Practicing Geohumanities

Michael Dear
University of California, Berkeley

The age-old confrontation between two cultures—humanities and science—obscures the fact that their traditions are fundamentally similar in several respects. A primary source of the continuing fracture between the two cultures might simply be practitioners' preference for exclusionary ontological or epistemological worldviews, expressed most directly through the differing discipline-based standards of evidence that practitioners deploy or are willing to accept. In this article, I consider the nature of practice in the nascent geohumanities by uncovering the tracks of recent convergences in geography and the humanities, and by reflecting on case studies from my own recent work. Three aspects of transdisciplinary scholarly dialogue are highlighted: the standards of practice, the quality of work produced, and the ensuing pedagogy. I suggest ways of replacing the opacities of intellectual difference with the transparencies of recognition; how the outcomes of transdisciplinary practice might be judged; and practices in the transdisciplinary classroom. **Key Words: digital humanities, geohumanities, GIS, keywords, pedagogy, place, transdisciplinarity, urban.**

Some years ago, at the University of California (UC) Berkeley's Townsend Center for the Humanities, I listened as a very eminent colleague expounded on the subtleties of Dante's *Divine Comedy*. She responded respectfully and gracefully to comments and critiques from diverse disciplinary perspectives, promising to incorporate them into her interpretive schema. But I became confused as the architecture of her original exposition garnered modifications, amounting sometimes to a small repair, later to a roomy addition, and even verging on complete renovation. The structure of her argument sagged under the weight imposed by these alternative framings and interpretations, finally collapsing (or so it seemed to me) into an undifferentiated bricolage of accumulated evidences. Unperturbed, other seminar participants politely enlightened me that humanities scholars typically welcomed an accumulation of interpretations. The last thing they expected was a resolution of such differences. What could I have been expecting? In retrospect, I had been unable to relinquish the tenets of my social-science training. I required resolution and closure! But I was rapidly learning that conversations in geohumanities would require more than a middle ground between the presenter's rich interpretive tapestry and my social-scientific baggage.

The Townsend experience demonstrated, once again, the age-old confrontation between the twin cultures—humanities and science[1]—and how this rift obscured the fact that the two traditions are fundamentally similar in several respects. Both seek to provide explanations of material and cognitive phenomena; both are evidence-based, despite differences in their categorical objects (word, number, image, map, etc.) and interpretive apparatus (proof, correlation,

GeoHumanities, 00(00) 2015, 1–16
Initial submission, June 2015; final acceptance, June 2015.
Published by Taylor & Francis Group, LLC.

interpretation); both enshrine goals of human betterment (e.g., through altered cultural practices, or medical advance); and both confront the provisionality of their explanations, which are inevitably supplanted by later understandings. The fundamental source of fracture between the two cultures could more accurately be traced to practitioners' preference for a particular ontological or epistemological worldview, expressed most directly through the differing standards of evidence and burdens of proof that practitioners deploy or are willing to accept. Bridging this solipsistic divide is a challenge that threatens even the most optimistic cross-disciplinary exploration.

In this article, I consider the nature of practice in the nascent geohumanities, first by uncovering recent convergences in geography and the humanities, and then by reflecting on case studies from my own work. From the latter, three issues in transdisciplinary dialogue are exhumed: standards of practice, the qualities of work produced, and consequences for pedagogy. These topics raise difficult challenges, and I cannot do more here than sketch appropriate directions, including ways of replacing the opacities of intellectual differences by the transparencies of recognition; how the outcomes of transdisciplinary practice might be judged; and practices of transdisciplinary teaching in the geohumanities.

My account is provisional and unabashedly personal. It begins around 2011, the time of the publication of the book *GeoHumanities: Art, History, Text at the Edge of Place* (Dear et al. 2011), of which I was co-editor, and ends now, with this first issue of the *GeoHumanities* journal, on whose editorial board I am honored to serve. During this period, I have been engaged in four projects that directly and indirectly comprise the experiential bases for my observations about practicing geohumanities:

1. As senior fellow at UC Berkeley's Townsend Center for the Humanities (2011–2012), a year-long seminar that met weekly to discuss ongoing projects of faculty and senior doctoral students.
2. As cocurator of an exhibition entitled *Trazando la línea: Pasado, presente y futuro de las comunidades transfronterizas*, at the Centro Estatal de las Artes, in Mexicali, the state capital of Baja California (2012).
3. As researcher, teacher, and executive committee member of the Global Urban Humanities (GLOUH) project at UC Berkeley, one of a number of initiatives funded by the Andrew W. Mellon Foundation's program, "Architecture, Urbanism, and the Humanities" (2013–2016).
4. As author of *Why Walls Won't Work: Repairing the US-Mexico Divide* (Dear 2013), which obliged me to journey far beyond the confines of my disciplinary expertise.

Despite the article's personal foundations, I hope that practitioners in the geohumanities will be sufficiently intrigued to take up the article's challenges, and that nongeographers will value being introduced to the kinds of concerns that a social scientist brings to the transdisciplinary commons.

GEOHUMANITIES: THE BOOK

The edited volume *GeoHumanities: Art, History, and Text at the Edge of Place* (Dear et al. 2011) had its origins in a 2007 conference at the University of Virginia, organized by the Association of American Geographers, and known as the Geography & Humanities Symposium.[2] At that time, the

term *geohumanities* had not been invented, and in approaching the contributions, the editors harbored no preconceived notion of a structure for the volume, nor what the essays cumulatively represented. The contributions included critical reflections, empirical analyses, short topical vignettes, and artwork from many fields of inquiry; truth be told, we rather cherished the amorphous puzzle they presented. At one point, we even contemplated publishing the thirty pieces as a randomly ordered melange that would engage every reader differently. Ultimately, however, the dictates of publishing and marketing obliged us to invent a more rational organization for the book, and we settled on a four-part structure: "Creative Places" (or geocreativity), "Spatial Literacies" (geotexts), "Visual Geographies" (geoimagery), and "Spatial Histories" (geohistory). Nevertheless, we continued to resist defining a priori what the geohumanities was, even as the word became current in our conversations. Instead, we preferred to let the contributions determine what could be said about the field's focus, scope, and conventions. Not until the very last pages of the volume did a tentative definition materialize:

> The geohumanities that emerges in this book is a transdisciplinary and multimethodological inquiry that begins with the human meanings of place and proceeds to reconstruct those meanings in ways that produce new knowledge and the promise of a better-informed scholarly and political practice. (Dear et al. 2011, 312)

It was a straightforward task to identify place as the common analytical focus of the book's contributors. In dealing with the essays' diversity of focus, method, and mode of representation, however, we quickly understood that transdisciplinarity required a nonexclusionary openness to all forms of knowing. We also intuited that self-aware practitioners of geohumanities could produce a kind of "democratic intelligence" that offered a firmer foundation for the shift from knowledge to action.

Then as now, this definition seems ambitious, but it was an accurate reflection of what *GeoHumanities* contained, and not some utopian fabrication on our part. Yet I still recall how much was left out of the book, mirroring the expansive frontiers that were being uncovered. In one example of what was left on the editing floor, Sarah Luria and I discovered an unexpected overlap between our intellectual traditions in human geography and literature. Our very rough map included the following:

1960–1970: Neo-marxism (in geography)/Marxist studies (in literature).
1970–present: Humanities/City as "text."
1980–present: Social theory/Cultural studies.
1980–present: Geographic information systems (GIS)/Mapping texts.
1990–present: Environmentalism/Eco-criticism.

How had she and I not noticed these overlaps earlier? Surely other humanities and social sciences had analogous experiences of concordance? We felt keenly that we were glimpsing common ground. As things turned out, we were not alone; the tracks of others were fast converging, too.

CONVERGENCES

The first decade of the twenty-first century witnessed a rising tide of interest in the intersection between humanities disciplines and emerging techniques associated with big data and the digital

age. The principal technologies were associated with the data storage, manipulation, and visualization capacities of GIS, later known as geographical information sciences (GIScience). During the last quarter of the twentieth century, GIScience had blossomed into a major research enterprise, a growth industry, and mega-employer. Subsequently, a plethora of humanities-oriented applications of the new technologies emerged. These went by various names, reflecting the substantive emphases of each application:

- Literary geography.
- Digital textual studies.
- Historical GIS (HGIS).
- Spatial humanities.
- Geohumanities.
- Digital humanities.
- Urban humanities.

A pivotal opening was carved out with the publication of Moretti's (1998) *Atlas of the European Novel, 1800–1900*, which charted the relationships between national literatures and geography. Moretti went on to become director of the Stanford Literary Lab, part of the Center for Spatial and Textual Analysis at Stanford University. The Lab's fresh approach to mining the huge repository of digitized novels attracted widespread attention. For instance, its most recent project in digital textual studies, "Mapping Emotions in Victorian London," was identified in the *New York Times* as part of a growing movement in the humanities to harness digital technology and cultural studies by treating books as data, and thereby creating a "literary geography" (Blumenthal 2015).

Historians were among the most enthusiastic early adopters of the map-making potential of GIScience, which (for many) appeared to promise a transformative impact on their discipline. HGIS practitioners focused their attention on how map layers could be combined to reveal hitherto unnoticed relationships in the historical record. The range of this cross-disciplinary intersection was well-represented in one of the four major analytical sections of our *GeoHumanities* volume.

A case for uniting GIScience with a wider humanities scholarship was succinctly made in a collection of essays edited by Bodenhamer, Corrigan, and Harris (2010). They adopted the term *spatial humanities* to describe efforts to (re)introduce geographical concepts of space into humanities disciplines beyond history. Barely two years later, the birth of the digital humanities (DH) was marked by publication of a 500-page compendium entitled *Debates in Digital Humanities* (Gold 2012). This volume embraced an inclusive approach by reaching out broadly across humanities disciplines. One of its representational innovations was to include selections of blog posts that amplified the book's more formal essays on definition, theory, critique, practice, teaching, and future directions in DH.

Already since 2009, the DH movement had been supported by the National Endowment for the Humanities and the National Science Foundation, together with the Andrew W. Mellon Foundation (which itself already had a long commitment to funding humanities research). In 2013, the Foundation launched a new initiative called "Architecture, Urbanism, and the Humanities," funding more than a dozen projects at different institutions.[3] The projects had in common a focus on the city, and the program was sometimes referred to more colloquially as the urban humanities. The program's big splash was noted by Parry (2013) in *The Chronicle of*

Higher Education, who described its goal as combining "the spatial and modelling skills of architects with the interpretive muscle of historians, philosophers, and other humanists." Such an alliance, he noted, held the promise of determining more effective ways of addressing contemporary urban problems. By limiting attention to a common analytical object, the city, the Mellon initiative emboldened specialists to depart from their home domains and breach disciplinary boundaries, and made it easier for humanities students to transfer into different pedagogical situations, such as the studio-based settings typical in environmental design teaching.

This rush of new directions in the humanities has been explosive, encouraging a spate of disciplinary border crossings.[4] However, as one might expect, the shift has not been universally applauded. The introduction of new technologies revitalized old suspicions and animosities based in the two-cultures ethos, and dissidents' concerns are not without foundation. As the number of DH projects proliferated, the traditional vocabulary, grammar, and syntax of humanities disciplines was progressively invaded by the languages of science and instrumentalism. Even the most enthusiastic DH practitioners are becoming concerned about how much is being lost in translation.

In recent years, I have encountered the shoals of linguistic ambiguity and translation many times. One prominent member of the Urban Humanities Initiative group at UCLA is Todd Presner, chair of the Digital Humanities Program and Professor of Germanic Studies and Comparative Literature. Much to my delight, he constructed a lexicon to frame his "HyperCities" project, identifying three keywords to characterize its focus, object, and method, as follows: *Digital humanities*, which "explores the deeply productive tension and precarious linkage between computational practices and humanities scholarship" (Presner, Shepard, and Kawano 2014, 20); *HyperCities*, the possibility of "telling stories, of narrating places, and of producing new configurations of knowledge in which every past, present, and future is a place" (15); and *thick mapping*, referring to "the process of collecting, aggregating, and visualizing ever more layers of geographic or place-specific data … sometimes called 'deep maps' because they embody temporal and historical dynamics through a multiplicity of layered narratives, sources, and even representational practices" (17).

I readily grasp Presner's formulation of the DH, and my familiarity with Geertz (1973) and "thick description" enables rapid recognition of thick mapping. But what about HyperCities? The idea of "narrating places" is intuitively appealing, yet only tenuously related to my customary concerns with urban theory—the forces underlying the production of the built environment, and the materiality of urban form.

I have taken Todd's definitions out of context to show how well-intentioned efforts at clarification might still suffer from cross-disciplinary ambiguity that can test our capacity for mutual understanding. Although it is true that his lexicon formally resembles mine, the possibility exists that we are referring to radically different categories and analytics.

The terms and conditions that underlie this kind of linguistic convergence are, in my experience, not widely discussed. There could be many reasons for this, such as concern to avoid upsetting the delicate balance inherent in crossing boundaries, or criticizing errors committed by less experienced practitioners from adjacent disciplines. But the wary hesitancy that characterizes many cross-disciplinary gatherings is counterproductive if it persists in suppressing vital questions: What expectations do practitioners of cross-disciplinary endeavors bring to these conversations? What degree of integration are they prepared to accept, or at least

tolerate? The following spectrum represents degrees of possible, anticipated, or desired integration in collaborations across disciplines, proceeding from the weakest to the strongest integration:

- *Cross-disciplinary*, a generic term recognizing simply the identification and admission of evidence from other disciplines (including simple borrowing by lone scholars in different fields).
- *Multidisciplinary*, the active participation of multiple collaborators from diverse fields.
- *Interdisciplinary*, work directed at the intersections of disciplines, undertaken from within disciplinary limits.
- *Transdisciplinary*, the strongest degree of integration, which seeks a fusion of diverse disciplinary approaches and the invention of novel hybrids distinct from parent disciplines.

These are far from trivial distinctions. In many situations, boundary-crossing collaborators might be unaware of the degree of commitment that is expected of them, or they might actively reject specifying a priori their level of commitment. Sooner or later, though, collaborative partners will decide how far they want to go in their courtship.

STANDARDS OF PRACTICE

A fundamental source of the fracture among various kinds of human knowledge—including the gap between sciences and humanities—can be traced to investigators' preferences for alternative ontological or epistemological worldviews. These find expression through differences in disciplines' *categorical objects* (word, number, image, map, etc., all variations of "evidence-based" scholarship), *analytical methods* (quantitative, qualitative, proof, interpretation), the projects and puzzles that *disciplinary conventions* favor or exclude (such conventions tend to be highly conservative and tradition-bound), and *commitment to activism or action* (many science and humanities scholars decline to move from knowledge to action, whereas this is usually a requirement in professional education).

Despite these differences, linking researchers in transdisciplinary dialogue might not be as difficult as it seems. Academics are accustomed to engaging simultaneously with multiple viewpoints; this is, after all, the basis of argumentation. We are capable of assessing different kinds of evidence, even broaching possibly alien concepts such as a proof. We also regularly commit to transparency; that is, being forthcoming about how our studies are framed and conclusions derived. Many scholars today willingly admit to the provisionality (or mutability) of knowledge, deriving as it does from particular conditions in time and space, and the inevitability that today's knowledges will be superseded by subsequent discoveries and reinterpretations. Analysts also reveal awareness of the layers of contingency that surround even the best explanation, as it would be naive to claim that cause-and-effect relations are ever adequately known, or that they will persist over all time and space. Remarkably, we almost always acknowledge the utility of transdisciplinarity, as if the potential of such engagement is self-evident; and undertake to learn the grammar and vocabulary necessary for linguistic competence in transdisciplinary conversations.

For myself, I was trained as a quantitative geographer before plunging into Marx and radical geography—in both spheres, attracted by different kinds of scientific pretension, or at least the

possibility of clarifying causal relationships. Later, after embracing social theory and postmodernism, I developed an aversion for grand theory, becoming a member of the Los Angeles School of urbanism that had evolved as a direct assault on the long-lasting grand theory installed by the Chicago School. Throughout these changes, I never rejected the diversity of skills and perspectives I accumulated through these alternative epistemologies, and today they provide valuable foundations for my excursions into transdisciplinary worlds (even though I would not claim equivalent levels of expertise in all these fields). I suspect that my experience is not untypical, and these days many scholars of all ages seem eager to spread their transdisciplinary wings.

Given these widespread, seemingly propitious circumstances, what could stand in the way of transdisciplinary practice? Two common proclivities in academic discourse are *exceptionalism* and *exclusivity*. The former refers to an assertion that my practice is axiomatically superior because my field or discipline somehow furnishes more fundamental or analytically more powerful insights; the latter elevates my claim to special privilege based on my particular practices—usually at the expense of your status! Everyone has experienced such snobbery, which can attain levels of high farce. Once, a philosopher friend and I were attending a reception welcoming new colleagues to the University of Southern California. One newcomer, a mathematician, opened conversation by telling us that there were only two absolutely fundamental disciplines in world-class universities: English and (of course) mathematics. Other disciplines were merely decorative, exotic, or diversionary, and consequently could be relegated to the periphery.

A more consequential expression of privilege (this time intra-, rather than interdisciplinary) is the current spat in physics. It concerns the apparent willingness of many physicists to set aside the requirement for experimental confirmation of theory, largely on the grounds that empirical verification (or falsification) of today's ambitious theories is practically impossible. In a *Nature* article defending "the integrity of physics," Ellis and Silk (2014, 322) argued against weakening the "testability requirement for fundamental physics," as this would represent a break with "centuries of philosophical tradition of defining scientific knowledge as empirical" (321). Although not prohibiting the practice of imaginative, evidence-independent science, Ellis and Silk warned that legitimacy of the scientific method was at stake, insisting that the "imprimatur of science should be awarded only to a theory that is testable" (323).

The rationale for exclusively reserving the appellation *science* for one very particular methodology is not at issue here. I simply wonder if its advocates possess minds open enough to flourish in the transdisciplinary trenches.[5]

Another human weakness that inhibits intellectual boundary crossing is the lust for order and synthesis (I am a sufferer). One of its most striking manifestations is the search for a grand theory of everything, which can affect all disciplines, and is bound to the belief that any complex issue can be reduced to, and explained by a small set of fundamental principles. About 20 years ago, I shared a podium with the eminent Stephen Hawking, who wove a spell-binding case for a grand theory of the universe. So imagine my surprise when, a few years later, he repudiated the search for grand theory because physics had fractured into many competing perspectives, and he now believed that greater insights lay at the compelling intersections of conflicting theories rather than resolution into some grand synthesis.

These days, the assertion that there is no such thing as a grand theory of everything is neither an original nor especially provocative ontological stance. All theories are evidently partial, even

though most possess a "home domain" within which they claim special insight. British philosopher Isaiah Berlin long ago pointed out that many human conflicts over differing values are real and unavoidable, with little or no potential for satisfactory reconciliation. In the face of such radical incommensurabilities, Berlin concluded, we had best focus on learning how to live with them and to choose between irreconcilable value systems, rather than construct intellectual conceits about imagined worlds where reconciliation was feasible (Gray 2006, 2013). Yet the siren call of grand theory persists as an ontological foundation in many scholarly minds.

The universalizing tendency of the place-based nature of knowledge production deserves much more attention in this context. From a holistic perspective in the social studies of science, Gieryn (2006) analyzed the conventions of the early twentieth-century Chicago School of urbanism and the challenge offered by the Los Angeles School after the 1980s. He was interested in how place matters in scientific claims, especially "the relationships between the place where knowledge comes from and its bid for credibility" (7). Central to Gieryn's investigation was the notion of a "truth-spot," defined as "a delimited geographical location that lends credibility to claims" (29). He concluded that scholars in each locality inevitably sought legitimacy by rooting their claims in their own cities, but "*epistemically*, Los Angeles becomes a vastly different kind of place than Chicago was for its School," because:

> The L.A. School in effect empowers its readers by weakening its own claim to privileged readings of the city … The objective city of Los Angeles vanishes amid multiple coexisting and contested imageries … as the L.A. School invites its audiences to co-construct the place. The city becomes a collaborative process. (26)

This is very different from the Chicago School, whose followers rarely shied from asserting the superiority of their scientific understandings. Gieryn's social studies of science perspective in my view exposed a key fault line separating Chicago's modernist urbanism from L.A.'s postmodern urbanism, and demonstrated how place played a formative role in the establishing Los Angeles as a preeminent urban archetype. Simply stated, L.A.'s star rose partly because a group of researchers used that city as a prominent exemplar of U.S. twentieth-century urban history, seeking thereby to displace Chicago, whose claim to fame rested on its nineteenth-century eminence.

Finally, transdisciplinary practice is inhibited by the language that scholars have invented to ascribe value to their findings, interpretations, and methodologies. In defending their solipsistic epistemologies, scholars deploy an extraordinary vocabulary for passing judgment, and one can only marvel at the variety and nuance that we have invented to (dis)credit our peers. Consider the following terms of approbation that are common among academic communities (the list is merely indicative):

- *In science*: replicability, prediction, basic, explanation, evidence-based, testability, falsification, robustness, unified.
- *In mathematics*: efficiency, parsimony, elegance, consistency, coherence, clarity, transparency, pure.
- *In humanities*: interpretation, insight, persuasion, aesthetics, craft, beauty, truth.
- *In social sciences*: structure, agency, time, space, society, individual, conflict, cohesion.
- *In professions*: action-oriented, grounded, performance, prescriptive capacity, function, outcome, relevance, impact.

I have deliberately left these terms undefined because that is how we encounter them in debate or in writings. Despite their manifest ambiguity and selectivity, in context any one of them can be strategically deployed as praise or condemnation. They can be especially effective in deterring the transdisciplinary neophyte.

JUDGING OUTCOMES

The requirements of academic success and advancement persuade us to favor only those standards of practice that match our disciplinary standards, which are then used to batter opponents both within and between disciplinary territories. In a transdisciplinary world this would be a mistake, because we risk losing what we set out to engage—diversity and nuance in alternative ways of knowing. In advancing transdisciplinarity, I encourage an ontology that rejects the hierarchies associated with exceptionalism and exclusivity, and promote an epistemological openness. Such advocacy reflects the sentiments expressed by Taylor (1985, 1994), who urged a move from a "politics of difference" to a "politics of recognition" that involved the active incorporation of alternative perspectives; he also invited us to judge theory by the quality of practice it promotes. Both are necessary, but the second is especially liberating because it shifts focus to the *outcomes* of theory; that is, what kind of practice is produced, rather than the contortions of theory itself.

By adopting a nonexclusive ontology and epistemological openness, we are confronted immediately by a far richer question: Does our transdisciplinary practice lead to better outcomes? The gains might be small, medium, or large, and cover a wide range of qualitatively and quantitatively different outcomes, but what matters is that something demonstrably superior results. Consider the following examples, on this occasion chosen from the work of others.

One essay I got to know well while co-editing the *GeoHumanities* volume was entitled "Without Limits: Ancient History and GIS" by von Lünen and Moschek (2011). Using an approach that involved quantitative and hermeneutic techniques, the authors examined Roman infrastructure in the Rhine-Main area of Germany during the first century AD. Their geostatistical analyses uncovered the likelihood that military concerns were not the only criterion for erecting infrastructure, but that the territorial organization depended as well on protecting the local economic structure and establishing Roman areas of influence—cultural borders—even in areas where there was no imminent threat. It was a neat, concise demonstration of how mixed methods opened up new vistas of understanding and added weight to hitherto speculative reasoning.

The new technologies are especially useful in the collation and processing of large amounts of information from disparate sources. Linking the outputs from such collaborations with public policy and politics is the goal of the Forensics group at Goldsmiths, University of London, under the direction of Eyal Weizman. In a remarkable example of what the group calls "The Architecture of Public Truth," Heller and Pezzani (2014) reconstructed the circumstances surrounding the drowning deaths of migrants who were attempting to reach Europe by sailing north across the Mediterranean Sea. The researchers painstakingly compiled migrant death statistics by location; then added tide, current, and weather conditions; shipping schedules; international distress and rescue calls; and Coast Guard and warship presences—all in service to providing an accurate account of the causes for mounting migrant deaths. And what was the

reward from this patient forensics of public truth-seeking? Culpability—a precise ascription of blame in a desperate, ongoing human tragedy.

Superior practice depends not only on new technologies, but also on imagination. In a brief, charming book, architect Andrea Ponsi (2010) described setting out to explore Florence, Italy, equipped only with pen and notebook, leaving his watercolor sketchbook at home. Ponsi wrote that he wanted "to verify the power of the word, as opposed to drawing" in describing the city.[6] At the end of his perambulations, he asked himself, "Which of the two descriptions of the city is more pleasing, closer to reality, more capable of stimulating the imagination, the drawn or the written?" Happily, Ponsi decided, "I would like not to have to choose" (80). For me, his insistence on seeing in more ways than one is the wellspring of superior practice.

Matteo Pericoli opened architecture's door even more widely in a course entitled Laboratory of Literary Architecture, which he taught in New York and Turin, Italy. Proceeding from the broad commonalities between architecture and literature, he phrased a deceptively simple question: Great architects build structures that can make us feel enclosed, liberated, or suspended. They lead us through space, make us speed up or slow down to contemplate. Great writers, in devising literary structures, do the same. So what happens when we ask writers to try their hand at architecture?

Parsing a text is a process of reduction, Pericoli (2013) explained. In architecture, "once you remove the skin—the language of walls, ceilings—what remains is space" (12). And in writing, if one discards words, what remains? Percoli's literature and architecture students worked together to construct three-dimensional models to answer this question. Their states of mind had an element of "magic" about them, he observed, at the point when they began to share a common language such as space, sequence, pacing, and chronology. "For writing students, being able to think wordlessly about literature can be revealing, liberating and empowering" (12). Writers thinking without words? Now *that* is cool.[7]

My next case might be hard to believe. The impending calamities of climate change are the catalyst for Christopher Nolan's film *Interstellar* (2015). One of its executive producers was Kip Thorne, professor of astrophysics at Caltech, who made sure that nothing in the film violated established laws of physics. So when intrepid space travelers approach giant black holes, the viewer may rest assured that the canons of general relativity are not being violated when screen images visualize the consequent deviations in paths of light rays near the hole's vicinity. New ray-tracing software was developed to simulate this bending of light accurately, and it looks terrific on the screen, but … Thorne also noticed aspects of light-bending in the movie visualizations that had never before been recognized in the mathematics. The new imaginings offered by the film's visualization team were subsequently incorporated into Thorne's scientific program (Thorne 2014; Natarajan 2015).

Finally, one of the most daring and accomplished moves in transdisciplinary DH was made by Moretti and his collaborators at the Stanford Literary Lab. By analyzing enormous quantities of digitized novels, Moretti (2013) uncovered new relationships regarding literary geographies, plot structure, and networks of characters. Most intriguing, for present purposes, was the way his investigations resurrected texts that lay well beyond the established canons of literature. In a nutshell, Moretti shifted attention from the canon to the archive. He moved from literature's tradition of close reading of individual texts to a distant reading based in cataloging and visualization of entire literatures, often on a continental or even global scale. Admitting that he had abandoned the idea of literature as a "collection of masterpieces," Moretti wryly

confessed that he missed the "conceptual cogency" offered by a small set of privileged texts (2), but for him there was no going back. The shift from canon to archive is breathtaking, and it is available to all disciplines. I often wonder how much path-breaking work has been lost because authors published in the wrong journals, were dismissed by an ill-tempered taste-maker, or relegated to the category of "regional" or "minor" writers simply for being in the wrong place at the wrong time. Moretti does not advocate abandoning close reading or the canon, but he harnessed DH technologies to resurrect buried archives and potentially revolutionize his field in ways that we cannot yet foresee.[8]

In a very preliminary way, these intentionally provocative examples suggest how transdisciplinary work could furnish superior scholarly and practical outcomes. I urge geohumanities practitioners to adopt the custom of determining exactly how their transdisciplinary collaborations have contributed to better insight, understanding, explanation, and pathways to more effective social action. This suggestion is not meant to detract from other tasks involved in research and scholarship, but by incorporating a self-critical focus on assessing outcomes we stand to gain freedom from arcane traditions, entrenched authority, and outrageous claims of privileged status; that is, a more democratic intelligence is made possible.

PEDAGOGY

In the DH, teaching is already receiving the attention it warrants, and I hope that a critical pedagogy becomes an integral part of the geohumanities enterprise. The shock of the new in DH classrooms cannot be underestimated because, as Reid (2012) underscored, the "third" DH is "not simply the digital/computational study of the humanities or the humanistic study of the digital; it is the way in which the humanities as a whole shifts from a print paradigm to a digital one" (357).[9] Many contributors to *Debates in the Digital Humanities* address pedagogic practices, reporting on the widespread diffusion of DH classes across the United States (including many small liberal arts colleges), and their warm reception by students partly because they were viewed as improving job prospects (Brier 2012). Various forms of social media, especially class blogs, offered students an opportunity to communicate with a broader DH community, as well as providing a legacy for subsequent generations of students who would continue contributing to the accumulation of knowledge (Owens 2012). Blogging also broke down disciplinary barriers and facilitated unexpected new connections, as well as encouraging a "public writing" that would interest people beyond academic and disciplinary boundaries (Sample 2012).

Questions of pedagogy in the geohumanities received considerable attention in Berkeley's GLOUH project.[10] In the spring of 2014, with Weihong Bao (Assistant Professor of East Asian Languages & Cultures and Film & Media) and Oscar Sosa (advanced doctoral student in the Department of City and Regional Planning), I taught "The City and Its Moving Images: Urban Theory, Media Theory," a graduate class in the Theory stream of our GLOUH curriculum. The purpose of the seminar was twofold: to examine the fundamental precepts of urban theory, method, and analysis as manifest in both film studies and urban studies; and to explore the potential for combining the two fields into an integrated urban humanities.[11]

The class was experimental in nature, deliberately avoiding many conventions of academic practice such as the production of a term paper. Students were advised to move quickly beyond

disciplinary home domains into uncharted intellectual territories, and to anticipate making several objects using a variety of representational modes such as maps, artwork, models, posters, plans, designs, charts, proposals, or short films and videos. The disciplines of those enrolled in the class were satisfyingly varied: architecture, East Asian languages and culture, environmental science and policy, film studies, performance studies, and rhetoric.

There are three aspects of the class experience that merit wider consideration in the context of this article. First, throughout the semester, participants returned to the question of overlap and discontinuities among their disciplines' approaches to urbanism. Work began by defining the intellectual history and foci of individual disciplines, moved on to uncover the commonalities among disciplines, and finally to production of a concordance "map" that encompassed all disciplines represented in the class in a single transdisciplinary metric.[12] Many students commented on how valuable the search for common ground had been, exposing them to a vastly expanded domain of theoretical, methodological, and practice-oriented knowledge; helping them glimpse a new horizon for transdisciplinary understanding; and positioning themselves (often for the first time) in the constellation of human knowledge.

Second, an appealing novelty for many was the class focus on a "maker culture," even if it was nerve-wracking for novices.[13] Many were delighted that they were required to actually make something. Students settled into the project's maker and production routine, as well as obligations of periodic reporting on progress, although not without protest (e.g., some were resistant to using terminology such as "product" and "deliverables" in the first place). Ultimately, however, they were satisfied by their accumulated outputs from the class, and enjoyed the release from the tyranny of the term paper.

Finally, the course focus on "the city" worked quickly to bring students and instructors to a common ground. However, both instructors felt that only limited progress was made in communicating the basic domain knowledges from film and urban theory. Certainly, more advanced students were better prepared to move into a postdiscipline mode. Bao and I began conservatively from within our respective disciplinary domains, but we could just as well have organized the class around points of intersection (e.g., space, time, and representation) even though this might risk alienating any less well-prepared students.

My impression is that students from the humanities are excited by the shift into collaborative learning environments and joint research projects. Participants were avid in their desire to acquire new skills, and rose to the challenge of making tangible objects. They responded to the professional-school imperative to move beyond knowledge to action by participating in local public debates about homelessness, or by cooperating with local municipalities in making public art. In short, they became more applied and solution-oriented.

By the end of our tumultuous semester, one student remarked, "*Now* I feel ready to take this class!" which we regarded as a positive outcome. Another telegraphed more mixed feelings:

> Most difficult and unsettled and heartburn inducing course ever. I wouldn't have registered knowing what I know now BUT—Also probably the most intellectually rewarding experience. This is a major conundrum.

Students reported valuing the class because it took them out of their comfort zones, or helped them in practical tasks such as formulating a doctoral dissertation proposal. Several deepened their engagement by enrolling in later GLOUH courses, and I witnessed how the groundwork laid in our course contributed to their composed performances in these follow-up classes. A

minor buzz throughout the semester concerned the definition and legitimacy of the "urban humanities" project as a distinct academic field. Questions emerged regarding its longevity, its acceptance in their home disciplines, and potential to boost job prospects.

As every teacher knows, classroom exchanges work in both directions. Joint instruction accelerates the learning curve for everyone. I realized that I will never become a film studies expert, but I was learning how to work with experts in the field, and this is the primary skill required for transdisciplinary work. From here, we can proceed to construct collaborations designed to produce knowledge that exceeds the sum of separate disciplines. For instance, I have no doubt that DH teachers and researchers could learn a great deal from practitioners in the longer established GIScience, including notions of critical and participatory GIS, alternative methods of representation, and qualitative GIS, as well as absorbing serious cautions pertaining to the technical aspects of their work (Goodchild 2015). In my experience, this last issue is especially important. Too many DHers appear to regard a map as the end-state of research, whereas geographers tend to treat it as a beginning. Conference presentations too often concentrate on the aesthetics of an image, and rarely cover the technical issues that went into map production, or critically reflect on data limitations and error, or the silences involved in cartographic representation. I have mentioned this concern to DH colleagues, and we have adopted a corrective slogan: "No More Free Passes for Pretty Maps!"[14] This phrase is used as needed in many different contexts as a humorous reminder to set aside our discipline-based frustrations and defensiveness, and to be more transparent about our assumptions and claims.

GEOHUMANITIES: THE JOURNAL

This article has investigated three principal issues that emerge from my social-science perspective on the practice of geohumanities: the unavoidable necessity for ontological and epistemological open-mindedness; the value of taking time to articulate how superior outcomes derive from transdisciplinary practice (or, just as important, cases where they do not); and the role of critical pedagogy as a general mode of learning and development in the geohumanities. Needless to say, many more issues remain on the tables of the transdisciplinary commons. Most pressing, for me, are developing skills for constructively dealing with the interpretive open-endedness characteristic of humanities discourses, and assessing how far social-science imperatives for social action can and should be absorbed into the humanities. In addition, the dozen or more projects engaged in the Mellon Foundation's initiative on Architecture, Urbanism, and the Humanities represent an unmatched opportunity for a meta-analytical investigation of the diverse practices undertaken by participating institutions, as well as their various outcomes.

For all of us, a new journal devoted to geohumanities represents an unprecedented opportunity for transdisciplinary collaboration. These days, tremendous efforts in many disciplines are being directed toward new understandings of space and place. They go by many names, and my hope is that this journal will incorporate all perspectives to achieve a level of balanced polyvocality necessary for successful transdisciplinarity. I also wish for plain speaking and writing from contributors, transparency in explaining their works and in judging the work of others, and a commitment to following through on matters of teaching, learning, and other forms of social action. Finally, I hope that future observers will record that this journal took risks and

asked big questions, and express admiration because readers never could predict what the journal would do next.

ACKNOWLEDGMENTS

Thanks to fellow editors of the *GeoHumanities* book (Jim Ketchum, Sarah Luria, and Doug Richardson) and to our contributors. To the Andrew W. Mellon Foundation for its support of UC Berkeley's Global Urban Humanities project (Anthony Cascardi and Jennifer Wolch, principal investigators; and Susan Moffat, executive director) plus my project partners, especially Mark Sandberg and Alan Tansman. To Weihong Bao, Oscar Sosa, and students in the "City and its Moving Images" course. To partners at UCLA's Urban Humanities Initiative, especially Dana Cuff. To Denis Wood and John Pickles, who made ground-clearing conference presentations at Berkeley and Los Angeles. To Michael Goodchild and Marc Treib, who helped clear up some of my confusions. To Jennifer Wolch who critiqued an earlier draft of this article. And to Tim Cresswell and Deborah Dixon for their constructive engagement. Everyone mentioned here is absolved from any association with the opinions expressed in this article.

FUNDING

The work in this article was supported by a grant from the Andrew W. Mellon Foundation.

NOTES

1. The notion of two cultures is primarily linked with C. P. Snow, but, in the present context, Berlin's ([1955] 2013) discussion is more pertinent.
2. A companion volume, *Envisioning Landscapes, Making Worlds* (Daniels et al. 2011), was also generated from the Virginia conference. It is especially useful in illuminating some of the past connections between geography and the humanities.
3. For more information on the Mellon program, visit https://mellon.org/grants/grants-database/?amount-low=&amount-high=&year-start=1969&year-end=2020&city=&state=&country=&q=%22architecture%2C+urbanism%22&per_page=25
4. One interesting example of cross-fertilization was the decision by the Alliance of Digital Humanities Organizations to adopt the name "Geohumanities" for one of its Special Interest Groups, partly because the term promised to attract a wider audience than a more DH-focused nomenclature (K. Grossner, personal communication, August 18, 2013).
5. Benson's *Cosmographics* (2014) is a magnificently illustrated book that is a compilation of human attempts to visualize the universe and our place within it. He demonstrated how discovery and visualization occurred simultaneously, and even (on occasion) how cartographic visualizations prefigured discoveries that remained far in the future. This might not be science in the strictest sense, but it vitally concerns the history and practice of science, standards of evidence, and interaction between the two cultures.
6. The prospects of drawing and thinking in an electronic age are considered in Treib (2008).
7. I doubt that "cool" is acceptable as a criterion for judging applications to the National Science Foundation, but it is common in the tech world. Perhaps we need to expand the list of criteria for evaluating academic work to include novelty, connection, pleasure, fun, and defamiliarization.
8. I should add that not everyone agrees with my assessment. In reviewing Moretti's *Distant Learning*, a dyspeptic Prendergast (2014) warned: "A degree of skeptical reserve would be in order, an increasing rare commodity as the

[DH] bandwagon continues to roll, fuelled here and there by a sort of fanatical scientism" (157–58). For an insightful overview of what is at stake in the DH role in the contemporary university, including Moretti's contribution, see Weigel (2015).

9. The shift has already occurred. Unforgivably, the print version of the 500-page *Debates* book contains no index.
10. Berkeley's GLOUH project is a three-year collaboration between the College of Environmental Design (the departments of architecture, city and regional planning, and landscape and environmental planning) and multiple departments from the Division of Arts & Humanities in the College of Letters & Sciences. The project promotes collaborative arrangements to develop robust and diverse models of learning, research, and public engagement through transdisciplinary methods courses, theory seminars, and research and practice studio projects (both domestic and international). For more information, visit http://globalurbanhumanities.berkeley.edu/about/ced.berkeley.edu
11. It might interest some to know that the texts used in our class were Dear (2000), Elsaesser and Hagener (2010), and Mitchelland Hansen (2010). For a perspective on my co-instructor's research in Chinese film, see Bao (2015).
12. Some students felt uncomfortable that their discipline was too "young" to have a history that matched the longevity and pedigree of some of longer established disciplines. I advised them to consult Mitchell and Hansen's (2010) *Critical Terms for Media Studies*, whose contributors tirelessly plunder the historical record for antecedents proving the longevity and legitimacy of origins behind the burgeoning media studies.
13. A brief but revealing perspective on the rise of the "maker culture" is by Morozov (2014).
14. Many knowledgeable practitioners in the DH and spatial humanities communities agree that more transparency is required (see Harris, Corrigan, and Bodenhamer 2010; Kelly 2012, 403).

REFERENCES

Bao, W. 2015. *Fiery cinema: The emergence of an affective medium in China, 1915–1945*. Minneapolis: University of Minnesota Press.

Benson, M. 2014. *Cosmographics: Picturing space through time*. New York: Abrams.

Berlin, I. [1955] 2013. The divorce between the sciences and the humanities. In *Against the current*. 2nd ed., I. Berlin, 101–39. Princeton, NJ: Princeton University Press.

Blumenthal, R. 2015. A literary geography from the pages of novels. *New York Times* April 14:C3.

Bodenhamer, D. J., J. Corrigan, and T. M. Harris, eds. 2010. *The spatial humanities: GIS and the future of humanities scholarship*. Bloomington: Indiana University Press.

Brier, S. 2012. Where's the pedagogy? In *Debates in the digital humanities*, ed. M. K. Gold, 390–401. Minneapolis: University of Minnesota Press.

Daniels, S., D. DeLyser, J. N. Entrikin, and D. Richardson, eds. 2011. *Envisioning landscapes, making worlds: Geography and the humanities*. London and New York: Routledge.

Dear, M. 2000. *The postmodern urban condition*. Oxford, UK: Blackwell.

———. 2013. *Why walls won't work: Repairing the US–Mexico divide*. New York: Oxford University Press.

Dear, M., J. Ketchum, S. Luria, and D. Richardson, eds. 2011. *GeoHumanities: Art, history, text and the edge of place*. London and New York: Routledge.

Ellis, G., and J. Silk. 2014. Defend the integrity of physics. *Nature* 516 (18/25 December): 321–23.

Elsaesser, T., and M. Hagener. 2010. *Film theory: An introduction through the senses*. London and New York: Routledge.

Geertz, C. 1973. *The interpretation of cultures: Selected essays*. New York: Basic Books.

Gieryn, T. 2006. City as truth spot: Laboratories and field studies in urban studies. *Social Studies of Science* 36 (1): 5–38.

Gold, M. K., ed. 2012. *Debates in the digital humanities*. Minneapolis: University of Minnesota Press.

Goodchild, M. 2015. Two decades on: Critical GIScience since 1993. *Canadian Geographer* 59 (1): 3–11.

Gray, J. 2006. The case for decency. *New York Review of Books* July 13:20–22.

———. 2013. *Isaiah Berlin: An interpretation of his thought*. Princeton, NJ: Princeton University Press.

Harris, T. M., J. Corrigan, and D. J. Bodenhamer. 2010. Challenges for the spatial humanities: Toward a research agenda. In *The spatial humanities: GIS and the future of humanities scholarship*, ed. D. J. Bodenhamer, J. Corrigan, and T. M. Harris, 167–76. Bloomington: Indiana University Press.

Heller, C., and L. Pezzani. 2014. Liquid traces: Investigating the deaths of migrants at the EU's maritime frontier. In *Forensics: The architecture of public truth*, ed. Forensic Architecture, 657–84. Berlin: Sternberg Press.

Kelly, M. 2012. Visualizing millions of words. In *Debates in the digital humanities*, ed. M. K. Gold, 402–03. Minneapolis: University of Minnesota Press.
Mitchell, W. J. T., and M. Hansen, eds. 2010. *Critical terms for media studies*. Chicago: University of Chicago Press.
Moretti, F. 1998. *Atlas of the European novel, 1800–1900*. London: Verso.
———. 2013. *Distant reading*. London: Verso.
Morozov, E. 2014. Making it. *The New Yorker* January 13:69–75.
Natarajan, P. 2015. Revelation from outer space. *New York Review of Books* May 21:34–36.
Owens, T. 2012.The public course blog. In *Debates in the digital humanities*, ed. M. K. Gold, 409–11. Minneapolis: University of Minnesota Press.
Parry, M. 2013. Mellon puts humanities in close touch with urban studies. *The Chronicle of Higher Education* November 11. http://chronicle.com/article/Mellon-Foundation-Puts/142889/ (last accessed June 21, 2015).
Pericoli, M. 2013. Writers as architects. *New York Times* August 24:SR–12.
Ponsi, A. 2010. *Florence: A map of perceptions*. Charlottesville: University of Virginia Press.
Prendergast, C. 2014. Across the "between." *New Left Review* 86:151–58.
Presner, T., D. Shepard, and Y. Kawano. 2014. *HyperCities: Thick mapping in the digital age*. Cambridge, MA: Harvard University Press.
Reid, A. 2012. Graduate education and the ethics of digital humanities. In *Debates in the digital humanities*, ed, M. K. Gold, 350–67. Minneapolis: University of Minnesota Press.
Sample, M. L. 2012. What's wrong with writing essays. In *Debates in the digital humanities*, ed. M. K. Gold, 404–05. Minneapolis: University of Minnesota Press.
Taylor, C. 1985. Social theory as practice. In *Philosophical papers*. *Vol. 2*, 91–115. Cambridge, UK: Cambridge University Press.
———. 1994. The politics of recognition. In *Multiculturalism: Explaining the politics of recognition*, ed. A. Gutman, 25–74. Princeton, NJ: Princeton University Press.
Thorne, K. 2014. *The science of Interstellar*. New York: Norton.
Treib, M., ed. 2008. *Drawing/thinking: Confronting an electronic age*. London and New York: Routledge.
Von Lünen, A., and W. Moschek. 2011. Without limits: Ancient history and GIS. In *GeoHumanities: Art, history, text and the edge of place*, ed. M. Dear, J. Ketchum, S. Luria, and D. Richardson, 241–50. London and New York: Routledge.
Weigel, M. 2015. Graphs and legends. *The Nation* June 1:28–33.

MICHAEL DEAR is a Professor in the Department of City & Regional Planning at the University of California, Berkeley, CA 94720. E-mail: m.dear@berkeley.edu. His current research interests focus on comparative urbanism and the U.S.–Mexico borderlands.