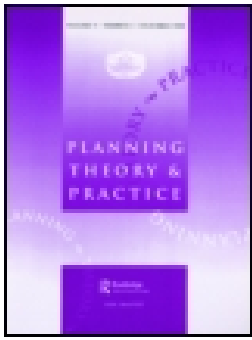
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Climate Justice in a Climate Changed World

Thinking Climate Justice: Introduction to the Interface

Libby Porter

Centre for Urban Research, RMIT University, Melbourne, Australia

Where I write from, in south-eastern Australia on the lands of the Kulin nation, now called Melbourne, the stark and terrifying dimensions of injustice in a climate changed world feel very present. As this season's unprecedented bushfires in Australia took hold, we stared the new normal, of living in a climate changed world, in the face. It looked a lot like the dimensions of injustice that are already known all too well, but with much sharper and more concerning edges. Dimensions of climate injustice came into view that were perhaps previously hidden or obscured, the distributional aspects of effects and impacts so obviously burdening those already disadvantaged.

Climate justice is a framework that brings into view the intersection between climate change and the way social inequalities are experienced as structural violence. Climate justice has grown in public debate and grassroots campaigning over the past decade, where not for profits and environmental NGOs in particular increasingly make the connection between human rights, uneven development and climate change. Often presented as a question of human rights, climate justice debates are often focused on the distributional effects of climate change – pointing out that those effects disproportionately burden the poorest and least disadvantaged. Much discussion in the climate justice field has examined the global maldistribution of climate change impacts, particularly between developing and developed nations. Linked with the understanding that developed nations are the biggest producers of the emissions that induce climate change, the ways that privileged nations and groups redistribute the effects of the harms they produce to burden the poor somewhere else, becomes clear.

In this Interface, we bring together scholars, educators, practitioners and activists to consider climate justice from a range of perspectives that extend and deepen these more established lines of thinking. The papers examine questions for planning that are perhaps less obvious or explicitly discussed in climate justice debates. The intention here is that these issues might become more prominent in our thinking and practice. Hence, the contributions interrogate issues such as planning education, the norms of the profession, the research that underpins knowledge about climate change, and the sharing of that knowledge as justice questions in and of themselves. The papers also focus on the principal dimensions of planning response and activity in relation to climate change, especially in key sectors such as housing, and also adaptation planning. Taken together, the papers reveal that *how* planning responses are framed, articulated and enacted is itself a live climate justice question. The contributions reveal the importance of ongoing efforts to

bring critical questions to bear on whose knowledge is valued, how climate justice ‘problems’ are framed, how knowledge is generated and disseminated, and how and for whom decisions are made.

Privilege and power in voice and process have long been concerns for planning theory and practice, and are also integral to the question of climate justice. Lauren Rickards presents a viewpoint about how climate debates are shaped by the power imbalances in academic research. These imbalances are then transferred into the world’s most authoritative dataset on climate change, the Intergovernmental Panel on Climate Change (IPCC). Key questions arise as to the relative presence of different world regions as key areas of focus, and the shaping of debates according to the concerns and interests of the most dominant voices and framings.

A related theme is taken up by Blanche Verlie in her consideration of the different ways that climate justice is understood and embodied by the next generation of planning practitioners. As a teacher in planning and environment courses, Verlie is concerned that the structures and norms of professional practice might be preventing our ability to identify the felt and lived experience of inhabiting a climate changed world at the same time as having to plan and intervene in that world.

How to grapple with the reality of an increasingly uncertain future – where it feels like the term ‘unprecedented’ is going to get a real workout – is also a core theme to the contribution from the leaders of a new initiative in Melbourne called The Climate Change Exchange. Here, practitioners and scholars are coming together with a new urgency to build the kinds of healthy, critical relationships that are clearly needed to practice and think in such a world. Karyn Bosomworth, Susie Moloney and Bronwyn Lay show that it is possible to take up the kind of call made by Rickards to practice forms of knowledge sharing and relationality in thinking and practice necessary to address climate injustice. In other words, it is not merely about generating ‘the answers’ from available datasets, but of course a far more profound question of who gets to shape the questions.

Ben Latham provides insight into the daily minutiae of the lived experience of injustice in a climate changed world. The Victorian Council of Social Service, where Latham writes from, is the peak body for the state of Victoria’s community and social sector. Working with disadvantaged communities across Victoria, their work reveals the intersection of structural injustice with climate change effects and the importance of planning to these matters. The paper reveals just how interconnected climate justice is across scales – where the global scale of the effects of emissions, pollutions and development come into the everyday realities of people living in poor housing, in poorly connected communities.

Picking up these kinds of themes in another context is a contribution from Isabelle Anguelovski and David Pellow, bringing into view the important question of climate justice in relation to adaptation. For not only are questions of justice critical to climate change effects, but the responses we make as a society, through interventions and processes like adaptation planning, themselves have effects on social inequality. They take to task the rather slippery language and politics of resilience and adaptation to examine the ways in which adaptation planning actively obscures or perpetuates conditions of structural domination and social inequity.

The final essay from a group of scholars and practitioners writing with Country¹ in south-eastern Australia, also examines planning for climate adaptation, but this time with the dynamic and structure of colonisation front and centre. The essay makes the point that colonialism is extremely good at adapting, and that any genuine consideration of climate justice issues must

become accountable to the forms of colonial extractionist development that have generated a climate crisis in the first place.

Thus, the Interface brings together reflections from different perspectives about the work of planning in a climate changing world, where the imperatives of socio-ecological justice are becoming ever more stark.

Notes on Contributor

Libby Porter is a Professor at the Centre for Urban Research, RMIT University. Her work has contributed to critical understandings of land and property, the relationship between Indigenous rights in planning and urban development, as well as the displacement effects of urban regeneration, urban governance, and the politics of urban informality.

Using and Interrogating Privilege to Progress Climate Justice

Lauren Rickards 

Centre for Urban Research, RMIT University, Melbourne, Australia

As originally conceived, the concept of climate justice provides a high-level view of the stark international and intersectional inequities that wealth-induced global climate change entails. Pointing out the uneven distribution of “goods” and “bads” that characterises the generation and manifestation of climate change, climate justice illuminates two broad human groups. The first is those who have benefited from fossil fuel- and colonialism-enabled economic development and now sit in positions of privilege. Compared to others, this group is well placed to adapt to the negative side effects of the development trajectory they have helped generate and have largely benefited from – side effects that include, but are not limited to, a disrupted climate. Most of the readers and authors of this journal are likely in this first group. It is one dominated by the well-educated, English-speaking, professional classes. Even though recent experiences have powerfully demonstrated that no one is immune to climate disruption and its far-reaching, cascading effects – including researchers (Rickards & Watson, 2020) – it is increasingly clear that for many individuals and households, the effects are not just cascading, they are compounded by existing structural violence. While such violence has many dimensions, many of these converge in disparities in wealth.

That brings us to the second group: the much larger and more diverse population who have long been, and continue to be, exploited and sacrificed in the development processes that have birthed climate change. Given their prior disadvantage, as well as spatial perversities that mean some locations are more exposed to climatic extremes than others, this group is now especially vulnerable to the additional burden of the capitalist economy’s feedbacks on the global climate. Despite doing little to cause climate change, and in fact already suffering from the exploitative processes generating its emergence, the world’s majority will suffer its worst effects. This is the primary climate justice conundrum that a growing number of practitioners and scholars are engaging with, including in planning.

As with other areas of “progressive scholarship”, however, there are certain ironies and perversities embedded in the climate justice message for those of us who are utilising our position on

the advantaged side of the equation to try to call attention to the existence of climate injustice and to rally efforts to understand and redress 'the problem'. The high-level – some would say privileged – perspective that enables climate (in)justice (in its dominant formulation) to become visible and heard as an issue, is both a source of important insight about inequities, and a justice challenge in its own right.

This is illustrated by the United Nation's Intergovernmental Panel on Climate Change (IPCC), with which I am a Lead Author. Increasingly, climate justice is a key message of and motivation for many of the authors of the IPCC. Like the United Nations Framework Convention on Climate Change (UNFCCC), the IPCC is strongly focused on identifying highly vulnerable groups and understanding their needs. Recent IPCC reports are unequivocal about the fact that further delays in emissions reduction will greatly worsen not just climate change impacts, but climate injustices. The 1.5 Degree Report for example, underlines that climate change is a matter of ethics, and calls for society to address the human rights of the dispossessed, "including their rights to water, shelter, food, health and life" (Masson-Delmotte et al., 2018). In turn, the Climate Change and Land report emphasises the ethical complexity of both climate change impacts as well as mitigation and adaptation responses, as some proposed land-based carbon reduction solutions threaten to worsen climate injustice at a local and regional level unless great care is taken (Shukla et al., 2019).²

These high-level perspectives are crucial for grasping what is at stake. The mandate of the IPCC is to synthesise the global literature on climate change to inform and improve decision making, not just at the UN level, but at all scales of government. Its assessment process depends on: researchers around the world conducting and documenting relevant studies, the academic peer review system improving and trying to guarantee the quality of much of the literature that is assessed, hundreds of IPCC authors debating and summarising key points, thousands of volunteer expert reviewers reviewing draft IPCC reports, and the member states evaluating and endorsing the final results. Each step is motivated by an abiding and arguably old-fashioned belief in the value of seeking and adhering to truths via thorough analysis, careful assessment, and evidence-based decision making.

Nevertheless, for many critical scholars, including those within the IPCC, the compression of thousands of experiences and standpoints into an ostensibly singular voice and universal perspective is unnerving. It is now well recognised that silences, gaps and presumptions are inherent in knowledge claims. Elite pronouncements on the world are always partial. Critiques of privileged voices are always needed.

While inescapably true, this does not mean we should dismiss claims to authoritative knowledge. To return to the case of the IPCC, its authority is deeply rooted in the academic literature, exhaustive academic labour, transparency of governance, and established norms of academic integrity. Although the lead author group does not mirror the diversity of the world, it is improving and extensive effort now goes into the selection of authors. What is more of an issue is the unevenness of the academic literature on which the IPCC can rest its work. A lack of institutional capacity in many parts of the world means that some places are under-researched, risking giving the misleading impression that climate change is having little effect in such places, and thus undermining efforts to specify and deliver what assistance is needed. In this way, inequities within the global research community may compound the disadvantage of certain areas and groups.

Unevenness in research activity and investment is also an issue in better resourced areas of the world such as Australia, but at a finer grain. In such places, much research funding and thus careers and institutions, are slanted towards stated government priorities and wealthy industry

partner interests. When those priorities and interests do not include difficult issues such as decarbonising society, social justice and structural violence, not to mention highly pertinent issues such as corruption and cronyism, then the gaps and silences are especially problematic. What this demonstrates is that academia and related professions such as spatial planning are deeply implicated, not only in responding to climate change but in generating the conditions that have helped it proliferate in the first place.

Although academic research (and planning practice) can be and have been used to support regressive development of the sort that advantages some individuals, groups and generations over others, this does not negate the potential of these domains to speak out and draw attention to what is now needed. Scholar-activists and planning-activists around the world have long used their craft and opportunities to give voice to those who need to be heard and to bear witness to what needs to be acknowledged.

In the climate change era this role is especially crucial. At the same time, though, the question of what type of research and planning is being done can seem increasingly redundant. For it is clear that the ‘inconvenient truth’ of climate change has emerged hand in hand with ‘post-truth politics’ in which anyone anywhere, including those with deep vested interests, can purportedly argue for what they want to be true. Yet post-truth politics is far from the radical democratisation of knowledge that its advocates present. Instead, it is the mere dismissal of unwanted elite knowledge by an alternate economic and political elite. Wielding their wealth and hold on the media, this group peddles an anti-intellectualism that dismisses academics and experts as “as one more cog in the establishment machine that allegedly suppresses free speech and imposes political correctness”, “silencing the voices of ‘ordinary’, ‘everyday’, ‘real’ people” (Lockie, 2017) p.1. In other words, post-truth politics displaces questions about the content of knowledge with a two-dimensional identity politics that pits ‘ordinary people’ against an ‘intellectual elite’. Certain political elites then side strongly with the former and use the opportunity to prosecute and spread claims designed to protect their own privilege.

So where does that leave academics and planners who want to use their professional roles to work for climate justice? One implication is the need to re-embrace good governance, strong institutions and shared standards of knowledge, as well as devoting ongoing effort to improving and opening up such institutions and dominant knowledge traditions. As Neimark et al. (2019) write about their field of political ecology, this means facing the “internal paradox” of having to challenge “those seeking to obfuscate or deny environmental degradation and social injustice”, while “retaining political ecology’s own historical critique of the privileged role of Western science and expert knowledge in determining dominant forms of environmental governance.” (p. 613). It means facing the ironies of calling for climate justice from a position enabled by the processes that have produced climate injustice. It means recognising our privilege and using it – and related opportunities such as this Interface collection – to say what needs to be said. It means sharing our privilege by using our professional roles and institutions to work towards a true democratisation of knowledge and genuinely shared futures.

Notes on Contributor

Lauren Rickards is an Associate Professor and co-leader of the Climate Change Transformations program at the Centre for Urban Research at RMIT University. She teaches urban planning, social science and other students about climate change. Lauren is one of the Lead Authors of the Australasia chapter in the forthcoming Sixth Assessment Report on climate change impacts and

adaptation of the Intergovernmental Panel on Climate Change. Her research examines the far-reaching implications of climate change and associated climatic extremes for society, with a particular emphasis on food, agriculture and rural areas.

ORCID

Lauren Rickards  <http://orcid.org/0000-0001-6088-3448>

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Intergenerational Climate Injustice within the Urban Planning Profession

Blanche Verlie

Sydney Environment Institute, University of Sydney, Australia

Over the last five years, I have taught climate change to undergraduate students in both ‘environment’ and ‘planning’ degrees, at RMIT University in Melbourne, Australia. RMIT’s environment and planning students take a number of courses together, but they are distinct degrees. The environment students study politics, economics, environmental management and theories of social change, all with the aim of enabling them to work towards environmental justice and sustainability. The urban planning degree focuses more on the governance of the built environment, and thus, on policy and legislation.

Planning students are, as a cohort, less vocally forthcoming about their worries about climate change than the environment students. Some planning students, to be honest, are not concerned at all. Often these students’ belief that the environment is irrelevant to urban planning is made sufficiently evident so as to contribute to a dominant class “atmosphere” (Verlie, 2019) of climate apathy. It is so strong that I have often left an environment class where I was counselling students

through their grief, only to arrive at a planning class and feel forced to reiterate why climate change is a serious issue. But in 2019 we had a wonderful tutor who refused to play the game with the 'boys club up the back' of his planning class. He ran the activity where we ask students to individually draw how they feel about climate change, which I had only ever done with environment students. To my surprise, the images he brought back from class were similar to those that the environment students draw: lots of planets on fire, sad faces, pictures of destruction. One particularly creative one that has stuck with me was a crumpled A4 page with a small note explaining that "the planet is like a piece of paper: if you crush it, you can try to put it back together, but it will never be the same". Behind the dominant class atmosphere of numbness, it seems many were indeed distressed.

So why is the prevailing atmosphere in the urban planning classes clouded (but not fully determined) by indifference? What does this say about how students imagine 'urban planning' as an industry, and how particular ideologies, understandings, framings and emotions filter from the industry (professionals, stakeholders and educators) into university classrooms? And what does it say about intergenerational climate justice, when this culture prevents many planners-to-be from feeling able to publicly express and respond to their concerns about climate change?

My sense is that urban planning is still dominated by a vision of itself as dispassionate designers and managers – but not embodied citizens – of urban spaces. Spaces too easily characterised by buildings, bridges, cars, trains, and other technological and physical infrastructure built by men, designed in offices looking down upon the city, using rational, disembodied and 'objective' forms of knowledge. This is the "God's eye view" so rigorously critiqued by Haraway (1988), which is built on what Barad (2007) terms a "container" model of space, where human bodies can be "in" the world, but not "of" it. Cities are, of course, also built by infrastructures of feminised and invisibilised care labour; the silenced work of earthworms; the non-profit networks of passionate, everyday citizens who meet, laugh, tell stories and build community; the ignored legacies of millennia of Indigenous practices of caring for Country; and of course, Country itself, which continues to provide the most foundational of infrastructures necessary for life, despite our assaults on its ability to do so. Yet these intensely embodied, personal, subjective, emotional, spiritual and vulnerable elements that make cities places that are liveable and desirable, are rarely considered the primary domain of urban planning. Consequently, what it is to be and become an urban planner can easily be over-inscribed with discourses about needing to be 'professional', which is to say, calm, organised, and somehow disembodied from the world you are helping to build.

And so I believe that urban planning perpetuates intergenerational injustice within the profession by failing to enable young planners to identify as people who *simultaneously plan cities as well as inhabit them, now and in the future*. This prevents students from being able to identify, express and discuss their feelings about climate change. This in turn limits their ability to develop authentic relationships with peers, and to manage their own climate distress. Given that emotional attachments are what motivate us, by failing to cultivate an atmosphere where personal passion, desire, and pain can be explored, we are also potentially foreclosing these students' efforts to build better worlds for others.

This is exacerbated by the box-ticking that characterises the first few years of many planners' careers. For example, when on their final year work placements, many of our Planning students end up doing the administrative legwork that supports established processes and policies, which is to say, business as usual. Many of their graduate jobs will also see them schooled in how to sustain

the status-quo long before they are given the chance to challenge it, by which time they will most likely have internalised the value of the institutional barriers to climate action and be less inspired and empowered to break them down.

Yet decisions made by planners have incredibly long-lasting and wide-ranging legacies, and it is our planners-to-be who will inherit the planet's climate-wrecking cities. They will be the ones tasked with trying to retrofit massive infrastructure systems to deal with a climate that is 2–3 degrees warmer, while also trying to get those systems to be carbon neutral, or better, zero carbon, at *never before seen speed and scale*. They will also be living in that world characterised by more frequent, more extreme weather and the social and ecological devastation that accompanies that, while trying to do this work.

These are the multiple ways urban planning enacts intergenerational climate injustice on our young planners: we keep building carbon-intensive, climate-vulnerable cities³ that younger planners will have to a) live in, and b) manage, and we regulate the professional discourse in ways that potentially c) cause emotional harm to worried young planners now and d) prevent them from implementing the passionate, ambitious, innovative changes that are needed.

What could urban planning do differently? Young planners have the most vested interest in, and thus commitment to, ensuring that planning responds adequately to climate change. Beyond generally working harder (and perhaps, smarter and more strategically) to ensure planning and the industries and stakeholders it engages with all contribute to zero carbon, climate resilient futures, it might involve finding ways to give young planners more voice and more say about strategic decision making, giving them space to contribute ideas, and taking their concerns seriously. But we – including planning educators – also need to change cultures within planning, such that the emotional, psychological, spiritual and other-than-rational dimensions of human lives are deemed both relevant and useful to the profession. Working with climate-distressed people will be a key task for planners in the future, so it makes sense that our young planners should be developing the skills needed to engage with their own emotions and with the emotions of others.

Notes on Contributor

Blanche Verlie is a climate change educator and researcher. Her PhD *Affective Entanglements: Learning to Live-With Climate Change* explored her undergraduate students' emotional and embodied experiences of a semester long course on climate change. She is currently a Postdoctoral Research Fellow at the Sydney Environment Institute at the University of Sydney, where she is continuing to work at the intersections of feminism, climate justice, education, and the politics of emotions.

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The Climate Change Exchange: An Experiment in Relational Climate Justice

Karyn Bosomworth, Susie Moloney  and Bronwyn Lay

RMIT University, Melbourne, Australia

Origins of the Climate Change Exchange

Efforts to mitigate greenhouse gas emissions and mitigate, prepare for, and proactively manage the implications of climate change continue to expand across households, communities, organisations, and sub-national to international governments. Yet the urgency is growing to step up these responses at all scales and across all sectors; from making changes in our everyday lives to how we institutionalise sustainable, equitable responses.

Over the last year we have witnessed a rapid rise in the international climate emergency movement. Here in Australia, there are more than 1,200 local government and 7 national government declarations of climate emergency. Melbourne will host the first Australian National Climate Emergency Summit in early 2020 involving citizens, activist organisations and government and non-government representatives. At the same time, there is a growing cohort of academic researchers from all disciplines working across adaptation and mitigation. Up until recently, Australia has publicly invested in dedicated climate change research facilities. For example, the National Centre for Climate Change Adaptation Research (2008–2019) at Griffith University Queensland and in Victoria, the state government funded Victorian Centre for Climate Change Adaptation Research (2009–2014). The former Federal Labor government funded the Climate Commission in 2011 to provide advice to government and the public, however this was de-funded in 2013 following the election of the current conservative government. A crowdfunding campaign re-ignited the initiative, and the Climate Council now operates as an independent non-profit organisation that provides information and data, particularly around mitigation. The Bureau of Meteorology and CSIRO continue to play important roles in analysing and generating climate science and projections, and some guidance on action. Yet despite this array of world-leading data and knowledge, guidance on how to interpret and use such information to support effective responses remains limited or ‘tucked away’ in academic journal articles. While important, this is not merely a matter of access and availability, for there is more data available than ever. The issues we are observing are much more about information use and interpretation, but perhaps more importantly, about building trusted relationships between organisations and agencies to address critical questions.

As social science researchers concerned with climate justice and associated issues of governance, decision-making, and public policy, we work at the interface of research and policy practice. Our work engages with a range of practitioners within state and local government, catchment management and water authorities, community services and health organisations, and other non-government entities. In this work we have observed a growing need and appetite for informed practical guidance about how to utilise data in the design and implementation of climate change strategies, policies, and initiatives. We are also seeing a growing demand for ongoing collaborations and partnerships to enable a better way of working and learning through necessary change processes. As researchers operating within the context of an academic environment, this presents both significant opportunities to engage in applied work that can directly impact policy and

practice, and significant challenges in providing trusted yet critical advice in highly political and dynamic contexts. Such work demands less transactional and more relational approaches; strong collaborations and networks that are collectively undertaking the shared work of understanding, supporting, and responding to the social, cultural, and political transitions required for sustainable and just action on climate change.

In our state of Victoria, there is currently no central place where people working on climate change related issues across different organisations, research, and sectors can easily and inclusively meet, share research and practice knowledge, develop their capabilities, discuss contentious and challenging issues, and support one another in this shared imperative to mitigate and adapt to climate change. Yet without bringing these collective skills and knowledges together, the ability to support such progress will remain fragmented, ad-hoc, and even risks entrenching practices and policies that have led to this disastrous state of affairs. We keep hearing strong similarities in the questions and challenges from those with whom we work, regardless of their policy, service provision, or issue focus. Central to these issues is a shared concern that adaptation and mitigation should be sustainable and just. Our collaborators are clear that artefacts such as reports, papers and fact sheets are useful, but they are not enough to catalyse or guide the kind of social and cultural changes required. There is a new need for researchers to respond differently and challenge the increasing commercialisation of research, where grant application rounds, project timelines, deliverables and end-dates drive and often distort the kind of research relationships being sought. As a team of collaborative, co-productive researchers working closely and for years with many of the groups described above, the interdisciplinary interface we operate in is calling for a more interventionist and activist approach.

The nature and range of our work means that we often act as an informal connection point for practitioners and a source of guidance as to the best available research. While this work seems incidental to actual projects, it is a critical part of our work as we facilitate more and more cross-sectoral meetings, introductions, and capacity building sessions. Breaking from the traditional 'expert' advisor roles, we have become trusted relationship builders, critical friends, and colleagues to those across the research-policy space we all occupy. What has become clear is the need for a dedicated 'space' in which such work can be more open, obvious and available. This led us to establish 'The Climate Change Exchange' (The Exchange).

Underpinning The Exchange is a consensus about the need for healthy, critical relationships between practitioners and researchers that could grapple with uncertain futures together, identify research that matters to practitioners, and further good practice. For us, this is sustainable and just adaptation and mitigation in practice.

Climate Justice and the Climate Change Exchange

As we work with local and state government, natural resource and water management and the community services sectors, the work of the Exchange naturally raises issues of climate equity and justice. We know that the impacts of climate change will hit the most marginalised the heaviest and we are already seeing the complexity of adaptation as service providers and advocates try to respond. For example, the extent of the recent bushfires in South Eastern Australia directly impacted many communities and towns which stretched many aspects of society, governance, and services. They have decimated populations of many non-human species. The impacts tangibly extended to wider human populations (including the entire metropolitan area of Melbourne) via poor and hazardous air quality over days of sustained

smoke haze. This historic Australian summer has made real the argument that no-one, no species is immune to the impacts of climate change. The cascading, multiplying and ongoing impacts of the bushfires reveals the social-political construction of vulnerabilities, unsustainability, and injustices.

Our understanding of climate justice deepens as the complexities and issues arise, not only during this current bushfire event, but in working with those attempting to develop, support, or implement equitable and effective adaptation and resilience. Community service organisations and health providers, for example, have intimate connections with some of the most vulnerable people in our communities, witnessing and hearing confronting and harrowing stories of the lived experience of both extreme events such as heatwaves, fires, and floods, as well as the more subtle, but eroding implications of a changing climate, such as food and fuel costs, and housing. Other organisations and peoples, hold and understand similar intimate connections with ecosystems, plants, and animals – the foundations of human existence. Respecting such knowledge and experience demands that research, seeking to support sustainable and just futures, is grounded, applied, useful, and reciprocal. The ideas of grounded and applied research are not in themselves new, as many approaches such as co-production, grounded theory, and participatory action research have long addressed these points. The ‘gap’ that we observe is for sustained, long-term partnerships (ie over years) that can guide practitioners in using *existing* research or develop new work as new and novel challenges arise. There seems to be a ‘reciprocity gap’ in much research; research that builds capacities among practitioners and researchers and enables us all to learn how to actually ‘do’ sustainable and just adaptation and mitigation. That is our focus.

Importantly, the Climate Change Exchange is a non-profit, co-learning Hub where many of our member organisations don’t have the private capital to access consultancy services or major research. An essential part of our commitment in The Exchange is to provide support for those working with communities and the environment who are often financially constrained, have stretched human resources, and little time to think and plan beyond their immediate operations or sector concerns. Some of this work simply means making case studies and guidance materials available, alongside a couple of humans on the other side of a website who may be able to direct people to other practitioners or researchers. Our stakeholders turn to us because we are academics; because our work is peer-reviewed. Yet this long-term, relationship building work challenges the dominant form of academia that seeks data, produces outputs (papers), and then moves on to the next piece of research. Even with the current drive for ‘research impact’, research is still only considered impactful where it can be measured and quantified. Yet, we keep finding that the greatest ‘impact’ may be the free sharing of knowledge, resources, or in just being a trusted, critical friend. So, as well as challenging current notions of ‘impact’ such work also faces the challenge of finding funding that is willing and able to support it.

In a context such as settler-colonial Australia, our practice in The Exchange must also be acutely aware that all research and climate change action and practice occurs on the unceded lands of First Nations peoples. We are currently all non-Indigenous people in The Exchange, and this demands that we consider the responsibilities we have to both the Traditional Owners of the land and to Country itself – to climate justice. The most obvious of our responsibilities is to reconsider the history and legacy of systems, practices and technologies that have been central to the dispossession and marginalisation of Aboriginal and Torres Strait Islander peoples for more than two centuries (adapted from Porter 2018), and to work to not reinforce, replicate, or

mainstream them through our actions to mitigate and adapt to climate change. Knowing how to do this well and appropriately are not immediately evident, but we are open to learning and as such, have started to think and read about what decolonising adaptation and mitigation might mean in our work, thinking, and indeed, lives.

The Climate Change Exchange is new and evolving. Our way of working is being developed relationally, and by that we mean in relation to and with the needs of those practitioners with whom we work. While we draw on approaches and ideas from participatory action research, co-production, and collaboration, we must also develop a balance between being responsive and problem-focused while also allowing for time and opportunities to critically assess common assumptions and approaches that become easy but problematic 'go-to' solutions when time and resources are in limited supply. This is very challenging and demands that we are collectively open and transparent in how we work, share knowledge across projects, offer critical advice to each other, and create time to build conceptual and methodological links across our areas of work. All the time, our aim is to ensure we are true to our industry partners' needs, while foregrounding the principles of justice, recognition and equity. Beyond the need to be responsive, we are also creating spaces where critical dialogue across sectors and organisations can take place in a 'safe' environment, where people can share their frustrations, doubts and concerns and stories of success and failure. Learning from failures is often neglected in public sector work.

Climate change impacts raise a multitude of complexities for policy and decision-makers and often unexpected challenges. In the space of one summer in Australia, the world has been confronted with images of destruction from bushfires, smoke haze, dust-storms and hailstorms, where the direct and indirect impacts of climate change were experienced by so many and became so obvious. This summer alone reinforces that we cannot be driven by historic data and trends nor pre-determined outcomes. We can learn from these events, but we must accept that what we will continue to face in the future will be unprecedented. How we work together is critical and who is involved and how, requires our heightened attention. We must remain vigilant and critical in forging our collective and shared futures, and in doing so create new ways of working collaboratively. Climate change impacts and climate justice concerns are constantly shifting as we face uncertain futures. What is certain is that we live in unprecedented times. Our approach to research and practice must respond.

Notes on Contributors

Karyn Bosomworth is a Senior Research Fellow, Co-leader of the Climate Change Transformations research group at RMIT's Centre for Urban Research, and co-founder of The Climate Change Exchange. Karyn's research focuses on climate change adaptation, with an emphasis on its sustainability and justice dimensions. Before academia, Karyn spent close to 15 years working in public policy for state government and the Country Fire Authority.

Dr Susie Moloney is an Associate Professor in the Sustainability and Urban Planning program and a member of the Centre for Urban Research (CUR), RMIT University. Her research focuses on urban sustainability, planning and climate change and the implications for policy and governance particularly at the local and regional scale. She has worked for both the public and private sectors in the urban planning and sustainability policy domains. She is one of the co-founders of The Climate Change Exchange a not-for-profit organisation committed to the goals of justice, equity and ecological sustainability in working towards a climate resilient future.

Bronwyn Lay is the Coordinator of Ecological Justice for Jesuit Social Services and the Climate Change Exchange at RMIT University. With a background in criminal and family law she completed her PhD on international land governance and environmental law at the European Graduate School in 2014. She worked as a legal consultant for international NGO's and expert organisations on environmental crime, was the Director of the Caux Dialogue on Land and Security in Geneva and is published in a wide variety of forums on the subject of ecological justice.

ORCID

Susie Moloney  <http://orcid.org/0000-0002-3177-3618>

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Our Homes Can't Stand the Heat

Ben Latham

Victorian Council of Social Service, Melbourne, Australia

Climate change means that Australian summers are hotter, heatwaves are more common, and temperature records tumble across the country year after year. In fact, Australia's hottest day on record was just last year when the average temperature across the country hit a staggering 40.9°C (Doyle, 2019).

And for many Victorians, keeping their home cool and comfortable isn't as simple as blasting an air conditioner.

For instance, Mildura is a regional city in north-western Victoria and one of the hottest areas in the state, yet a majority of its public housing is not fitted with any cooling devices whatsoever (Mallee Family Care, 2019). These homes reach higher temperatures than outside during heatwaves, forcing tenants to seek respite from their hotboxes at public places like shopping centres and libraries. Residents suffer at night when these havens shut, with many roaming the streets until it is cool enough to rest and some choosing to sleep by the river or in their backyard to escape the unrelenting heat (Mallee Family Care, 2019).

Some residents resort to extra showers and soaking their sheets with cold water, only to be slugged with higher water bills. Others sit in their car with the air conditioner on, but then have to fork out more on petrol. Even the tenants who can afford a portable air conditioner cannot use it as much as they need to because of the high electricity bills that follow.

Unsurprisingly, all of this means that periods of extreme heat in places like Mildura are harming physical health, mental health, and social wellbeing. There is hospitalisation due to dehydration, heat stroke, and chronic conditions exacerbated by the heat. There are spikes in antisocial behaviour and increased alcohol consumption and drug abuse. And there are children skipping school and parents missing work because they are unable to sleep (Mallee Family Care, 2019).



But these heatwaves are not going to abate anytime soon. There were 64 days over 34°C in Mildura from November 2018 to March 2019, up from 41 days during the same period in 1998–99 (Mallee Family Care, 2019). The inadequate public housing in Mildura is already failing to protect families from the unrelenting heat, and the weather conditions are only getting worse.

Unfortunately, however, Mildura is not the only community affected by extreme heat in Victoria. Dangerous temperatures exacerbated by climate change are harming regional and urban households across the entire state.

Indeed, the Victorian Council of Social Service (VCOSS) is the peak body for community services in Victoria, and more member organisations are reporting clients facing health threats caused by heatwaves and financial stress from rising energy bills. Undoubtedly the problem is being experienced throughout Australia, as well as other countries susceptible to prolonged heatwaves.

But the untenable situation in a place like Mildura also illustrates how low-income households are vulnerable to the impacts of climate change, while their wealthier neighbours can afford to adapt. It is one example of how the crisis is punishing the 774,000 Victorians living in poverty and forcing them to shoulder an unfair share of the burden (Tanton et al., 2018).

As an advocate for people facing disadvantage, VCOSS campaigns for equitable responses to climate change and for policy initiatives that address the crisis's impact on vulnerable communities.

There are many challenges to tackling climate injustice, but here I focus on extreme heat because the planning system should play a major role in alleviating the harm extreme heat causes to people living in poverty, especially when safe and comfortable housing is a basic human right.

In particular, planning decisions can dramatically increase the energy efficiency of homes and facilitate access to renewable energy, regardless of capacity to pay. These outcomes can prevent vulnerable people suffering from thermal discomfort and ensure that their financial disadvantage is not exacerbated.

Poor energy efficiency is an acute problem for low-income households. The majority of Australian housing has a rating below 3-stars under the Nationwide House Energy Rating Scheme (NatHERS) (CoAG Energy Council, 2019). This means thermal comfort is low unless coolers and heaters are utilised, and appliances use inordinate amounts of energy to function. It creates a spiral where occupants are forced to turn on their air conditioner to avoid dangerous heat levels, only for their electricity bills to spike.

Not only can low-income Victorians ill-afford the costs of operating an air conditioner, but the sub-standard public housing across much of the State of Victoria illustrates that some vulnerable families do not even have the option. People experiencing disadvantage generally are also more likely to suffer from energy inefficient homes to begin with, because a disproportionate number live in private rental properties and rely on landlords to pay for modifications (CoAG Energy Council, 2019). Even for home-owners it can still be costly to install modifications that reduce heat gain, such as insulation, efficient appliances, and double-glazing and proper shading for windows.

The Victorian Government's Energy Savvy Upgrades program is addressing this inequality for 3,300 low-income households, providing subsidised retrofits like draught sealing and insulation, as well as upgrading appliances to more energy efficient models (DELWP, 2020).

It is a step in the right direction, but a more sustainable solution would be to establish an appropriate minimum standard. The Australian Building Code Board (ABCB) is investigating whether the mandated NatHERS (Nationwide House Energy Rating Scheme) rating for new dwellings should be raised from 6-stars to 7, (Australian Building Codes Board, 2019) and this is positive.

But we also need to improve the state of our existing building stock and legislate a thermal comfort standard for rental properties as well.

While housing plays catch-up with energy efficiency standards, integrating renewable energy into planning decisions and development projects is another way to help low-income households protect themselves from extreme heat.

Solar panels help occupants lower their electricity bills so they can utilise coolers and heaters. But despite more than one in five Australians having solar panels on their roof, the low-income households who would most benefit are the least likely to have access. The Victorian Government's solar rebate scheme provides a 50 per cent subsidy towards solar panels but neglects the multitude of energy users who are locked out from utilising this technology, such as apartment dwellers and renters whose landlords do not agree (Rutovitz et al., 2018). Low-income households overwhelmingly fall into these categories.

Energy bills are the top cost-of-living concern for Victorians, and vulnerable people are most susceptible because they spend up to five times more of their disposable income on electricity (CoAG Energy Council, 2019). It means that even turning on the kettle for a cup of tea can be a source of stress, let alone blasting an air conditioner to avoid the dangerous health effects of extreme heat (Tanton et al., 2018).

Constructing solar gardens is one possible method to increase access to solar for low-income families. These are solar panels constructed at an off-site location that customers can purchase or rent, then receive credits on their energy bill for the amount of electricity generated (Rutovitz et al., 2018). These solar gardens would be open to anyone, including apartment dwellers and renters. Low-income households are more likely to subscribe to a leasing model rather than purchasing outright, but would still save a predicted \$AUD290 annually on their electricity bills. This money can then be used to operate an air conditioner and maintain healthy thermal comfort, or to invest in upgrades like insulation and double-glazing. A government subsidy of between 2,400 USD and 4,200 USD would be required for these projects to be feasible, but this amount is similar to other initiatives in operation (Rutovitz et al., 2018).

And what about installing rooftop solar directly onto apartment buildings and public housing? Solar energy company Ovida has been granted government funding to demonstrate viability through its Community Energy Hubs Project (Ovida, 2020). These community microgrids include panels, battery storage, demand management systems, and customer support services with no upfront cost to owners or tenants. The first will be built at a 52-resident community housing building in Preston, a suburb in northern Melbourne. Customers can opt-in at a cost, but will save a greater amount through reduced electricity bills.

If this model is successful, it will provide a blueprint for future development, so that apartment tenants are not locked out of renewable energy. Requiring new residential buildings to accommodate renewable energy systems is another proposal the ABCB is considering (CoAG Energy Council, 2019).

It should be noted that all of the above proposals would result in lower carbon emissions, by reducing reliance on coolers and heaters or increasing the use of renewable energy. Household energy usage is predicted to contribute 9.2 per cent of Victoria's emissions in 2020, so it is a sector that will have to contribute to the decarbonisation of the state's economy (Independent Expert Panel on Interim Emissions Targets for Victoria 2019). Ultimately, emissions reduction is the only way to stop the planet's warming and halt the exacerbation of existing inequalities.

Planning decisions can prevent vulnerable people from being pushed further into poverty by climate change, while ensuring responses to the crisis are fair and just. Housing inequity is

a particular problem that can be addressed by improving energy efficiency of residential buildings and increasing access to solar energy.

Notes on Contributor

Ben Latham is a policy advisor at the Victorian Council of Social Service, with a focus on how climate change is impacting vulnerable people living in poverty. He is passionate about energy efficiency and renewable technology being shared with Victorians facing disadvantage, as well as ensuring a just transition for workers in the fossil fuel industry. Ben recently moved from Western Australia where he specialised in political campaigns and policy.

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Towards an Emancipatory Urban Climate Justice Through Adaptation?

Isabelle Angelovski BCNUEJ ^a and David N. Pellow^b

^aBarcelona Lab for Urban Environmental Justice and Sustainability, Barcelona, Spain; ^bGlobal Environmental Justice Project at the University of California, Santa Barbara, USA

The broader climate community recognizes that low-income, working-class, people of color, and immigrant communities face a triple form of climate injustice. They have contributed the least to climate change yet are the most exposed to climate-related hazards and effects (Leichenko & O'Brien,

2008), and have the fewest resources to adapt (Ciplet et al., 2015). In this paper, we want to put the accent on another type of urban climate injustice: the failure of current urban climate adaptation practice to (a) address persistent, structural domination, subordination, and social inequalities and to (b) construct emancipatory practices that can repair harm and trauma – and avoid new harm – for historically marginalized groups. We call here for an emancipatory urban climate justice by asking adaptation scholars and practitioners to place critical attention on these dynamics.

Justice Failures in Urban Adaptation Practice

Urban climate adaptation is often characterized by formal adaptation – or more marketable ‘resilience’ – plans and strategies that municipalities adopt to respond to climate impacts and risks (Hughes, 2015). Here, environmental planners build on vulnerability or risk assessments that take local and regional land use, development, and urbanization patterns into account to prepare guiding documents and proposed interventions on the ground. Their approach is rarely transformative, however, and tends to privilege existing engines of urban economic growth, including real estate development and new tech-, or design- industry.

Global urbanization has been historically marked by racialized and class-driven capital accumulation, which fundamentally de-values, segregates, invisibilizes, yet exploits the bodies and lives of vulnerable residents. Formal or informal redlining together with racism in the subprime lending and foreclosure crisis in the United States (on colonized Indigenous lands) or the ghettoization and territorial stigmatization of immigrants in Europe are only a few illustrations. These processes have produced inequalities in access to ecological necessities. It has also made marginalized residents more vulnerable to climate change. Yet, urban adaptation practice today does not prioritize the short and long-term needs and identities of marginalized residents. We argue this is because it is increasingly relying upon private finance or allowing private real estate or investment firms to capture land and benefits for adaptation (Teicher, 2018). As a result, those residents are faced with intersectional experiences of climate vulnerability and greater marginalization with respect to achieving wellbeing, prosperity, and security.

Most recently, a process like climate gentrification embodies how adaptation interventions can – while espousing an environmental and green ethos – further marginalize, invisibilize, and displace vulnerable residents. It is illustrated by increases in land and property prices, as residents with higher socioeconomic status move to more protected, previously undesirable neighborhoods, while pushing away lower-income and minority residents (Anguelovski et al., 2016; Keenan et al., 2018). In more extreme cases, the privileged purchase citizenship and exclusive property for a personalized climate disaster relief escape hatch in another nation. Here, new research pathways and institutional arrangements that concurrently respond to social and environmental vulnerability (Connolly, 2018) are needed to avoid climate adaptation privilege for the wealthy and white, and maladaptive outcomes for the underclass.

Advancing Emancipatory Urban Climate Justice

Our main point is therefore that researchers and practitioners must work towards emancipatory urban climate justice through adaptation. First and foremost, this means recognizing pervasive social and racial stratification – in other words, understanding how different categories of urban inequalities are produced by institutional structure, socio-spatial orderings and hierarchies, and bias and discrimination. This is of great importance because social structures already differentially

position groups in ways that privilege and protect some populations and place others at greater risk, or what Caniglia and Frank call “injustices in waiting” (Caniglia & Frank, 2016). This also means advancing emancipatory adaptation interventions that address these inequalities and move away from the hegemony of color-blind or racialized, upper class-driven, and patriarchal capitalism and neoliberalism that today characterizes urban development and adaptation practice (Hardy et al., 2017).

Second, this radical shift requires ensuring the broader capabilities of marginalized or oppressed individuals and groups so they can both adapt to climate impacts and achieve prosperity, wellbeing, and security. Here, sustained and liberating access to land and natural resources is central as is the creation of new governance structures to achieve this goal. However, much of the urban land area of major cities is controlled by investors who protect their real estate assets (against climate change and other risks) while, at the same time, seizing the land of lower-income, minority, and immigrant communities to build luxurious climate-resilient elite ghettos for the privileged (Anguelovski et al., 2019). Thus these urban lands are viewed through diametrically opposed lenses: housing for shelter and community-building versus private wealth accumulation and exclusion. Climate adaptation holds the risk of becoming a new form of settler colonial practice, as spaces previously devalued and stigmatized as too poor, too black, or too brown now become a new frontier for building residential citadels of climate protection or for constructing climate-resilient infrastructure.

Relatedly, emancipatory adaptation might require urban climate reparations for those whose land has been stripped away, exploited, and re-captured over cycles of investment, de-investment, and re-investment (including for climate-proofing). In that process, researchers and planners must make visible the testimonies that expose the racial and social formations of insecure landscapes, and uncover the historic production of precarity and trauma (Ranganathan & Bratman, 2019). They must also allow for mechanisms that will redistribute land for vulnerable residents who will be able to use it to facilitate adaptation, protection, and emancipation. Here, adaptation must redress histories and geographies of oppression, segregation, and exclusion while advancing ethics of healing and care. Those resources and frameworks would help nurture valuable relationships, networks, and attachment to place in vulnerable people’s every day lives. Elsewhere we have referred to these perspectives as an ethic of indispensability – the idea that all members of our communities are valued participants in our necessary efforts to create equitable, just, and sustainable futures (Pellow, 2017). One example of this ethic in practice is the 805 Undocufund, a community-driven disaster relief effort that provided direct financial relief to immigrant workers who lost their jobs, families who lost homes, incurred health care costs, and others affected by the wild fires in California’s Santa Barbara and Ventura counties in 2018.

Last, critical urban climate justice means preventing new harm and trauma and recognizing that risks might be differently perceived by groups based on past experiences, identities, and needs. Here, the struggle for less risk exposure and vulnerability is often a struggle for recognizing different risk claims, especially from groups who have long struggled with the social, psychological, economic and physical impacts of unsustainable and unjust development patterns. Some risks are also politically utilized to assert specific adaptation visions and projects. There is thus significant work to be done to move away from understandings of risk (and resilience) as the domain of expert voices towards the recognition and integration of citizen science and vernacular knowledge.

As a side note, one needs to recognize that different groups occupy and use spaces in ways that climate adaptation might compromise. Some might already feel over-controlled, -surveilled, and

-coerced in the urban space, and fear that climate adaptation practice will reinforce (or be used as a pretext) to create new social, spatial territorial orderings against them. African-Americans in particular face overlapping life threats, risks, and harms in the urban space, including state-sanctioned control and violence (Pellow, 2016). Thus climate adaptation must involve a transfer of control away from state and large corporate institutions to community-based organizations, as well as efforts to support and sustain the latter in areas that are typically under-resourced and overburdened.

What Would Emancipatory Greening for Adaptation Look Like?

In this part, we would like to illustrate this vision for critical urban climate justice through the analysis of an increasingly popular tool for urban climate adaptation: nature-based or nature-centered solutions and green infrastructure. Our position here is that the growing planning orthodoxy around green or nature projects for climate adaptation, illustrated by projects such as the Lafitte Greenway in New Orleans, the Boston Harbor Plan in Boston, or the Philadelphia Green City-Clean Waters plan, holds the risk of reproducing or worsening social and environmental inequality, unless it places the present and long-term needs of vulnerable residents at the center of green resilient practice.

For green adaptation interventions to achieve urban climate justice, they would, for instance, in the context of heat waves or heat islands, offer cooling spaces for lower-income, minority, children or elderly residents who do not have the ability to leave the city or to cool their homes during heatwaves due to energy poverty, but need refreshing spaces. In addition, rain gardens, bioswales, canals, or green roofs financed and built by public institutions might also enhance resilience against flooding for lower-income and minority homes whose landlords (or themselves as landlords) do not have the financial ability (or will or time) to build them and who are confronted with discriminatory lending practices, and cannot otherwise structurally secure their homes. This green infrastructure would need to be placed in areas where vulnerable residents also consider certain risks as most prevalent. Projects need also to be co-created with those residents to avoid producing new fears and threats (for instance, fear of drowning in new canals or fear of violence in so called “resilient parks”).

Proposed green adaptation projects could make use and sense of abandoned, forgotten areas, and unexpected “holes” or spots in cities for greening by and for vulnerable residents – rather than becoming spaces to be re-exploited by the creative or business class. Here, projects would first need to guarantee land control and property ownership for those who lead and coordinate them. They should also avoid promoting manicured nature and formally enclosed spaces, and rather promote the production of spaces where residents can also recognize themselves, have often built new uses and practices around them, and foster individual and local community identity and place-attachment. Those would be spaces such as so called “vacant” lots, alleys, highway underpasses, and urban-rural borders where recreation, caring activities, gardening, and a range of other vital practices can flourish.

Emancipatory greening for adaptation should also start with equity-driven urban land and housing policies such as core objective (and associated budget) rather than an afterthought or a separate priority. Such policies would not only prevent displacement, but redistribute land and provide reparations for past subordination, oppression, and exploitation. Governance mechanisms such as community land trusts (CLTs) specifically planned for climate adaptation, could help secure land for marginalized groups – financed, among others, by taxes on development projects,



especially those that will be market-priced, climate citadels for the upper class. Other financing mechanisms could come from municipal subsidies and employer contributions – both of which have played a key role in various Green New Deal plans around U.S. cities, with particular emphasis on addressing the needs of vulnerable communities hit hardest by the twin crises of climate change and market inequalities. One could also argue that central governments should set up a birth fund for minorities, immigrants, and other socially vulnerable groups that would help them secure income to be used, as adults, for individual or collective land purchase in climate-safe areas. Such a measure would also reduce the inter-racial and inter-class generational wealth gap that currently prevents so many working and moderate income residents from remaining in cities. These kinds of practices work best when supported by policy and regulatory safeguards, which are themselves more likely to emerge in contexts where there is a significant and robust presence and mobilization of civil society actors.

Put differently, green resilient infrastructure should prioritize areas of greater social and environmental vulnerability and not be premised upon private financing, while considering that new infrastructure might also trigger climate gentrification and exacerbate land accumulation for a few.

Concluding Thoughts

Overall, to think of prosperity, wellbeing, and security within an emancipatory urban climate justice framework, it is critical for scholars, policy makers, and community-based advocates to support urban climate adaptation. This means understanding that specific communities, populations, and geographies are systematically overburdened with climate disruption and other environmental injustices, historically underserved with respect to access to basic services and needs, and politically and economically marginalized. These communities are most impacted by our climate crisis and must therefore be at the center of efforts to devise and implement solutions to these challenges.

Notes on Contributors

Isabelle Anguelovski is the Director of BCNUEJ (Barcelona Lab for Urban Environmental Justice and Sustainability) and ICREA Research Professor at the Universitat Autònoma de Barcelona (UAB). Her research examines the extent to which urban plans and policy decisions to more just, resilient and sustainable cities. She examines how environmental processes can lead to new forms of locally unwanted land uses in communities of colour and lower-income neighbourhoods.

David Pellow is the Dehlsen Chair and Professor of Environmental Studies, and Director of the Global Environmental Justice Project at the University of California, Santa Barbara. His teaching and research focus on environmental and ecological justice in the U.S. and globally. His books include: *What is Critical Environmental Justice?*; *Total Liberation: The Power and Promise of Animal Rights and the Radical Earth Movement*; *Resisting Global Toxics: Transnational Movements for Environmental Justice*; and *Garbage Wars: The Struggle for Environmental Justice in Chicago*. He works with numerous organizations focused on improving the living and working environments for people of color and other marginalized communities.

ORCID

Isabelle Anguelovski  <http://orcid.org/0000-0002-6409-5155>

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Decolonising Climate Change Adaptation

Naarm/Birrarung-ga, Libby Porter, Karyn Bosomworth, Susie Moloney, Blanche Verlie and Bronwyn Lay

Naarm/Birrarung-ga/Melbourne

As we write this piece, the Country⁴ to the north, south, east and west of us is burning. While here in Naarm/Birrarung-ga/Melbourne (and for Blanche in Sydney on Gadigal Country) we are at some distance from the worst of the flame, heat, smoke, ash and destruction, the effects are nonetheless present and real. We began writing this piece just as the summer fire season in Australia was getting started. Back then, we hadn't yet seen how loudly Country would shout, and couldn't yet conceive (we still can't really) of that much burnt forest – much of it never burnt before because it shouldn't burn. We still can't conceive of that many incinerated creatures. Of a mountain of ash silting up rivers and coastlines. Of the birds falling out of the sky, dead, to wash up on coastlines. Not to mention the human toll – the homes and livelihoods destroyed, rural economies stunted,

animals starving. The bleakness of a climate changed world has been thrown into sharp relief for us here in south-eastern Australia in the summer of 2019–20.

No better time, then, than to think carefully and critically about the influential discipline of adaptation – a word that just now, at least in our part of the world, seems to be on the newspaper front page every day. Everyone is suddenly interested in adaptation. In this piece, we want to bring a critical decolonial lens to the question of adaptation, for it is clear that adaptation heralds some significant problems when understood as part of a wider settler-colonial structure of power, a structure that has of course produced the very conditions to which we now must adapt. As Gamilaroi writer Luke Pearson observed of the national conversation in the aftermath of the fires: “this is not a different conversation than the one that Indigenous people have been having in various forms since the earliest days of invasion and colonisation” (Pearson, 2020).

What Do We Mean by Planning for Adaptation?

Climate change, as with other environmental issues, is a social problem resulting from the dynamic and intersecting relationship between the climate system and policy systems (Keskitalo & Preston, 2019). Even if the goals of climate change mitigation – to reduce greenhouse gas emissions or remove them from the atmosphere – are realised, the lags in the global climate system mean that we are already ‘locked in’ to unavoidable climate changes over the next decades into centuries. For this reason, climate change adaptation, or a process of adjusting to the changes, is now unavoidable.

The theory and practice of climate change adaptation and adaptation planning has evolved rapidly, particularly since the Fourth (2009) and Fifth (2014) IPCC Assessment Reports. Adaptation is broadly understood as a process to limit and manage the impacts of climate change which includes assessing risks, reducing vulnerabilities and preparing for and responding to extreme weather events. In adaptation planning, the focus is on all of the systems that are going to be impacted by climate change, and how the risks can be mitigated. As the recent fires here in south-east Australia demonstrate, that means all systems. We have seen impacts on everything from communications and power infrastructure, to fuel availability, transport, food systems, local economies, global trade, air and water quality, housing and tourism. There are implications across urban planning systems and processes, because decisions about where to build houses, where and how to grow what we eat, what kinds of transport investment decisions to make and infrastructure provision, are central.

Adaptation planning and response is largely a place-based endeavour, constituting a social response to locally experienced climatic impacts. Adaptation planning must therefore be locally responsive, contextualised and necessarily involve the entanglements of socio-cultural practices and institutions. In terms of urban planning, Steele and Gleeson (2010) distinguish between a framing of planning ‘for’ climate change and planning ‘in’ climate change. The latter, they argue, is more likely to strengthen the force for institutional change necessary to adequately respond. In practical terms planning tools can be employed to address adaptation challenges through the use of regulations, zones, overlays as well as design standards and delivery of services and utilities. However, institutional change is likely to be resisted if climate change is not considered an urgent or immediate threat (Matthews, 2013). In understanding adaptation as a social and institutional challenge, Keskitalo and Preston (2019, p. 8) argue the need to “look

beyond what seems only observable, to understand on a more fundamental and theoretical level how the structure and function of society drives adaptation processes”.

Like other incrementalist approaches to change and risk, adaptation is susceptible to the same kinds of problems arising from the dominance of technoscientific knowledge and problem framing. This brings us to the question about the relationship between such approaches to climate change adaptation and colonialism. This is rarely if ever discussed in either the literature or policy debates, for example, a recent important collection on climate adaptation policy (Keskitalo & Preston, 2019) is largely silent on colonisation as an underpinning dynamic of both climate change and adaptation policy approaches, although it is welcome to see some mention of Indigenous knowledge systems. Our purpose here is to bring a critical inquiry to understanding how adaptation is rooted in colonialist tendencies.

The Relationship between Climate Change Adaptation Planning and Colonialism

As noted above, climate change adaptation has three strong conceptual inheritances: disaster risk reduction (DRR), conservation and community development. While each is a distinct mode of thinking and practice, each is variously underpinned by developmentalist logics, a particularly strong faith in techno-scientific fixes and a presumption that modernity drives positive change endlessly forward. Thus, how they inform adaptation is similarly steeped in these presumptions. The long techno-scientific emphasis in mitigation – e.g. through climate modelling and engineering foci on shifts to renewables – influences how adaptation is so often portrayed as a techno-scientific issue. Even as the adaptation field is developing, it still draws heavily on concepts and approaches from DRR, development, and conservation, such as notions of vulnerability and resilience, often ignoring the social critiques that have been advanced. It is only recently that adaptation has been emphasised as a socio-political issue, bringing to the fore urgent questions such as what (who?) should be adapted, and who gets to say. But even among these debates, rarely are questions of the relationship between adaptation philosophies and colonialism discussed.

In the settler-colony of Australia, these issues are in fact vital and urgent because what constitutes efforts in adaptation usually ignores the fact that adaptation interventions take place on lands and waters that remain the unceded sovereign domains of diverse First Nations peoples. Rarely, if ever, do questions arise about the socio-ecological relationships that are being reinforced within the adaptation processes that impact upon First Nations in remarkably different ways. For Australian First Nations it is commonly understood that ‘land is law and law is land.’ If adaptation embeds the colonial governance presumption that land, eco-systems and humans can be existentially separated, this can reinforce colonial structures and flows of power. The decolonisation process means grappling with what it means for land practices to be law, and what it means to then live lawfully with Country, which has consequences for when, how, to what and with whom we adapt.

The specificity of the Australian context and history is also reinforced and corralled by an international affirmation of colonialism. Global forms of knowledge codification and proprietary investment – forms of dispossession, work their way through international capital and the normative structures of international development. Colonialism morphs as it marches through time, institutions and lands: altering the modes of dispossession to contemporary conditions. Colonisation is extremely good at adapting. Added to this is the use of adaptation by international organisations to further dispossess, by funding adaptation approaches and methodologies in developing contexts that work against the self determination of the local communities. An

extreme adaptation example, although not unimaginable, is the removal of communities from land considered uninhabitable due to climate change impacts, such as extreme heat, bushfire risk or coastal erosion. This land can then be rezoned and used for other purposes, perhaps more profitable for a transnational corporation. Who makes these decisions about adaptation needs, movements and consequences? What is the adaptation process employed here? There are clear justice questions that need to be embedded within adaptation that speak to possibilities of decolonising both the discourse and practice of adaptation.

It is helpful to briefly examine the history of adaptation planning lineages here in Australia. DRR has always been framed as a techno-scientific problem since its emergence in the late 1930s through the Air Raid Precautions (ARP) Organisation, which later became the Civil Defence Organisation. Such organisations privilege a masculine/heroic role of 'protecting' lands that have been claimed and occupied by settlers, with no reference at all to the systems of protection and management that have always shaped those lands, nor to the rights of the First peoples who have been displaced by settler institutions such as these. Mainstream conservation also privileges western scientific knowledge over other ways of knowing (and being in) the world. For example, models of protected areas in which people are separated from their ecologies, and nature is conceived as 'wilderness', allow the representation of local and Indigenous lifestyles as harmful to nature conservation (Martin et al., 2016; Howitt), and perpetuate "the tyranny of the coloniality of nature" (Francis, 2020). Emphasis on scientific, economic, and political criteria in management decisions often see culture, context, and rights dimensions of natural resource management marginalized (at best), dismissed, or sometimes outright opposed (Howitt et al, 2013).

The technoscientific framing of these fields arguably stem from an ongoing influence of the so-called Enlightenment and what Cochrane (2014) calls its 'disenchantment of nature'. As Burton describes, writers from the majority world have long argued that the underside of the European enlightenment project "was the colonisation of the Americas (and later of other regions), which in turn provided the wealth on which European capitalism was built and which created a new way of looking at the 'Other', as inferior, subhuman, and hence racism". Similarly, Figueroa-Helland and Lindgren (2016, p. 432) write that coloniality is "the underside of modernity: the historical and structural foundation that has enabled – e.g. through conquest, imperialism, slavery, resource extraction and Western dominance – the rise, hegemony, and globalization of a world-system dominated by modern civilization".

DRR and development also often employs colonial constructs through defining groups of people as inherently vulnerable; despite ongoing critiques (Handmer, 2003). This assumption implies a helplessness that warrants external intervention whereby development, DRR, (and now adaptation), can be framed as something to be done to these 'vulnerable groups' rather than with them. For example, most adaptation discourse portrays Aboriginal and Torres Strait Islander peoples as intrinsically vulnerable. While it is true that climate change is having disproportionate impacts on Aboriginal and Torres Strait Islander peoples in Australia as a direct result of existing structural violence, it is vital to also see those communities as active, knowledgeable and sovereign peoples who have long adapted to significant social and environmental change.

Many Indigenous scholars point out that much of the research framing populations (such as 'women' and 'Indigenous peoples') vulnerable to natural hazards or climate change has failed to address gendered power and the patriarchal discourse of humans in a relationship of dominance with a singular nature that is viewed as resources or 'capital' (Pearse, 2016; Betasamosake Simpson, 2017). For Indigenous peoples this is part of the intensified *déjà vu* experience of climate change (Whyte, 2017; Betasamosake Simpson, 2017).

Where adaptation work does engage with questions of colonisation, colonisation is often framed as a historical rather than an ongoing contributor to current vulnerabilities (as discussed by Arvin et al., 2013; Davis & Todd, 2015). It generally ignores Indigenous voices, including those who highlight climate change vulnerability as an intensification of colonialism (Arvin, 2013; Davis & Todd, 2015; Whyte, 2017). Yet, as Mitchell (2015) emphasises, the Anthropocene isn't produced by humanity generally, but rather by particular segments of humanity, and that colonization is a driving, perhaps even defining, element of the production of the conditions we now recognise as the Anthropocene.

We accept the eco-feminist premise that environmental crises are a product of the institutions of capitalism, colonialism, and patriarchy. Indigenous voices keep reminding us that these structures and the institutions they engender are so deeply ingrained in our Western-European societies that what comes to be accepted as approaches to addressing those issues, including adaptation, occur through the same institutionalised frames (Todd, 2015). Yet adaptation research and much practice (at least in our working contexts) engages in little critical reflection on these settler-colonial foundations of the inheritances and contemporary approaches of adaptation planning. Without active, conscious work to unpack and address these foundations, adaptation planning risks reinforcing all the politics of risk, of racism, of development and land dispossession that we know are foundational to socio-political dynamics across many parts of the world. It will not be transformative, sustainable, or just.

Therefore, inspired by Arvin et al.'s (2013) similar critique of feminism, centering settler colonialism within adaptation studies and practice could "expose the still-existing structure of settler colonialism and its powerful effects on Indigenous peoples and settlers". What Metis scholar Zoe Todd (2015) asks us to develop is an "ethic of historical consciousness that the past occurs simultaneously in the present and influences how we conceptualize the future". This lays profound challenges to the inheritances of adaptation and to non-Indigenous scholars, such as ourselves, examining what this means for our own thinking and practice.

Understanding Adaptation Through Loss

Climate change is a driver of loss, and climate change adaptation's primary purpose is to prevent, reduce, or manage such losses. Loss "arises when people are dispossessed of things that they value, and for which there are no commensurable substitutes" (Barnett et al., 2016, p. 977). As Tschakert et al. (2019) demonstrate, climate change generates "one thousand ways to experience loss": empirical research finds that climate change has threatened multiple forms of intangible values, such as identities, sense of place, culture, community, and knowledge. Yet adaptation largely seeks to prevent damage to physical infrastructures such as housing, transport networks or energy systems. While we critique business-as-usual approaches to climate change mitigation, most adaptation is largely focused on maintaining the colonial-capitalist status quo. For example, when human settlements are largely destroyed by climate induced disasters, this could generate an opportunity to return the land to traditional owners – with support for regeneration and rehabilitation of people and place, yet this is rarely, if ever, raised. Rather, we re-build, re-zone, re-locate or perhaps re-insure, but either way, colonial control over the land is maintained.

Adaptation can therefore be seen as a practice of asserting colonial forms of sovereignty. That is, while adaptation by necessity involves change, those changes are enacted so as to retain some kind of essence or integrity of the pre-existing system. If that system is colonialism, then adaptation is likely

seeking to perpetuate colonialism. That is, for the settler state, the loss that climate change poses is, at the root of it all, about losing control of land and the society that lives on it. Decolonising adaptation then, is an approach to both understand how climate change is a potential driver of re-colonisation at the same time as opening possibilities for decolonising practices and philosophies. Giving Indigenous people authoritative power to determine what is valuable, what is threatened, which losses matter, and what should be done about this, is central to a decolonising adaptation. Such a process must also contribute directly to the maintenance and practice of Indigenous sovereignty.

Ultimately, adaptation involves decisions about which lives and 'lifeworlds' are valuable, and which are not. This is not to say that the decision to value something means we can preserve it. Adaptation is more of a process than an endpoint, as climate change will continue, worsening, constantly disrupting our lives. Understanding adaptation as a constant political process of negotiating loss can enable us to better identify the hierarchies at play in adaptation planning.

Towards an Agenda of Responsibility for Adaptation Planning

We have raised serious and difficult questions here that we ourselves cannot (yet) answer. Clearly adaptation to climate change is a clear and necessary ecological, political and social reality. But neither can we allow the desires and logics of settler colonialism to provide the only or predominant criteria for 'success' and the marginalisation of questions of Indigenous sovereignty and the colonial relationship to be obscured, once again, from view. At the same time we acknowledge that 'complete system transformation' (while in principle, something we all support) is not on the political horizon anytime soon and so the realpolitik of having to work inside a system and set of structures retains its urgency. For now, we want to suggest some broad dimensions of an 'agenda of responsibility' for the field of planning for climate justice adaptation.

A first dimension emerges from where this short paper began – that given the dominant language and technoscientific framings, and especially the recent shift into 'emergency' overdrive, a key first step is to consider more effectively the reality of the colonial encounter. In terms of adaptation planning, this means to consider the ways in which adaptation planning is implicated in the colonial condition and how then what might be the lines of our responsibility and accountability. There are always alternative ways of knowing, being and doing in relation to apprehending climate change and the new realities it demands. Coming into a heightened understanding of the ways by which claims to knowledge and expertise often operate in the service of colonial systems of domination is one first step toward understanding this responsibility.

Then there is the work we need to do within planning, and especially climate adaptation planning, to build our capacity and knowledge. For we are hardly even in our infancy in acknowledging, much less grasping, the dimensions of knowledge, philosophy and land governance that Indigenous people have been speaking about for generation on generation. Whether we are scholars, practitioners or students, our task is to carefully source and learn with Indigenous perspectives and then support the respectful and appropriate translation of these to gain wider purchase in planning systems. This is not a call for appropriation of Indigenous knowledge systems – an approach and practice we reject, and that is entirely contrary to a decolonising ethic we are interested in advancing here. Instead, we are asking the profession and its cognate disciplines to make space (give something up) for Indigenous-led knowledge systems.

A third key dimension is that adaptation planning needs also to address tangible and material dimensions of the colonial relation. It really does mean fully considering how adaptation planning

needs to address Indigenous land rights and access, and shift practice to ensure genuine Indigenous political authority can be advanced.

As Leanne Betasamosake Simpson states: “we need to join together in a rebellion of love, persistence, commitment, and profound caring and create constellations of coresistance, working together toward a radical alternative present based on deep reciprocity and the gorgeous generative refusal of colonial recognition” (Simpson, 2017, p. 9).

Our role as non-Indigenous people is to fulfil our responsibility to that work; of relationship, reciprocity, care and critique.

Notes on Contributors

Karyn Bosomworth is a Senior Research Fellow, Co-leader of the Climate Change Transformations research group at RMIT’s Centre for Urban Research, and co-founder of The Climate Change Exchange. Karyn’s research focuses on climate change adaptation, with an emphasis on its sustainability and justice dimensions. Before academia, Karyn spent close to 15 years working in public policy for state government and the Country Fire Authority.

Bronwyn Lay is the Coordinator of Ecological Justice for Jesuit Social Services and the Climate Change Exchange at RMIT University. With a background in criminal and family law she completed her PhD on international land governance and environmental law at the European Graduate School in 2014. She worked as a legal consultant for international NGO’s and expert organisations on environmental crime, was the Director of the Caux Dialogue on Land and Security in Geneva and is published in a wide variety of forums on the subject of ecological justice.

Dr Susie Moloney is an Associate Professor in the Sustainability and Urban Planning program and a member of the Centre for Urban Research (CUR), RMIT University. Her research focuses on urban sustainability, planning and climate change and the implications for policy and governance particularly at the local and regional scale. She has worked for both the public and private sectors in the urban planning and sustainability policy domains. She is one of the co-founders of The Climate Change Exchange a not-for-profit organisation committed to the goals of justice, equity and ecological sustainability in working towards a climate resilient future.

Libby Porter is a Professor at the Centre for Urban Research, RMIT University. Her work has contributed to critical understandings of land and property, the relationship between Indigenous rights in planning and urban development, as well as the displacement effects of urban regeneration, urban governance, and the politics of urban informality.

Blanche Verlie is a climate change educator and researcher. Her PhD *Affective Entanglements: Learning to Live-With Climate Change* explored her undergraduate students’ emotional and embodied experiences of a semester long course on climate change. She is currently a Postdoctoral Research Fellow at the Sydney Environment Institute at the University of Sydney, where she is continuing to work at the intersections of feminism, climate justice, education, and the politics of emotions.

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Notes

1. Country is the concept and term used by Aboriginal people in Australia to translate complex philosophies of place (encompassing land, waters, sky, all beings, matter, spirit, ecologies, energy) in English. It is capitalised as a proper noun because Country is alive and sentient.

2. See for example, <https://www.iied.org/climate-justice-ipcc-special-report-land>.
3. Or at least, allowing them to be built, or failing to prevent them from being built.
4. Country is the concept and term used by Aboriginal people in Australia to translate complex philosophies of place (encompassing land, waters, sky, all beings, matter, spirit, ecologies, energy) in English. It is capitalised as a proper noun because Country is alive and sentient.