
Digital and Environmental Humanities: Strong Networks, Innovative Tools, Interactive Objects

Author(s): Stephanie Posthumus, Stéfan Sinclair and Veronica Poplawski

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Digital and Environmental Humanities

Strong Networks, Innovative Tools, Interactive Objects

STEPHANIE POSTHUMUS, STÉFAN SINCLAIR,
AND VERONICA POPLAWSKI

Since the early 1990s, various humanities disciplines have been developing specific branches to respond ethically, historically, creatively, and critically to issues related to humans and the environment. Environmental history, philosophy, ethics, literary theory, education, and art, all share the belief that the humanities play a key role in understanding the ways in which environmental problems are socially and politically driven. Moreover, these new studies and approaches are keenly aware of the need for interdisciplinary scholarship when attending to complex environmental issues and concerns.¹

Gaining momentum since around the 1950s, the digital humanities (previously known as humanities computing) have been responding to the increasing use of computer technology in contemporary culture. Inclusive in nature, the digital humanities include media studies, digital text analysis, big data, and visualization studies, to name a few.² Collaborative and interdisciplinary in nature, the digital humanities have much in common with the environmental humanities. And yet these two fields have evolved largely independently.

In the present article, we will describe the work we have been doing to bring the digital and the environmental humanities together by way of a set of timely projects. We begin by offering a rapid overview of the parallels between these two fields. We then outline an initiative in the digital environmental humanities that we have been leading for the last six years. What began as a networking workshop held at McGill

University in September 2013 (funded by the Social Sciences and Humanities Research Council of Canada) has subsequently developed in two different directions: (1) the application of topic modeling and visualization, to study a collection of scholarly texts and understand the emergence of the environmental humanities; and (2) the creation of interactive digital exhibits, to disseminate research in the environmental humanities. We will conclude by proposing some further ways in which the digital environmental humanities can continue to build strong networks, innovative tools, and interactive objects.

Parallel Paths: The Digital and the Environmental Humanities

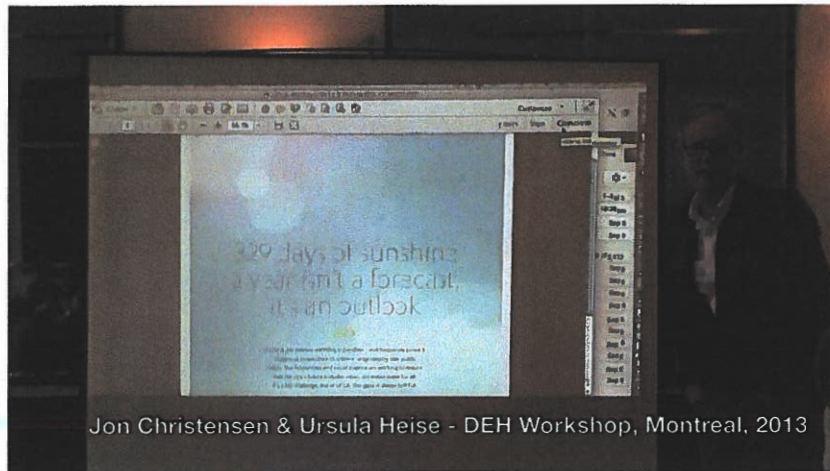
At first glance, the digital and the environmental humanities appear to represent opposing forces. How can a field that embraces environmentally unfriendly computer technology help to further understand environmental issues? Should we not be reducing our use of high-energy cloud computing and discouraging the production of yet more e-waste? While these questions have merit, they remain quite narrow in scope. Rather than dismissing outright any association with computers (are electronic gadgets not just as prevalent in academic scholarship in the environmental humanities?), the environmental humanities can learn much from critical engagement with technology that has characterized the digital humanities since its inception.³ At the same time, digital humanities scholars can take away from the environmental humanities a more critical look at how the Internet, cloud services (Google, Facebook, etc.), and the electronic devices we use to access them have a real impact on the environment.

A closer look reveals that the digital humanities are very much steeped in a humanities culture like that of the environmental humanities, a culture that promotes critical thinking and public engagement.⁴ Moreover, the digital humanities' long historical view on the emergence of new technologies is helpful in contextualizing the changes that contemporary culture is undergoing. In other words, the digital humanities are not simply embracing quantification and big data in the humanities (though critical perspectives are not always at the forefront).⁵ While introducing new methodologies that would have been foreign to the humanities in the past due to limits of time and scale, the digital humanities are also illustrating what makes the humanities

distinct from purely quantitative approaches. They underscore the role of interpretation, experimentation, play, reflection, and critical thinking when developing tools for humanist scholarship.⁶ Moreover, the hands-on approach within the digital humanities has called for more inclusivity in terms of details such as who learns to code, what tools they have access to, and where research centers are established. The visible and ongoing debate about coding and diversity illustrates that the digital humanities are necessarily bound up in the questions that identity politics have been raising about race, gender, and class within the humanities more generally.⁷

In terms of the environmental humanities, there is a similar productive tension between practice and theory, between those who do environmental activism and those who critique notions of nature and wilderness, between those who embrace the urgency of environmental issues and those who insist on thinking more slowly.⁸ For many environmental humanities scholars, this tension characterizes their work, and they insist on the necessity of inhabiting “a difficult space of simultaneous critique and action.”⁹ The environmental humanities have also been aware of the need to move beyond single models of environmentalism and embrace more diverse political positions. In many ways, the environmental and the digital humanities have followed similar pathways as they move back and forth between practice and critique.

By extending humanities interpretation to issues in the environmental humanities and by creating new tools and methods for research with the digital humanities, both disciplines are advocating for a new way of thinking about the humanities. Moving beyond traditional forms of scholarship, the environmental and the digital humanities contribute to a wider range of contemporary discussions about media, technology, and the environment. Both the environmental and the digital humanities develop and model an interdisciplinary and collaborative mode of humanities scholarship. Moving away from the single-authored monograph characteristic of humanities research requires an important shift within the disciplines themselves to imagine new ways of determining the value of creative, cross-disciplinary contributions, ones that appear not only in scholarly publications but also in mobile applications, blog posts, and Twitter feeds. By the very nature of the work they do, both the environmental and the digital humanities are reshaping the human-

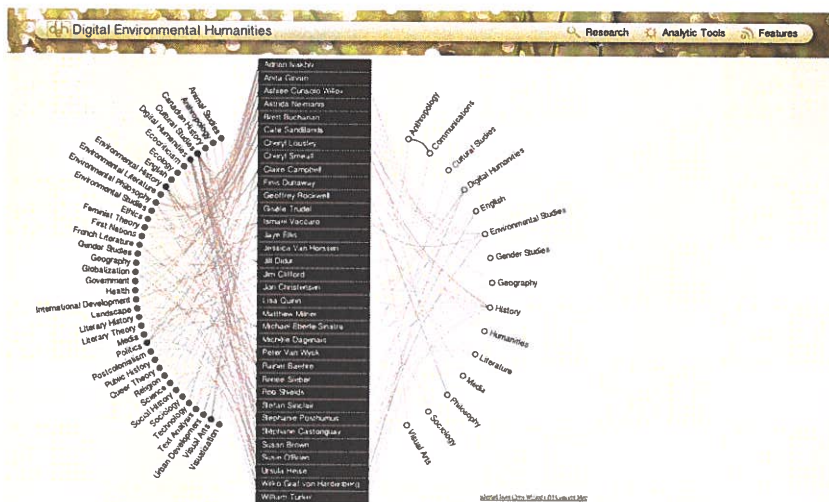


Video supplement available.

ities at many different levels: administrative, academic, and more generally in the public sphere.

Digital Environmental Humanities Initiative: Strong Networks

The Digital Environmental Humanities Network (DEHN) workshop was held in September 2013 at McGill University, organized by Stephanie Posthumus and Stéfan Sinclair and funded by the Social Sciences and Humanities Research Council of Canada. The workshop's main objective was to bring digital and environmental humanities scholars together to showcase work that had already been done at the intersection of these two fields and to concretize the possible emergence of a new field. Thirty digital humanists and environmental humanities scholars spent two days discussing and debating about the possibilities of an emerging interdisciplinary field. Through lightning talks, digital humanities tool presentations, open discussions, and group brainstorming, the workshop worked toward a shared understanding of the development of the digital environmental humanities. The affinities and potential for collaboration between digital humanists and environmental humanists were rapidly recognized, through platforms such as e-books, curated digital catalogs, crowdsourcing interfaces, and online conferences.



The network of researchers established at the DEHN workshop included scholars well versed in the digital humanities and scholars focused on particular disciplines within the environmental humanities, such as environmental historians and ecocritics. As a result, the discussions among participants exemplified the interdisciplinary nature of the environmental humanities, in and of themselves.

For example, Ursula Heise and Jon Christensen from the University of California, Los Angeles, spoke of their efforts to institutionalize the environmental humanities at UCLA and of the issues surrounding this process. They emphasized the need for the environmental humanities to adopt a larger agenda that is recognizable to the general public, thereby making the field relevant to contemporary life. Christensen's collaborative project *City Nature* is one example of a multiscalar,

interdisciplinary platform that has the potential to appeal to researchers and members of the general public.

Cheryl Lousley from Lakehead University presented the Wilfred Laurier University Press environmental humanities book series, documenting the mutual contributions of the humanities to environmental studies in offering novel perspectives and modes of thought. Further demonstrating the international and interdisciplinary character of the workshop, Kim Coulter Skyped in to outline the work of the Environment and Society Portal, a project developed by the Rachel Carson Center in Munich, Germany. Comprised of many features such as online exhibitions, timelines, and an environmental humanities-themed blog, this portal's primary purpose is to serve as a digital gateway to environmental humanities open-access content.

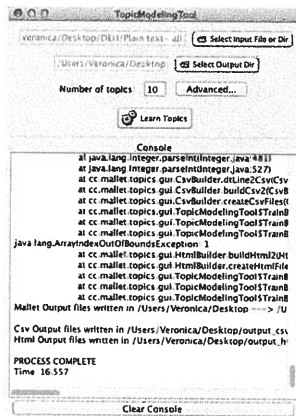
In anticipation of the workshop, a preliminary online portal was created to feature participants' projects and to dynamically visualize the network of participants itself.

Today, the Digital Environmental Humanities (DEH) website continues to showcase projects in the environmental humanities and the digital environmental humanities, researcher profiles, bibliographies, a blog, the topic-modeling project, and interactive exhibits. The website's ultimate goal is to experiment with an extensible, interactive, public, web-based gathering place (the one-time funding of the workshop precludes longer-term ambitions).

The DEHN workshop was successful in solidifying a network of environmental humanities researchers and sparking collaboration with those working in the digital humanities. The feedback received from participants was extremely useful in shaping the next steps of the research initiative, as will be described in the next sections.

Digital Environmental Humanities Initiative: Innovative Tools

Following the in-person workshop meeting in Montreal, we asked participants to submit a bibliography of what they felt were the most representative and relevant articles and books concerning their field of study and the environmental humanities more generally. Using Zotero (an online collaborative reference-management tool), we cataloged and tagged each item appropriately. Additionally, we conducted many database searches, particularly with JSTOR, to add items to



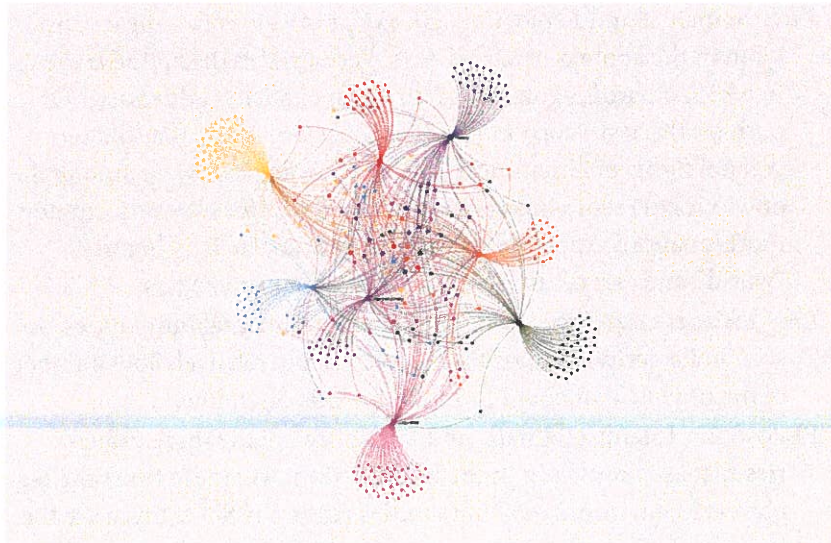
topicid	words.
1	place early land power local histories time scholars landscape experience
2	natural museum data science sciences history collecting collections knowledge practices
3	wilderness man years civilization act animals people species country wild
4	nature human social natural environment water time society political systems
5	urban city cities century home ownership nineteenth class humboldt growth
6	national american people park west americans indians parks game united
7	world century land ecological labor europe production soil consumption expansion
8	world human forest change global past forests modern species science
9	environmental history historians work field historical environment public people issues
10	north northern research development scientists areas knowledge resources canadian wildlife

the collection. Based on the disciplines represented by participants as well as other content metadata, we subdivided the corpus by humanities discipline, in order to be able to conduct multiple forms of text analysis to compare and contrast by discipline. The Interdisciplinary category was among the

largest, representing, in some cases, truly interdisciplinary work and, in other cases, work that didn't neatly associate with any particular discipline. Not all texts in the Zotero database were readily available electronically, but we amassed a collection of 350 (out of 650) full-text documents (mostly in PDF). The Zotero database is private since it contains full-text articles that are not licensed for redistribution.

One of the text-analysis experiments we conducted was to use topic-modeling software called Mallet, which computes terms that tend to occur significantly together using Latent Dirichlet Allocation (LDA). Essentially, this statistical model can be used to suggest hidden structures (those not apparent through normal reading) of each disciplinary corpus. Each topic contains a ranked list of words that have a higher probability of appearing in the same context within documents. Topic-modeling results were obtained for each discipline, as well as for the entire collection as a whole. The results revealed which ten word models had the highest frequency of cooccurrence within a given corpus.¹⁰

In order to further examine the numerical results obtained with Mallet, we input the data into Gephi, a program designed for exploring and visualizing many different kinds of network graphs. By identifying the nodes (items) and edges (associations between items) in the results, it was possible to translate them into a graphical mode of representation. The nodes indicate the particular words from the topics, as well as the discipline names; and edges outline where connections exist (terms occurring in one or more disciplines). The functionality of Gephi al-



<http://dig-eh.org/dig-eh/TopicModelling/RectangularNodes/>.

lowed the establishment of a layout, ranking, and coloring of the various connections.

Along with visualizations of the topic-modeling results in the entire corpus, we created many individual visualizations for particular words, such as “place” and “human,” as well as comparisons of disciplines.

The visualized topic-modeling results lent themselves to a detailed analysis and interpretation of the data obtained. Some of the insights and hypotheses stemming from the visualizations are as follows:

The area between Philosophy and Interdisciplinary had the most overlap. One could argue that the Interdisciplinary category is very representative of the framework of the environmental humanities as an emerging field. The visualization demonstrated that interdisciplinary documents utilized a lot of philosophical vocabulary. Perhaps this has something to do with the fact that environmental humanities is indeed an emerging field and research papers primarily concern themselves with outlining its philosophical foundations. Likewise, documents in the Philosophy subcorpus have a self-reflective nature about interdisciplinary forms of the environmental humanities.

Environmental and Ecological, although both central, appear most often in the context of Visual Arts. Perhaps this discipline is the one in which environmentalism is the most explicitly addressed? Or perhaps these subcorpora are otherwise so eclectic that the more general terms of “environmental” and “ecological” were among the only ones to recur consistently? Other disciplines seem to employ more-nuanced aspects of environmentalism, such as “nature,” “world,” and “land,” as seen in the Literature subcorpus.

Linguistics is clearly the outlier in the environmental humanities, as seen in its peripheral position, as well as the relatively low number of documents that could be found for this discipline.

Philosophy, Interdisciplinary, and Literature are the three categories that are the closest in the visualization. Are these three the big players in environmental humanities research? Since these are the largest subcorpora, it is not surprising to observe these disciplines centrally represented.

Performing Arts, Religion, and Linguistics topic-modeling results contain many words that are exclusive to each respective discipline (topics such as “lyrics,” “ballet,” and “theatre” for Performing Arts; “belief,” “creation,” and “conservative” for Religion; “verbal,” “speakers,” and “communication” for Linguistics), as opposed to Philosophy, Interdisciplinary, and Literature, which all have significant overlap (topics such as “nature,” “world,” and “social”). Visually, this distinction is illustrated by the large number of unique results found in Performing Arts, Religion, and Linguistics compared to the relatively small number of unique results in Philosophy, Interdisciplinary, and Literature.

History seems to be somewhat of an outlier as well, especially compared to the interconnectedness of Philosophy, Interdisciplinary, and Literature. While the documents in most disciplines were primarily written over the past ten to fifteen years, with occasionally older texts, History documents were much more uniformly spread out over the forty years of the corpus. Perhaps this discipline has developed its own vocabulary for discussing the environmental humanities since it has been around the longest? For instance, topics such as “home,” “wildlife,” “expansion,” and “ownership” were uniquely found in the History topic-modeling results. Perhaps

themes of colonialism and settlement played a pervasive role in the environmental history texts of the corpus.

Generally speaking, the topic-modeling visualizations demonstrate that there is no clear divide to be found among the disciplines, at least in terms of lexical usage (vocabulary). Perhaps this should come as no surprise, seeing as interdisciplinarity is at the core of this emerging discipline. Crossover and overlap between disciplines simply illustrate this quality. However, one cannot say that environmental topics and schools of thought are equally represented across disciplines. The observations above offer clues as to which aspects of the corpus lend themselves to a more in-depth examination of similarities and differences between disciplines. The visualizations we created serve as a stepping stone, being the big picture (distant reading) of the topic-modeling results, from which more precise interpretations and conclusions might be pursued. The utility of digital tools to this project was immense, offering both quantitative and qualitative insight that would otherwise be nearly impossible for one person to reach single-handedly. In addition, the topic-modeling results became tools in and of themselves, offering a platform to discover connections and contrasts that warrant closer consideration. This work is dynamic in the sense that it will never be a finished product, as user interaction and analysis is an integral part of the experience.

Digital Environmental Humanities Initiative: Interactive Exhibits

The latest DEH project has been aimed at transforming research objects in the environmental humanities into interactive online exhibits. This project was born in part from a workshop titled Digital Publics and Environmental Humanities, organized by Cheryl Lousley, Stephanie Posthumus, and Wilfrid Laurier University Press editor Lisa Quinn, held at the conference of the Association for Literature, Environment, Culture, in Canada (ALECC) in Thunder Bay, Ontario, August 2014. At the workshop, participants presented a research object and were given five to seven minutes to weave together a narrative about their object. After the presentations, a general discussion took place about using digital tools to transform research objects into interactive digital exhibits. Thus far, two such prototype exhibits have been created,

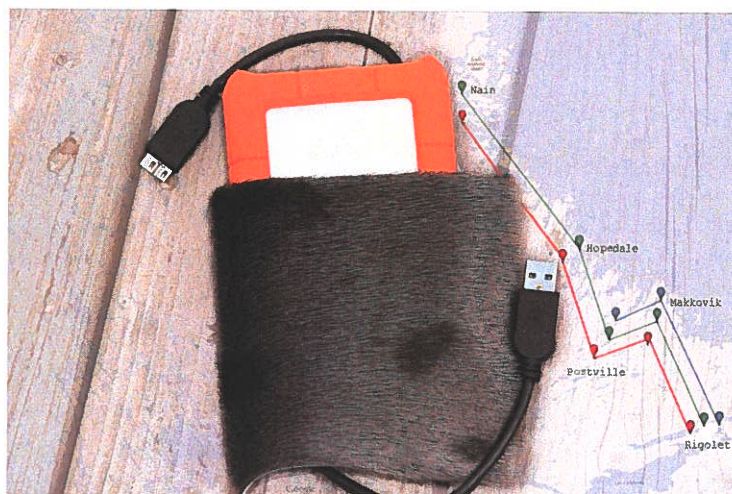
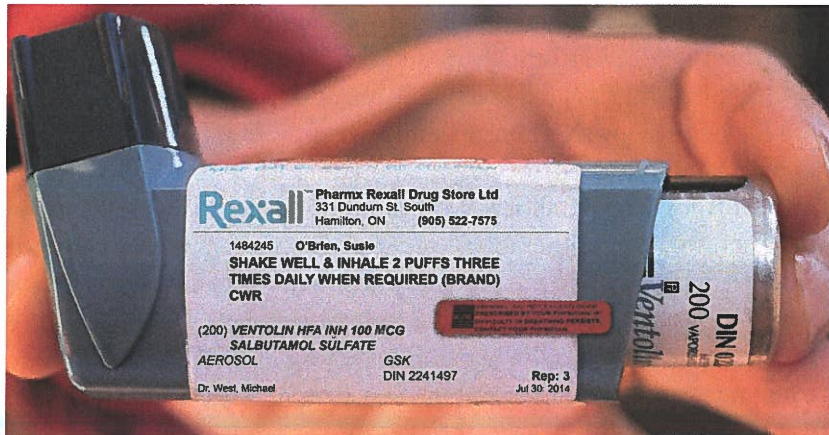


Image used by permission of Ashlee Cunsolo.

exploring the possibilities made available using different digital tools and technologies.

The first online exhibit presents Ashlee Cunsolo's experience with documenting the stories of Canada's Inuit population (see figure above). Cunsolo is a Canada Research Chair in Environment and Health at Cape Breton University in Canada. Her exhibit links the past with the present, offering a modern means for preserving and sharing a predominantly oral culture. Text, images, and links appear when the user clicks on certain areas of the exhibit. For instance, clicking on the title reveals a summary of the project. Meanwhile, clicking on points on the map that appears on the right side and in the background of the image below brings the user to the respective project page, where additional information and videos can be found. These interactive aspects allow the user to explore the clickable elements and piece together Cunsolo's work and underlying narrative.

The second exhibit documents Susie O'Brien's own personal story rooted in her use of a Ventolin inhaler (see figure below). A cultural studies and globalization scholar at McMaster University in Canada, O'Brien chose an object from her own life to illustrate the many threads involved in environmental humanities research. Her narrative about the inhaler supports a broader argument about the harms of



using band-aid solutions to temporarily mask environmental issues. Ventolin is dubbed a “rescue inhaler,” offering a quick and efficient way of curbing an asthma attack without addressing the underlying illness caused by increased air pollution. To O’Brien, this band-aid solution is comparable to modern approaches to environmental health, where issues are tackled on a case-by-case basis without addressing the deeper systemic problem. In contrast to Cunsolo’s exhibit, O’Brien’s interactive object is primarily text based. Clicking on different areas of the image of the Ventolin inhaler progressively adds text to the narrative on the left-hand side of the page, with accumulation of a narrative being a deliberate design choice.

In comparison with O’Brien’s object, Cunsolo’s image of an external hard drive lends itself to a more multimedia-based online exhibition. Since the original project was primarily video based, much of the content reflects the existing digital elements of her work. In contrast, O’Brien’s object gives rise to more of a reflection on her own reality as an asthmatic Ventolin user and how it is representative of the ways in which issues of environmental health are treated as symptoms without looking at underlying causes. It is interesting to note the hybridity of the digital platform for creating these projects. While a different approach was taken in their creation, it was possible to create an online and interactive project out of both of their research narratives.

Both projects are interactive and require participation on the part of the user, albeit in different ways. We created Cunsolo’s narrative us-

ing Google Web Designer, a program for authoring interactive online content. While it was initially difficult to grasp the usability of the various features, the program eventually proved to be very useful in creating the online exhibit. O'Brien's narrative proved to be difficult and too idiosyncratic to adapt to Google Web Designer. Instead, the code was written from scratch, allowing the user to progressively build the narrative on the side of the image as different representative areas on the label were clicked. We mention this distinction since it seems important to recognize that some digital environmental humanities projects might use existing tools, while others require more advanced technical competencies—there is a constant negotiation between what we might want to do and what we have the expertise to produce.

The production of these two interactive exhibits is the first step toward an understanding of the possibilities of using more-interactive digital formats for disseminating knowledge in the environmental humanities. The next step will be to examine the ways in which users interact with the exhibits, by creating spaces for commentary, questions, and feedback. How do users navigate the exhibits in order to create a cohesive narrative about a research object? How does the digital environment inform their learning about environmental issues? How does the interactive object encourage a form of play and exploration that may be less present in a text-based article? These questions will inform the next step of the project as we continue to develop the platform for digital exhibits in the environmental humanities.

Conclusion: Next Steps

The next steps of our work will follow the three paths outlined by the projects above. In terms of strong networks, we have been establishing relationships with the DEH research group at Trinity College in Dublin, Ireland (led by Charles Travis), and the North American Observatory of the Humanities for the Environment (HfE) research group (led by Sally Kitch and Joni Adamson). By fostering innovative programmatic ideas and new forms of collaborative research across national, regional, and disciplinary boundaries, the HfE initiative has much in common with our own research project. A next step will be to determine if there are researchers working in other continents and countries on similar

questions. In terms of text analysis, we aim to increase the database of articles we currently have in order to look more closely at the Francophone context. How have the environmental humanities been developing differently or similarly outside the Anglophone world? Analyzing a Francophone corpus will also allow us to determine some of the differences between linguistic communities and (hopefully) shift emphasis away from a supposed global Anglophone worldview. Finally, in terms of interactive exhibits, we will build another two prototypes and begin looking more closely at user interaction in order to understand the potential of digital formats for disseminating knowledge about environmental humanities scholarship.

Our project does not aim to solve what some may see as the deep ideological differences between the environmental and the digital humanities. Instead, it develops practices at the intersections of the digital and the environmental humanities, creating new digital tools and adopting already existing tools to study and communicate systemic environmental issues.¹¹

Stephanie Posthumus is an associate professor of European literatures at McGill University's Department of Languages, Literatures, and Cultures. A pioneering scholar of French ecocriticism, she has published articles in well-known journals such as *Mosaic*, *French Studies*, *Interdisciplinary Studies of Literature and Environment*, and *Fixxion* as well as a monograph *French Écocritique: Reading French Theory and Fiction Ecologically* (Toronto, ON: University of Toronto Press, 2017). In the area of animal studies, her coedited collection with Louisa Mackenzie, *French Thinking about Animals* (East Lansing: Michigan State University Press, 2015), establishes a cross-disciplinary approach to understanding the animal question in France today. In collaboration with Professor Sinclair, she has been leading the Digital Environmental Humanities project (www.dig-eh.org).

Stéfan Sinclair is an associate professor of digital humanities at McGill University and director of the McGill Centre for Digital Humanities. His primary area of research is in the design, development, usage, and theorization of tools for the digital humanities, especially for text analysis and visualization. In addition to his work developing sophisticated scholarly tools such as Voyant Tools and BonPatron, he has numerous publications related to research and teaching in the digital humanities, including *Hermeneutica: Computer-Assisted Interpretation in the Humanities*, with Geoffrey Rockwell

(Cambridge, MA: MIT, 2016), and *Visual Interface Design for Digital Cultural Heritage: A Guide to Rich-Prospect Browsing*, with Stan Ruecker and Milena Radzikowska (Farnham, UK: Ashgate, 2011).

Veronica Poplawski is pursuing an MS in social and organizational psychology at the London School of Economics. She completed her BA in psychology at McGill University in 2015. In collaboration with Professor Posthumus and Professor Sinclair, she designed the Digital Environmental Humanities project and participated in the first DEH workshop (2013). As part of this interdisciplinary project, she created three interactive DEH objects and conducted topic modeling of environmental humanities literature.

ACKNOWLEDGMENTS

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NOTES

1. For an overview of the environmental humanities, see recent issues of *Environmental Humanities*, *Resilience*, and *Green Humanities*. Another useful starting point is David Nye, Linda Rugg, James Fleming, and Robert Emmett, *Background Paper: The Emergence of the Environmental Humanities* (Stockholm, Sweden: MISTRA, 2013), http://www.mistra.org/wp-content/uploads/2018/01/Mistra_Environmental_Humanities_May2013.pdf.

2. For a historical overview, see Patrick Svensson, "Humanities Computing as Digital Humanities," *Digital Humanities Quarterly* 3, no. 3 (2009), <http://www.digitalhumanities.org/dhq/vol/3/3/000065/000065.html>; for an interesting discussion about what constitutes the digital humanities, see Chris Forster, "I'm Chris. Where Am I Wrong?," *Hastac* (blog), September 8, 2010, and the many subsequent comments, <https://www.hastac.org/blogs/cforster/2010/09/08/im-chris-where-am-i-wrong>.

3. See, for example, Julia Flanders, "The Productive Unease of 21st-Century Digital Scholarship," *Digital Humanities Quarterly* 3, no. 3 (2009), <http://www.digitalhumanities.org/dhq/vol/3/3/000055/000055.html>.

4. Projects like 4humanities.org that harness the strengths of the digital humanities community in order to further advocate for humanities scholarship are making the humanities more visible in public culture. Partnering with the digital humanities on this project is one way the environmental humanities could make their work more visible as well.

5. See, for example, Alan Liu's challenge to include more critical perspectives within the digital humanities in his article "Where Is Cultural Criticism in the Digital Humanities," in *Debates in the Digital Humanities*, ed. Matthew Gold (Minneapolis: University of Minnesota Press, 2012), 490–509.

6. Johanna Drucker and Bethany Nowviskie, "Speculative Computing: Aesthetic Provocations in Humanities Computing," in *A Companion to Digital Humanities*, ed. Susan Schreibman, Ray Siemens, John Unsworth (Oxford: Blackwell, 2004), <http://www>

.digitalhumanities.org/companion/; Kevin Kee, ed., *Pastplay: Teaching and Learning History with Technology* (Ann Arbor: University of Michigan Press, 2014).

7. See, for example, Moya Bailey, "All the Digital Humanists Are White, All the Nerds Are Men, but Some of Us Are Brave," *Journal of the Digital Humanities* 1, no. 1 (2011), <http://journalofdigitalhumanities.org/1-1/all-the-digital-humanists-are-white-all-the-nerds-are-men-but-some-of-us-are-brave-by-moya-z-bailey/>; Roopika Risam, "Across (Two) Imperial Cultures," *Roopika Risam* (blog), May 31, 2015, <http://roopikarisam.com/uncategorized/across-two-imperial-cultures-2/>; Adeline Koh, "Inspecting the Nineteenth-Century Literary Digital Archive: Omissions of Empire," *Journal of Victorian Culture* 19, no. 3 (2014): 385–95.

8. Activism may not seem as present in the digital humanities as it is in the environmental humanities, but there are some excellent examples of scholars working on questions related to identity politics and the digital humanities (see, for example, Mark Sample's work on digital activism at www.samplereality.com and Roopika Risam's work at the intersection of digital humanities and postcolonial studies at www.roopikarisam.com).

9. Deborah Bird Rose, Thom van Dooren, Matthew Chrulew, Stuart Cooke, Matthew Kearnes, and Emily O'Gorman, "Thinking through the Environment, Unsettling the Humanities," *Environmental Humanities* 1 (2012): 1–5.

10. See the "Topic Modeling Visualizations" page on the Digital Environmental Humanities website (<http://dig-eh.org/topic-modeling-visualizations/>).

11. On the Projects page of our Digital Environmental Humanities website (<http://dig-eh.org/projects/>), see Cheryl Lousley's research project "Planet and Narration," which uses text mining to examine the narratives of the World Commission on Environment and Development (1983–87) public hearings, and Jill Didur's "The Alpine Garden MisGuide," a locative media app for navigating the Montreal Botanical Gardens that allows the user to explore the relationship between the history of alpine garden design and colonial plant hunting. See also Stephanie Posthumus's "Mapping Literary Places" project that uses Neatline to map the geo-spatial imaginary in a French contemporary novel (<https://bit.ly/1CCfiLP>).

