

# Digital Humanities in the Anthropocene

Bethany Nowviskie

University of Virginia Library, VA

## Abstract

This keynote address for the 2014 Digital Humanities conference is a practitioner's talk, and—though the abstract belies it—an optimistic one. I take as given the evidence that human beings are irrevocably altering the conditions for life on Earth and that, despite certain unpredictabilities, we live at the cusp of a mass extinction. What is the place of digital humanities (DH) practice in the new social and geological era of the Anthropocene? What are the DH community's most significant responsibilities, and to whom? This talk positions itself in deep time, but strives for a foothold in the vital here-and-now of service to broad publics. From the presentist, emotional aesthetics of Dark Mountain to the arms-length futurism of the Long Now, I dwell on concepts of graceful degradation, preservation, memorialization, apocalypse, ephemerality, and minimal computing. I discuss digital recovery and close reading of texts and artifacts once thought lost forever, and the ways that prosopography, graphesis, and distant reading open new vistas on the *longue durée*. Can DH develop a practical ethics of resilience and repair? Can it become more humane while working at inhuman scales? Can we resist narratives of progress, and still progress? I wish to open community discussion about the practice of DH, and what to give, in the face of a great hiatus or the end of it all.

### Correspondence:

Bethany Nowviskie,  
University of Virginia  
Library, Scholars' Lab, P.O.  
Box 400129, Charlottesville,  
VA 22904-4129, USA.

### E-mail:

bethany@virginia.edu

*'And by-and-by Christopher Robin came to an end of the things, and was silent, and he sat there looking out over the world, and wishing it wouldn't stop.'* – A. A. Milne, *The House at Pooh Corner*

Every morning, as the Virginia sun spills over the rim of the Shenandoah Valley, I dive into the water of my municipal swimming pool and think of ruined Roman baths. On either end of the lane in which I take my laps are blue tile letters, mortared just beneath the waterline by a craftsman of the century gone by. I read two words as I swim back and forth: *shallow* and *deep*, shallow and deep.

I'm here to give a talk that likewise wants to glide from shallows to depths in turn. My hope is to

position *our work*—the work of the digital humanities (DH) community that has nurtured me with kindness for some 18 years—less as it is lately figured (that is, less as a fragmenting set of methodological interventions in the contemporary, disciplinary *agon* of humanities scholarship) and more as one cohesive and improbably hopeful possibility. The possibility is for strongly connecting technologies and patterns of work in the humanities to deep time: both to times long past and very far in prospect. But I'll swim to the shallows, too—because, by musing about the messages we may attempt to send and receive in the longest of *longues durées*, I mean also to encourage a searching and an active stance in DH, toward our present moment—toward engagement with the technological,

environmental, and ethical conditions of our vital here-and-now.

I promised, in my abstract for the DH 2014 conference, a practitioner's talk—and that is what you will get. I'm not a philosopher or a critic. I'm a builder and a caretaker of systems. So I will attempt to bring a craftsperson's perspective to my theme tonight.

To make plain the premise on which this talk rests: I take as given the scientific evidence that human beings have irrevocably altered conditions for life on our planet. I acknowledge, too, that our past actions have a forward motion: that we owe what ecologists like David Tilman call an 'extinction debt' (Tilman *et al.*, 1994, pp. 65–6)—and that this debt will be paid. As the frequency of disappearance of species leaps from its background rate by a hundred to a thousand times the average, I accept—despite certain unpredictabilities but with no uncertain horror—that we stand on the cusp of a global mass extinction of plants and animals, on the land and in our seas. We are here to live for a moment as best we can, to do our work, and to help our fellow travelers muddle through their own short spans of time—but we are also possessed of a knowledge that is sobering and rare. We, and the several generations that follow us, will bear knowing witness to the sixth great extinction of life on Earth. This is an ending of things, a barring of doors, not seen since the colossal dying that closed the Mesozoic Era, 66 million years ago.

What does that knowledge do to DH in the year 2014? What does it do to our *self-conception* as humanities computing practitioners? It is certainly a reminder of common ground and shared fate. Can it speak to us, as increasingly loosely coupled guilds of scholars working across disciplines, as archivists and librarians, as guardians and interpreters of cultural heritage? Can it speak to us as technologists, developers, and specialists in method and form; as researchers, administrators, students, and shapers and makers of all kinds? What responsibilities, for the DH community, does this knowledge imply? What outlooks come more sharply into view?

I don't believe I'll fully answer these questions over the course of the next 40–45 minutes. Most of all, I mean to ask them—and to use them—to

draw together a kind of toolkit for the years to come. So allow me to pose a few more questions, and to outline my talk in brief, before I really begin.

Tonight, I'll ask you to take to heart the notion that, alongside the myriad joyful, playful scholarly and intellectual concerns that motivate us in the digital humanities—or, rather, resting beneath them all, as a kind of substrate—there lies the seriousness of one core problem. The problem is that of extinction—of multiple extinctions; heart-breaking extinctions; boring, quotidian, barely-noticed extinctions—both the absences that echo through centuries, and the disposable erosions of our lossy everyday. We edit to guess at a poet's papers, long since burned in the hearth. We scrape through stratigraphic layers of earth to uncover ways of life forgotten, and piece together potsherds to make our theories about them hold water. Some of us model how languages change over time, and train ourselves to read the hands that won't be written, anymore. Others promulgate standards to ward against isolation and loss. With great labor and attention, we migrate complex systems forward. We redesign our websites and our tools—or abandon them, or (more rarely) we consciously archive and shut them down. DHers peer with microscopes and macroscopes, looking *into* things we cannot *see*. And even while we delight in building the shiny and the new—and come to meetings like this to celebrate and share and advance that work—we know that someone, sooner or later, curates bits against our ruins.<sup>1</sup>

What is a digital humanities practice that grapples constantly with little extinctions and can look clear-eyed on a Big One? Is it socially conscious and activist in tone? Does it reflect the managerial and problem-solving character of our 21st-century institutions? Is it about preservation, conservation, and recovery—or about understanding ephemerality and embracing change? Does our work help us to appreciate, memorialize, and mourn the things we've lost? Does it alter, for us and for our audiences, our global frameworks and our sense of scale? Is it about teaching ourselves to live differently? Or, as a soldier of a desert war wrote in last autumn's *New York Times*, is our central task the task of learning how to *die*—not (as he put it) to die 'as

individuals, but as a civilization' (Scranton, 2013), in the Anthropocene?

My plan for this evening is, first, to spend a bit of time defining the concept of the Anthropocene and sharing some key ways it has been discussed by scholars and has entered the public consciousness. I'll identify two broad categories of popular and scholarly response to notions of deep time, extinction, and decline, and I'll introduce them by way of the provocations of two groups, twinned groups—made up of poets and scientists, philanthropists and preppers, scholars, technologists, artisans, and storytellers. These are the Long Now Foundation and Dark Mountain.<sup>2</sup> I'll then tell, but not necessarily explicate, two small stories. My stories are about contemplating time by *building for time*—focusing on the problem of communication across millennia. They come from Fascist architecture and the post-war field of nuclear semiotics. Finally, I'll conclude with some thoughts on the intersection of digital humanities methods, systems, projects, and values with these larger concerns. I'll identify a few things that the DH community *in particular* may be positioned to do, to enable, and to give. (Is everybody with me, now? Let's go on.)

Lately, human beings like to toy with terms that might encapsulate our growing sense of responsibility toward and entanglement with the natural world. If we have become a geophysical force, capable of impacting the very crust and atmosphere of the planet, and if geophysical forces become objects of study, presences able to be charted over millions of years—one of our many problems is a *naming* problem. In 1992, journalist Andrew Revkin made a prediction: 'Earth scientists of the future,' he said, 'will name this new post-Holocene period for its causative element—for us. We are entering an age that might someday be referred to as, say, the *Anthrocene*. After all, it is a geological age of our own making' (Revkin, 1992, p. 55). In fact, an alternate form of the word—*Anthropocene*—coined by the biologist Eugene Stoermer in the 1980s, won out, having been popularized through the early 2000s by Nobel Prize-winning chemist Paul Crutzen. In 2008, the Stratigraphy Commission of the Geological Society of London took up the question of whether the Anthropocene should

become official nomenclature—resting alongside the Pleistocene and Holocene in a system of chronology that measures not spins around the sun, but *geologic* time: the complex chemical, elemental, magnetic, and other bio-physical signals we glean from layers of rock. Work that only you TEI folks in the audience can *truly* appreciate remains underway, among the relevant international standards bodies. One point of disagreement and discussion rests in where, exactly, far-future geologists and alien paleontologists might drive the Anthropocenic delimiter—a marker that, for rockhounds of our day, is a literal 'Golden Spike'.<sup>3</sup> Will they detect the startling isotopic signature of 20th century atomic bombs, evident in all our teeth and bones? Will they note chemical and mineral traces—acid and soot—or coal miners' physical perturbations of the earth dating to the Industrial Revolution? Or will the Anthropocene begin in the microscopic fossil record of the spread of agriculture, some 8–100,000 years ago? Who knows? It's all the blink of an eye, and we'll be long gone.

But the idea that the impact of humans on the natural world is marked and measurable, so much so that it might be named, is not particularly new. In 1873, the Italian geologist and priest Antonio Stoppani suggested that our technologies, infrastructures, and patterns of land use had created fundamental changes in Earth's systems, propelling us into what he called an 'anthropozoic era'. Stoppani's concept was quickly picked up by George Perkins Marsh in a revised edition of his 1864 ecological treatise, *Man and Nature*—re-titled straightforwardly, *The Earth as Modified by Human Action*.

R. L. Sherlock's 1922 volume, *Man as a Geologic Agent*, offers an early warning of global anthropogenic climate change due to excessive use of fossil fuels which, as the Foreword to the book puts it, will surely result in an 'unwelcome change in [man's] atmospheric surroundings' (Sherlock, 1922, p. 8). This should prompt him to 'pause to consider whether his use and alteration of the crust of the earth itself are for *future* as well as for present advantage' (Sherlock, 1922, p. 8). I'm charmed that Sherlock is able to present such a prescient warning at the same moment he can also entertain lessons offered us by a declining civilization—on Mars.

The Martians are introduced as our elderly near neighbors whose ‘battle with Nature has been on a much more gigantic scale than Man’s conflict,’ and whose wasted, arid planet is branded with the futile engineering works of the great canals (Sherlock, 1922, p. 374). But most of all, I wanted to pause to introduce this book to you because it touches on themes to which we will return.

First, this cheerful sentiment. ‘Truly it would seem as if “Man strews the earth with ruin.”<sup>4</sup> But this conclusion is too flattering to human vanity. Man’s most permanent memorial is a rubbish-heap, and even that is doomed to be obliterated’ (Sherlock, 1922, p. 343). Ladies and gentlemen—geology! I won’t actually gloss this bleak passage right now—but want to point out that depressing you so deeply is my way of making sure I’m never on the big stage at a DH conference again. (I’ll be an ancient old lady, one day, in the running for a Busa Award, and someone will say, ‘Yes, but you remember Nowvskie at Lausanne!’) We will return, later on, to the notion of the obliteration of our ‘most permanent memorials.’

A second quotation is the one I’ll build from immediately. Sherlock, interested in the whimsical bursts of human influence seen against the usually more continuous sweep of Nature, writes: ‘Perhaps the most difficult, and at the same time the most interesting, problem that arises . . . is the relation between Man’s psychology and his geological activities. His most profound interferences with Nature have their origin in his thoughts’ (Sherlock, 1922, p. 347).

Above all, the intellectual uses to which the Anthropocene label is *currently* put—by 21st-century climate scientists, historians, and eco-critics, by philosophers, politicians, activists, and artists—have to do with this relation, called out in 1922: the relation between the changeable psychology of people on the one hand, and the practices that lead to their geologically detectable activities, on the other. You know our contemporary battles around climate science well, and understand their stakes, so I will not rehearse them here—except to recommend to you the substantive work of our opening speaker, Bruno Latour, who meditates in a number of pieces<sup>5</sup> on the Anthropocene as a

concept powerful enough to challenge the long-standing philosophical separation of humans from Nature—and to jar us from a curiously modern political paralysis. But more, tonight, than in conceptions of the tenuous relation of politics to reason, I am interested in the rhetorical, technological, aesthetic, and deeply personal, sometimes even sentimental, struggles brought into focus by the Anthropocene—and how they prompt us to position the work of the digital humanities in time.

Let’s frame these struggles with the tale of two collectives. The first is the California-based Long Now Foundation, which has undertaken an ambitious, interconnected set of projects meant to promote long-term thinking—*very* long-term thinking. The Long Now was established in 1996 by Steward Brand (hippie *Whole Earth Catalog* editor and founder of the WELL), by computer scientist Danny Hillis, and by experimental musician Brian Eno, among others. In fact, members of the Long Now would have me say that it was founded in the year 01996, a way of writing dates that presently accommodates a further 97,985 years. To put this into perspective—50,000 years before the Long Now runs out of digits, Niagara Falls will have eroded its remaining 32 kilometers to Lake Erie. That communion will occur a full 30,000 years *after*, according to one lexico-statistical model, the point at which human languages will have retained only one percent of their present-day words. By the time the Long Now has a Y100k problem, the constellations you recognize will be gone from the sky. I lay this out to make the point that Long Now folks embed a puckishly provocative *optimism* in everything they do. But most of their efforts target the more modest timescale of 10,000 years, about the length of human civilization thus far. Among the best-known of these is the Rosetta Project,<sup>6</sup> a scheme to gather up and document over 2,500 human languages, some 13,000 page images of which have been microscopically etched onto pretty, 4-inch nickel disks. A gigantic, imperceptibly moving Clock of the Long Now,<sup>7</sup> another project, is currently being installed deep inside a mountain in West Texas—with a duplicate planned for the Nevada desert, to be planted under a grove of 5,000-year-old bristlecone pines. Brian Eno

designed the clock's combinatoric system of chimes—a mechanical computer that will ring out 3.5 million different melodies over the centuries. 'Why would anyone build a Clock inside a mountain with the hope that it will ring for 10,000 years?' write the Long Now. They answer: 'Just so that people will ask this question' (The Long Now Foundation, 2014a). Their latest venture<sup>8</sup> is a chic San Francisco bar, library, and salon, for conversations about long-term thinking. There are TED talks.

Contrast this with the Dark Mountain Project—founded in 2009 by Dougal Hine and Paul Kingsnorth, a couple of 30-something British writers and disillusioned environmental activists who crowd-funded the printing of a manifesto. Their pamphlet, inspired by the American poet of 'inhumanism', Robinson Jeffers, was titled *Uncivilisation*. It urged readers to look—not to the far future, but steadily on our *present* moment of material contraction, ecological collapse, and civilizational decline, with an eye toward the dissolution and final failure of deeply ingrained myths of progress. 'What comes after the end of the world?' they asked (The Dark Mountain Project, 2014). And if the stories we've told ourselves, about dominion over nature, manifest destiny, liberty and advancement and ease, are the things that brought us to this state—what kind of story-telling can usher in a new way of life? Dark Mountain speaks not to policymakers and technocrats, but to writers and artists—asking them to drop all pretense about the perfectibility of our technologies and our capacity to stave off disaster, and instead use their craft to help audiences come to terms with the 'unraveling . . . of the world' (The Dark Mountain Project, 2014). *Uncivilisation* struck a nerve, and it wasn't long until an annual compilation of writing appeared, alongside several summers of open-air festivals held in Hampshire and Wales. Dark Mountain has pulled back on carnivalesque events, but nonetheless makes the news, now, with increasing frequency, and publishes two print books a year. I read them at the beach.

I introduce these groups to you—Dark Mountain and the Long Now—as a kind of shorthand for two classes of scholarly conversation that

they in fact rarely cite or engage with, but of which they still seem a part. Maybe it's the Zeitgeist. Something in the air. They're a way for me, tonight, to orient and condense the scholarship that informs our theme. So bear with me for a moment through a little lit review. I'm kitting out a toolkit we will need.

So. Long Now and Dark Mountain. They're not exactly deep time vs. the ephemeral and experiential—nor are they exactly about careful manufacture and how the machine stops.<sup>9</sup> They're not neatly about hope vs. despair, either. But when, in an edited collection on post-environmentalism and the Anthropocene, Latour urges us to 'love our monsters', that is, to take a page from *Frankenstein* (here on the shores of Lake Léman), and invest in more systematic management of the technologies we have created—when he tells us that hope lies in putting as much care into the stewardship of our disquieting tech as we put into its creation—it's a call for long-term thinking and a constructive, continuing Long Now (Latour, 2012). 'The environment', Latour writes, 'should be *even more* managed, taken up, cared for, stewarded; in brief, integrated and internalized in the very fabric of the polity' (Latour, 2012). On the other hand, when technology governance expert Steven J. Jackson submits, in a recent essay called 'Rethinking Repair', that we require 'broken world thinking', he's on the slopes of Dark Mountain (Jackson, 2013, p. 221). Jackson holds that individual acts of maintenance, disassembly, and repair are ever-present in our interaction with technology, as quietly hopeful and generative deeds, but that they are occluded by a privileged cultural rhetoric of 'innovation, development, and design' (Jackson, 2013, p. 222). He calls for more thoughtful engagement with the notion *not so much* of making things, but of fixing them, repurposing them in their diminishment and dismantlement—not of making *new*, but of *making do*, and of thereby engaging what he calls 'an ethics of mutual care'—with each other, the world around us, and with the (quite literal) objects of our affection (Jackson, 2013, p. 231). This is a source, he says, of 'resilience and hope' and it's a way of being in space and time that has deep feminist roots (Jackson, 2013, p. 237).

The postcolonial eco-criticism of Canadian literary scholar Susie O'Brien similarly advances an 'agenda of empathy', but complicates Jackson's lauding of 'resilience' manifested in acts of repair (O'Brien, 2012). Her recent paper, 'The Downside of Up', and a later piece on 'edgework' and resilience theory in Arundhati Roy, show how comfortably the concept of resilience—of bouncing back, of being flexible and adaptable as a measure not just of ecological fitness, but of a kind of 'moral worthiness'—has aligned with 'the ideals of neoliberalism: constant volatility, strategic dynamism, deregulation, and the consequent 'dismantling of environmental and social welfare programs' (O'Brien, 2013, p. 5). Today, we seek resilient cities, resilient infrastructure, resilient employees. It's a seductive term. But reflect how easily, as McKenzie Wark writes in a recent post on *Heidegger and Geology*, resilience becomes 'government under conditions of constant apocalypse... something to be endured' (Wark, 2014). What would constitute a resilient digital humanities—and do we really want to know?

Historian Dipesh Chakrabarty, in a pivotal article called 'The Climate of History', argued that the Anthropocene unsettles received notions of freedom and emancipation (Chakrabarty, 2009). These are deeply embedded in the Enlightenment and post-colonial narratives that continue to shape our institutions and technologies—for good and ill—those very myths of progress and ease against which Dark Mountain calls for counter-tales. Liberty is an intellectual framework, he says, that was thoughtlessly energy-intensive, that overlooked its own costs. Marisa Parham (of the Five College DH Consortium) never references Chakrabarty, but sees those costs instantly in the trans-Atlantic slave trade, when she looks at an historical data visualization created by DHer Ben Schmidt—a visualization the popular press latched onto and labeled 'A Map of Nineteenth-Century Shipping Routes and Nothing Else'.<sup>10</sup> Parham's beautifully nuanced short post is called 'Black Haunts in the Anthropocene' (Parham, 2014).

Eileen Crist, who works in animal studies, objects to the very concept. Her essay 'On the Poverty of Our Nomenclature' attacks the egocentrism of the

Anthropocene label (Crist, 2013). For Crist, the one conceptual freedom naming the era for ourselves denies, is the freedom to disengage: radically and voluntarily to scale back our human presence. Similarly, Brian Lennon, who considers ecological questions in the framework of scholarly labor, suggests we resist by understanding *time* as the medium of humanities research, 'in so far as time itself brings all worldly striving to extinction' (Lennon, 2013, p. 189). Time is therefore the thing we should protect and conserve. 'The freedoms we imagine for digital scholarship', Lennon writes, 'are in the end perhaps merely productive efficiencies... To address the ecological impasse we now face is not to demand some productive new critical-theoretical innovation... so much as some restraint of mechanized production.' This would constitute a needed 're-evaluation of ourselves as we are accustomed to work' (Lennon, 2013, p. 186).

To take a final look at the themes arising through the Long Now and Dark Mountain, I'll return to one of the questions with which I began. What does it mean, I asked you, to witness mass extinction—the end of so much 'worldly striving?' What could, or *should* it mean to us, or motivate us to do? John C. Ryan, a scholar of the cultural history of Australian flora, emphasizes emotional and aesthetic losses, which he says have only been 'minimally articulated in the [scientific] literature'—all those 'colours, sounds, smells, behaviours, and relations', the absence of which leave 'our sense worlds impoverished' (Ryan, 2009, pp. 54, 71, 51). If it's true, as the Indian anthropologist Shiv Visvanathan has written, that 'science has no mourning rituals,' (Visvanathan, 1996)—then Ryan might well seek consolation in poetic inquiry alongside botany. But this, he writes, 'requires a [real] framework and actual modalities for mourning'—a productive *aesthetic*, in the truest sense of Dark Mountain—the development of which could be a special task for the digital and environmental humanities in our time (Ryan, 2009, p. 52).

Thom van Dooren and Deborah Rose, of the Extinction Studies Working Group,<sup>11</sup> agree. (This is a group, by the way, that includes Professor Donna Haraway—who more commonly appears in DH talks as a cyborg, rather than a goddess.)

Rose and van Dooren take on the final Long Now project I'll mention, in a sharp presentation made last year to the Royal Zoological Society of New South Wales. Like Ryan, they see our primary cultural task as simply to grieve—in their words, to 'dwell with extinction'—because grief changes us, and only deeply profound internal change will create 'the foundation of a sustainable and informed response' (Van Dooren and Rose, 2013). Van Dooren and Rose are responding to 'Revive and Restore', the Long Now's new effort to coordinate a 'DeExtinction Movement' (The Long Now Foundation, 2014b). This project supports the genetic engineering of endangered species (altering them physically to become more resilient in the Anthropocene) and the cloning and wholesale recreation of extinct ones—passenger pigeons, woolly mammoths—work that founder Stewart Brand promotes as 'genetic rescue'.

Revive and Restore is entirely different in character from the Long Now's Rosetta Disk and Clock projects, which originated almost two decades ago. It is not about an aesthetic provocation to more careful long-term thinking, but rather about doing something, maybe *anything*, right now. In a TED talk last year, Brand 'posed the question of how [the history of human-driven extinction of animals] makes us feel, and how it is that we ought to orient ourselves in relation to it' (Brand, 2013). Van Dooren and Rose quote the talk: 'Sorrow, anger, mourning?' says Brand, 'Don't mourn', he says. 'Organize.' I watched it. 'Well?' he whips up the crowd. 'Do you want extinct species back? *Do ya want* extinct species back?' They burst into applause.

Perhaps we have become cautious enough of the unintended results of our technological solutions to look concernedly on a DeExtinction project—on the careless creation, one might fear, of too many monsters to love. Simply 'dwelling with extinction,' though, in the Dark Mountain sense, seems profoundly bleak—and potentially without end. What are we left with?

Let me hang two fearsome masks on the wall. Both are apotropaic.

Mask the First. The strange, speculative subfield of nuclear semiotics came into being in 1981, when the US government and the Bechtel Corporation, builders of the Hoover Dam, commissioned a task

force. Its goal was to diminish the likelihood that, over the course of the next ten thousand years, some unlucky band of human descendants would blunder into a planned underground repository for radioactive waste. Two major reports emerged from this effort. The first, authored by the linguist and semiotician Thomas Sēbēok, is famous<sup>12</sup> for proposing the creation of an atomic priesthood, a hieratic cult that would be devoted to protecting and transmitting knowledge about the site. A later group's 1993 report includes sketches of threatening-looking earthworks, a jagged field of thorns, Rosetta-stone warnings, sad-face pictures, and so forth (Trauth *et al.*, 1993). Their proposed signs and structures were meant to be clear: 'This is not a place of honor. Don't dig here.' But of course, what could be *more enticing* to future archeologists than an utterly unique, monumental, and terrifying ruin of the lost civilization of the Americas? An architecture of admonition seems doomed to fail. More imaginative than the official reports was a special issue of the German *Zeitschrift für Semiotik*, which, inspired by the project, made a call for alternate proposals and published a cluster of them in 1984, including a short piece by Sēbēok.<sup>13</sup> Berlin's Phillip Sonntag proposed to put the message somewhere safe: on the face of an artificial moon. The Polish sci-fi writer Stanislaw Lem suggested that information about the site be encoded in the DNA of flowers planted in the earth above. But two French researchers, Bastide and Fabbri, win the Dark Mountain prize. They proposed creation of a breed of cats—Strahlenkatze—whose fur would change color when exposed to lingering radioactivity. Storytellers, artists, and songwriters would be recruited to seed in every culture, everywhere, a viral set of fables and legends about the bad things that happen when your kitten turns blue. The collection closed with two essays, by Susannè Hauser and Marshall Blonsky, sharply suggesting that effort might be better spent on disarmament and reduction of nuclear waste in the first place—and stating that the question itself (perhaps like this talk) reflects a condition in which 'a disintegrating late capitalist society seduces its elite into projecting its own...insecurity on the future of mankind' (Blonsky, 1984).

Second mask. In 1934, Adolph Hitler asked his state architect, Albert Speer, to design a permanent structure to replace the wooden tribunal at a zeppelin landing field in Nuremberg—a place that was to become the infamous Nazi Party rallying grounds. Speer knew Hitler was inspired by classical architecture<sup>14</sup> and jealous that the ruins dotting Italy suggested a certain continuity of Mussolini's regime with the great empire of Rome. Perhaps *himself* inspired by a painting<sup>15</sup> commissioned by 19th-century architect Sir John Soane, of the then-new Bank of England, Speer ultimately presented Hitler with more than one image of the finished building. He offered a second sketch, of the Zeppelinfeld a thousand years hence—ruined, ivy-covered, yet recognizable and perhaps lying in wait to inspire a Fourth Reich to come. His ministers were scandalized at the architect's *memento mori*, but Hitler loved it, and Speer later developed and described the idea as a 'Theory of Ruin-Value', henceforth taking care only to use building materials that would crumble picturesquely (Speer, 1969). I offer this uncomfortable story, like the irradiated Strahlenkatze of nuclear semiotics, as an instance of our common drive to communicate across millennia—whether we grasp the fact, or not, that what we speak may be our darkest sin.

And perhaps that explains all our human striving toward a label for the Anthropocene: the hope against hope that we *will* leave material traces, even knowing that so many are traces of transgression. Maybe it's also why—in a recent talk on retreating from academic turf wars to turf itself—Finnish media theorist Jussi Parikka reminds us that the materiality of modern info tech sinks its common roots deep below, in toxic metals in the earth (Parikka, 2012).

Given all this—the broader scientific, historical, and speculative lenses through which we view ourselves in time, and the climate of extinction that surrounds our work—what are our best, shared hopes for DH? What tasks and projects might we take up, or tie in? What are our functions—or, if you prefer, our vocations, now? I want us to use the seriousness of this moment to draw ourselves together with compassion, solidarity, and smarts—as an international, multi-disciplinary, and self-consciously

inter-professional community—mindful of everyday extinctions and of the complexities of contending with them, cautious of the darker sides and callings of our drive to communicate in deep time, and yet filled with benevolence and hope.

I think we have reason for hope, and for confidence in our gifts. I'll spend my last minutes with you enumerating some of the more important of these—both our successes and places where we're still scoping out needed work. (And forgive me for not associating individual names with the bulk of the projects I'll allude to: in typical DH style, most are team-based, some crossing institutional and national borders.)

First, the *digital recovery* of texts, objects, and traces of human experience thought long since lost to time. Here (from the outside, at least), DH accomplishments look magical: from the Great Parchment Book of 1639,<sup>16</sup> a brittle wad since the Guildhall fire over two centuries ago, and now unfolded virtually and legible again—to the Herculaneum papyri,<sup>17</sup> last unfurled on the slopes of Mount Vesuvius and flash-fried into charcoal briquettes in AD 79—slowly opening themselves up through x-ray micro-CT and multispectral scanning. Projects in prosopography give us a stronger sense of common lives from the Byzantine world<sup>18</sup> to the 19th century,<sup>19</sup> while computer-assisted approaches to paleography<sup>20</sup> become ever more deeply humanistic and hermeneutic in character. We simulate and model (calculating, say, the way that light fell<sup>21</sup> into a long-gone Roman villa on a winter's day, or seeking lost cities by reading Homer's *Iliad* through GIS<sup>22</sup>). And we explore our *recent* past with media archaeology and forensics done on born-digital resources<sup>23</sup>—activities which themselves inform steady advances in the field of digital preservation. Resurrection can be grisly work. I think we come to understand extinction better in our struggles.

Next, big data and the *longue durée*. If it's true, as Rebecca Solnit writes, that people are bad at 'looking at the biggest things' in this, our 'age of inhuman scale' (Solnit, 2013)—a concept Timothy Morton theorizes through 'hyperobjects'—ineffable, natural, and computational entities (like global warming) 'massively distributed in time and space'



(Morton, 2013, pp. 37–9)—then DH has a public and transformative role to play. For Morton, grappling with hyperobjects can lead to a new ‘time of sincerity, that is, a time in which it is impossible to achieve a final distance toward the world’ (Morton, 2013, p. 44). Jo Guldi gets at this when she narrates ‘how information won’t (and will) save the climate’—describing her meetings with a dozen grassroots mapping efforts in India, and calling for ‘an information architecture stamped with participation’ and informed by history (Guldi, 2013). ‘Mapping, code, and data collection’, she writes, ‘must be allied to a sense of memory’ (Guldi, 2013). It’s a powerful reminder to those of us positioned to pit data design and visualization against what Guldi calls ‘information overload, the corruption of privilege, and the inefficacy of expertise’ (Guldi, 2013). David Armitage joins Guldi in another essay, historicizing the recent narrowing of temporal scope by Anglophone academic historians, and describing how advances in distant reading and mass digitization make a ‘Return to the Longue Durée’ (the title of their article, available in French and English) not only technologically feasible, but politically imperative and deeply restorative for the humanities writ large (Armitage and Guldi, 2014).

But picturing histories anew will require us to go beyond big-data *algorithmic* analysis and visualization. If we seek a rich and humanistic DH capable of meeting more than the *technical* challenges of our massive geo-temporal datasets, we must develop design approaches that address recent theoretical mergings of background and foreground, space, and time. The Neatline<sup>24</sup> project at the Scholars’ Lab is one such attempt, though only half-complete. Key here will be embedding, in our tools, concepts like Johanna Drucker’s ‘graphesis’, to enable knowledge-production through iterative visualization—and affordances that support Nick Mirzoeff’s call for a ‘counter-visibility’ to the dominant imagery of the Anthropocene (Mirzoeff, 2014). Mirzoeff locates the seeds of that resistance in the global South.

Or maybe we need a counter*factuality*—room for those ‘strange loops and hybrid products of what-if thinking’ that form the subject of Kari Kraus’s forthcoming book, *Hopeful Monsters*, an attempt

to ‘reorient the [historically-minded] humanities’ toward possible and positive futures (Kraus, 2012). Experimental humanities labs and DH makerspaces participate in this forward-facing reorientation, allowing scholars to tinker and build, bringing critical perspectives to the realms of 3d fabrication; do-it-yourself wearable and embedded computing; hardware hacking, modding, and repair, augmented reality, and the making of bots and games. After all, as Armitage and Guldi argue in their case for the *longue durée*, ‘alternative futures became the purview of futurists and science-fiction writers only when historians gave up the field’ (Armitage and Guldi, 2014).

There are further projects we might undertake, individually and collectively, in the framework of the Anthropocene. I’ll close with a fragmentary list. DHers need more effective communication with broader publics, to bring our own work in preservation, speculative computing, and cultural memory into the light—and to foster collaborations with people outside the academy who share our orientations and concerns. We need systems of reward that don’t just value the new, but find nobility in activities like metadata enhancement, project maintenance, and forward migration—and therefore prompt us to attend to the working conditions of our colleagues in cultural heritage institutions and those who steward DH software and systems. We need more ‘agendas of empathy’—and to create safe and welcoming spaces for the vulnerable, wherever we can make them (and here I want to pause to express thanks to my ADHO colleagues and working group members who helped to craft an important new Code of Conduct<sup>25</sup> for this conference). We need greater attention to matters of accessibility<sup>26</sup> and minimal computing,<sup>27</sup> and cognizance that the so-called global revolution in humanities technology is not equally distributed. We need to acknowledge the imperatives of graceful degradation,<sup>28</sup> so we run fewer geriatric teen-aged projects that have blithely denied their own mortality and failed to plan for altered or diminished futures. But alongside that, and particularly in libraries, we require more a robust discourse around ephemerality—in part, to license the experimental works we absolutely want

and need, which *never* mean to live long, get serious, or grow up. We must attend to the environmental and human costs of DH—from our complicity with device manufacturers and social media manipulators, to the carbon footprint<sup>29</sup> and price tag<sup>30</sup> of conferences like this—and ask ourselves seriously what we might change, or grow to be. As our governments employ military surveillance techniques against common citizens and plan for climate-change-induced civil unrest, we need to bring our technological savvy and deep historical conscience more squarely into the politics of 21st century life. And we may need to dwell with extinction, each of us, professionally and privately, just a little more than I have forced us to, tonight.

It's too much, though—is it not? It's daunting and immobilizing, my list of insoluble paradoxes—of Long Nows and Dark Mountains, of new times of sincerity and alien, critical distance—and of all the things we *must* and *need to do*, when we are doing so much, already, and in straightened circumstances. But 'we' are *many*, and more people with more diverse interests gravitate toward the digital humanities every day. In our 'age of inhuman scale', I am reminded of a night I spent,<sup>31</sup> a few years ago, hanging out in the congenial darkness of a New York City park with members of the Occupy Wall Street movement. The crowd was huge, and lacked a permit for amplified sound, so when there was news to share, Occupy-ers employed what they called 'the human mic',—or the people's microphone—vocally repeating and thereby amplifying one speaker's words with hundreds of voices and lungs. It's a grassroots approach not unlike the lovely idea of the whispering translations<sup>32</sup> here at DH 2014.<sup>33</sup>

We have many smart messengers for the imperatives I've put forth tonight. Not all of them work in words, but they're speaking, nonetheless.<sup>34</sup> One goal of our digital humanities collective in the coming years—in times that are getting harder, and in service to the world that comes next—could simply be to *amplify their voices*, with everything we have.

I finished writing this talk, but didn't know how to stop—so I went to take a swim. *Shallow* and *deep*, the blue-tile letters said, at the ends of the lane I always choose. Maybe you like to splash about, too. I kick off from one word, and stretch my hands out

toward the other, back and forth, again and again, while my swimming-pool lasts.

## References

- Armitage, D. and Guldi, J.** (2014). The Return of the *Longue Durée*: an Anglo-American perspective. Forthcoming in *Annales Histoire. Sciences Sociales*, **69**. [http://scholar.harvard.edu/files/armitage/files/rld\\_annaes\\_revised\\_0.pdf](http://scholar.harvard.edu/files/armitage/files/rld_annaes_revised_0.pdf) (accessed 28 October 2014).
- Blonsky, M.** (1984). Wes Geistes Kind ist die Atomsemiotik? *Semiotik*, **6.3**. [http://www.semiotik.tu-berlin.de/menue/zeitschrift\\_fuer\\_semiotik/zs-hefte/bd\\_6\\_hft\\_3/](http://www.semiotik.tu-berlin.de/menue/zeitschrift_fuer_semiotik/zs-hefte/bd_6_hft_3/) (accessed 27 October 2014).
- Brand, S.** (2013). The dawn of de-extinction. Are you ready? *TED* February 2013. [http://www.ted.com/talks/stewart\\_brand\\_the\\_dawn\\_of\\_de\\_extinction\\_are\\_you\\_ready](http://www.ted.com/talks/stewart_brand_the_dawn_of_de_extinction_are_you_ready) (accessed 27 October 2014).
- Chakrabarty, D.** (2009). The climate of history: four theses. *Critical Inquiry*, **35**(2): <http://www.jstor.org/stable/10.1086/596640> (accessed 27 October 2014).
- Crist, E.** (2013). On the poverty of our nomenclature. *Provocations*, **3**. <http://environmentalhumanities.org/2013/11/03/provoked-discussion-on-the-poverty-of-our-nomenclature/> (accessed 27 October).
- Guldi, J.** (2013) How information won't (and will) save the climate: the perspective of history. 20 June 2013. <http://landscape.blogspot.com/2013/06/how-information-wont-and-will-save.html> (accessed 28 October 2014).
- Jackson, S. J.** (2013). Rethinking repair. In Gillespie, T., Boczkowski, P., and Foot, K. (eds), *Media Technologies: Essays on Communication, Materiality and Society*. Cambridge MA: MIT Press [http://sjackson.infosci.cornell.edu/RethinkingRepairPROOFS\(reduced\)Aug2013.pdf](http://sjackson.infosci.cornell.edu/RethinkingRepairPROOFS(reduced)Aug2013.pdf) (accessed 27 October 2014).
- Kraus, K.** (2012) Hopeful monsters. 27 April 2012. <http://www.karikraus.com/?p=141> (accessed 28 October 2014).
- Latour, B.** (2012). Love your monsters: why we must care for our technologies as we do our children. *The Break Through* Winter 2012. <http://thebreakthrough.org/index.php/journal/past-issues/issue-2/love-your-monsters> (accessed 27 October 2014).
- Lennon, B.** (2013). New stationary states: real time and history's disquiet. *Symploke*, **21.1**(2): 179–93.
- Mirzoeff, N.** (2014) 'Visualizing the Anthropocene', *Public Culture* 26.2.73, Duke University Press, Durham. <http://publicculture.org/articles/view/26/2/visualizing-the-anthropocene>.

- Morton, T.** (2013). *Hyperobjects: Philosophy and Ecology after the End of the World*. MN: University of Minnesota Press <http://www.upress.umn.edu/book-division/books/hyperobjects>.
- O'Brien, S.** (2012). The downside of up; or, what's the matter with resilience? Paper presented at *Underground Ecocriticism Conference*. London, ON: Western University [http://www.academia.edu/2125356/The\\_Downside\\_of\\_Up\\_or\\_Whats\\_the\\_Matter\\_With\\_Resilience](http://www.academia.edu/2125356/The_Downside_of_Up_or_Whats_the_Matter_With_Resilience) (accessed 27 October 2014).
- O'Brien, S.** (2013). On the edge of resilience: postcolonial ecologies in Arundhati Roy's work. Paper presented at *Global Ecologies: Nature/Narrative/Neoliberalism Conference*, UCLA. [http://www.academia.edu/3846899/\\_On\\_the\\_Edge\\_of\\_Resilience\\_Postcolonial\\_Ecologies\\_in\\_Arundhati\\_Roys\\_Work\\_](http://www.academia.edu/3846899/_On_the_Edge_of_Resilience_Postcolonial_Ecologies_in_Arundhati_Roys_Work_) (accessed 27 October 2014).
- Parham, M.** (2014). Black haunts in the Anthropocene 26 January 2014. <http://mp285.com/black-anthropocene/> (accessed 27 October 2014).
- Parikka, J.** (2012). Turf instead of turf wars: the future of media theory (as Bin Theory) 30 August 2012. <http://jussiparikka.net/2012/08/30/turf-instead-of-turf-wars/> (accessed 27 October 2014).
- Revkin, A. C.** (1992). *Global Warming: Understanding the Forecast*. New York: Abbeville Press.
- Ryan, J. C.** (2009). Why do extinctions matter? Mourning the loss of indigenous flora in the Southwest of Western Australia. *Philament ABSENCE* December 2009: 51-80. [http://sydney.edu.au/arts/publications/philament/issue15\\_pdfs/RYAN\\_Why%20Do%20Extinctions%20Matter.pdf](http://sydney.edu.au/arts/publications/philament/issue15_pdfs/RYAN_Why%20Do%20Extinctions%20Matter.pdf) (accessed 27 October 2014).
- Scranton, R.** (2013). Learning how to die in the anthropocene. *The New York Times* 10 November. <http://opinionator.blogs.nytimes.com/2013/11/10/learning-how-to-die-in-the-anthropocene/> (accessed 27 October 2014).
- Sherlock, R. L.** (1922). *Man as a Geological Agent: An Account of his Action on Inanimate Nature*. London: H. F. & G. Witherby.
- Solnit, R.** (2013). Bigger than that: (The Difficulty of) looking at climate change. *Tomgram: Rebecca Solnit, The Age of Inhuman Scale* 6 October 2013. [http://www.tomdispatch.com/blog/175756/tomgram%3A\\_rebecca\\_solnit\\_the\\_age\\_of\\_inhuman\\_scale](http://www.tomdispatch.com/blog/175756/tomgram%3A_rebecca_solnit_the_age_of_inhuman_scale) (accessed 28 October 2014).
- Speer, A.** (1969). *Erinnerungen*. Berlin, Propyläen-Verlag: Frankfurt/M., Ullstein. <http://uva.worldcat.org/title/erinnerungen/oclc/621236668> (accessed 27 October 2014).
- The Dark Mountain Project.** (2014). *Uncivilisation*. <http://dark-mountain.net/about/manifesto/> (accessed 27 October 2014).
- The Long Now Foundation.** (2014a). *The 10,000 Year Clock*. <http://longnow.org/clock/> (accessed 27 October 2014).
- The Long Now Foundation.** (2014b). *Revive and Restore*. <http://longnow.org/revive/> (accessed 27 October 2014).
- Tilman, D., May, R. M., Lehman, C. L., and Nowak, M. A.** (1994). Habitat destruction and the extinction debt. *Nature*, **371**: 65–66. <http://www.nature.com/nature/journal/v371/n6492/abs/371065a0.html> (accessed 27 October 2014).
- Trauth, K. M., Hora, S. C., and Guzowski, R. V.** (1993). Expert judgment on markers to deter inadvertent human intrusion into the waste isolation pilot plant. *Sandia Report* November 1993. <http://www.wipp.energy.gov/PICsProg/Test1/SAND%2092-1382.pdf> (accessed 27 October 2014).
- Van Dooren, T. V. and Rose, D.** (2013). *Keeping faith ith death: mourning and de-extinction* 2 November 2013. <http://thomvandooren.org/2013/11/02/keeping-faith-with-death-mourning-and-de-extinction/> (accessed 27 October 2014).
- Visvanathan, S.** (1996). Footnotes to vavilov: an essay on gene diversity. In Apfel-Marglin, F. (ed.), *Decolonizing Knowledge: From Development to Dialogue*. Oxford and New York: Oxford University Press. [http://sydney.edu.au/arts/publications/philament/issue15\\_pdfs/RYAN\\_Why%20Do%20Extinctions%20Matter.pdf](http://sydney.edu.au/arts/publications/philament/issue15_pdfs/RYAN_Why%20Do%20Extinctions%20Matter.pdf) (accessed 30 October 2014).
- Wark, M.** (2014). Heidegger and Geology. *Public Seminar*, 26 June. <http://www.publicseminar.org/2014/06/heidegger-and-geology/#.VE5envnF-E> (accessed 27 October 2014).

## Notes

- 1 See <http://www.bitcurator.net/>. (URLs to resources linked from the published, open access version of this talk, available at <http://nowvickie.org/2014/anthropocene/> have been converted to footnotes here. See also slides and an audio reading by Nowvickie, available at <https://vimeo.com/101331187>, as well as Alex Gil's Spanish translation of the talk, available at <http://elotroalex.webfactional.com/las-humanidades-digitales-en-el-antropoceno/>.)
- 2 Found at <http://longnow.org/> and <http://dark-mountain.net/>, respectively.

- 3 For more on the ‘golden spike’, see [http://en.wikipedia.org/wiki/Global\\_Boundary\\_Stratotype\\_Section\\_and\\_Point](http://en.wikipedia.org/wiki/Global_Boundary_Stratotype_Section_and_Point).
- 4 A misquotation from Byron’s ‘Childe Harold’s Pilgrimage’, (Canto 4, Stanza CLXXIX). See: <http://www.rc.umd.edu/editions/poets/texts/childeharold.html>.
- 5 For more from Latour, see <http://rs.resalliance.org/2013/03/22/bruno-latour-thinks-about-the-anthropocene/comment-page-1/> as well as <http://www.bruno-latour.fr/node/535>.
- 6 On the Rosetta Project, see <http://rosetta-project.org/>.
- 7 On the Clock of the Long Now, <http://longnow.org/clock/>.
- 8 See <https://longnow.org/interval/>.
- 9 E.M. Forster, *The Machine Stops* (1909). Full text available: [http://en.wikisource.org/wiki/The\\_Machine\\_Stops](http://en.wikisource.org/wiki/The_Machine_Stops).
- 10 See <http://io9.com/a-map-of-19th-century-shipping-routes-and-nothing-else-1495012998>.
- 11 For more on the Extinction Studies Working Group, <http://extinctionstudies.org/>.
- 12 For Sebeok’s report, see <http://www.osti.gov/scitech/biblio/6799619>.
- 13 See [http://www.semiotik.tu-berlin.de/menue/zeitschrift\\_fuer\\_semiotik/zs-hefte/bd\\_6\\_hft\\_3/](http://www.semiotik.tu-berlin.de/menue/zeitschrift_fuer_semiotik/zs-hefte/bd_6_hft_3/).
- 14 For more on Hitler and classical architecture, see <http://books.google.com/books?id=xx3h7nJssvC>.
- 15 For more on Soane, [http://www.soane.org/collections/soanes\\_london/bankofengland/8](http://www.soane.org/collections/soanes_london/bankofengland/8).
- 16 For the Great Parchment Book of 1639 Project, see <http://www.greatparchmentbook.org/>.
- 17 For more on the Herculaneum papyri, see <http://vimeo.com/35691952>.
- 18 For example, see ‘Prosopography of the Byzantine World’ at <http://blog.pbw.cch.kcl.ac.uk/>.
- 19 For example, see <http://documentscompass.org/projects/pfe/>.
- 20 For example, see Ségoleène Tarte’s ‘On Cognition and the Digital in the Study of Ancient Textual Artefacts’ at <http://www.digitalclassicist.org/wip/wip2014-01st.html>
- 21 A video of Ethan Gruber’s ‘3D reconstruction of Pompeii’s House of the Faun’: <http://vimeo.com/38875794>.
- 22 See <https://news.virginia.edu/content/innovative-research-homer-s-iliad-wins-prestigious-digital-humanities-prize>
- 23 For example, see <http://www.rarebookschool.org/courses/libraries/195/>
- 24 For more on Neatline, see <http://neatline.org/>
- 25 For more on the ADHO’s New Conference Code of Conduct, see <http://adho.org/announcements/2014/adho-announces-new-conference-code-conduct>
- 26 For more on accessibility, see <http://www.accessiblefuture.org/>
- 27 For more on minimal computing, see <http://www.globaloutlookdh.org/minimal-computing/>
- 28 For more on ‘graceful degradation’, see Nowviskie & Porter: <http://dh2010.cch.kcl.ac.uk/academic-programme/abstracts/papers/html/ab-722.html>
- 29 For more on carbon footprints and academic conferences, see <http://blog.whitneyannetrettien.com/2008/09/new-media-academic-conferences-and-our.html>
- 30 For more on conference costs, see <http://www.hastac.org/blogs/ernesto-priego/2014/06/25/how-much-does-it-cost-make-it-conference>
- 31 See <https://www.flickr.com/photos/nowviskie/sets/72157627948201574/>
- 32 For more on ‘multi-lingual participation’, see <http://adho.org/announcements/2014/godh-and-mcml-partner-initiative-multi-lingual-participation>
- 33 The DH 2014 website can be found here: <http://dh2014.org/>
- 34 See the Scholars’ Lab’s ‘Speaking in Code’—the website for which can be found here: <http://codespeak.scholarslab.org/>