Climate, Culture and Music: Coping in the Anthropocene

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I INTRODUCTION

I wrote my first climate change song, 'Final Warning', in early 2004. It was the only climate change song that I knew of at the time and was prompted by growing concern about the breakup of the Antarctic ice shelves and the implications of this breakup for sea level rise. The opening lines reflect the sound of shattering ice: '[a] crack fills the earth like a single rifle shot / But no one's there to hear the beginning of the end of the world'.

That was fourteen years ago and while a little melodramatic, global emissions have continued to rise,[1] so my song clearly had no obvious impact. I did enter it into a song writing competition at the time. It did not win, but one judge helpfully commented that I ought not write so directly on such themes. It was not clear to me that he had even heard of climate change![2]

In 2016, my colleagues and I launched a new climate change project called 'Music for a Warming World' (MWW).[3] This was a much more substantial attempt to explore the use of music to address the climate challenge. MWW is a multimedia concert that uses large scale immersive visuals, live music (broadly drawing on folk, reggae and world-music), and a narrative arc that takes audiences on a guided journey through the climate challenge. To date the show has been performed 55 times from Tasmania to Queensland in a diverse range of venues and institutions: universities, conferences, music festivals, house concerts, community halls, faith communities, schools and art galleries.

This brief background provides the context for why I accepted an invitation to write this article. Performing MWW to such a wide audience has prompted careful reflection on the relationship between music and climate change. What can music offer the vexing and urgent issue of climate change? Can a song, an opera, an electronic soundscape or a symphony make any material difference to our capacity to live in light of

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[1] Zeke Hausfather, *Analysis: Global CO_2 Emissions Set To Rise 2% in 2017 After Three-Year 'Plateau'* (13 November 2017) Carbon Brief <https://www.carbonbrief.org/analysis-global-co2-emissions-set-to-rise-2-percent-in-2017-following-three-year-plateau>.

[2] This is only speculation on my part.

[3] Simon Kerr, *Music for a Warming World* <https://www.musicforawarmingworld.org>.

the Anthropocene? These are not straightforward questions, even if the instinct of most people is to answer in the affirmative. After all, despite an absence of sufficient funding for artistic endeavours, the arts in general have very large support in Australian society, or at least feature in the lives of most Australians. Museums and art galleries are found in even the smallest regional centres and musical performances are alive and well. For many people, music provides a soundtrack to their lives.[4] Music provides entertainment, it can move our emotions, and, in a communal setting, it can create solidarity. It can also be used to communicate ideas, whether the political ideals of folk singers in the 1960s, rap-music of the 1980s or the nationalism of the Nazi party in the 1930s.

But what can it do with climate change? In 2005 environmental writer and activist Bill McKibben called for a huge outpouring of 'art, sweet art' in response to climate change.[5] He urged artists to take up the climate story and create new visions of our future. In his 2010 book, *Eaarth: Making Life on a Tough New Planet*, McKibben claimed human activity is making a new, tougher world, where the timeline and outcome are uncertain, and the world we are creating is novel and unpredictable. We may not be able to *solve* climate change so will have to figure out how to live on a very different planet. This requires creative resources, something that artists specialise in. Artists, including musicians, accordingly have a role to play in our response to life on 'eaarth' (in the Anthropocene). The question I explore here is the nature of that role.

What is the relationship between music and this phenomenon of climate change? My purpose is not to outline a musical theory and its relationship to science, to explore the anthropology or politics of music or to document current trends in musical responses to climate. Rather, I posit three 'stories' or 'reflections' that shape my thinking about the intersection of music/art and climate. I use the term stories to refer to the fundamental need of our species to explain the world and create a collective or shared understanding of human experience. This ability to simplify the world around us through stories is an inescapable part of being human. These stories can be big, as in the reframing of the creation story through the Big History project of David Christian[6] or the story of our species by Yuval Noah Harari,[7] or they can be local and deeply personal.[8] Stories may be framed in different ways; in scientific language,

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[4] Jane Davidson and Sandra Garrido, *Music is the Soundtrack to Your Life – What's on Your Playlist?* (19 May 2014) Conversation <https://theconversation.com/music-is-the-soundtrack-to-your-life-whats-on-your-playlist-26893>.

[5] Bill McKibben, *What the Warming World Needs Now is Art, Sweet Art* (22 April 2005) Grist <https://grist.org/article/mckibben-imagine/>.

[6] David Christian, *Origin Story: A Big History of Everything* (Penguin, 2018).

[7] Yuval Noah Harari, *Sapiens: A Brief History of Our Species* (Random House, 2014).

[8] See eg K Holmes, ''It's the Devil You Know': Environmental Stories from the Victorian Mallee' in K Holmes and H Goodall (eds), *Telling Environmental Histories: Intersections of Memory, Narrative and Environment* (Palgrave Macmillan, 2017) 295.

legal theory, shared history or religious or secular values. But we all tell stories.

I start with the story of climate change itself, reflecting on the powerful idea of climate as an object of science. Treating the climate system as a scientific story leads to important reflections on the limits of this narrative. This leads to the second story: climate as culture; the idea of climate as a human creation, mediated through our experiences, histories and culture. On this view, we gain a rather expanded vision of how climate change interacts with human societies and particularly in our expectations and views of the future. The need to deal with our future, then, becomes a third story in this reflection. It is here I turn to a role for music, and explore some important contributions that music can, and indeed does, make to our life in the Anthropocene.

II THE FIRST STORY: CLIMATE AS AN OBJECT OF SCIENCE

The human community faces a climate crisis. This is the clear signal coming from many of the world's leading climate scientists and reflected in activist narratives.[9] The 2015 Paris Climate Agreement committed the world's nations to limiting global warming to 'well under 2°C', with the aspirational target of 1.5°C. The Agreement called for an urgent investigation by the Intergovernmental Panel on Climate Change (IPCC) on how to stay under the 1.5°C aim. This report, released on 8 October 2018, puts it starkly. To limit global average warming to 1.5°C requires the world's economies to reach net zero emissions by 2050.[10] On the current projections, based on the Nationally Determined Contributions, the planet will warm by 3.1 to 3.7°C (with the uncertainty range between 2.4 and 4.7°C).[11] Some commentators argue that the world's carbon emissions must begin to fall by 2020 or **'**the temperature goals set in Paris become almost unattainable'.[12] Princeton University climate scientist Michael Oppenheimer argues that even a warming of 2°C would produce a 'totally different world … It would be indescribable, it would turn the world upside down in terms of its climate. There would be nothing like it in the history of civilisation.'[13]

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[9] See eg *Call to Declare a Climate Emergency,* Climate Emergency Declaration <https://climateemergencydeclaration.org/>.

[10] V Masson-Delmotte et al, 'Global Warming of 1.5°C' (Special Report, Intergovernmental Panel on Climate Change, 2018) <https://www.ipcc.ch/sr15/>.

[11] See eg *2100 Warming Projections: Emissions and Expected Warming Based on Pledges and Current Policies* (11 December 2018) Climate Action Tracker <*https*://climateactiontracker.org/global/temperatures/>.

[12] Christiana Figueres et al, 'Three Years to Safeguard our Climate' (2017) 546 *Nature* 593.

[13] Oliver Milman, 'Climate Change 'Will Inflict Substantial Damage on US Lives'', *Guardian*, (online) 24 November 2018,

The scale of this challenge has sparked the call for a climate emergency mobilisation, taking inspiration from similar mass mobilisation during the Second World War. It has already had some success. The Victorian City of Darebin has committed to a climate emergency plan[14] and active campaigns are underway in other Australian cities. A number of American cities have also taken a Climate Emergency Declaration,[15] with the city of Oakland, for example, '… [R]equesting Regional Collaboration on an Immediate Just Transition and Emergency Mobilisation Effort to Restore a Safe Climate'.[16]

In late November 2018 the United State Government released its Fourth National Climate Assessment.[17] As with the examples above, it lays out the significant risks and costs to the US economy and its people from unmitigated emissions. It is clear that:

> The impacts of climate change are already being felt in communities across the country. More frequent and intense extreme weather and climate-related events, as well as changes in average climate conditions, are expected to continue to damage infrastructure, ecosystems, and social systems … Future climate change is expected to further disrupt many areas of life, exacerbating existing challenges to prosperity posed by aging and deteriorating infrastructure, stressed ecosystems, and economic inequality.[18]

This brief depiction of some of the key narratives around the climate challenge suggests we do not have the luxury of time in our collective response. Drawing down carbon from the atmosphere is one of the most urgent tasks we face.[19] This suggests that attention to ways and means to achieve this aim is paramount. These responses can take a variety of forms, including the rapid development of clean energy and other smart technologies. Creating an enabling policy environment is also critical to providing clear signals to the market, and the development of new

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<https://www.theguardian.com/environment/2018/nov/23/climate-change-america-us-government-report>.

[14] City of Darebin, *Energy and Climate* <http://www.darebin.vic.gov.au/Darebin-Living/Caring-for-the-environment/EnergyClimate>.

[15] See eg Paul Gilding, 'It's Not Too Late to Act on Climate Change', *Age* (online), 11 September 2018, <https://www.theage.com.au/national/victoria/it-s-not-too-late-to-act-on-climate-change-20180911-p50318.html>.

[16] *USA: City of Oakland Declares a Climate Emergency* 2 November 2018, Climate Emergency Declaration <https://climateemergencydeclaration.org/usa-city-of-oakland-declares-a-climate-emergency/>. The climate emergency strategy is not without its critics. See for example Cambridge geographer Mike Hulme's comments at *Against Climate Emergency*, 17 November 2018, Professor Mike Hulme's Site <https://mikehulme.org/against-climate-emergency>.

[17] David Reidmiller et al, 'Fourth National Climate Assessment' (Report, US Global Change Research Program, 2018) <https://nca2018.globalchange.gov/>.

[18] Ibid 25.

[19] See Paul Hawken (ed), *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming* (Penguin, 2017).

regulatory tools will be essential to help guide and drive change, as will appropriate legal reform.

The science story is powerful and compelling. But as a way of understanding human experience it is a very recent innovation, emerging in current form largely from the European enlightenment. One outcome of this is the idea of nature to be conquered.[20] Nature was always a threat to human wellbeing because it was largely uncontrollable, subject to the vicissitudes of the gods. With the rise of the scientific method and new technology, mastery over nature was placed within human reach. This narrative was not uncontested, but for the most part, the rise of science greatly increased societies' food production, health, economic development and exploitation of natural resources. And, in more recent decades, the climate has become a major object of scientific interest.

The scientific evidence is compelling that humans are impacting our environment in unprecedented and dangerous ways. While the environmental impact of humans is not unique to the last 200 years, the planetary scale of it certainly is.[21] But I wish to argue there is another compelling and, I think, equally interesting but underrated story taking place in parallel to this scientific, techno-regulatory narrative.

III THE SECOND STORY: CLIMATE AS CULTURE

It is useful to reflect on why the overwhelming body of evidence generated by science has not yet triggered a major cultural shift away from a fossil-fuel intensive consumption culture. The reality and seriousness of global warming has been on the international political agenda since at least the establishment of the IPCC in 1988, and there has been widespread public interest for many years. Even with the rise of scepticism over global warming, largely attributed to the 'merchants of doubt' in the early twenty first century,[22] there was nevertheless significant public concern about the impacts of fossil fuel emissions and rising temperatures. There was no shortage of reputable scientific reports and analysis. Yet this immense body of scientific output did not translate into widespread action. The idea that 'facts' would lead to change began to be questioned. Human responses to climate change have proven much

[20] See A Elliott and J Cullis, 'The Importance of the Humanities to the Climate Change Debate' in A Elliott**,** J Cullis and V Damodaran (eds), *Climate Change and the Humanities: Historical, Philosophical and Interdisciplinary Approaches to the Contemporary Environmental Crisis* (Palgrave Macmillan, 2017) 15.

[21] See eg Stockholm Resilience Centre, *The Nine Planetary Boundaries* <https://www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html>.

[22] Naomi Oreskes and Eric Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (Bloomsbury, 2012).

more complex than a linear rational model would suggest.[23] Facts are important but they are not the only thing that shapes human beliefs. Even though the great majority of Australians believe the scientific reality of climate change,[24] this belief has not led, in any significant way, to a change of lifestyle. Messages of fear also do not work and may even drive people into avoidance lifestyles through greater consumption.[25] This story of 'rational change' is clearly inadequate.

In recent years, the environmental humanities have taken up the challenge, arguing that climate challenge can no longer be viewed as just a scientific issue.[26] It is a deeply neglected cultural challenge. Climate disruption arises, ultimately, from human behaviour. To limit dangerous or problematic disruption requires behaviour change. But, as Amel and colleagues point out,[27] individual change is not enough. Individuals face all sorts of structural, institutional and cultural barriers in seeking to respond to climate change. Transforming institutions requires collective action:

> Psychological research suggests that humans can move toward a sustainable society by creating conditions that motivate environmentally responsible collective action – conditions that help people surmount cognitive limits, create new situational drivers, foster need fulfillment, and support communities of social change.[28]

This discussion is particularly useful because the authors offer a nuanced and multi-layered approach to increasing climate and environmental engagement and action. They present a model that focuses on the 'spheres of influence' that individuals have available, beginning with personal responses (such as donating money and walking more), through social networks, organisational influence, the public sphere (run for public office, create laws, organise) and finally the cultural sphere (change norms, stories and symbols). Climate change therefore can no longer be treated as just a science issue or an individual responsibility. Individual *and* collective behaviour is grounded in culture. As previously discussed, central to the notion of culture are those shared stories (or narratives) that give shape to individual and collective behaviour. To adequately respond to the climate challenge we require new stories, and new stories mean cultural change. If we take culture seriously, then, as I hope to show, new possibilities for our future beyond the scientific narratives open up.

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[23] See George Marshall, *Don't Even Think About It: Why our Brains are Wired to Ignore Climate Change* (Bloomsbury, 2014).

[24] Lowy Institute, *2018 Lowy Institute Poll*, (20 June 2018) <https://www.lowyinstitute.org/publications/2018-lowy-institute-poll>.

[25] Elise Amel et al, 'Beyond the Roots of Human Inaction: Fostering Collective Effort Toward Ecosystem Conservation' (2017) 356 *Science* 275.

[26] Elliott and Cullis, above n 20.

[27] Amel, above n 25.

[28] Ibid 279.

Instead of framing climate only by its biophysical characteristics, there is a much more interesting and powerful story to be told by understanding the cultural origins of climate and the way that these diverse cultural frames shape the climate story.[29]

Cambridge Geographer Mike Hulme has argued that the idea of climate needs to be understood as a cultural phenomenon rather than limiting it to the science story. Hulme researches and writes broadly in the environmental humanities. However, he began his career in the environmental sciences, publishing widely as a climate scientist. He worked for many years on constructing climate scenarios, the 'compilation and analysis of large-scale observational climate datasets … and … the evaluation and manipulation of climate model simulations'.[30] In 2000, he became the founding director of the Tyndall Centre for Climate Change Research, at the University of East Anglia. Much of his thinking involved how to deal with uncertainties in data and models, and how we can and should understand climate change. Hulme, however, was on a journey of understanding, and, as he acknowledges, 'it would take [him] several more years to be able to adopt a more reflexive stance to [his] own work'.[31] In the mid-2000s he undertook a course in memoir writing and a post-graduate diploma in history. As he puts it, they had '… a significant influence … on [his] subsequent thinking and writing about climate change'.[32]

This background is important because Hulme's more recent work is increasingly critical of the way climate science and climate change has been framed. Hulme argues that the idea of climate is a cultural relationship between humans and our weather. Climate may be the averaging of the weather over time, but climate also exists as a cultural story. We cannot experience the *climate* directly through our senses but only through a culturally framed narrative. These narratives are varied over time because they embody cultural elements specific to that context. For instance, the early Greeks believed that climate reflected moral virtue. The hospitable climate of the Mediterranean allowed for superior cultural development than the hotter regions to the south or the colder regions to the north.[33] A similar narrative emerged when the early Europeans first encountered the tropical climate of the Caribbean which they considered 'morally degrading, disease ridden and deadly'.[34] Yet by

[29] For what follows I mainly draw on two of Hulme's works: Mike Hulme, *Weathered: Cultures of Climate Change* (Sage, 2016); Mike Hulme, *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity* (Cambridge, 2009).
[30] Mike Hulme, *Mike Hulme 1978 to 2012: A Research Narrative* (22 December 2011) <https://www.mikehulme.org/wp-content/uploads/2011/09/Hulme-Research-narrative.pdf>.
[31] Ibid 8.
[32] Ibid 10.
[33] Mike Hulme, *Weathered: Cultures of Climate* (Sage, 2017) 17.
[34] Ibid 25.

the twentieth century, that climate was considered highly desirable, a place of robust health and attractive to visit. The meaning of climate, then, is not a culturally stable notion. It reflects its cultural context, from the personal experiences people have of climate in their own lives to the global narratives constructed from scientific modelling.

Yet even the scientific framing is not as stable as we might think. All science is a collective enterprise, subject to actors who create narratives about what they believe their data (and the data of their peers) is telling them. These narratives are the grand stories that compete for political attention. One collection of influential grand stories is provided by Hulme in his 2009 book, *Why We Disagree About Climate Change*. He argues there are many stories through which contemporary climate is expressed.[35]

Specifically, Hulme identifies six 'frames' through which climate change may be viewed. First, climate change can be understood as a failure of markets to adequately price the atmosphere and the future. Market reform, through carbon taxes or other market mechanisms, should therefore be prioritised in a response to the climate challenge. Another way of interpreting climate change is through lens of technology and risk. Technology is both the *source* of our climate troubles through our capacity to extract fossil fuels from increasingly challenging environments, and the *solution* to the climate issue. Solutions include renewable energy technology such as wind and solar, but also geoengineering solutions to cool the planet. These narratives frame technology as the solution to global warming. For many people, however, this misses the key point that climate change is a deeply moral issue. Framing climate in terms of global and local justice provides an overarching narrative for experiencing, understanding and acting on climate. Alternatively, climate change can be viewed through the story of overconsumption. The pursuit of economic growth and continued consumption of limited natural resources gives rise to any number of alternative ways of experiencing and thinking about the climate future. From the degrowth movement to smart algorithms and the virtual economy, these views shape how different people think about the climate. Hulme also notes the narrative around planetary 'tipping points', a narrative that has been expressed in terms of planetary boundaries.[36] This work identifies a range of global systems, such as atmospheric CO_2, ocean acidification, global freshwater use and biodiversity loss to determine what constitutes a safe operating space for humans and where the zone of uncertainty and serious risk begins. Beyond these zones lies

[35] See Mike Hulme, *You've Been Framed: Six New Ways to Understand Climate Change* (5 July 2011) Conversation <https://theconversation.com/youve-been-framed-six-new-ways-to-understand-climate-change-2119>.

[36] J Rockstrom et al, 'Planetary Boundaries: Exploring the Safe Operating Space for Humanity' (2009) 14(2) *Ecology and Society* 32.

danger territory for that system. Finally, Hulme notes that climate change is on some accounts framed as a mostly natural phenomenon relatively uninfluenced by human action. Thus, the focus ought to be less on reducing fossil fuel use and more in adapting to what are natural changes.

What can we take from all this? These framings reflect the complex and *mediated* ways humans engage with the climate and the way climate science is appropriated and represented. They are also not mutually exclusive and they express varied climate cultures and multiple stories that are held in different ways by different individuals and groups. My key argument here is that no one can come to the climate issue in a neutral way. Stories help us make sense of science, but also of our economic, social and environmental contexts. They shape what we notice and focus on, but also how we *experience* climate.

I offer one more set of examples of how this can work. The stories we tell today shape our tomorrow because they constrain or empower human action. As Christophe Bonneuil observes, 'stories matter for the earth'.[37] Bonneuil outlines four 'earth' stories that speak to the new and novel geological era humanity has now entered: the Anthropocene. Like Hulme, Bonneuil seeks to interrogate the diversity of narratives that inform different people and different communities' views on what it all means.

The 'naturalist narrative' represents the journey of human beings from hunter-gatherers to a global geological force in the Anthropocene. This narrative tells the story of our planet, culminating in the domination of our species and the human fingerprint now clearly seen in the geological record. Due to the development of modern science, humans now have a planet-level awareness that our forebears did not or could not have had. This collapses the nature/human dichotomy of modernism where humans were largely exempt from nature's wrath, placing humanity in a brand new role. As Clive Hamilton puts it, '[h]umans are more powerful; nature is more powerful. Taken together, there is more power on earth'.[38] This story does, however, mask the particular histories of humans and erase the local experiences of climate. While it is a powerful new story, it tends to focus on the leadership of the scientific community and the global solutions they devise. But, in an important twist that we will return to, it also advocates for a new humility in the face of the resurgent power of nature (or in Clive Hamilton's phrase, in the face of a 'defiant earth').[39]

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[37] Christophe Bonneuil, 'The Geological Turn; Narratives of the Anthropocene', in Clive Hamilton, François Gemenne, Christophe Bonneuil, (eds), *The Anthropocene and the Global Environmental Crisis: Rethinking Modernity in a New Epoch* (Routledge, 2015) 15.
[38] Clive Hamilton, *Defiant Earth: The Fate of Humans in the Anthropocene,* (Allen and Unwin, 2017) 45.
[39] See eg Oran R Young, *Governing Complex Systems: Social Capital for the Anthropocene* (MIT Press, 2017).

A second story is the 'post-nature grand narrative', provocatively referred to by Bonneuil as 'repairing Frankenstein's monster'.[40] This story is a more radical extension of naturalist narrative. In the Anthropocene, humanity and earth systems are now inescapably bound together. The distinction between humans and the nature that modernism sought to conquer is now thoroughly blurred, with each acting on and influencing the other. Nature no longer exists in an ideal state separate from human beings. There is no part of this planet unaffected by the human induced increase in atmospheric CO_2, for example. But this story does not embrace the humility of the naturalist narrative. Rather, this eco-modernist vision seeks to artificially intervene in recreating nature. Bonneuil draws on Latour's reading of the Frankenstein story[41] where the monster's creator failed not by creating the monster, but failing to repair and improve him. As Latour himself notes, 'Dr. Frankenstein's crime was…that he *abandoned the creature to* itself'.[42] Thus, this story is one of intervention in and improvement of the earth. We are now thoroughly entangled with nature and cannot retreat to a mythical past of pure nature. This story is partially reflected in geoengineering ambitions which hold we will soon have no choice but to intervene to lower the earth's temperature or to take carbon out of the atmosphere. Another example is the speculative employment of artificial photosynthesis to build future resources artificially, [43] thus bypassing 'nature'.

A less optimistic story is the 'eco-catastrophic' narrative which sees a future of resource depletion, ecological collapse and a new wave of vulnerabilities facing human communities. Transgression of planetary boundaries and warnings of societal collapse has led to a more dynamic systems approach, recognising the 'growth, collapse and reorganisation' in resilient ecosystems. Systems can undergo shocks; if they are resilient they can survive. But to do so requires new ways of doing things, and the other narratives (so this story goes) are not up to the task. Current social systems are not robust enough to deal with the shocks that are coming. Building resilient social systems and communities becomes an important response to this story, shaping how one sees the climate and other challenges. Bonneuil provides the examples of permaculture, transition towns and the de-growth movement as a response to this story.[44] In other words, while science can demonstrate that the planet is heating up, eco-

[40] Bonneuil, above n 37, 23.
[41] Bruno Latour, 'Love Your Monsters' in M Shellenberg and T Nordhaus (eds), *Love Your Monsters: Post-environmentalism and the Anthropocene*, (Breakthrough Institute, 2011) 17.
[42] Bruno Latour, *Love Your Monsters: Why We Must Care for Our Technologies as We Do Our Children* The Breakthrough Institute <https://thebreakthrough.org/index.php/journal/past-issues/issue-2/love-your-monsters>.
[43] Australian National University Energy Change Institute, *Artificial Photosynthesis* <http://energy.anu.edu.au/research/artificial-photosynthesis>.
[44] On the de-growth movement, a useful entrée is the work of Samuel Alexander, *Samuel Alexander* <http://samuelalexander.info/>.

catastrophists have little faith in science alone to find solutions and instead advocate for a radical overhaul of how we live.

This leads to the final story, the Capitalocene. This eco-Marxist story interprets the Anthropocene as the outcome of the inherent contradictions in capitalism: it has an inability to maintain labour as well an inability to maintain nature. Capital, not the human species, drives the Anthropocene and any meaningful analysis of our current crisis needs to take account of this. As Moore puts it:

> The Anthropocene sounds the alarm—and what an alarm it is! But it cannot explain how these alarming changes came about. Questions of capitalism, power and class, anthropocentrism, dualist framings of 'nature' and 'society,' and the role of states – and empires – all are frequently bracketed by the dominant Anthropocene perspective.[45]

This age of capital is not just about the economic system in isolation, but rather seeing our current age in world system terms, implicating globalisation, labour and 'nature'.[46] This includes the recent focus by many scholars on deepening mal-distribution of capital,[47] income (the 'precariate')[48] and the destruction of nature. Yet, as Moore shows, the idea of the Capitalocene is still a conversation in progress as scholars work to make sense of the Anthropocene through critical and historical analysis of capitalism.

In summary, there are many stories in circulation that provide important ways of thinking and understanding this moment in the history of our species and planet. These stories share many common points, and emphasise others. As they are debated by scholars, some will take on greater prominence and influence than others in the competition over ideas. Beyond the particulars of these stories is an important function of social narrative: to stabilise social life and to reduce complexity. As George Monbiot puts it, '[s]tories are the means by which we navigate the world'.[49] In doing so, they help us 'see' parts of the climate issue as well as 'obscure' other parts.

But stories also do something else. They shape our feelings and emotions as well as our beliefs. In the face of the climate issue, the types of stories we have available and are drawn to will also have a corollary in our emotional response. For example, a vision of a post-nature world with a

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[45] Jason W Moore, 'Introduction: Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism', in Jason W Moore (ed), *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (PM Press, 2016) 1.
[46] On world systems, see Immanuel Wallerstein, *After Liberalism*, (New Press, 1995).
[47] Thomas Piketty, *Capital in the Twenty First Century* (Harvard University Press, 2014).
[48] See Guy Standing, *The Corruption of Capitalism: Why Rentiers Thrive and Work Does Not Pay* (Biteback Publishing, 2017).
[49] George Monbiot, *Out of the Wreckage: A New Politics for an Age of Crisis* (Verso, 2017) 1.

high level of technical innovation and positive human intervention shapes our expectations and *how we experience* the climate crisis (Crisis? I only see opportunity!). Conversely, immersion in climate collapse-porn or even just a daily dose of new science reports on climate change may well lead to bouts of anxiety about the future. A 2018 Lancet report for Canadian policy makers recognises mental health risks, eco-grief and eco-anxiety arising from rapidly changing climates:

> Climate-related weather events and environmental change have been linked to elevated rates of depression, anxiety, and pre-and-post-traumatic stress; increased drug and alcohol usage; and increased suicidal ideation, suicide attempts and death by suicide.[50]

Stories do not make the weather, but they do shape our experience of it.[51] It is not that the 'story' of climate change is wrong but rather it is always shaped and mediated by culture. The extraordinary climate science being produced today does not lead automatically to seeking to control or govern the climate system. That step is political and, as we have seen above, it could be framed in different ways. As Foucault eloquently puts it:

> There are times in life when the question of knowing if one can think differently than one thinks, and can perceive differently than one sees is absolutely necessary if one is to go on looking and reflecting at all.[52]

We are therefore confronted by complex, unstable and culturally laden notions of climate. It doesn't sit nice and still but keeps asking new questions of us. Climate change reminds us of our humanity and our vulnerability, that we must seek justice for all the world's peoples, and that we'd do well to exercise our interventions in the climate system and environmental with some humility. The future will be challenging but it is far from clear how it will actually play out. In this contested story-world, I find some solace in Mike Hulme's big question: 'the question is not so much how we can stop climate change but what can climate change teach us about ourselves'.[53]

IV THE THIRD STORY: THE MUSIC OF COPING WITH AN UNKNOWABLE FUTURE

This final section will be more reflective that the analysis above. It is also more speculative, and I will write as a musician on what music might

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[50] 'Lancet Countdown 2018 Report: Briefing for Canadian Policy Makers', (Report, November 2018) <http://www.lancetcountdown.org/media/1418/2018-lancet-countdown-policy-brief-canada.pdf>.

[51] Stories matter. For example, the policy and community response to 'child prostitution' changed dramatically when the narrative changed to the 'sexual exploitation of children'.

[52] Cited in James Miller, *The Passion of Michel Foucault* (Simon and Schuster, 1993) 36.

[53] Hulme, above n 30, 362.

contribute to the Anthropocene. The future is in principle unknowable and will inevitably be different than we project. This is not to dismiss what climate evidence and modelling tell us. But as Hulme is at pains to point out, there is always uncertainty present in our projections because the future is also a cultural project.

Consider Latour's bold pronouncement on the situation we find ourselves in:

> Talking about a 'crisis' … [is] just another way of reassuring ourselves, saying that "this too will pass'", the crisis "will soon be behind us". If only it were just a crisis![54]

If only it were just a crisis indeed! A crisis can be faced and worked through until a new stability arrives. But if there is no new stability, or *sustain*ability,[55] we must face an uncertainty as the new normal. Art can offer a means of facing the unknown. Art creates space for reflection and a way to look afresh. Ideally, art surprises us, disrupts our settled understandings and opens us to new ideas. It can help us to ask new questions, to look at things differently. This unbounded exploration by art generally offers an important contribution to rethinking or reimagining the future. Artists, unlike scientists, are less bound by 'what is' and therefore can ask the otherwise unaskable questions. Artists' imagination is a resource which can create new stories that reflect who we are or what we may become in the Anthropocene.[56]

What can music offer humans in the Anthropocene as they face Gaia? I suggest four possibilities. It can tell stories, cultivate empathy, increase solidarity and provide emotional release. This is not an exhaustive list but these dimensions are particularly relevant to the question of music and climate change.

Storytelling is an important part of many, though not all, musical forms. An obvious example is traditional folk music that tells culturally specific stories, reflecting memory and identity. There is a rich heritage within all cultures where music holds the stories of the past. Having spent a couple of decades in the folk club scene in New Zealand and Australia I am struck by the way cultural heritage, that is, stories of identify and memory, get reproduced in these communities. The folk singers of the 1960s told political stories, but they are not alone in storytelling. Rap artists in the 1980s reflected the alienation and self-empowerment of their

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[54] Bruno Latour, *Facing Gaia: Eight Lectures on the New Climatic Regime* (Policy Press, 2017) 9.

[55] For a useful critique of sustaining *sustain*ability, see Melinda Harm Benson and Robin Kundis Craig, *The End of Sustainability: Resilience and the Future of Environmental Governance in the Anthropocene*, (University Press of Kansas, 2017).

[56] I hasten to add that scientists and policy makers also use their imaginations, but they are subject to an entirely different set of disciplines.

communities (among other things). Reggae, recently inscribed as an 'intangible cultural heritage of humanity' by UNESCO, speaks to 'issues of injustice, resistance, love and humanity … [and is] cerebral, socio-political, sensual and spiritual'. [57] Opera is also a mode of storytelling, as is musical theatre. All these forms employ a narrative approach using semantic structure to storytelling – not necessarily a literal story, but they seek to bring the listener on a journey of ideas.

Telling stories rooted in people and climate however is an underutilised opportunity. Having attended many folk music festivals full of songwriters, I am struck by how few songs there are on the climate challenge. I know that many of these musicians are aware and often active in climate issues, but we have not yet generated the 'art sweet art' momentum called for by Bill McKibben.[58] While there have been some songs written and performed by influential artists, such as the Pathway To Paris concert in 2015 that brought together a number of high profile artists, musicians, politicians and activists,[59] climate has yet to challenge 'love' as the dominant theme of songwriters. Grammy award winning Australian musician Goyte has addressed the climate theme with his 2010 release 'Eyes Wide Open': '[a]nd we walk the plank with our eyes wide open'.[60] But it is commercially and reputationally risky to sing too much about the environment. One high profile Australian contemporary roots musician told me that people come to his gigs to be entertained, so he has to be careful not to overplay the activist environmentalist hand.[61]

Our own show, Music for a Warming World,[62] is an example of the use of narrative structure to tell a discursive story. We use a combination of metaphoric and literal lyrics to create a narrative arc. We begin with the storm (science), move into loss (eco-grief), then to change (action) and finish with hope (living with impermanence). But we do not just rely on music; we use large screen high quality visuals (images, video and minimal text) to provide an immersive experience for audiences. There are risks with this approach, such as being overly didactic (music audiences do not like to be preached to). But because our show is advertised as a 'climate change' concert (climate change never sounded so good!), it sets up audiences' expectations to be more open to learning as well as experiencing something new.

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[57] United Nations Educational, Scientific and Cultural Organisation, *Reggae Music of Jamaica* Intangible Cultural Heritage <https://ich.unesco.org/en/RL/reggae-music-of-jamaica-01398>.

[58] McKibben, above n 6.

[59] *Pathway to Paris* <http://pathwaytoparis.com/>.

[60] *Gotye – Eyes Wide Open – Official Video* <https://www.youtube.com/watch?v=oyVJsg0XIIk>.

[61] Celebrated Indian novelist Amitav Ghosh makes a similar observation in *The Great Derangement: Climate Change and the Unthinkable* (The University of Chicago Press, 2016). He argues that serious novelists have yet to grapple with the climate issue.

[62] Kerr, above n 3.

What else does music provide beyond storytelling and narrative? This is where things get more interesting in relation to the climate. In his book, *Music, Evolution and the Harmony of Souls*, Alan Harvey elevates the significance of music in the evolution human life.[63] Drawing on a wealth of research including neuroscience, anthropology, psychology, philosophy and education theory he seeks to answer this question: 'Why are we the all-speaking, all-singing, all-dancing creatures of our planet?'[64] Whatever the etiology of the behaviour, our species' musical ability has generated one of the key features of shared musical experience – solidarity with others:

> [E]arly in our history, our sense of self and knowledge of our impermanence was intensified and focused through the lens of spoken language. Music's communal, socialising power acted as an essential counterweight to the individualisation experienced by increasingly intelligent and articulate members of 'Homo sapientior'. Music was able to maintain—as the title of this book suggests—a harmony of souls during the emergence of a 'society of selves'.[65]

Solidarity – this harmony of souls – becomes deeply significant as we face the Anthropocene. If we are to find a pathway (or pathways, more likely) into this future, then we will not be able to do it alone. The power of music to play a role in community solidarity is one of the common reflections our audiences made when experiencing Music for a Warming World. While we haven't carried out any 'scientific' research on the impact of our show, anecdotally a feeling of not being alone in the climate challenge was one of the most common forms of feedback we received.[66]

It is important to note that solidarity does not always solidify around noble or virtuous beliefs. The Third Reich is evidence enough that music can support commitment to dangerous ideas. Nevertheless, solidarity is clearly enhanced by shared emotional experiences such as listening to a musical performance. It is also enhanced by participation:

> Music is a force that binds us together with others, in dance, in joy, in mourning, in war, in love; momentarily we forget our isolation, our mortality, and we step beyond the confines of our own individuality.[67]

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[63] Alan R Harvey, *Music, Evolution, and the Harmony of Souls* (Oxford University Press, 2017).
[64] Ibid 7.
[65] Ibid 205.
[66] Many of the show reviews or comments reflect this experience. See Simon Kerr, *People Have Said Some Nice Things About Our Show. Here is a Selection of Them*, Music for a Warming World <https://www.musicforawarmingworld.org/reviews>.
[67] Harvey, above n 63, 206.

Music has much to offer but is still a relatively unexplored opportunity to help provide communities with the resources needed to face the Anthropocene.

Another important outcome of the communal shared experience of music is the development of empathy. Sometimes considered as a theory of mind, empathy most commonly refers to the capacity to adopt the perspective of another.[68] Although individuals can vary in their capacity to experience empathy, recent research suggests this is not just a personal trait but is also impacted by environmental factors.[69] As a social animal we are born dependent on others and our development and wellbeing requires a high degree of interdependency. Empathy for others is a cornerstone for the functioning of social cooperation. That music can foster empathy has important implications for considering music's role in living in a future defined by the Anthropocene. It is worth noting that music's role here does not appear to require 'accessible semantic content', such as lyrics to guide the listener's feelings, in order to evoke empathy for others.[70]

There are a number of practical examples of music producing empathy in listeners. Examples include the West-East Divan Orchestra that brings together Palestinian and Israeli musicians, UNICEF's engagement of classical musicians as goodwill ambassadors[71] and the NGO Musicians without Borders.[72] But it is not just empathy for people that music can enhance. As noted earlier, eco-grief from the loss of heritage, nature and particular futures is on the increase and is now of concern to the medical and psychological community. Music offers an opportunity to increase the empathetic resources communities have available to counter this 'alienation'.[73]

Music also does something else, perhaps even, as Harvey suggests, beyond that of all other arts. It can't solve the 'framing' issue of climate change, it cannot analytically investigate in the same way that scholarship, science and quiet reflection can because it does not address conceptual thinking. In the words of scholar and musician Ian Cross, 'it neither ploughs, sows, weaves or feeds'.[74] But it does have an 'extraordinary capacity to stimulate our emotions'.[75]

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[68] Eric Clarke, Tia DeNorab and Jonna Vuoskoskia, 'Music, Empathy and Cultural Understanding' (2015) 15 *Physics of Life Reviews* 61, 65.
[69] Ibid 68.
[70] Ibid 76.
[71] Ibid 62.
[72] Musicians Without Borders <https://www.musicianswithoutborders.org/>.
[73] Sophie Lamond, *A Paler Shade of Green: Artists in the Cryosphere in the New Millennium* (BA (Honours) Thesis, Australian National University, 2011) 99.
[74] Cited in Lamond, above n 73, 35.
[75] Harvey, above n 63, 35.

Music affects emotions. It provides an emotional release, allowing us to feel the full gamut of our emotions. Let me offer an anecdote to illustrate. Composer Mathew Dewey was commissioned to work with PhD students from the Institute of Marine and Antarctic Studies, University of Tasmania, and write a symphony reflecting this collaboration. The resulting work was recorded by the Czech National Symphony Orchestra in Prague, 2013. Titled 'ex Oceano',[76] it offered a musical interpretation of the impact of global warming on the powerful southern ocean. One of the project's sponsors told us that not all the oceanographers initially thought there was value in the project; how could music add to an understanding of this mighty ocean system? One of these scientists had spent a lifetime in painstaking research, documenting the devastating impacts of warming ocean currents. However, we were told that this scientist wept upon hearing 'ex Oceano' for the first time. The power of the music unlocked a lifetime of grief about what they were seeing and *experiencing* in their work on a daily basis.

Aldous Huxley once wrote that for humans, all the things 'profoundly significant can only be experienced, not expressed. The rest is…silence. After silence that which comes closest to expressing the inexpressible is music'.[77] At its best, music does what no other art form can do. Harvey, citing Herbert Spencer, was unambiguous in his praise: '[m]usic must rank as the highest of the fine arts—as the one which, more than any other, ministers to human welfare.'[78] To argue that emotions have no place in how we respond to such issues as climate is to strip humans of one of our key characteristics, and strengths. Emotions are central to how we experience the world, and are 'a permanent part of our mental furniture'.[79]

In my experience as an active 'climate-focused' musician,[80] I am conscious that 'music' is generally viewed as entertainment (which it of course is), but not really a serious contributor to our grappling with climate. There are some wonderful exceptions, such as the Seattle based 'ClimateMusic Project'[81] and an increasing range of creative collaborations between scientists, scholars, activists and artists. It seems to me that music is the lesser cousin to the visual arts, partly I suspect because 'art' is more cerebral, resonating with the semantic orientation of our intellectual culture. Yet, if music is perhaps:

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[76] Lynchpin, *The Making of a Symphony – 'a Love Letter to the Ocean'* <http://www.lynchpin.org.au/our-projects/ex-oceano/>.
[77] Aldous Huxley, *Music at Night and other Essays* (Doubleday Doran and Company, 1931) 17.
[78] Harvey, above n 63, 2.
[79] Ibid 6.
[80] Kerr, above n 3. For the record, only my most recent output has been 'climate focused'. Other themes in my work include love, psychology, travel and a zombie trilogy.
[81] The ClimateMusic Project, *About the ClimateMusic Project* <http://www.theclimatemusicproject.org/>.

> the most important thing our species ever did… [then is] the relatively recent separation of art from science in modern human life, so often the source of philosophical discussion and rationale for guileful political decisions, one of the most unfortunate things our species has ever done?'[82]

V FINAL REFLECTIONS: MUSIC AND THE FUTURE OF THE BRAVE

Climate change changes not just the climate system, but the humans who live in, experience and believe things about their climate and weather. It can shine a mirror on who we are as a species. It reminds us of our humanity and vulnerability, that we must seek justice for all the world's peoples, and we need humility in exercising our power intervening in the climate system and environment. The future will be challenging and it is far from clear how it will actually play out. We will need new stories, new cultural metaphors, that will help us navigate this future. As George Monbiot puts it, we can't take a story away from a community without providing a new one.[83] To do so requires a full range of the extraordinary capacities to know the world around us. Science, in all its evolving forms and disciplines, is currently the most powerful voice speaking to our future and many of the necessary changes, such as the urgent need to reach zero carbon emissions, are material in nature. But as this article has attempted to argue, material circumstances are profoundly shaped by the immaterial. It is important that the cultures of climate be taken seriously by scholars and explored by artists, for this throws open the dynamic creativity of humans.

Cultural transformation is inevitable, as Giddens, among others, has shown us,[84] and the Anthropocene is adding another layer of disruptions to an already crowded marketplace of disruptions.[85] One way or another, our world will change, taking us with it, voluntarily or kicking and screaming. The more important question is what sort of future we desire and how we cultivate the social reflection, emotional resources and creative action and intervention to not be passive victims of change. How can we move beyond the experiential limits of scientific discourse to support new storytelling, solidarity in response to the climate challenge and sufficient empathy to support each other and, indeed, other species and the biosphere itself? Science cannot achieve this by itself. We need the humanities to unearth the stories of living with climate and we need visual and performance artists to challenge what we see and feel.

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[82] Harvey, above n 63, 207.
[83] Monbiot, above n 49, 3.
[84] Anthony Giddens, *The Consequences of Modernity* (Policy Press 1990).
[85] It is perhaps sufficient to simply note some of the other phenomena that are shaping the future: artificial intelligence, globalisation, robotics, cybernetics, globalization and terrorism. Yuval Noah Harari gives a useful summary in *21 Lessons for the 21st Century* (Jonathon Cape, 2018).

Unfortunately, music has been siloed from a serious contribution to our climate challenge, marginalised as a luxury, a 'gloss on the surface of life ... of no great importance to our species'.[86] Part of this is a legacy of the great divide between the arts and science, a divide some are working hard to bridge.[87] We prioritise the discursive power of logical argument. We are unsure how to deal with artistic or musical contributions to the climate story.

The challenge is to reclaim the power of music as we face the Anthropocene. I am not just thinking of mass-commercial music, but rather working closer to home for many of us by bringing music into the very places where climate thinking and talking takes place: seminars, conferences, symposiums, public talks and community events. It is here the community of the concerned gather and it is one location to learn how to include music, to experiment and to become more comfortable at the intersection of ideas and emotion.

I will finish with another anecdote. About two years ago my partner and I attended a high-profile climate talk in a local school. There were about 500 people present. The speakers were diverse, and the headliner was a high profile and well-respected scientist, writer and communicator. The news from the panel was not great. The political stalemate of climate policy was entrenched, and emissions were again rising. The main speaker sounded discouraged, even with a valiant attempt to optimism. The session finished and as we all lingered in the foyer there was a palpable sense of depression in the atmosphere. The few strangers I talked to were discouraged. I was feeling discouraged. It was a truly flat note to finish on.

Most religions employ music as part of their liturgy or rituals. As Alain de Botton noted in his 'Religion for Atheists',[88] religions, for all their faults, understood the power of ritual and music. In the words of Martin Luther, 'music is the art of the prophets, the only art that can calm the agitations of the soul; it is one of the most magnificent and delightful presents God has given us'.[89]

As we left the auditorium, I recalled this, thinking how we have inadvertently reduced our humanity in becoming secular, replacing religion with science. And then I thought, as a musician, how different

[86] Harvey, above n 63, 204.
[87] See eg Kat Austen, *How I Made Musical Instruments from Lab Equipment to Help Create Empathy With the Arctic* (30 October 2018) Conversation <https://theconversation.com/how-i-made-musical-instruments-from-lab-equipment-to-create-empathy-with-the-arctic-105685>.
[88] Alain de Button, *Religion for Atheists* (Penguin, 2012).
[89] Cited in Harvey, above n 63, 2.

our collective brain chemistry could have been had we ended with some collective singing, some musical and emotional release.

Nietzsche once said that 'we possess art lest we perish of the truth'.[90] Facing the Anthropocene with only the hard facts of climate models for comfort is only for the bravest. The rest of us must cultivate a climate culture that is as immersed in profound and moving music and art as it is with science. Then, together, we can perhaps find the bravery we need.

[90] Friedrich Nietzsche, *The Will to Power*, tr Walter Kaufmann and R J Hollingdale, (Penguin, first published 1901, 1968 edition) 435.