

## A “Stubbornly Persistent Illusion”? Climate Crisis and the North, Ecomusicology and Academic Discourse

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### **Abstract:**

The climate crisis impacts the northern polar regions in disproportionate ways, and ecomusicology is an academic discourse. In bringing these two seemingly unrelated pairs together, I argue for academic discourse in ecomusicology that makes connections with the climate crisis in music and sound studies. What can ecomusicology offer humanity as we face climate catastrophe? While not a panacea, ecomusicology can serve to further collapse the unfortunate nature-culture dichotomy that is at the root of so many social and environmental problems. Academic discourse always should have a place for titillation, but we must not avoid the climate crisis in music scholarship, for that only enables climate change denialism. I elaborate on an ecomusicology that is both new and not new, providing examples of climate connections in ecomusicological discourse. Ultimately, we must make such connections and do something about the problems we face as a civilization.

**Keywords:** ecomusicology | climate change

### **Article:**

**\*\*\*Note: Full text of article below**

**“A Stubbornly Persistent Illusion”?:  
Climate Crisis and the North, Ecomusicology and Academic Discourse**

Aaron S. Allen<sup>1</sup>

Climate change exacerbated and sped up by human-caused global heating is the most profound challenge modern civilization has faced or will face. As the proverbial canary in the coal mine, it is the polar regions of the planet that will be impacted by climate change most acutely.<sup>2</sup> With climate change in the north, what was once a periphery comes to the center; due to the increased rate of change in the region, we are offered a glimpse into the future of the rest of the planet. That future involves a continually synergistic feedback loop of heating: pumping carbon into the atmosphere increases global temperatures, which decrease sea ice, which diminishes the albedo effect, which keeps more solar energy on earth and increases temperatures, which increase permafrost melting rates, which increase emissions of once-frozen methane, which is a greenhouse gas more potent than carbon dioxide and further increases the temperature, which melts glaciers, which raises sea levels, which decrease sea ice, etc. Feedback loops are fundamental parts of ecological webs and integral to life on earth, but given the excessive rate of change that is speeding up natural processes (change is now measurable on the order of decades rather than tens of thousands of years), the appropriate term is

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<sup>1</sup> My thanks for many engaging conversations with Tim Cooley, Jennifer Post, Juha Torvinen (and his colleagues at the University of Turku), and especially Mark Pedelty, Jeff Titon, and Denise Von Glahn (see our “Music in a Changing Climate,” <https://vimeo.com/127103673>; accessed 3 September, 2019). I would also like to thank Britta Sweers for her feedback and for maintaining the impetus to publish this collection of articles. While my thinking has evolved since writing in 2013 what was originally intended as an introduction to an edited volume, I remain convinced of the importance of the points I raise herein. Much new relevant ecomusicological research has been published, which is heartening, and I have updated this essay with a few of these in my references.

<sup>2</sup> A widely accessible book on climate change is Al Gore: *Our Choice: A Plan to Solve the Climate Crisis* (Emmaus, PA: Rodale Books, 2009). See also the many publications, both the full reports and the convenient summaries, of the Intergovernmental Panel on Climate Change, [www.ipcc.ch](http://www.ipcc.ch) (accessed 3 September, 2019). In this article, I use “north” (lower case) to refer to the cardinal direction pointing to the Arctic and the star Polaris; it is not the same as “North” (capital case) as a short hand for “Global North,” which is used to refer to developed/Western countries.

really climate “catastrophe.” The term climate “change” is seemingly too benign for what we have unleashed: what we have at hand is a climate crisis.<sup>3</sup>

By burning carbon, together with their numerous other environmental insults to the planet, humans are disrupting the natural systems on which all life depends. With such a Pandora’s box opened, any attempt at mitigation becomes an attempt at striking an ever-moving target. Once the problems are understood, amelioration can seem illusory: climate mitigation plans developed now may seem insufficient once more problems are understood. Nevertheless, humanity must persist in confronting the climate crisis by diminishing the production of greenhouse gasses. We must be prepared to change our ways in order to do so—and in order to adjust to the reality of a rapidly changing planet.

Ecomusicology is a burgeoning field of interdisciplinary inquiry that considers the interrelations of “music, culture, and nature in all the complexities of those terms. Ecomusicology considers musical and sonic issues, both textual and performative, related to ecology and the natural environment.”<sup>4</sup> Although the fundamental ideas are much older, scholars have been developing ecomusicology particularly in the early twenty-first century, drawing on fields as diverse as literature, geography, history, and ecology to develop a complex academic discourse. Linguist Ken Hyland defines academic discourse as “the ways of thinking and using language that exist in the academy.” This discourse is important because of its role in socializing academics and defining professional disciplines; moreover, this discourse contributes to educating students, constructing knowledge, and disseminating ideas into society. As Hyland observes, “beyond the university, the languages of the academy have quietly begun to insert themselves into every cranny of our lives, colonizing the discourses of technocracy, bureaucracy, entertainment and advertising.”<sup>5</sup> Ecomusicology has been an academic pursuit, but we must not presume that it is purely intellectual and exists solely within institutions of research and higher

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<sup>3</sup> Climate change means simply that there are alterations in the expected and observed weather patterns on our planet; global warming is one process that causes such climactic patterns to change. But in modern twenty-first century usage, the terms “climate change” and “global warming” are losing relevance. *The Guardian* newspaper changed its house style guide in May 2019 to use “climate emergency, crisis or breakdown” and “global heating,” respectively. While this is still not standard practice, I adopt it in this essay to emphasize the urgency those re-phrased terms suggest. Damian Carrington, “Why the Guardian Is Changing the Language It Uses About the Environment,” *The Guardian* (17 May, 2019), sec. Environment.

<sup>4</sup>Aaron S. Allen, “Ecomusicology,” in *The Grove Dictionary of American Music*, 2<sup>nd</sup> ed. (New York: Oxford University Press, 2014).

<sup>5</sup> Ken Hyland, “Academic Discourse,” in *Continuum Companion to Discourse Analysis*, eds. Ken Hyland and Brian Paltridge (London and New York: Continuum, 2011), 171–184.

learning. The fruits of intellectual labors—the connections and constraints, the enlightenments and enhancements, the products and problems—can, and must, develop outside the ivory tower.<sup>6</sup>

So while the north is a proving ground for climate change, and while ecomusicology is an academic discourse, what does northern climate change have to do with ecomusicological discourse? Or, we might rephrase the question: What can ecomusicology offer humanity as we face climate catastrophe? These seemingly unrelated issues are indeed connected. My aims in the following are to argue for academic discourse that engages the climate crisis, to argue for making climate connections in music and sound studies, and, ultimately, to do something about the crisis at hand. While no panacea, ecomusicology can serve to further collapse the unfortunate nature-culture dichotomy that is at the root of so many social and environmental problems, the climate crisis especially. As I (and others before me) have argued, the environmental crisis is not just a problem of science; it is fundamentally a crisis of culture.<sup>7</sup> Thus, we must find ways forward with understandings in the humanistic sphere—be it through sustainability, via resilience, or with consilience.<sup>8</sup> Ecomusicological discourse is one path among many to confront humanity’s self-imposed climate crisis. And with a crisis at such a global scale, we need to take every approach possible to confront it.

### The Climate of Denial

In the scientific community, the facts of global heating are not in dispute.<sup>9</sup> With climate catastrophe, the same physical feature that contributes to making life on earth possible—the “greenhouse effect”—

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<sup>6</sup> See also the introduction to and transcript of the “dialogue” (between Denise Von Glahn, Jeff Todd Titon, and me) held at the 2013 conference of the Association for the Advancement of Sustainability in Higher Education, published as “Sustainability and Sound: Ecomusicology Inside and Outside the Academy,” *Music & Politics* VIII, no. 2 (2014).

<sup>7</sup> Aaron S. Allen: “Prospects and Problems for Ecomusicology in Confronting a Crisis of Culture,” *Journal of the American Musicological Society* 64, no. 2 (2011): 414–424.

<sup>8</sup> The classic on consilience, if from a somewhat biased scientific perspective, is Edward O. Wilson, *Consilience: The Unity of Knowledge* (New York: Knopf, 1998). Resilience is a movement to update sustainability; see Andrew Zolli and Ann Marie Healy, *Resilience: Why Things Bounce Back* (New York: Free Press, 2012). Regarding sustainability, the classic source is Gro Harlem Brundtland and World Commission on Environment and Development: *Report of the World Commission on Environment and Development: Our Common Future* (Transmitted to the General Assembly as an Annex to document A/42/427 – Development and International Co-operation: Environment, 1987), <http://www.un-documents.net/wced-ocf.htm> (accessed 3 September, 2019). More recently, one of the most engaging and inspiring writers on sustainability in education is David W. Orr; see his volume of collected writings, *Hope Is an Imperative: The Essential David Orr* (Washington, D.C: Island Press, 2010). Sustainability is perhaps one of the most abused and widely misinterpreted terms in contemporary global discourse; Orr’s writings help provide a rich and nuanced understanding of its roots and intricacies. See also Aaron S. Allen, “Sounding Sustainable; or, The Challenge of Sustainability,” in *Cultural Sustainabilities: Music, Media, Language, Advocacy*, ed. Timothy J. Cooley (Urbana-Champaign: University of Illinois Press, 2019): 43–59.

<sup>9</sup> Scientists are virtually unanimous in their agreement on the science and anthropogenic nature of climate change. See, for example, James Powell’s study of 54,195 peer-reviewed articles on climate change during the period 1991–2015; he found a 99.94% consensus that recent global heating is anthropogenic. James Lawrence

is simply thrown into overdrive. Global heating, the increase of average surface temperatures, is a result of greenhouse gases (e.g. carbon dioxide) that come from natural sources, such as plants and volcanoes, as well as anthropogenic ones, especially the burning of the fossil fuels coal, oil, and gas (so-called “ancient sunlight”).<sup>10</sup> Degraded ecologies (deforestation, erosion, pollution, etc.) exacerbate global heating and contribute further to disruptions in the climate and for all species in all places on earth. Humanity’s disconnections from nature result in those degraded ecologies and the ultimate treatment of the atmosphere as a free and open sewer, into which we pump the wastes of our industrial development from the past few centuries to the present.

The disputes and debates about the climate crisis, however, are many: who is to blame, who should bear the cost of remediation, who should change their ways, whether or not the changes are the result of natural cycles or of human growth, etc. There are many “deniers:” those who refuse to admit that global heating is happening, that climate change is caused by human activities, and/or that the impacts threaten both human civilization and the planet as a whole. I will not grant time to them, for they are a truly short-sighted and self-serving minority voice in what the popular media has erroneously labeled a scientific debate. What is important to note here is the chasm between those who believe climate change is a fact and those who deny its validity. Such gaps—together with the gargantuan scope of the problems, the lacunae in and high standards of our scientific knowledge and technological abilities, and the potential changes to current societies—result in the political paralysis that prevents the global actions necessary to appropriately address the climate crisis. As historian of science Naomi Oreskes puts it: “Scientists have been very, very afraid of crying wolf, and the consequence of that is that we’ve all been fiddling while Rome burns, or maybe I should say, we’ve been fiddling while Greenland melts.”<sup>11</sup>

In 2013, American president Barack Obama pledged to “respond to the threat of climate change, knowing that the failure to do so would betray our children and future generations.” He went on to acknowledge, however, that “some may still deny the overwhelming judgment of science, but none can avoid the devastating impact of raging fires, and crippling drought, and more powerful storms.”<sup>12</sup> President Obama’s successor in the White House denies the science and has strong-armed

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Powell, “The Consensus on Anthropogenic Global Warming Matters,” *Bulletin of Science, Technology & Society* 36, no. 3 (2016): 157–163. They may not always agree, however, on how to communicate the science to the public; see also Michael E. Mann, “If You See Something, Say Something,” *The New York Times* (17 January, 2014).

<sup>10</sup> See Thom Hartmann, *The Last Hours of Ancient Sunlight: The Fate of the World and What We Can Do Before It’s Too Late* (New York: Three Rivers Press, 2004).

<sup>11</sup> Interviewed by Steve Curwood, “The Collapse of Western Civilization,” *Living on Earth* (Boston, MA: PRI), 25 July, 2014.

<sup>12</sup> Barack Obama, “Obama’s Second Inaugural Speech,” *The New York Times* (21 January, 2013).

numerous policy mechanisms according to his destructive worldview. Many in the scientific community cannot understand the persistent stubbornness, even when confronted with evidence, of these deniers, most of whom are powerful political figures, corporate leaders, media barons, and pundits. And yet there are others who agree on some tenets of the situation—that, for example, global heating is happening<sup>13</sup>—but believe that human ingenuity will find a solution no matter what happens. (The eminent physicist, avowed pacifist, and political liberal Freeman Dyson believes that scientists’ concerns about global heating are exaggerated and that any problematic increases in carbon dioxide will be good for plant growth.<sup>14</sup>) Nevertheless, political bickering, the need for consensus in the scientific community, the uncomfortable changes we must make, the inherent difficulties in communicating about the science and problems as vast as those involved with the climate crisis, and especially the lack of political leadership<sup>15</sup> all combine to make it difficult to find common ground, and, more importantly, to limit and diminish the amount of carbon entering our atmosphere.

One of the fundamental elements only recently entering into this debate is that of emotion, of the non-rational, and in particular the ability to communicate and create meaningful dialogue that is both logical and emotional. The arts and humanities have roles to play here. Consider the following brief examples: In 2012, Bill Chameides, then dean of Duke University’s Nicholas School of the Environment, convened a group of artists and scientists, both faculty and students, to confront the challenge of the arts addressing climate.<sup>16</sup> That same year, the Sustainability Institute at the University of New Hampshire (the oldest endowed such program in the U.S. higher education) held the “Sustainability Unbound” lecture series, which engaged five prominent scholars around the humanities’ contributions to sustainability.<sup>17</sup> The arts are increasingly focusing on the climate crisis: from arts and literature classes at universities<sup>18</sup> to established art foundations<sup>19</sup> to innovative textbooks.<sup>20</sup> Various

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<sup>13</sup> Major corporations are already incorporating climate change into their activities and planning. See Coral Davenport, “Industry Awakens to Threat of Climate Change,” *The New York Times* (23 January, 2014). See also Naomi Klein, *This Changes Everything: Capitalism vs. the Climate* (New York: Simon & Schuster, 2014).

<sup>14</sup> Nicholas Dawidoff, “The Civil Heretic,” *The New York Times Magazine* (29 March, 2009).

<sup>15</sup> Kofi Annan, “Climate Crisis: Who Will Act?” *The New York Times* (24 November, 2013). While in the United States the so-called political debate seems to be divided by party (Democrats in favor of addressing climate change, Republicans against), the binary is not so simplistic: coal-state Democrats are against it, and some establishment Republicans favor taking action to address climate change as a nation. See William D. Ruckelshaus, Lee M. Thomas, William K. Reilly, and Christine Todd Whitman, “A Republican Case for Climate Action,” *The New York Times* (1 August, 2013).

<sup>16</sup> <http://dotearth.blogs.nytimes.com/2012/10/02/postcard-a-climate-communication-retreat-in-the-north-carolina-hills/> (accessed 3 September, 2019).

<sup>17</sup> <https://sustainableunh.unh.edu/sustainabilityunbound> (accessed 3 September, 2019).

<sup>18</sup> Richard Pérez-Peña, “College Classes Use Arts to Brace for Climate Change,” *The New York Times* (31 March, 2014).

performing arts ventures connect with climate science and activism: the string-quartet focused Crossroads Project,<sup>21</sup> the ecomusical *Firerock*,<sup>22</sup> a requiem for a melting glacier,<sup>23</sup> and much more.<sup>24</sup> Journalist Andrew Revkin, who writes and blogs for the *New York Times*, is also a songwriter; his song ‘Liberated Carbon’ is a short history of humanity’s love for fossil fuels.<sup>25</sup> Ron Shiffman, an urban planner who has worked in and on New York for half a century, suggests that to confront deniers one must, “set aside the issue of climate change.” In doing so, he acknowledges the communication problem; but, at the same time, he also emphasizes a cultural argument by suggesting that we should “[t]hink about what will make [our] living conditions better.”<sup>26</sup> Public transit, parks, clean air, and cultural life—art, literature, music—are fundamental to those better living conditions.

The academic discourse of ecomusicology has a role to play in this dialogue, from the emotional powers of music in communication regarding climate, to the understanding that cultures of music making and music experience have impacts on global heating. Any academic discourse can and should have places for intellectual titillation, thought experiments, and non-applied research results—and there are certainly examples of that in this collection of essays and elsewhere in ecomusicological writings, including my own.<sup>27</sup> But there is also a need to broaden the scope of ecomusicological discourse in order to consider the emotional and cultural impacts of music regarding the climate crisis.<sup>28</sup>

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<sup>19</sup> Allan Kozinn, “Cultural Programs to Focus on Climate Change,” *The New York Times* (15 July, 2013), <http://artsbeat.blogs.nytimes.com/2013/07/15/cultural-programs-to-focus-on-climate-change/> (accessed 3 September, 2019).

<sup>20</sup> Linda Weintraub, *To Life!: Eco Art in Pursuit of a Sustainable Planet* (Berkeley: University of California Press, 2012).

<sup>21</sup> <http://www.thecrossroadsproject.org/> (accessed 3 September, 2019).

<sup>22</sup> <http://www.firerockmusical.com> (accessed 3 September 2019).

<sup>23</sup> Bill Metcalfe, “Orchestra Travels to Kootenays to Play Requiem for Melting B.C. Glacier,” *Vancouver Sun* (29 July, 2013),

<http://www.vancouversun.com/entertainment/Orchestra+plays+glacier+sorrow/8718868/story.html>

(accessed 3 September, 2019).

<sup>24</sup> Mik Aidt, “Concerned Musicians Communicate Climate Problems,” <https://climatesafety.info/concerned-musicians-communicate-climate-problems/> (accessed 3 September, 2019).

<sup>25</sup> <http://dotearth.blogs.nytimes.com/2013/08/16/liberated-carbon-itll-turn-your-night-to-day/> (accessed 3 September, 2019).

<sup>26</sup> Constance Rosenblum, “Debriefing—Because Green Goes With Everything,” *The New York Times* (1 February, 2013).

<sup>27</sup> Aaron S. Allen, “Beethoven’s Natures,” in *Ecological Thought in German Literature and Culture*, eds. Gabriele Duerbeck, Urte Stobbe, Hubert Zapf (Lanham, Md.: Lexington Books, 2017), 371–86.

<sup>28</sup> See also my “Environmental Changes and Music,” in *Music in American Life: An Encyclopedia of the Songs, Styles, Stars and Stories That Shaped Our Culture*, ed. Jacqueline Edmondson (Santa Barbara, Calif.: Greenwood, 2013), 418–421. (I had originally titled this piece “Global Warming, Climate Change, and Music,” but the production staff, not the editor, changed the title and published it without consulting me.)

Music and music studies must contribute to the current “climate swerve,” which, according to psychiatrist Robert Jay Lifton, involves the need to deepen awareness.<sup>29</sup>

Scientists recognize this need. Consider, for example, the internet sensation ‘I’m a Climate Scientist (Hungry Beast).’<sup>30</sup> This original song and video feature actual climate scientists rapping about climate change and the deniers. They build on the conventional confrontational approach in hip hop of lauding the self (in this case, peer-reviewed science) and insulting the competition (denialists and incompetent politicians). After an introduction of a call-and-response chorus (“Who’s a climate scientist? / I’m a climate scientist!”), the first two verses set the basic tone (angry) and problem (climate change):

[Scientists:]

Droppin’ facts all over this wax,  
While bitches be cryin’ about a carbon tax.  
Climate change is caused by people,  
Earth, unlike Alien, has no sequel.  
We gotta move fast or we’ll be forsaken,

[Politicians:]

‘Cause we were too busy suckin’ dick in Copenhagen....

[Cheerleaders:]

Burn! It’s hot in here,  
32% more carbon in the atmosphere.  
Oh-eee oh-eee oh-eee, ice ice ice,  
Raisin’ sea levels twice by twice.

[Scientists:]

We’re scientists, what we speak is true.  
Unlike Andrew Bolt our work is peer reviewed...

Who’s a climate scientist? I’m a climate scientist....

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<sup>29</sup> Robert Jay Lifton, “The Climate Swerve,” *The New York Times* (23 August, 2014). He is building on Stephen Greenblatt, *The Swerve: How the World Became Modern* (New York: W.W. Norton, 2011).

<sup>30</sup> Dan Ilic, Duncan Elms and Brendan Woithe: <http://www.youtube.com/watch?v=LiYZxOICN10> (accessed 3 September, 2019). Another venue in which climate scientists have made attempts to open up their field and work to the public is through a “Climate Models” calendar; see <http://www.treehugger.com/climate-change/climate-models-calendar.html> (accessed 3 September, 2019).

The catchy, irreverent, angry delivery, together with a sophisticated beat and collage video in the spirit of the Beastie Boys have resulted in hundreds of thousands of views, re-posts, and purchased downloads. (Another creative hip hop approach to capturing current debate on the climate crisis— together with related political, historical, and economic issues—can be seen/heard in Juice Media’s “The Energy Crisis.”<sup>31</sup>)

Science journalism also recognizes this need to contribute to the climate swerve. Consider, for example, a project by New York University students in conjunction with the non-profit investigative news team ProPublica, ‘My Water’s on Fire Tonight (The Fracking Song).’<sup>32</sup> The song/video uses an R&B/funk accompaniment to sung choruses (“What the frack is goin’ on with all this frackin’ goin’ on”) and text delivered in a patter rapping style to provide a quick explanation of, and condemnation of the problems resulting from, fracking:

Fracking is a form of natural gas drilling,  
An alternative to oil ‘cause the oil kept spilling.  
Bringing jobs to small towns so everybody’s willing,  
People turn on their lights and the drillers make a killing.

Water goes into the pipe, the pipe into the ground,  
The pressure creates fissures 7,000 feet down.  
The cracks release the gas that powers your town,  
That well is fracked... yeah, totally fracked...

But there’s more in the water than just H<sub>2</sub>O,  
Toxic chemicals help to make the fluid flow.  
With names like benzene and formaldehyde,  
You better keep ‘em far away from the water supply.

The drillers say the fissures are a mile below  
The groundwater pumped into American homes.  
But don’t tell it to the residents of Sublette, Wy-O.

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<sup>31</sup> [https://www.youtube.com/watch?v=Q\\_xI\\_8aLjds](https://www.youtube.com/watch?v=Q_xI_8aLjds) (accessed 3 September, 2019). The hip hop community is no stranger to climate activism and awareness; see <http://climate.hiphopcaucus.org/> (accessed 3 September, 2019).

<sup>32</sup> David Holmes and Andrew Bean (music), David Holmes and Niel Bekker (vocals and lyrics), and Adam Sakellarides and Lisa Rucker (Animation), [http://www.youtube.com/watch?v=timfvNgr\\_Q4](http://www.youtube.com/watch?v=timfvNgr_Q4) (accessed 3 September, 2019).

That water’s fracked... we’re talking Benzene...

[Chorus:] What the frack is going on with all this fracking going on?

I think we need some facts to come to light.

I know we want our energy but nothing ever comes for free,

I think my water’s on fire tonight!

A subsequent verse makes the connection with the climate crisis; due to the release of methane, “It’s a greenhouse gas, worse than CO<sub>2</sub> / Fracking done wrong could lead to climate change too.” The clear delivery (with text and graphics in the video to reinforce the lyrics), catchy chorus, and the funky beat provide for an easily digested and remembered lesson on a complex subject. (In a related project, artists and musicians, led by Sean Lennon and Yoko Ono, have organized to sing and to protest fracking.)<sup>33</sup>

(But what of the media, i.e. the computers and gadgets and the Internet, we use for the creation and consumption of such messages? Scenarios certainly vary, but the impacts are still meaningful. Consider a 2009–10 study that found “despite the increased energy and emissions associated with Internet data flows, purchasing music digitally reduces the energy and carbon dioxide emissions associated with delivering music to customers by between 40% and 80% from the best-case physical CD delivery.”<sup>34</sup> So the carbon intensity of music delivery has gotten more efficient, apparently. Compare that to a 2019 study focusing on the U.S.: Devine and Brennan found a significant decrease in the amount of plastic, hence petroleum, used in delivering streaming music during the second decade of the twenty-first century, in comparison to the heyday of physical media, i.e., vinyl, cassette tapes, and CDs, in snapshots from 1977, 1988, and 2000, respectively.<sup>35</sup> At first it seems that the benefits of a dematerialized music world are real—until, that is, we consider the energy that powers that dematerialized world. Devine and Brennan also found that greenhouse emissions from those music delivery methods went from between 136 million and 157 million kilograms for the physical media to something between 200 million and over 350 million kilograms for the downloading services. Cloud

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<sup>33</sup> See their song ‘Don’t Frack My Mother.’ <https://www.youtube.com/watch?v=VfymhAEe-TM> (accessed 3 September, 2019).

<sup>34</sup> Christopher L. Weber, Jonathan G. Koomey, and H. Scott Matthews, “The Energy and Climate Change Implications of Different Music Delivery Methods,” *Journal of Industrial Ecology* 14, no. 5 (October 2010): 754–769. Regarding the increased level of certainty regarding the study’s results, see the statement by one of the authors (Koomey) at [www.treehugger.com/culture/what-beyonces-album-means-climate-change.html](http://www.treehugger.com/culture/what-beyonces-album-means-climate-change.html) (accessed 3 September, 2019).

<sup>35</sup> For more on the impacts of the physical media of music culture, see Kyle Devine, “Decomposed: A Political Ecology of Music,” *Popular Music* 34, no. 3 (2015): 367–389.

streaming remains a new frontier to study.<sup>36</sup> And we must also consider the gadgets that are used to create and access those Internet data flows; due to the minerals contained in them and the manufacturing of them, our new toys perpetuate old values of exploitation and colonialism, impacting environments and societies across the globe.<sup>37</sup> They do so with a non-negligible climate impact, one likely greater than the small-scale, face-to-face, live and non-electronic music making of many cultures.)

Musicians and scholars do recognize this need to consider the emotional and cultural impacts of music regarding climate change, and they have worked to address the climate crisis directly.<sup>38</sup> Consider, for example, the ecological remediation work of composer David Dunn and physicist James Crutchfield. Their work has explained how bark beetles attack drought-stressed trees to reproduce and, ultimately, kill the trees. Field recordings of the bioacoustic communication between the beetle and the tree demonstrate that beetles can detect the ultrasonic emissions of drought-stressed trees. Furthermore, sound can be used to counter the infestations, thus protecting the trees and interrupting the negative-feedback cycle of climate-change induced deforestation.<sup>39</sup> Elsewhere, I have written about the spruce tonewood used for high-quality lutherie; the cultural values we ascribe to such instruments contribute to supporting traditions and forests that are central to carbon sequestration as we confront global climate change. Unfortunately, this positive result is in contrast to the situation regarding the *pernambuco* used to make the bows to play such violins; the destruction of *pau brasil* habitat and the loss of trees has even caused the United Nations to develop restrictions on the trade of such an endangered species.<sup>40</sup>

Ecomusicological approaches contribute to and learn from all the above efforts, and both the academic discourse of ecomusicology and those applied examples contribute to fostering connective thinking, especially in the context of a liberal arts education. Indeed, an academic discourse for ecomusicology is coalescing, even as the key words—music, sound, culture, society, nature,

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<sup>36</sup> Kyle Devine and Matt Brennan, “Music Streaming Has a Far Worse Carbon Footprint Than the Heyday of Records and Cds—New Findings,” *The Conversation* (7 April, 2019), <http://theconversation.com/music-streaming-has-a-far-worse-carbon-footprint-than-the-heyday-of-records-and-cds-new-findings-114944> (accessed 3 September, 2019).

<sup>37</sup> See Jacob Smith: *Eco-Sonic Media* (Oakland: University of California Press, 2015).

<sup>38</sup> Such direct engagement might be understood as distinct from types of indirect engagement that, for example, involve staging a nineteenth-century opera (written a decade before industrial emissions of CO<sub>2</sub> were identified as a cause of increased global heating) in a post-apocalyptic world undone by climate catastrophe. See Corinna da Fonseca-Wollheim, “A Look at the New ‘Parsifal’ at the Metropolitan Opera,” *The New York Times* (7 February, 2013).

<sup>39</sup> David D. Dunn and James P. Crutchfield, “Entomogenic Climate Change: Insect Bioacoustics and Future Forest Ecology,” *Leonardo* 42, no. 3 (June 2009): 239–244.

<sup>40</sup> Aaron S. Allen, “Fatto Di Fiemme’: Stradivari’s Violins and the Musical Trees of the Paneveggio,” in *Invaluable Trees: Cultures of Nature, 1660–1830*, eds. Laura Auricchio, Elizabeth Heckendorn Cook, and Giulia Pacini (Oxford: Voltaire Foundation, 2012), 301–315

environment—point to some of the most complex concepts in the English language, and they thus make for an impossibly large tent under which to gather diverse and sometimes competing interests. However, rather than technical jargon and a language of pseudo-scientific objectivism, the discourse seems to be developing more along the lines of the analytic rigor of humanistic argument while also appealing to the profound emotions that music has the power to elicit.

As Denise Von Glahn has written, “[e]comusicology explores relationships to the natural world and questions how those relationships imprint themselves on music *and scholarship*” (my emphasis).<sup>41</sup> Scholars reflect those relationships, construct them, and influence how those relationships are construed. As scholars teach students and share knowledge with the public, and as artists communicate with the public, we show increasingly how our world is interconnected. In confronting the climate crisis, the roles of artists and humanists in general, and of ecomusicology scholars in particular, are not illusory—unless in our discourses we take the stubborn path of avoidance, ignorance, and/or self-reflective navel gazing. Scholarship or art “for its own sake” has a place in every scholarly and artistic milieu. But if as a community of scholars and artists we continually avoid, remain ignorant of, or even reject such connections between music and the climate crisis,<sup>42</sup> then we only enable the deniers.

### **The Past, Present, and Future of Ecomusicological Discourse**

The relatively new term “ecomusicology” is not yet common in academic discourse, and in fact it is not used much at all in the present collection of articles. Nevertheless, the related keywords and their synonyms abound here and elsewhere.<sup>43</sup> Scholars working ostensibly in this field that connects studies of music/sound, nature/environment, and culture/society may never invoke, or may never have even heard of, the term, but their work still fits, for our own understanding at least, under its large umbrella.

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<sup>41</sup> Denise Von Glahn, “American Women and the Nature of Identity,” *Journal of the American Musicological Society* 64, no. 2 (2011): 399–403, here 401.

<sup>42</sup> Music scholarship, or any intellectual study, is political act, not only because of what we choose to study but also by what we exclude; see Philip V. Bohlman, “Musicology as a Political Act,” *The Journal of Musicology* 11, no. 4 (Fall 1993): 411–436. Beyond mere academic quibbling, there is a well known complaint by audiences and the recording industry to keep politics out—as the Somali-Canadian musician K’naan said, he was asked change his lyrics to be more lighthearted. Record company executives told him that “radio programmers avoid subjects too far from fun and self-absorption.” K’naan, “K’naan, on Censoring Himself For Success,” *The New York Times* (8 December, 2012).

<sup>43</sup> A few select recent publications in which I offer overviews of ecomusicology include Aaron S. Allen and Kevin Dawe, eds., *Current Directions in Ecomusicology: Music, Culture, Nature* (New York and London: Routledge, 2016); Aaron S. Allen, “Ecomusicology from Poetic to Practical,” in *Handbook of Ecocriticism and Cultural Ecology*, ed. Hubert Zapf (Berlin and Boston: DeGruyter Mouton, 2016), 644–663; Aaron S. Allen and Jeff Todd Titon, eds., “Ecologies” Special Issue, *MUSICultures* 45, no. 1–2 (2018); and Aaron S. Allen, “Ecomusicology,” in *The SAGE International Encyclopedia of Music and Culture* vol. 2, ed. Janet Sturman (Thousand Oaks, SAGE Publications, 2019), 763–765. See also Timothy J. Cooley, ed., *Cultural Sustainabilities: Music, Media, Language, Advocacy* (Urbana-Champaign: University of Illinois Press, 2019).

(Most scholars who work disciplinarily or interdisciplinarily do not need, and should not have the need, to name their disciplines and fields when writing; the field of ecomusicology is no different.) The concept of ecomusicology is not new, even if the term is and the venerable *Grove* dictionary has only recently published a short entry on the subject.<sup>44</sup> I will elaborate on that point briefly, but then I will present the opposite stance: that ecomusicology is, in fact, new, for it is precisely this present newness, rather than the past conception of it, that serves to contribute to the future of ecomusicological discourse on the climate crisis. To connect the dots between ecomusicology and climate change is also to connect past lessons with present realities and future prognostications.

Numerous historical examples provide connections between music and nature, as well as thinkers working to connect them with culture. While enumerating a complete history would be unnecessary here, consider just a few examples: Many Biblical Psalms relate humans to nature. The Ancient Greek “harmony of the spheres” could be interpreted as finding a sonic undergirding to all of the natural world. The Ancient Chinese had a similar way of understanding a harmonious universe that sounded in music through a pitch system purportedly discovered in birdsong.<sup>45</sup> European music theorists, philosophers, and theologians debated the nature of music that imitated birdsong as well as birdsong itself.<sup>46</sup> Various music theorists from the Renaissance through the twentieth century used nature as a source for their theories of music.<sup>47</sup> Composers from the late-eighteenth century through the twentieth century found ways to relate the pastoral through the usually textless (i.e. “abstract”) genre of the symphony, and even the popular press of nineteenth-century Italian opera journals found an outlet in connecting music, culture, and nature.<sup>48</sup> And no account of the past of ecomusicology, however cursory, would be complete without citing the curious work of William Gardiner,<sup>49</sup> whose complete title is worth quoting in full: *The Music of Nature, Or, an Attempt to Prove That What is Passionate and Pleasing in the Art of Singing, Speaking, and Performing Upon Musical Instruments, is Derived from the Sounds of the Animated World*. Even if the “study of” suffix -ology that we could ascribe to such work today was not then in use, these examples from the past few millennia nevertheless make connections between music, culture, and nature.

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<sup>44</sup> Allen, “Ecomusicology,” op. cit.

<sup>45</sup> Jeff Todd Titon, “Ecomusicology and the Problems in Ecology,” *MUSICultures* 45, no. 1–2 (2018): 255–264.

<sup>46</sup> Elizabeth Eva Leach, *Sung Birds: Music, Nature, and Poetry in the Later Middle Ages* (Ithaca, NY: Cornell University Press, 2007).

<sup>47</sup> Suzannah Clark and Alexander Rehding, eds., *Music Theory and Natural Order from the Renaissance to the Early Twentieth Century* (New York: Cambridge University Press, 2001).

<sup>48</sup> Aaron S. Allen, “Symphonic Pastorals,” *Green Letters* 15 (2011): 22–42; Aaron S. Allen, “New Directions: Ecological Imaginations, Soundscapes, and Italian Opera,” in *Current Directions in Ecomusicology: Music, Culture, Nature*, eds. Aaron S. Allen and Kevin Dawe (New York and London: Routledge, 2016): 273–285.

<sup>49</sup> William Gardiner, *The Music of Nature*, reprint (Cambridge, UK: Cambridge University Press, 2009; originally, Boston: O. Ditson, 1832).

At the same time, however, ecomusicology takes on a decidedly different tone after civilization has crossed critical thresholds in development, population, technological capacity, and self-destructive ability. Once we developed the capacity to destroy the entire human race, and much of the rest of life on earth, multiple times over with the nuclear weapons developed in the middle of the twentieth century, we took a decided turn away from our intimacy with the natural world.<sup>50</sup> And after the environmental moment of the twentieth century, any sort of environmentally related study—be it of chemistry, zoology, or politics, or of art, literature, or music—has the capacity to take on critical, political, and activist overtones, both implicit and explicit and both deliberate and interpreted. Nature study no longer is just an innocent pastime, and it is this contextual distinction that qualifies contemporary ecomusicology as new and as different from earlier endeavors. Jeff Titon appropriately elaborated on the *Grove* definition of ecomusicology to be “the study of music, culture, sound and nature in a period of environmental crisis.”<sup>51</sup>

With wide-ranging disciplinary and interdisciplinary connectivity—from literary ecocriticism to environmental history, and from soundscape studies to scientific ecology—the roots of contemporary ecomusicology are diverse. When in 1972, Malcolm Troup proposed what was perhaps of the first use of the term “ecomusicology,” it was decidedly scientific.<sup>52</sup> Troup was discussing the work of R. Murray Schafer, the Canadian composer and seminal author on soundscapes;<sup>53</sup> the various fields and endeavors inspired and informed by his work (such as acoustic ecology) are at the core of ecomusicology.

In 2009, the Ecocriticism Study Group of the American Musicological Society (of which I was a co-founder in 2008 and was then chair) held a session with an overflow crowd at the annual meeting in Philadelphia. The occasion was the 75<sup>th</sup> Anniversary of the Society, and the topic could not have been more explicit: “Why Now is the Time for Ecomusicology.” A keynote by Mitchell Morris<sup>54</sup> was followed by responses from Suzannah Clark (a music theorist),<sup>55</sup> Emily Doolittle (a composer),<sup>56</sup> Helmi

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<sup>50</sup> Some have posited that the divide has considerably earlier roots—as in, with the dawn of agriculture. See Daniel Quinn’s philosophical novel, *Ismael* (New York: Bantam/Turner Book, 1992).

<sup>51</sup> Jeff Todd Titon, “The Nature of Ecomusicology,” *Música e Cultura* 8, no. 1 (2013): 8–18, here 8. Although Titon’s article appeared before the *Grove* entry was published, the entry was written and widely available before the final publication of the *Grove Encyclopedia*.

<sup>52</sup> Malcolm Troup, ed., *Guildhall School of Music and Drama Review* (London: Guildhall School of Music and Drama, 1972).

<sup>53</sup> See especially R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World*, (Rochester, VT: Destiny Books, 1994).

<sup>54</sup> Morris is one of the earliest writers in the contemporary instance of ecomusicology; see his “Ecotopian Sounds; Or, The Music of John Luther Adams and Strong Environmentalism,” in P.F. Broman, N.A. Engebretsen, and B. Alphonse, eds., *Crosscurrents and Counterpoints: Offerings in Honor of Berngt Hambraeus at 70* (Goetenberg: University of Sweden Press, 1998), 129–141.

<sup>55</sup> Clark is the co-editor of Clark and Rehding, *Music Theory and Natural Order*, op. cit.

Järviluoma (an ethnomusicologist),<sup>57</sup> and Thomas Peattie (a music historian).<sup>58</sup> This event marks a turning point in the consciousness of ecomusicological work.

But this turning point neither indicates that all subsequent work differs, nor does it mean that previous authors did not make explicit their environmental aims. Considering the latter, for example: Tina Ramnarine has been practicing an environmental ethnomusicology.<sup>59</sup> Nancy Guy has called on ethnomusicologists to engage their work more actively with environmental concerns.<sup>60</sup> Stephen Feld had drawn on his experience with the Kaluli (the Papua New Guinean people who have a rich epistemology regarding music making, ritual practice and custom, their acoustic environment, and the natural forest world around them)<sup>61</sup> to encourage listeners to “do everything possible to make people realize that the destruction of rainforests is not only linked to global warming and the disastrous loss of biodiversity. It’s also about the destruction of cultures, and that includes massive musical wipeout.”<sup>62</sup> And after that 2009 AMS session, the most prestigious scholarly journal of musicology published a colloquium on ecomusicology;<sup>63</sup> the authors’ perspectives ranged the gamut from sustainability issues and geography to place/placelessness and gender. In that colloquium, Alex Rehding—who has been a consistent voice supporting contemporary ecomusicology<sup>64</sup>—made the case that ecomusicology might

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<sup>56</sup> In addition to her many compositions informed by nature (discussed further in Denise Von Glahn, *Music and the Skillful Listener: American Women Compose the Natural World* (Bloomington: Indiana University Press, 2013)), see Emily Doolittle, “Crickets in the Concert Hall: A History of Animals in Western Music,” *TRANS: Revista Transcultural de música/Transcultural Music Review* 12 (July 2008), <https://www.sibetrans.com/trans/article/94/crickets-in-the-concert-hall-a-history-of-animals-in-western-music> (accessed 3 September, 2019).

<sup>57</sup> See especially Helmi Järviluoma, Meri Kytö, Barry Truax, Heikki Uimonen, and Noora Vikman, eds., *Acoustic Environments in Change & Five Village Soundscapes* (Joensuu, Finland: Tampereen ammattikorkeakoulu, 2009), which among other endeavors updates (and reprints) the classic study, R. Murray Schafer, Bruce Davis, and Barry Truax, eds., *Five Village Soundscapes* (Vancouver: A.R.C. Publications, 1977). The 2009 volume is reviewed in Aaron S. Allen, “Ecomusicology: Music, Culture, Nature . . . and Change in Environmental Studies?” *Journal of Environmental Studies and Sciences* 2, no. 2 (2012): 192–201.

<sup>58</sup> Thomas Peattie, “In Search of Lost Time: Memory and Mahler’s Broken Pastoral,” in *Mahler and His World*, ed. Karen Painter (Princeton: Princeton University Press, 2002): 185–198.

<sup>59</sup> Tina K. Ramnarine, “Acoustemology, Indigeneity, and Joik in Valkeapää’s Symphonic Activism: Views from Europe’s Arctic Fringes for Environmental Ethnomusicology,” *Ethnomusicology* 53, no. 2 (Spring-Summer 2009): 187–217.

<sup>60</sup> Nancy Guy, “Flowing Down Taiwan’s Tamsui River: Towards an Ecomusicology of the Environmental Imagination,” *Ethnomusicology* 53, no. 2 (Spring-Summer 2009): 218–248.

<sup>61</sup> Among his many books and articles, his now thrice reprinted classic is *Sound and Sentiment: Birds, Weeping, Poetics, and Song in Kaluli Expression* (Philadelphia: University of Pennsylvania Press, 1982).

<sup>62</sup> Stephen Feld, liner notes to the CD: *Voices of the Rainforest* (Salem, MA: Ryko, 1991).

<sup>63</sup> Aaron S. Allen, Daniel M. Grimley, Alexander Rehding, Denise Von Glahn, and Holly Watkins, “Colloquy: Ecomusicology,” *Journal of the American Musicological Society* 64, no. 2 (2011), 391–424.

<sup>64</sup> In addition to his contributions with Clark on *Music Theory and Natural Order*, op. cit., see also his “Eco-Musicology,” *Journal of the Royal Musical Association* 127, no. 2 (2002): 305–320; and his “Review of *The Book of Music and Nature*,” *Music Theory Spectrum* 25, no. 2 (Fall 2003): 401–402.

be better at dealing with the nostalgic aspects of music rather than the more crisis aspects of environmental studies.<sup>65</sup> While Rehding certainly has a point, and the traditional (eco)musicological work of considering place<sup>66</sup> and the pastoral<sup>67</sup> fit well with the contribution of literary ecocriticism to the environmental humanities,<sup>68</sup> a number of authors are demonstrating alternative paths to the nostalgia approach.<sup>69</sup> Furthermore, as we broaden ecomusicology’s humanistic audience to scholars and students in environmental studies and other fields, new paths are bound to emerge.

And that brings me to considerations of the future of ecomusicology. Prognostication for a scholarly field is difficult (rather, impossible!), and one’s hopes should be understood as distinct from discernable trends.<sup>70</sup> Here, I would like to propose a few potential paths that could bring ecomusicology closer into dialogue with efforts to confront climate catastrophe. Many of the following ideas are already implemented, or may be well implemented, or have happened without my being aware

<sup>65</sup> Rehding’s contribution to the *JAMS* colloquy was updated and translated as “Brauchen wir eine Ökomusikwissenschaft?” *Archiv für Musikwissenschaft* 69, no. 3 (2012): 187–195.

<sup>66</sup> See Denise Von Glahn, *The Sounds of Place: Music and the American Cultural Landscape* (Boston: Northeastern University Press, 2003). Two of many composers who have profound engagements with northern places in their music are John Luther Adams and Matthew Burtner. See John Luther Adams, *The Place Where You Go to Listen: In Search of an Ecology of Music* (Middletown, CT: Wesleyan University Press, 2009); and Matthew Burtner, “The Syntax of Snow: Musical Ecoacoustics of a Changing Arctic,” in *North by 2020 Perspectives on Alaska’s Changing Social-Ecological Systems*, eds. Amy Lauren Lovecraft and Hajo Eicken (Fairbanks: University of Alaska Press, 2011): 513–519.

<sup>67</sup> See Allen, “Symphonic Pastorals” and Holly Watkins, “The Pastoral After Environmentalism: Nature and Culture in Stephen Albert’s *Symphony: RiverRun*,” *Current Musicology* 84 (2007): 7–24.

<sup>68</sup> The field of ecocriticism is vast; a good introduction is Greg Garrard, *Ecocriticism* (New York: Routledge, 2004). David Ingram has consistently engaged with music studies; see especially his *The Jukebox in the Garden: Ecocriticism and American Popular Music Since 1960* (Amsterdam, New York: Rodopi, 2010). See also his “‘A Balance That You Can Hear’: Deep Ecology, ‘Serious Listening’ and the Soundscape Recordings of David Dunn,” *European Journal of American Culture* 25, no. 2 (June 2006): 123–138; “For Free? Theorising Consumption, Commerce, and the Environmental Costs of Artistic Production,” *Green Letters* 8 (Spring 2007): 13–22; and “‘My Dirty Stream’: Pete Seeger, American Folk Music, and Environmental Protest,” *Popular Music and Society* 31, no. 1 (February 2008): 21–36.

<sup>69</sup> Mark Pedelty addresses issues of sustainability and their relationships with music making on the local and global scale. Nathan Currier outlines a path to connecting ecomusicology more with ecology (rather than ecocriticism) via Gaia Theory. I have considered the conservation and destruction of forests in Italy and Brazil due to the values placed on professional instruments of the violin family. The collected essays that Tim Cooley curated present a wide-ranging set of responses to sustainability issues with music. See Mark Pedelty, *Ecomusicology: Rock, Folk, and the Environment* (Philadelphia: Temple University Press, 2012); Mark Pedelty, *A Song to Save the Salish Sea: Musical Performance as Environmental Activism* (Bloomington, Indianapolis: Indiana University Press, 2016); Nathan Currier, “Classical Music in the Anthropocene,” *Ecomusicology Newsletter* 3, no. 1 (April 2014): 8–12, 30–51; Allen, “‘Fatto Di Fiemme’”; Cooley, ed., *Cultural Sustainabilities*.

<sup>70</sup> For some of my further thoughts on the matter, see Andreas Engström and Juha Torvinen, “The Study of the Music & Culture of the Environmental Crisis: Interview with Aaron S. Allen,” *Ecomusicology Newsletter* II, no. 2 (2013): 3, 20–23. Finish and Swedish translations: “Musikintutkimus ja kulttuurinen ympäristökriisi” [“The Study of the Music and Culture of the Environmental Crisis”], *Musiikin Suunta*, XXXV, no. 1 (2013): 49–54; “Ekomusikologi—för att förstå vår omvärld” [“Ecomusicology: In Order to Understand the World around Us”], *Nutida Musik* 1 (2013): 32–35.

of them; such a collapsing of the past, present, and future is, in fact, where I eventually hope we find ourselves—and where I aim to bring this particular essay in my conclusion.

Physicist and popular author and blogger Joe Romm has sought to improve scientists’ and climate activists’ communication skills by drawing on the rhetorical and emotional prowess of figures as diverse as Jesus and Lady Gaga.<sup>71</sup> Perhaps there are fruitful collaborations and lessons to be learned and exchanged in such efforts. There could be more opportunities similar to the dynamic Crossroads Project, which combines music with art and climate science in a highly polished and accessible stage performance.<sup>72</sup> And the world certainly could benefit from more initiatives such as: Julie’s Bicycle, which works to make the music industry more carbon sensitive and focused on sustainability;<sup>73</sup> the AmbITion program in Scotland, which helps cultural organizations organize their activities and programming with regard to the climate crisis;<sup>74</sup> and composer Matthew Burtner’s EcoSono environmental arts organization, which connects musical creation and ecological awareness to improve human-place relations.<sup>75</sup>

Maybe we will listen to, rather than just look at, more graphs about climate change.<sup>76</sup> And perhaps we will more often listen to and visualize real time data on geological and climactic events in order to be more connected to our environments.<sup>77</sup> As linguistic diversity and biodiversity are correlated,<sup>78</sup> so too are art history and climate connected. Consider, for example, that chemists and artists have collaborated to test a hypothesis that was substantiated when looking at historical paintings: redder sunsets correlated with periods of increased atmospheric pollution (e.g., from aerosols and

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<sup>71</sup> Joseph J. Romm, *Language Intelligence: Lessons on Persuasion from Jesus, Shakespeare, Lincoln, and Lady Gaga* (North Charleston, SC: CreateSpace, 2012).

<sup>72</sup> <http://www.thecrossroadsproject.org/> (accessed 3 September, 2019).

<sup>73</sup> <http://www.juliesbicycle.com/> (accessed 3 September, 2019).

<sup>74</sup> Hannah Rudman, “Culture’s Role in Environmental Change,” *The Guardian*, Culture Professionals Blog (15 July, 2013, <http://www.theguardian.com/culture-professionals-network/culture-professionals-blog/2013/jul/15/creative-industries-environmental-change> (accessed 3 September, 2019).

<sup>75</sup> <http://www.ecosono.org/> (accessed 3 September, 2019).

<sup>76</sup> For three various examples, see <http://dotearth.blogs.nytimes.com/2013/07/10/fiddling-while-the-world-warms/>, <http://dotearth.blogs.nytimes.com/2013/07/02/global-warming-trend-and-variations-charted-by-cello/>, and <http://www.tinpanalgorithm.com/geothermophone/> (accessed 3 September, 2019).

<sup>77</sup> Adams: *The Place Where You Go to Listen*; see also my review essay, “Ecomusicology: Music, Culture, Nature . . . and Change in Environmental Studies?” Furthermore, for a thoughtful engagement on this topic, see Andrea Polli, “Ice + Air + Dust: Sonifications of Global Environmental Phenomena,” in *Art of Immersive Soundscapes*, eds. Pauline Minevich and Ellen Waterman (Saskatchewan: University of Regina Press, 2013). Polli collaborated with scientists to create *Heat and the Heartbeat of the City* (which directly translates projected data into sound to illustrate the impacts of global heating on New York City’s Central Park) and *N.* (which takes a similar approach on observed and real time data on the Arctic). Matthew Burtner has also taken ecoacoustic approaches to northern climate and integrated data and models; see his “Syntax of Snow.”

<sup>78</sup> Jonathan Loh and David Harmon, *Biocultural Diversity: Threatened Species, Endangered Languages* (Zeist, The Netherlands: WWF Netherlands, June 2014).

particulates due to volcanic eruptions, which have both cooling and warming effects on the climate of the Earth). Overall, they determined that sunsets have been getting redder since the early nineteenth century due to increasing anthropogenic pollution.<sup>79</sup> Ecomusicology might seek out similar roles for music in understanding historical change and reaching broader publics. (Perhaps the finding that finches contaminated by mercury sang measurably different songs than those not so polluted<sup>80</sup> is a path that considers the implications of environmental changes on learning sound/music.)

The series of conferences aptly entitled “Ecomusicologies” has taken a specifically outreach and interdisciplinary focus. With its theme of “Dialogues,” the 2014 conference has made an explicit effort to incorporate activists, artists, and scholars—rather than the more typical scholarly conference that keeps the dialogue within the field. The *Ecomusicology Review* is an active community of scholars and artists from a variety of music-centered fields with similar goals.<sup>81</sup> Soon, perhaps, those involved with the *Review* and ecomusicologies should find themselves enmeshed in one of the most challenging social issues related to climate catastrophe, sustainability, and environmental issues in general: justice.<sup>82</sup> While the parallels between slavery and the climate crisis are imperfect, the moral implications are similar.<sup>83</sup>

Fundamentally, we need to find better ways to make the experience of sound, study of music, music making, music communities, and music consumption more causally linked with efforts to make

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<sup>79</sup> C. S. Zerefos et al., “Further Evidence of Important Environmental Information Content in Red-to-Green Ratios as Depicted in Paintings by Great Masters,” *Atmospheric Chemistry and Physics* 14, no. 6 (25 March, 2014), 2987–3015.

<sup>80</sup> <http://dotearth.blogs.nytimes.com/2014/08/28/winged-warning-heavy-metal-song-distortion/> (accessed 3 September, 2019).

<sup>81</sup> The *Ecomusicology Review* was previously the *Ecomusicology Newsletter*, and Ecologies conference information was disseminated via those publications as well as other sponsoring organizations. <http://www.ecomusicology.info/> (accessed 3 September, 2019).

<sup>82</sup> ASLE (The Association for the Study of Literature and Environment) has already started down this path. Their biennial conference for 2015 was entitled “Notes from Underground: The Depths of Environmental Arts, Culture and Justice,” <https://www.asle.org/conference/biennial-conference/archive/> (accessed 3 September, 2019). Ecocritics have been engaging with issues of justice, equality, and equity for many years; see, for example, some of the essays included in Joni Adamson, Mei Mei Evans, and Rachel Stein, eds., *The Environmental Justice Reader: Politics, Poetics & Pedagogy* (Tucson: University of Arizona Press, 2002). Regarding approaches to music, I find Jeff Todd Titon’s idea of a “sound commons” central to a pan-species approach to justice, in that anthropogenic sounds and environmental disruptions should not displace other species from their acoustic niches. See Jeff Todd Titon, “A Sound Commons for All Living Creatures,” *Smithsonian Folkways Magazine* (2012), <https://folkways.si.edu/magazine-fall-winter-2012-sound-commons-living-creatures/science-and-nature-world/music/article/smithsonian> (accessed 3 September 2019), and some of his subsequent thinking (2014) at <http://sustainablemusic.blogspot.com/2014/07/sustainability-sound-commons-and.html> (accessed 3 September, 2019).

<sup>83</sup> Andrew Winston, “The Climate Change Abolitionists,” *The Guardian*, Sustainable Business Blog, <http://www.theguardian.com/sustainable-business/blog/climate-change-abolitionists> (accessed 3 September, 2019).

the world a more just place. While they may often be thought of (incorrectly) as liberal bastions,<sup>84</sup> institutions of higher education have arts programs that are relatively conservative. (Schools of music and academic departments of music often aspire to the rarified conservatory model that is deeply retrospective and enmeshed in a small subset of canonical repertoires of conservative music from a particular European heritage; their pedagogy and curricula are often conservative as well.) Nevertheless, social practice<sup>85</sup> and eco art<sup>86</sup> are influencing some higher education art programs, which are opening up to activist-oriented work that addresses this need to connect art to social justice (and environmental concerns).<sup>87</sup> Perhaps some day, ecomusicology too will find this path productive and engaging, and new curricula and academic programs can contribute to addressing pressing problems via music.<sup>88</sup> Or perhaps scholars of ecomusicology will, like some historians of science,<sup>89</sup> expand our academic discourse and venture into the world of fiction writing,<sup>90</sup> maybe even melding it with music.

Is it a stubborn illusion to think that the scholarly discourse of ecomusicology can matter in humanity’s struggle with the climate crisis? Perhaps. Could the resources be better spent elsewhere? Also perhaps, especially if we consider the challenge we face as a civilization to convert our energy sources from ancient sunlight to present-day sunlight (ecomusicology, as best I am able currently to imagine it, surely plays at most a supporting rather than central role with respect to such a challenge).

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<sup>84</sup> David La Falce and Simon Peter Gomez, “Political Attitudes in the Classroom: Is Academia the Last Bastion of Liberalism?” *Journal of Political Science Education* 3, no. 1 (2007): 1–20.

<sup>85</sup> This field of engaged art making is vast. See Suzi Gablik: *The Reenchantment of Art* (New York, N.Y.: Thames and Hudson, 1991). See also the music-theatrical-multimedia hybrid on climate change by Cynthia Hopkins, Charles Isherwood, “‘This Clement World’ at St. Ann’s Warehouse,” *The New York Times* (8 February, 2013).

<sup>86</sup> Weintraub, *To Life!*

<sup>87</sup> Some of these degree programs Portland State University, Arizona State University, Unity College, and Pitzer College, with numerous others including various courses or tracks in relevant work. Amy Westervelt, “Can Art Schools Save the Planet?” *Sierra Club*, <http://www.sierraclub.org/sierra/2014-5-september-october/cool-schools-2014/can-art-schools-save-planet> (accessed 3 September, 2019).

<sup>88</sup> Aaron S. Allen, “Greening the Curriculum: Beyond a Short Music History in Ecomusicology,” *Journal of Music History Pedagogy* 8, no. 1 (2017): 99–109.

<sup>89</sup> Naomi Oreskes and Erik M. Conway, *The Collapse of Western Civilization: A View from the Future* (New York: Columbia University Press, 2014). As Oreskes recounts: “Erik and I were struggling with some way to convey something important that we felt we had come to understand: people really weren’t getting why climate change really mattered, and lots of people had the impression that climate change was something that was just about polar bears. So we wanted to write something that would convey why this is not just an issue about polar bears; this is an issue about us, about our way of life, and also about our institutions—about our economic and political and democratic institutions.” Interviewed in Curwood, “The Collapse of Western Civilization,” op. cit.

<sup>90</sup> As Jeff Todd Titon has observed, “A scholarly essay persuades by being true to facts, ideas, and logic; but fiction seeks assent in the reader’s experience, real or imagined.” Jeff Todd Titon, “Representing Ethnographic Ambiguity in Fiction,” *Sustainable Music: A Research Blog* (29 June, 2014), <http://sustainablemusic.blogspot.com/2014/06/representing-ethnographic-ambiguity-in.html> (accessed 3 September, 2019).

Nevertheless, such lines of ecomusicological and humanistic inquiry have roles to play in education,<sup>91</sup> in collapsing the divide between nature and culture that has exacerbated the climate crisis, in shaping social discourse around the climate crisis, and in impacting political and technological actions.

### “A Stubbornly Persistent Illusion”?

Just a month before his own death on April 18, 1955, Albert Einstein wrote a letter of condolence to the family of Michele Besso, ending it as follows: “Now he has departed from this strange world a little ahead of me. That means nothing. People like us, who believe in physics, know that the distinction between past, present, and future is only a stubbornly persistent illusion.”<sup>92</sup>

Einstein was not being heartless when he said Besso’s death “means nothing,” for Besso was his close friend of over half a century. Rather, according to physicist Freeman Dyson, Einstein’s “discovery of relativity taught us that in physics the division of space-time into past, present and future is an illusion. He also understood that this division is as illusory in human affairs as it is in physics.” People of the past and people of the future are connected with us in the present: “They are our neighbors in this universe.”<sup>93</sup>

What does this anecdote have to do with climate change and the north, ecomusicology and academic discourse? I find in it three important meanings. First, this statement shows how seemingly different things come together fundamentally and how teasing them apart is artificial—and has unintended consequences. We take for granted the pastness of history, the present-ness of art, and the future-ness of concern,<sup>94</sup> and while we may know that they are related, we need to be reminded to connect them actively and always—to be reminded of those neighbors who came before and will come after us. Perhaps collapsing these ideas into one is out of reach for everyone not of Einstein’s intellect, but an attempt to forge lasting and significant linkages is a step toward achieving that wisdom.

Second, Einstein makes a point about the ultimate subjective, experiential humanity of that supremely objective science known as physics. In doing so, he denies the false binary between the humanities and sciences that C.P. Snow reified nearly a half century ago. Collapsing such boundaries

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<sup>91</sup> I elaborate on this issue in “Sounding Sustainable,” op. cit., and in the forthcoming “Diverse Ecomusicologies: Making a Difference with the Environmental Liberal Arts,” in *Performing Diverse Environmentalisms: Expressive Culture at the Crucx of Ecological Change*, eds. John Holmes McDowell, Katey Borland, Rebecca Dirksen, and Sue Tuohy (forthcoming).

<sup>92</sup> Freeman Dyson, *Disturbing the Universe* (New York: Basic Books, 1979), 93. Dyson’s translation of the French is taken from Albert Einstein and Michele Besso: *Correspondance 1903–1955*, ed. Pierre Speziali (Paris: Hermann, 1972), letter 215, page 538.

<sup>93</sup> Dyson, *Disturbing the Universe*, 93.

<sup>94</sup> Regarding the future-ness of concern, see Samuel Scheffler, “The Importance of the Afterlife. Seriously,” *The New York Times* (22 September, 2013).

helps create a safe space for fields such as ecomusicology, which necessarily blur such artificial silos that have been constructed between art and science.<sup>95</sup>

Finally, this anecdote provides a powerful stimulus to reflect on the past, present, and future of academic discourse in ecomusicology as it relates to the climate crisis. We can learn from Einstein’s lesson that if we care about humanity’s past, present, and future artistic experiences, then we also care about our past, present, and future existence, and we recognize the inseparable intertwining of whence we come, where we are, and wither we are headed. The continuing climate crisis jeopardizes our past, present, and future traditions.<sup>96</sup> We cannot bury our heads in books and musical scores and pretend the physical laws of nature can be ignored while music scholars seek to revive, preserve, protect, disseminate, encourage, sustain, and intellectualize music traditions. Ecomusicology can help realign our scholarly discourse with itself, with each other, and with creative and intellectual potentials that aid in our confrontation of the most profound crisis that humanity faces.

But ecomusicology is no panacea; it is certainly not the only way forward, and these matters are not limited to any field or discipline. My only hope is that ecomusicology offers a set of examples that help make clear that it is possible and productive for academic discourse on music and sound to engage with the climate crisis. To reiterate and make as clear as possible the arguments I have laid out in this essay: Academic discourse avoiding the climate crisis can only enable denialism; there are many climate connections to be made in ecomusicological discourse; and, ultimately, we need to make such connections and do something about the problems we face as a civilization. As Einstein criticized, in a broad stroke, those who failed to connect seemingly disparate realms, so must we. The connections between climate crisis and the north, and ecomusicology and academic discourse are not illusory. We must be stubborn and persistent in making them.

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<sup>95</sup> Two recent books further this blurring: Arthur I. Miller, *Colliding Worlds: How Cutting-Edge Science Is Redefining Contemporary Art* (New York: W. W. Norton & Company, 2014); Peter Pesic, *Music and the Making of Modern Science* (Cambridge, MA: The MIT Press, 2014). Regarding C.P. Snow, see my “Ecomusicology: Bridging the Sciences, Arts, and Humanities,” in *Environmental Leadership: A Reference Handbook*, ed. Deborah Rigling Gallagher (Thousand Oaks, CA: Sage Publications, 2012), 373–381.

<sup>96</sup> Regarding the durability of musical cultures, see *Sustainable Futures for Music Cultures: An Ecological Perspective*, eds. Huib Schippers and Catherine Grant (New York: Oxford University Press, 2016). But see also my critique: “Review of *Sustainable Futures for Music Cultures: An Ecological Perspective*, edited by Huib Schippers and Catherine Grant,” *Ethnomusicology Forum* 26, no. 3 (2017): 400–405.