PROVOCATION

Making the Environmental Humanities Consequential in “The Age of Consequences”
The Potential of Global Environmental Assessments

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Abstract This article suggests that global environmental assessments (GEAs) may be a potent means for making the environmental humanities more consequential outside universities. So far most GEAs have been led by geoscientists, with mainstream social science in support. However, there is no reason why the concept of assessment cannot be elasticated to include the concerns of interpretive social science and the humanities. Building on the forty-year history and authority of GEAs as a means to bridging the gap between the research world and the wider world, this article identifies the potential that reformatted assessments hold for more impactful work by environmental humanists. It suggests some next steps for rethinking the means and ends of assessment toward a new paradigm that bridges geoscience, mainstream social science, and humanistic thinking about the nonhuman world. This paradigm would explore the human dimensions of environmental change fully. The timing is propitious: independently GEAs are undergoing change at the very moment that the “What next?” question is being asked by many environmental humanists. This article is intended to inspire debate and, ultimately, action. It both makes the case for more humanistic GEAs and offers examples of potential work packages.

Keywords environmental humanities, global environmental assessment, expertise, global environmental change, Anthropocene

The efficacy of the environmental humanities will depend on their ability to address contemporary problems that cannot be fully addressed by other configurations of knowledge production.¹

¹ Neimanis et al., “Four Problems, Four Directions for Environmental Humanities,” 73 (hereafter cited as “FPFD”).
he environmental humanities are burgeoning. Though their origins precede the coin-
ing of the term by at least thirty to forty years, since the turn of the millennium they have grown prodigiously in size, scope, and sophistication. In an intellectual, institutional, and international sense, rarely have coincident (though hitherto largely separate) developments across several disciplines been knitted together with such speed and purpose. The environmental humanities are here to stay: as a collective enterprise they now possess considerable weight and momentum within the academy. But how can such a large and complex endeavor be steered, and to what ends?

Unsurprisingly this two-part question is preoccupying many of those who advocate for the environmental humanities. In the last few years numerous book chapters and journal articles have been published identifying possible next steps in light of progress to date. These contributions often convey a sense of real urgency. In large part this is because the environmental humanities have come of age in a period when teams of geoscientists have been sounding the planetary alarm ever more loudly. A recent article published by Timothy Lenton and colleagues in *Nature* offers a graphic example. Titled “Climate Tipping Points—Too Risky to Bet Against,” it warns that “the stability and resilience of our planet is in peril” because political leaders continue, perversely, “to err on the side of danger rather than precaution.” Among other things the environmental humanities speak to the so-called human dimensions of this looming crisis (even as many people regard the term as far too anemic to be appropriate). As we look ahead a key challenge is to ensure that more of the speaking occurs outside the universities where most environmental humanists ply their trade—that is, a humanities for the environment not simply of it.

In this article I suggest one high-level and achievable way to rise to this challenge. It relates to global environmental assessments (GEAs)—one of the most institutionalized mechanisms for rendering research about people-planet relationships globally visible and influential. If recent publications about the future of their field are anything to go by, precious few environmental humanists have spotted the potential to make their work more impactful beyond academia by way of GEAs. This is no doubt because assessments have so far been dominated by geoscience and the “scientific” parts of social science—so much so that GEAs may seem an unlikely milieu for environmental humanists to inhabit in the future. However, as Poul Holm and colleagues assert in a fairly recent manifesto, environmental humanists now “need a concentration of effort and clarity of focus” to

4. Humanities for the environment (HfE) is the name of a consortium of universities and an international network of people committed to making the EH more than academic studies of the environment. I will discuss HfE below. It has made a serious effort to de-academicize the EH.
“achieve economies of scale and impact.” That being, so my argument here is that GEAs might, in fact, offer a viable way forward compared to other current options.

GEAs are now entering their fifth decade—the first was undertaken back in 1976–77 (it was the OECD-commissioned assessment of Long Range Transportation of Air Pollutants [LRTAP]). There have been more than 140 assessments so far, the most prominent being those conducted by the Intergovernmental Panel on Climate Change (IPCC). To date GEAs have been predominantly problem focused. But there are growing demands for them to become solution focused: metaphorically the question now is “Can GEAs help humanity contain the fire before it gets out of control?” Answering this question implies the need for a larger and sharper focus on human dimensions. After all global environmental change is an anthropogenic problem (a wicked one at that) requiring coordinated and concerted action by many of the world’s 190-plus countries. Legitimate, credible, and salient information, argument, policies, and visions are needed to underpin any effective human response. As GEAs begin a transition away from problem identification it seems to me that environmental humanists have a signal opportunity to shape the means and ends of future assessments.

This article is organized as follows. First, I rehearse the environmental humanities’ definition, focus, and growth, before briefly surveying recent stock-takes of this large multidisciplinary field. I note the common wish in these stock-takes to exert extra-academic influence, but also the consistent oversight of specific mechanisms to achieve this in a coordinated way. I speculate as to why this oversight occurs. Second, I then identify the potential of GEAs to be such a mechanism. I sketch their evolution, noting the relative (though by no means absolute) paucity of humanists involved so far but the opportunities afforded by the recent turn toward solutions. Third, I then engage the most elaborate proposal for solution-focused GEAs—one formulated by analysts situated outside humanities disciplines in a major report and set of published papers. For all its merits this proposal for “assessments 2.0” ultimately replays the exclusion of humanities work characteristic of problem-focused GEAs. It is symptomatic of an epistemic deficit that, while it could and should be addressed outside GEAs, needs also to be addressed in and through assessments. Fourth, I then suggest how including humanistic work could usefully reformat the means and ends of GEAs in the immediate future (a paradigm shift toward assessments 3.0). The time is ripe for such a reformatting: a world population suffering a pandemic against the background of geopolitical tensions, chronic social inequality, and incessant, deep environmental change cannot afford to avoid serious reflection, leading to practical actions. The fifth section suggests some work programs for reformatted assessments, where environmental humanists are center stage (or at least coequal with other experts).

We live in an “age of consequences,” the current COVID-19 crisis being an especially graphic illustration of this long-standing fact. In this context environmental humanists need, quickly, to find ways to make their own work consequential beyond the seminar

room and lecture theater. Fine sounding words and exhortations will not be enough, and nor in the end will a smattering of local interventions (crucial though such interventions may be).  

### The Environmental Humanities: Progress and Prospect

#### Defining the Environmental Humanities

The term “environmental humanities” (hereafter EH) has become part of the academic lingua franca since about 2010. It describes research and teaching in various humanities disciplines that foregrounds the world of plants, animals, rivers, mountains, ice sheets, coral reefs, and microbes. It also encompasses environmentally focused work by interpretive social scientists across several other disciplines, such as sociology and human geography. Broadly speaking the shared concern is with how the nonhuman realm takes on various registers of significance for people in a world that is: (1) culturally diverse, (2) increasingly interconnected both spatially and temporally, (3) changing rapidly, (4) yet marked by forces of inertia and also by (5) numerous inequities and injustices (variously defined).

I use the word significance in the dual sense of signification (or sense-making) and importance—importance being a relative question of both meaning and matter, semiosis and physicality. As Astrida Neimanis and colleagues phrase it, “environmental humanities work has always challenged the idea that nature or the environment simply ‘is.’” Tweaking Greg Garrard’s neat formulation we can say that the EH “ecologize society” and “socialize ecology,” semantically and materially. They work productively between constructionist and realist approaches to the world. They ask how our humanity is enabled by the nonhuman world and what our humanity (in its various, often dissonant forms) can and should contribute to that world through symbolic and material practices. The environmental humanities largely eschew the objectivism and nomothetic preoccupations of social science (e.g., economics) even as they are committed to faithful accounts

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6. This article is one of two on the subject of future GEAs. Castree, Bellamy, and Osaka, “The Future of Global Environmental Assessment,” makes the general case for what we call GEAs 3.0. It is directed at geoscientists and environmental social scientists, as much as environmental humanists. It presents a comprehensive argument for a new assessment paradigm. The present article makes a specific case about the potential role of the environmental humanities for the benefit of environmental humanists. It touches only quite briefly on the wider case for GEAs 3.0. The tables are reproduced from Castree, Bellamy, and Osaka and were created by the present author.

7. For this reason some prefer the broader term “environmental social science and humanities” or ESSH for short. The environmental humanities also intersect with the arts (for instance, see Tyszczuk and Smith, “Culture and Climate Change Scenarios”), though the term “environmental humanities and arts” has not yet caught on, let alone the acronym ESSHA. Somewhat confusingly for those not already in the know, some work in the environmental humanities designates itself as posthumanities scholarship. In many ways both environmental social science and the environmental humanities have emerged from what is called environmental studies—a multidisciplinary field that was distinguished from environmental science in part because it focused on people, in part because it was not science-dominated in its approach. Today environmental studies are thought to encompass all branches of academia, as with The Companion to Environmental Studies edited by myself, Mike Hulme, and Jim Proctor.


of the world. More precisely they do so in the context of the abovementioned alarm bells sounded by scientific analysts of the atmosphere, biosphere, hydrosphere, pedosphere, and cryosphere. Indeed, several environmental humanists define their field as one of “crisis response.”10 Relatedly many expressly reference it to the epochal geoscientific concept of the Anthropocene.11 A sense of urgency animates the field in our “no analogue” times.

The value added by the EH is to shed light on what the geoscientists typically leave in the dark: namely the complex societal causes, interpretations, and impacts of global environmental change as well as actual and possible human responses to them at various scales—all this in a range of registers (cognitive and normative; explanatory and prescriptive; historical and contemporary; comparative and future focused; evidential and evaluative; moral, emotional, and aesthetic). While social scientists such as Nicholas Stern—lead author of a famous review of the economics of climate change 12—have likewise examined causes, impacts, and responses, environmental humanists attend more to the hermeneutic, contextual, value-laden, affective, evaluative, and idiosyncratic elements of all this. Critique, the identification of alternate past and present realities, and the visioning of futures are key. Unconventional thinking abounds, at least by the standards of everyday life outside universities. What is more, environmental humanists are not simply reacting to, and building on, the insights of global change scientists, such as Timothy Lenton. They often question these insights on ontological, epistemological, and political grounds, recognizing that science shapes the world as much as it represents it (thereby belying its purported neutrality). In sum the EH both fill the vacuum left by scientific approaches to society-environment relations and sometimes pushes back against aspects of these approaches (such as the scientization of environmental politics and policy). Together environmental humanists do not proffer general solutions to problems of society and nature. Instead they open up thinking about how problems should be defined and thus what sort of responses are appropriate.

**Evolution**

There is no need to recount the history of the EH here.13 Over the last decade the term “environmental humanities” has served to retrospectively designate environment-focused work in several humanities (and social science) disciplines. It has also given real impetus to this work, fostering a greater sense of shared identity and purpose. Metaphorically the term has placed a roof over a large but half-built house, in the

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10. For instance, see Oppermann and Iovino, *The Environmental Humanities and the Challenges of the Anthropocene*.

11. See, for example, Horn and Bergthaller, *The Anthropocene*.


13. Several accounts of its geographic and subdisciplinary origins now exist. For instance an early and quite comprehensive overview was provided by Nye et al., *The Emergence of the Environmental Humanities*. More recently detailed accounts have been published focused on parts of the larger story (e.g., Rigby, *Weaving the Environmental Humanities*). As yet there is no definitive history written. The more time passes, the harder the history will be to write since the environmental humanities is growing larger quite rapidly.
process allowing stairways and corridors to be constructed and, increasingly, some extensions too. It has thereby promoted a powerful feeling of, if not family, then certainly community and solidarity. As the house is upgraded and enlarged more people choose to become long-term residents (often disagreeing productively among themselves). This has occurred on the heels of scientific parts of social science playing a growing role in analysis and policy relating to the human dimensions of global environmental change (for instance, in Working Group III of the IPCC).

Today, as most readers of this journal know, environmental humanists number in the tens of thousands worldwide (even if not all of them claim the moniker). There are now professorships in the EH, peer review journals (published by Duke University and the University of Nebraska), degree programs, research centers and institutes, a book series (published by Routledge), introductory texts, research-level edited books, monographs, special journal issues (e.g., of Humanities and Global and Planetary Change, both in 2017), advanced seminar series, institutional nodes (for instance, in Sydney and Stockholm), interdisciplinary publishing outlets that welcome EH work (e.g., Anthropocene Review), a panoply of key thinkers recognized across the disciplines (e.g., Deborah Bird Rose, Dipesh Chakrabarty, Bruno Latour, Timothy Morton, and Anna Tsing), attempts at public communication and international networks of scholars—most notably, those organized into eight observatories that began life as three in 2013, courtesy of a grant to the Consortium of Humanities Centers and Institutes by the Andrew W. Mellon Foundation (the grant was for a transcontinental “Humanities for the Environment” (HfE) project). The observatories are a first attempt to emulate the long-standing global change research networks created by geoscientists and some social scientists (e.g., via the International Geosphere-Biosphere Program, 1987–2015). More pointedly, and in the words of two insiders, the observatories’ creation reflected a “concern that the humanities were not playing what we thought could be a vital part in global change scholarship and indeed politics.”

Speaking for the Environmental Humanities: Visions of the Future

Given this surge of institutional and intellectual effort it is no surprise that several attempts have been made to map the evolving terrain and chart paths forward for environmental humanists worldwide.

In 2015 Poul Holm and colleagues published “Humanities for the Environment—A Manifesto for Research and Action.” It emerged from phase one of the Mellon-funded observatories. It cites global environmental change as the key reference point for the

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14. See, for example, Emmett and Nye, *The Environmental Humanities*.
15. See, for example, Adamson and Davis, *Humanities for the Environment*.
16. See, for example, van Dooren, *Flight Ways*.
17. For example, by Carolyn Merchant in *The Anthropocene and the Humanities*.
18. See also Adamson, “Networking Networks and Constellating New Practices.”
EH and wishes to harness them to the cause of “pro-environmental behaviour.” A broad five-part agenda is proposed to this end—for instance one part involves collating humanistic insights into why many people resist green behavior change, so as to improve future environmental policy interventions by governments. The intellectual agenda is followed by an argument that humanities scholars should now get out of their comfort zones and engage scientists, publics, politicians, and business leaders alike. The article concludes with a report on the observatories and a set of next steps for them. The extended family of eight observatories (which now exists) will, so hoped Holm et al., together “seek a range of evidence-based, reasoned, scaled and culturally diverse responses to the complex problems under examination.”

The same year Neimanis et al. published a more general survey of the EH in the journal *Ethics and the Environment*. Titled “Four Problems, Four Directions for the Environmental Humanities,” it outlines a quartet of future pathways—two academic/investigative, two about reaching into nonacademic domains. Exploring the cognitive, normative, and affective potential of “environmental imaginaries” is an example of academic directions, while engaging the public is an example of nonacademic engagement. Unlike the Holm et al. article, Neimanis et al.’s claims are not anchored in the trajectory of any specific institutional form, such as the global observatories. Instead their argument is more declaratory and thereby hopeful. For instance at one point they assert that the “environmental humanities must . . . directly engage . . . diverse publics both within and outside of academic institutions so as to renew their ethical experience of environmental embeddedness.” Implicitly it is left to humanists to determine quite how to engage in light of their circumstances.

Two years later Ursula Heise threw her own net over the EH when introducing *The Companion to the Environmental Humanities*. At the core of this substantial edited book are papers emerging from an international seminar held in 2014–15 in Los Angeles. Heise references the environmental crisis and the Anthropocene proposition as twin contexts for the EH as well a fact of humans’ unavoidable embeddedness in the nonhuman world. After a quick survey of the EH’s origins the chapter focuses on narrative and use of aesthetic media as key to the EH contribution to understanding and affect. The chapter concludes with a call for public engagement, echoing Holm et al. and Neimanis et al. To quote Heise, environmental humanists need to devise “experimental strategies for generating new narratives and images, grounded in an understanding of ecological crises as fundamentally cultural processes, [to] . . . help . . . create a more sustainable world for humans and the species that coinhabit the planet with us.”

21. On this, see also Castree, “The Anthropocene and the Environmental Humanities.”
25. Heise rather overlooked some of the HfE project work that has indeed been experimental from the get go.
Writing in the same year as Heise, Joni Adamson introduced another major edited collection arising from the Mellon-funded seminars and observatories—*Humanities for the Environment*. She frames the EH with reference to the United Nations document "The Future We Want" (2012), an outcome of the second Earth Summit (Rio +20). Noting the alarming messages conveyed by geoscientists, like Holm et al. she speaks of the "sense of urgency, relevance and need for action among a fast growing number of humanists." Yet her overview seeks to respect the great diversity of the EH, as do Neimanis et al. and Heise. She urges environmental humanists to find various ways to shape public understanding by "seeing, observing, moving, walking and paddling toward knowledge." Likewise in their conclusion to *The Environmental Humanities*—the first student textbook about the field—Robert Emmett and David Nye balance the need for the EH to urgently shift broad public discourse about people-planet relationships with a concern it maintain internal diversity and be attuned to various local-level challenges.

Finally Greg Garrard has expressed a concern that the public face of the EH remains, in fact, indistinct (cf. LeMenager, who is far more sanguine). In an overview chapter subtitled “Notes towards a Summary for Policy Makers,” he calls for more muscular attempts to frame EH for those not already in the know. In this he shares Holm et al.’s desire for collective action. “What we need,” he suggests, “is a Janus-faced characterization: recognizable and acceptable to those working in the field, but concerned primarily to tell people who have no idea what we do and no prior commitment to the humanities, why we deserve their attention.” He proposes the twin-frame of “ecologizing humanity” and “humanizing ecology,” concluding that “a coherent, legible account of the things we agree about and the difference they might make to environmental sustainability is, in my view, the most vital work for the environmental humanities right now.” Yet he refrains from suggesting particular vehicles for making this account public internationally or efficacious politically.

Reading across these six contributions are some common themes. One is that the work of the EH is urgent and essential; another is that practitioners need “to speak from their disciplines not [just] to them”; a third is that “many flowers should bloom,” yet the EH somehow need to be coordinated; a fourth is that the EH are both inspired by geoscientific warnings yet need to work more closely with scientists so as to reframe

29. Emmett and Nye, *The Environmental Humanities*.
31. LeMenager, “The Humanities after the Anthropocene.”
34. LeMenager, “The Humanities after the Anthropocene,” 474.
scientific questions and issues about the Earth to capture the extra-scientific dimensions; and a final theme is that the EH can provide nonacademics with vital food for critical thought about human relations with the nonhuman world.

The Missing Mechanisms to Steer Change

However, as already intimated, what is striking is the lack of specific guidance on how to make the EH more consequential in the age of consequences. For instance consider one early overview I did not mention above, by Hannes Bergthaller et al. The authors noted that “for the majority of humanities scholars, the classroom will probably remain the most important venue for [their] . . . work, but we should also collaborate with partners outside the academy. Museums are well-placed in this regard. In the short term, they can sponsor dialogue and host public forums.”

A notable example of collaboration with a museum is the Rachel Carson Centre at the Ludwig-Maximilians-Universitatsit in Munich, which has worked closely with the Deutsches Museum of Science and Technology for some years. But Bergthaller et al.’s mention of museums immediately narrows the field of nonacademic engagement to something rather familiar; and it suggests a somewhat piecemeal, place-by-place, university-by-university approach. Strikingly it belies their hope (one hardly exclusive to them) that “by bringing scholarly work from across a broad spectrum of disciplines together under a new conceptual umbrella, the environmental humanities may finally allow that work to acquire the critical mass and popular appeal it needs to have an impact in the public sphere.”

Relatedly, in her overview of the EH Australian historian Libby Robin at one point urges public scholarship as a way forward—a most conventional and largely individualistic means of making the EH count (via book writing, TED talks, etc.). Notwithstanding the existence of the global observatories advice like this suggests there’s a fear among those speaking of (and for) the EH of being prescriptive or else an implicit skepticism that sustained, international coordinated action is really achievable.

This situation looks decidedly suboptimal when seen in two related contexts. The first is the considerable coordination of both research and communication achieved by thousands of geoscientists and a smaller number of environmental social scientists in the global change research programs launched twenty-five to forty years ago. Few humanists have been involved in these programs, and where they have it has been a concentrated rather than distributed involvement. The programs such as DIVERSITAS,

38. A prime example is the long running IHOPE research network and project. The acronym stands for integrated history and future of people on Earth. It began life in 2003 and was linked both to the International Geosphere-Biosphere Program and the International Human Dimensions Program. It draws heavily on humanities expertise, interfaces with geoscience, and connects to stakeholders too. For more details, visit http://
launched in 1991, have often enjoyed institutionalized means for research translation, notably the IPCC (linked to the World Climate Research Program). They thus set a high bar for the EH to reach. Second, for some years a contingent of geoscientists and social scientists in the world of global change research have actively called for greater involvement by humanists in their endeavor. They are looking for full spectrum collaboration and to have their expertise supplemented by historians, philosophers, media studies specialists, and so on. Examples of these calls abound, with some humanists strongly urging their colleagues to dive in. What’s more the new platform for global change research, Future Earth (futureearth.org/), has created clear space for environmental humanists to be involved in its research projects and knowledge-action networks—notably through its aspirations to transdisciplinarity and the coproduction of knowledge with stakeholders (e.g., Indigenous peoples).

**Toward a Globally Consequential Environmental Humanities:**

**Recognizing the Potential of GEAs**

The EH, it seems to me, have arrived at a fork in the road (and, in fact, first did so a few years ago as one reviewer of this article pointed out). After a decade of growth there are two options. One is to continue on the present path, more or less. The other option is to innovate and design the equipment needed to move in a new direction, while taking all the useful baggage of the recent past along. Though the overviews of the EH discussed above offer some sense of that direction, they largely fail—as we have seen—to identify suitable equipment. Without it the road ahead looks pretty similar to the one just traveled, not to mention a road likely to be traveled quite slowly. In the remainder of this article I want to suggest that GEAs—or something akin to them—offer strong potential for rapid and effective change. In the next section I begin to explain why.

**The Past Is Not the Future: GEAs as Malleable Resources**

Often produced by boundary organizations (such as the IPCC and IPBES), GEAs take the form of boundary objects—that is, major reports (with associated communications through the news media) that bridge between the world of academic research and the wider society. A recent example of a GEA is the IPBES (2019) global assessment. To date, with varying degrees of success, GEAs have allowed systematic review and dissemination of peer review research to occur, in the process strengthening academic networks (e.g., among climate scientists) and rebounding on the research base (e.g., integrated

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39. See, for example, Bai et al., “Plausible and Desirable Futures in the Anthropocene”; Mauser et al., “Transdisciplinary Global Change Research.”

40. See, for example, Palsson et al., “Reconceptualizing the ‘Anthropos’ in the Anthropocene.”

41. Star and Griesemer, “Institutional Ecology.”
assessment models would arguably not have developed in the ways they have without the IPCC. Up to this point GEAs have had a strongly natural science flavor in both content and tone, as noted above.

It is thus no surprise that few of those speaking about the future of the EH have seen the potential of GEAs. In one of the few comments made about them Garrard at one point offers the rousing injunction: “If the IPCC can do it, so can we.” But his essay refrains from saying more. Poul Holm and collaborators aimed “to ensure that future IPCC reports be informed by humanities’ perspectives on the New Human Condition.” Yet IPCC reports have not been systematically informed by EH insights and evidence, notwithstanding Holm et al.’s aspirations. The Panel’s author teams continue to include few humanists, even as Working Group III assumes greater importance over time. As Holm notes, writing with Charles Travis, “this fact . . . illustrates the huge opportunity cost to the world’s societies by not engaging . . . scholars in these [humanities] disciplines to address what is essentially a ‘human problem’ [of climate change].”

Like Holm I see a real potential for environmental humanists to harness GEAs. The potential lies in the history, globality, and cognitive authority of assessments as well in some (albeit rare) precedents. Firstly, GEAs are a highly established boundary mechanism with a forty-plus-year track record. There’s something very real to build-on and modify. The thing is both the concept of assessments as well as the current process and organizations that are used to deliver reports like the Global Environmental Outlooks. Assessments involve systematic surveys of a huge first-order knowledge base, thereby bringing a mass of expertise and experts together so as to distill key information and insight for nonacademic audiences. Notwithstanding their science-led character so far there’s nothing intrinsically exclusionary about the assessment idea for environmental humanists. It’s the means and ends of assessment that is at issue, not the process of taking stock of knowledge and information.

Secondly, GEAs have a ready-made global visibility by virtue of their aims, their geographically inclusive author teams, and wide reporting in the news media. It’s telling that it currently requires an individual of rare cultural authority, the Catholic Pope, to get global exposure for a serious treatment of humanistic themes—as he did in 2015.

Thirdly, GEAs possess considerable epistemic authority. To be sure it’s been hard won and there have been setbacks, such as the “climate-gate” affair that cast doubt on the IPCC more than a decade ago. It is also an authority based on the perception that

42. Garrard, “Notes towards a Summary for Policy Makers,” 462.
43. The reference here is to the Anthropocene, where people have the collective power to alter the Earth System and thus the weighty responsibility to act as planetary stewards.
44. See Holm and Winiwarter, “Climate Change Studies and the Human Sciences.”
46. The encyclical was published by the Vatican, Rome and authored by Pope Francis. It received serious critical attention in the news media, the social sciences, and the humanities.
environmental science is being assessed in most GEAs, not social science or humanities research. Even so the authority exists as a symbolic resource to build on for environmental humanists seeking ways to make their research more consequential. Finally, there are some precedents for humanistic involvement in GEAs. More than a decade ago there was the International Assessment of Agricultural Science and Technology for Development (2008). It was novel in that it broached value-laden human dimensions, such as the merits of peasant farming versus high-tech commercial food production. Most GEAs, until recently, sought to scientize such dimensions and keep the politics out.

These four reasons should instill some belief that an environmental humanist like Holm is not wrong to see potential in GEAs or something akin to them. But there’s an important additional reason too. As it turns out GEAs are taking a turn of their own at just the moment when the EH needs to chart its own path forward. This makes them more malleable than heretofore as they approach their own fork in the road.

The Turn to Solutions in GEAs

A number of well-informed observers and participants have argued that GEAs need to change. The current IPCC chairman, Hoesung Lee, has been quite vocal about this. Where the existing GEA paradigm is founded on problem-identification and tracking there is a fast-growing demand for information and proposals pertaining to (1) ameliorating problems and (2) mitigating their impact on people and the environment. The demand arises for at least three powerful reasons.

First, during the four decades when GEAs have grown in number and frequency the environmental challenges they identify have multiplied in complexity, scale, scope, and intensity. Secondly, this state of affairs has arisen despite the messages contained in numerous GEAs. The evidence—sifted, sorted, and synthesized in numerous GEAs—has so far been insufficient to change much at all in the arenas of government, business, and civil society. There are missing links in knowledge-action, is-ought chains. Thirdly, though, political action is not entirely absent. The world’s governments have agreed on various goals designed to reduce the human impact on the Earth System. Indeed the environment is, after trade, now the second most common area of international rule making and target setting. Accordingly some GEAs are already moving in lockstep with things such as the Paris Accord by providing evidence on whether nations are fulfilling their declared commitments and by projecting future socio-ecological scenarios relating to weak, moderate, and high policy success.

48. See, for example, Hallegatte and Mach, “Make Climate Change Assessments More Relevant”; Kowarsch et al., “A Roadmap for Global Environmental Assessments.”
49. Lee, “Turning the Focus to Solutions.”
To summarize in light of the demands of a world much changed since 1977, “the GEA enterprise now finds itself at a crossroads.” As the introduction to a recent journal collection about GEAs puts it, “contemporary assessments have been undergoing a transformational shift ... towards ... analysing the suitability of specific response options and policy pathways that range from technologies and behavioural changes to ... regulatory measures and market-based instruments.”

Current Proposals for Future GEAs and Their Truncated Approach to Human Dimensions

If environmental humanists are to realize the potential contained in GEAs, and if future GEAs are going to make real space for the EH, then a new concept of assessment is required in my view. The concept, in turn, can inspire new concrete assessment practices. The concept needs to make space for the wide and deep understanding of human dimensions found in the environmental humanities. What is assessed, in this broader concept, is a diverse set of descriptive, explanatory, prognostic, and normative accounts of people-environment relations, informed by evidence and reasoned argument. These accounts cannot converge on a rational position or even an optimal one, and nor can some objective truth or body of value-free evidence adjudicate among them. Yet we need such accounts if citizens, politicians, and business leaders are to confront the profound challenges of global environmental change.

Currently the most developed concept for solution-focused assessments—let’s call it the concept of GEAs 2.0, to distinguish it from the original ideas animating the LRTAP of 1977 and most of the other 140 GEAs since then—has been presented in a report and series of peer review papers by Martin Kowarsch and collaborators. The approach of Kowarsch et al., codified in an “objectives-means-consequences” model, would involve assessors doing the following things: (1) broaching value questions about what people believe they need and want from the physical environment; (2) recognizing and balancing diverse value positions in society; (3) exploring, with stakeholders, a range of policy goals and mechanisms in light of value pluralism; and (4) attending to the likely real world effects of possible policy goals and mechanisms with a view to revisiting some of them (the well-known maxim “the means do not justify the ends” would apply here; feasibility would also be a key consideration). Assessments 2.0 would, in this light, be highly complex yet committed to closing the knowledge-action gap evident in many GEAs 1.0. As Kowarsch and Ottmar Edenhofer express it, future assessments would help to “map the solution space,” leaving political leaders to “navigate” their societies toward desired outcomes.

Table 1. The differences and commonalities between GEAs 1.0 and 2.0*

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<tr>
<th>Characteristics</th>
<th>1.0</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key goal</strong></td>
<td>Understanding human impacts on the global environment and the effects of a changing environment on people</td>
<td>Identifying options for impact reduction and human adaptation to a changing global environment</td>
</tr>
<tr>
<td><strong>Principal forms of expertise</strong></td>
<td>STEM and the science end of the social science spectrum</td>
<td>STEM plus a broad section of social science, including policy science, resource management and planning</td>
</tr>
<tr>
<td><strong>Stakeholder engagement?</strong></td>
<td>Usually not</td>
<td>Yes, in a representative manner</td>
</tr>
<tr>
<td><strong>Core assessment values</strong></td>
<td>Honesty, accuracy, and integrity; achieving consensus about the first-order knowledge base; truth oriented</td>
<td>Honesty, accuracy, and integrity; avoidance of advocacy of particular proposals for problem-solutions; recognition of is-ought entanglements</td>
</tr>
<tr>
<td><strong>Cognitive or normative focus?</strong></td>
<td>Largely cognitive</td>
<td>Cognitive and normative</td>
</tr>
<tr>
<td><strong>Policy relevant?</strong></td>
<td>Yes, indirectly (informing)</td>
<td>Yes, directly by shaping policy discourse (forming)</td>
</tr>
<tr>
<td><strong>Main epistemic content</strong></td>
<td>Factual knowledge, predictive knowledge</td>
<td>Factual knowledge, predictive knowledge, reasoned and evidenced arguments about solution options</td>
</tr>
<tr>
<td><strong>Main epistemic activities</strong></td>
<td>Description, explanation, prediction, identification of solution possibilities</td>
<td>Description, explanation, prediction, evaluation, identification of solution possibilities alone and in relation to each other (nexus solution assessment)</td>
</tr>
<tr>
<td><strong>Approach to first-order knowledge base</strong></td>
<td>Quest for consensus</td>
<td>Acknowledgement of dissensus; disagreement seen as a resource</td>
</tr>
</tbody>
</table>

Much of this solution space would be geared to long-term, intergovernmental action framed by things such as the United Nations’ Sustainable Development Goals.

GEAs 2.0 would differ from assessments 1.0 as outlined in table 1. However, as with assessments 1.0, assessors would aim to behave in an honest and rigorous way as they survey the first-order research base and as they consult citizens, businesses, and civil society actors. GEAs 2.0 would be more policy relevant than most previous assessments, but still nonprescriptive. Indeed, they would inspire much more research into policy issues, thereby enriching the first-order knowledge base that assessments survey and synthesize. Additionally, much more interdisciplinary activity would occur in and around GEAs 2.0. For instance, consider the assessment of potential geoengineering technologies. Conventional techno-scientific assessment would need to conjoin an assessment of how different societies might react to a range of human dimensions such as the cost, risk levels, and negative impacts on people of these technologies.

53. Edenhofer and Kowarch, “Cartography of Pathways.”
If the arguments of Kowarsch et al. were to be widely actioned, while being tailored to the specifics of different assessments, then GEAs would experience something like a paradigm shift. They would adapt to a context that’s very different to the one prevailing back in 1977. As we know this current context is marked by more numerous and acute global environmental problems caused by human activity. It is also marked by a growing recognition that practically achievable and socially legitimate solutions are a sine qua non.

Compared to present assessment practice the proposals of Kowarsch et al. are fairly radical. They seek to institutionalize a more useful, people-focused model of assessment—after all people are both causes of and the solutions to the problems identified in the GEA 1.0 paradigm. They pivot on an expanded sense of assessment: not only will factual, cognitive knowledge of real-world problems be assessed, but argument-based, value-laden, normative positions will be too, informed by evidence. Kowarsch et al.’s vision of future assessment is highly democratic and takes seriously representation in the political sense of allowing people to be heard. However, logistically GEAs 2.0 would be forbiddingly difficult to undertake and involve huge assessment teams requiring skillful coordination. Politically they would be contentious. Almost certainly special interests would question assessors’ integrity or suitability and challenge elements of the assessment process.

**Humanizing GEAs: Toward a New Paradigm**

From the perspective of much work ongoing in the EH the human dimensions that GEAs 2.0 would focus on are nonetheless truncated. Their solutions orientation implies an immediate attention to action: that is, to what seems practical in light of current resources, knowledge, and threats. While this may seem reasonable given the urgent crisis of global environmental change, it entails two risks. One is that “impractical” thinking gets written off because it exceeds the frontiers of conventional thinking. The other is that solutions are abstracted from the deeper question whose answer ultimately lends them significance: namely, how should we live? This venerable existential question, whose relevance has perhaps never been greater as we face a pandemic and escalating environmental change, requires thinking that goes beyond Kowarsch et al.’s conception of GEAs 2.0.

Joni Adamson candidly asks, “Can the humanities, which typically are characterized as weakly tooled to address social and environmental crises, catalyze the imagination of new ideas, narratives, frameworks, alternatives, demands, and projects that will enable people to envision different, livable futures?”54 But this “weak tooling” is not necessarily a weakness at all. In fact it is a strength when considering the significance of policy, action, and practice in the dual sense of the term mentioned earlier in this article. EH comprise a dynamic, expanding storehouse of concepts, ideas, arguments, propositions,

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insights, and evidence that could help assessments grapple with the profundity of what
global environmental change means for humanity today. The challenge is to organize
the storehouse and ensure its contents have wider impact.

We might envisage assessments 3.0 that go beyond Kowarsch et al.’s otherwise commendable proposals. They would explore human dimensions that are political in the widest sense of that term. These dimensions are the panoply of cultural norms, social values, religious beliefs, moral and aesthetic dispositions, explanations of lived reality, and visions of the good (or necessary) life and criticisms of present-day realities that vie for attention in a world that is both hyper-integrated yet highly differentiated. In everyday life these worldviews exist in often incoherent, shallow, dogmatic, or contradictory ways as people navigate the complexities of the early twenty-first century. In social movements, political parties, think tanks, religious organizations and—most especially—in social science and the humanities, they usually approach something more systematic and sophisticated. Philosopher John Rawls famously called them “comprehensive doctrines”—a mix of logical arguments, critical assessments, axiological defenses, evidence-based claims (descriptive and explanatory), and normative positions predicated on certain ontological and epistemological axioms. Others call them VMEPs (values-means-ends packages) that are secular (e.g., Marxist political economy) or religious.

Worldviews, doctrines, and VMEPs stake claims about the world (1) as it seems to be in the past and present and (2) as it ought to be in the future. They are always in the making as they respond to an ever-changing reality. They are fashioned, and held, collectively. Some are consistent with science (as conventionally understood), others less so. Some are felt by their adherents and advocates to be under assault (for instance, aboriginal Australian lived conceptions of Country). They can be presented in a range of genres, including stories. Regardless, they form the intellectual and affective basis to answering the existential questions arising from humanity’s (mis)use of the global environment.

It is only in the context of worldviews, comprehensive doctrines, or VMEPs that workable solutions to things like our current mass extinction event make sense. Likewise it’s only in the context of them that factual evidence about environmental change assumes significance. Pope Francis understood this well when he issued his encyclical during the period when the UN brokered the Paris Agreement. Many researchers and resource managers understand this well in countries such as Canada, New Zealand, and Australia: there, indigenous cosmologies impinge on Western environmental policy practices. Worldviews, doctrines, and VMEPs breathe life into the political debates that should, ideally, underpin policy debates about how for instance to prevent global warming of more than 2 degrees Celsius above preindustrial levels. As English philosopher David Runciman puts it, “politics is about the collective choices that bind groups of

55. Rawls, Political liberalism.
56. See Castree et al., “The Anthropocene and the Environmental Humanities.”
people to live in a particular way. . . . Without real choice there is no politics.”

“Real choice” involves not only having the mechanisms and resources to effect political change but also a set of alternative frames that define the very parameters of choice as well as its substantive content. Together these frames mean that in proper politics “nothing is fundamental and nothing can be taken off the table.” While GEAs are hardly the only place where important political choices can be presented to the world’s 190-plus countries and billions of inhabitants, they could in future be among the most credible places—building on the hard-won authority of GEAs to date.

GEAs 3.0 would thus be solutions focused, but they would (1) take a wider and deeper view of the normative component of assessment; (2) engage with stakeholders as fully political animals; (3) involve social science and the humanities in the widest possible sense; (4) thereby involve assessment of the best research in fields such as environmental sociology, political theory, moral philosophy, theology, and heterodox economics; and (5) embrace dissensus all the way down, thus mirroring sharp (though often misunderstood and frequently caricatured) differences of perspective existing in the wider world (Table 2).

GEAs 3.0 would thus help to politicize global environmental change in a balanced, mature, well justified, and transparent way. They would operate at one remove from the formal political sphere and the public sphere where the quality of political debate is today often very low. They would embody a cosmopolitan ethos and give epistemic and political representation equal billing. They would be politically relevant so as to be policy relevant—all the while being studiously nonprescriptive. They would take what’s important in GEAs 1.0 and 2.0 but add in the missing human dimensions, without which attempts to consider our planetary future will be undemocratic and narrow—leading, almost certainly, to dangerous decisions that will sow the seeds of future human conflict.

We might say that assessments 3.0 are suitably wicked, whereas Kowarsch et al.’s vision for assessments 2.0 is insufficiently so. The integration of knowledge across the geosciences, social sciences, and humanities would not be the aim, unless it is plural forms of integration we are talking about. For singular integration would presume a one-world ontology where putatively objective realities somehow trump intersubjective meanings (making it a scarcely human world at all).

Assessing What Matters: Possible Work Programs for Environmental Humanists

GEAs are here to stay. I have suggested that an expanded concept of assessment offers a way to make the EH more visible and consequential in human affairs. Put differently I have suggested that meaningful inclusion of the EH in future GEAs requires a shift in

57. Runciman, Politics, 6
59. Klenk and Meehan, “Climate Change and Transdisciplinarity.”
thinking about the means and ends of assessment. Periodic assessments in my enlarged sense would focus collective effort in what's a sizeable, diverse, and lively field of inquiry. They would thicken and expand international networks within the EH, while enabling sustained, high-level engagement with assessors in mainstream social science and in geoscience. Periodic assessments would sharpen critical discussion of philosophical, theoretical, methodological, and evidential issues in the EH. They would foster synthesis and cross-fertilization of research insights. They would oblige environmental humanists to render their work communicable across the academy and beyond it. And they would also react back on research activity in the EH, according to the real-world issues that seem most pressing at any given moment. In short, if it could be institutionalized, a new assessment paradigm could be the single most important translational device between university-based work in the EH and the wider world. Assessment could operate in parallel with, or be substantively linked to, global citizen assemblies that convene worldviews and consider existential questions.
Before I consider some of the important practical issues let me offer an illustrative sense of potential future work programs for environmental humanists seeking to operationalize an expanded definition of assessment.

1. **Global assessment of human progress**: Building on the existing work of the still young International Panel of Human Progress ([www.ipsp.org/](http://www.ipsp.org/)), one can envisage an assessment that foregrounds more or less different interpretations of the human past, present, and future (that is, both a likely and a desirable future). By opening up the loaded question of progress fully, the assessment could allow everything from ecomodernist, Marxist, deep green, Buddhist, feminist, and other perspectives to be given full consideration. Each perspective offers descriptions, explanations, and criticisms of the world past and present, along with various prescriptions for change geared to achieving certain goals.

2. **Global assessment of the needs and rights of (what we call) nature**: While humans are undoubtedly transforming the biosphere, atmosphere, cryosphere, and hydrosphere, societies have very different views on whether the nonhuman world has needs and rights (and if so what obligations they impose on people). Countries such as New Zealand and Ecuador have broken new ground compared to countries such as Germany or Brazil. One can envisage an assessment that examines evidence and argument in favor of a range of bio-centric and anthropocentric perspectives on local, regional, and global nature.

3. **Global assessment of obligations toward future generations**: The past and present always influence the future. However, specific sections of humanity (e.g., Americans, Chinese, and West Europeans) now have the power to influence the long-term future in ways that will be significant to our grandchildren and their successors globally. One can envisage an assessment of concepts, principles, and arguments for different sets of actionable responsibilities owed to the unborn. These responsibilities would need to be assessed relative to the short- and medium-term costs (and benefits) they might create for those presently alive. The meaning of costs and benefits would be opened up fully.

4. **Global assessment of environmental in/justice**: Global environmental change is clearly an issue of justice, and not just for nature (according to bio-centrists) or the unborn. Questions of procedural and substantive justice arise that have a social and geographic component in the present and near-term future. Understanding the answers requires an assessment of concepts of justice, of the merits of the arguments they are based on and imply, and of how—if at all—common ground can be found between them. Open
thinking about in/justice might allow useful evaluation of our current intergovernmental architecture (institutions, laws, protocols, etc.). It could also help frame future technology assessments, so too assessments of emerging internationally recognized issues like the loss and damage attendant on anthropogenic global change.

5. **Global assessment of sustainability transitions**: There is a fast-growing research focus on the nature and pace of socioeconomic and technical transitions away from fossil-fueled capitalism. This extends across economics, business studies, economic sociology, and beyond. Transition is an attractor topic that allows ideas such as green Keynesianism, de-growth, ecological modernization, the circular economy, postenvironmentalism, the green new deal, and others to be compared and contrasted systematically. Attempts to compare and contrast transition thinking, so too transformation thinking, are already well advanced in parts of social science and the humanities. Relatedly there is ample research into social tipping points that can feed into any assessment of how to trigger coordinated, paradigm-shifting action across the whole of society.

6. **Global assessment of environmental crisis**: The GEAs suggested above all highlight worldviews, doctrines, and VMEPs as a necessary precursor to discussion of solutions and policies. But the worldviews and doctrines themselves have certain conceptual preconditions. The merits and validity of these could be assessed. The idea of crisis is one. Linked to notions of risk and loss it animates the discourse of many a global change scientist, never mind a socialist-feminist like Naomi Klein. It circulates widely in society through the news media and the blogosphere. But are crises objectively given or are they relative? Is there serious moral hazard attached to presuming we are in the grip of a global environmental crisis? Or is it seriously remiss not to recognize this putative crisis, even if it is a slow one in human terms? What are the emotional stakes in terms of fear, hopelessness, and motivation attendant to crisis talk? One can envisage an assessment of perspectives on what counts as a crisis and what a crisis, when recognized, ought properly to entail. Assessment like this could be preparatory for the assessments above. If crisis was deemed too loaded a word for an assessment, risk would be an alternative semantic vehicle for undertaking a similar sort of interpretive assessment.

These examples would, of course, in various ways involve experts beyond the EH. But each one would also foreground the work of environmental humanists, showing powerfully that their work is not merely academic. They could take the lead in ways that geoscientists have done in successive GEAs to date.
There are many other conceivable assessment tasks for the EH. For instance general assessments like those above could inform specific assessments of options for changing energy systems, agriculture, transportation systems, manufacturing, water management, animal husbandry, fisheries management, common pool resource management, global governance regimes, multilevel governance, and so on. All of them are consistent with the focus on so-called grand challenges, as promoted by many national research funding organizations. All of them implicate the question of the future we want. Importantly the illustrative examples above imply no fundamental erosion of the diversity or identity of work by environmental humanists. Instead they suggest a way to channel and coordinate that work over time through structured engagement with other areas of academia and the world beyond universities.

Next Steps for the Environmental Humanities

As we have seen this is a moment of opportunity for the EH. Change is afoot in the world of GEAs. Consequently there’s a chance to chart new paths for environmental humanists and assessments simultaneously. I have outlined a notion of GEAs that can accommodate work in the EH to the benefit of those whose thoughts and deeds stand to be influenced by assessments. While the notion is general and can no doubt be significantly improved upon, the point is that some well elaborated notion needs to be developed and advocated prior to any change in assessment practices. Compared to other current options, modified assessments seem to be an especially good vehicle to travel down a new road.

How to begin the journey? It would be perfectly possible for environmental humanists to organize a series of workshops, symposia, and conferences to do what I have done here only briefly. A clear, expanded, and robustly justified concept of assessment is required that can link the EH to mainstream social science and geoscience, such that each domain of inquiry has an important role to play. This concept development could be enabled by the Global Observatories or by several national academies working in concert. While the humanities lack a global academic body to speak in their name, the sort of interpretive social science that forms part of the EH does have some representation through the International Science Council. Currently led by a social scientist,

60. And there are already topical subfields emerging within the EH to support specialist assessments, such as the energy humanities – on which, see Szeman and Boyer, *Energy Humanities*.

61. Steven Hartman wrote an essay “Into the Fray” whose content echoes this one. I read it just as I was revising this article. Hartman makes a useful distinction between EH that is “policy (or solution) relevant” and one that is “policy (or solution) engaged.” GEAs need increasingly to be engaged and the EH could spur this—so I am arguing here.

62. The closest organization to fulfilling this role is the International Council for Philosophy and Human Sciences (http://cipsh.net/web/aboutus.html). It is a nongovernmental organization initiated by UNESCO back in 1947. However it appears to lack the visibility and clout, at least in global change research circles, of the International Science Council.
Heide Hackmann, it is possible the Council could play a key role in catalyzing a new, wider approach to assessment. One related option might be to work through the Future Earth platform’s Earth Commission and create a new project focused on rethinking assessments. A further possibility arises from the new BRIDGES—a UNESCO MOST Sustainability Science Coalition. The coalition foregrounds humanities approaches within an expanded sustainability science agenda. Whatever the vehicle used, lengthy and wide consultation would be required (e.g., with the UNEP and the Belmont Forum of global change research funding organizations) to lend any fresh approach legitimacy prior to implementation.

One key challenge is that the approach will necessarily have to be mindful, as part of its development, of the difficulties of operationalizing it. A purely cerebral, principle-based conception will rapidly run up against hard realities. Only by addressing the issues at the level of both concept and practice can modified assessments eventually achieve legitimacy, credibility, and relevance. For instance, as noted in passing earlier, humanistic expertise could readily be politicized in a highly polarizing way by parties external to the assessment process. In fact these parties will challenge the very idea that assessment can rightly involve normative reasoning. Somehow a balance has to be struck between breaking new ground and being pragmatic.

While important gains have been made by incorporating humanistic perspectives in existing GEAs, are path dependencies built in to current GEA practices that arguably limit the capacity to reform them from within? For instance, Working Group III of the IPCC has gone a long way to incorporate social science. However the analytical and scientific flour of its work on climate mitigation and adaptation makes it hard for many humanists to feed in on their own terms.

Conclusion
Fundamentally this article is inspired by the notion that thinking differently can make a real difference in the world, given an opportunity. To use Joni Adamson and Steven Hartman’s felicitous distinction, the EH is a “community of interest,” but the question is: Can it become a “community of purpose” too? How can the EH exert greater societal

63. For instance this would dovetail with the ISC’s Transformations to Sustainability (T2S) program (transformationstosustainability.org).

64. Thanks to Steven Hartman for alerting me to this important and exciting initiative just as I was completing this article in July 2020. The acronym stands for Building Resilience in Defense of Global Environments and Societies, but is also a metaphor for joining knowledge and people together. The major output of the project is a recent UNESCO policy document Guidelines for Sustainability Science in Research and Education (unesdoc.unesco.org/ark:/48223/pf0000260600). Exploratory discussions in 2018 led by the UNESCO Management of Social Transformations program, the International Council for Philosophy and Human Sciences (CIPSH), and the Humanities for the Environment Circumpolar Observatory resulted in a multistakeholder process during 2019 to establish the BRIDGES–UNESCO MOST Sustainability Science Coalition (MOST stands for management of social transformations). At the time of writing formal approval for this global initiative has been granted.

65. Adamson and Hartman, “From Ecology to Syndemic.”
influence without losing their identity as an academically situated interdisciplinary field? I have answered this question by making the case for revised GEAs as a possible vehicle. Beyond the immediate impacts that more humanistically inflected assessments could have over time, there are also wider ones for universities. GEAs 3.0 could, to quote Lauren Rickards and Tamson Pietsch, help promote universities “unique role as embedded, future-regarding, ethical generators of crucial knowledge and skills, well-equipped to handle coming contingencies and helping others do the same.”66 There’s nothing easy about this, but the rewards are considerable. To revisit a metaphor I used earlier: if the EH is a house of many rooms, corridors and stairways, GEAs might allow it to sit in a place where the traffic in and out gets multiplied and directed to the benefit of all who pass through it, within a much wider ecology of thought and action.

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References

66. Rickards and Pietsch, “Climate Change Is the Most Important Mission for Universities.”


Tyszczuk, Renata, and Joe Smith. “Culture and Climate Change Scenarios: The Role and Potential of the Arts and Humanities in Responding to the ‘1.5 Degrees Target.’” *Current Opinion in Environmental Sustainability* 31 (2018): 56–64.
