

**Computational Cultures after the Cloud: A Special Issue of the *Journal of e-Media Studies*
[Issue Introduction]**

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I drafted the call for this special issue in the cloud. As I was working, I noticed that Google Docs rendered the save button obsolete, removing the 3.5-inch floppy from the menu, mocking my incessant and now futile use of ⌘-s. I no longer needed to write to disk, and I no longer knew its location, either. Now the word processor automatically committed my changes to a server farm somewhere in the world, eliminating a newly unnecessary gesture of the hand, making acts of digital inscription and memory all the more effortless and even more removed.

Precisely because of this seemingly banal effortlessness of screen-oriented, web-based work, my research has grown increasingly invested in how the cloud—that ostensibly immaterial space affording on-demand access, rapid distribution, infinite storage, and single-click synchronization—is shaping a spectrum of labor across geographies. For instance, in 2005, Amazon launched its web-based Mechanical Turk service, which invites workers to complete “human intelligence tasks” at the rate of, say, 5 cents per task.¹ Elsewhere, a company called CrowdFlower gives “labor providers” online access to millions of “skilled contributors,” who commit real-time judgments across the globe, rating advertisements, comparing search results, performing sentiment analysis, creating metadata, transcribing audio, completing surveys,

validating relationships, making shopping decisions, and providing other “human reviews” of the web.²

Programs like these are pitched to a precarious workforce through appeals to flexibility and comfort: select your own tasks, work from your own home, adhere to your own schedule. So often invisible, this micro-work hardly seems like labor. It is casual, automatic, rote. It accumulates quickly, rendered quantifiable through the task management tools, data entry forms, reward systems, and visualization techniques that frequently enable attention-based economics. Indeed, the conduciveness of digital labor to quantification is its conduciveness to metrics, which make it at once intelligible and interoperable for industry. A judgment on CrowdFlower is one of 857,117,347 total judgments geolocated and time-stamped at the rate of 3 judgments per second. But what do creativity, critique, and collaboration look like in this climate of quantified selves and 24/7 productivity? How are emerging modes of digital inscription, processing, and expression recursively related to new forms of scholarly communication? To activism? To social justice?

Of course, these questions have long, vexed histories anchored in old media; yet they also intersect with an array of contemporary problems, especially those of a networked sort, where the cloud is often at hand and always at a remove, fusing computation with social relations through historically unique articulations of technologies and culture. In *Programmed Visions*, Wendy Chun “links computers to governmentality” by underscoring how they simultaneously individuate and integrate us.³ In *Gaming*, Alexander Galloway examines games as machine and operator actions, performances across the algorithms, rules, patterns, and processes of play.⁴ In

The Cinematic Mode of Production, Jonathan Beller demonstrates how the internet welds sensual labor to value-generating mechanisms, through which “[p]erception is increasingly bound to production.”⁵ In “Don’t Hate the Player, Hate the Game,” Lisa Nakamura shows how bodies of color become both labor and capital in massively multiplayer online games like *World of Warcraft*.⁶ In *Digital Labor*, Trebor Scholz calls the internet a playground and a factory, suggesting that “[o]n the social web, we are getting used, we are using each other, and we can act together.”⁷ And in her chapter in *Debates in the Digital Humanities*, Tara McPherson urges humanities practitioners to actively participate in—rather than scorn—the development of computational technologies that encode culture through their architectures and instrumentality.⁸

Networked computers and the cloud are always at remove, then, because no narrative or knowledge base will ever afford absolute access to their techno-social relations. The problem is not necessarily that the cloud is an abstract construct or some illusive ideal, but rather that—through the complexity and dynamics of its particulars—it enacts what Matthew Kirschenbaum describes as a working model for flatness and immateriality.⁹ It appears fleeting and ephemeral. It invites real-time judgments through friendly interfaces and automated memory. Its routine tasks do not seem laborious, and it implies flow, ease, and connectedness. But it also toys with assumptions of human control. It is often discontinuous. It generates its own interests and affinities. It broadcasts its own phenomenology. It enables and—for some—determines our situation.¹⁰ It also sparks possibilities for novel interventions and collectives, which are represented and conveyed across stress points in this special issue.

The Changing Conditions of Labor and Collaboration

One such stress point is the recognition that labor is changing in and through the cloud, and that collaboration and social organization should be reimagined accordingly. In her readings of both *Flight Paths* and *VozMob*, Anne Cong-Huyen begins with a crucial observation: “Sometimes [. . .] two seemingly contradictory motives—profit-motivated production and community-based production and sharing—converge in crowdsourced projects that are meant to be sites of education and awareness.” Here, she underscores the difficulty of neatly parsing the production of technologies from their use cultures. In this specific case, the purpose-fit mobilization of collaborative authoring platforms by educational and creative projects such as *Flights Paths* and *VozMob* does not magically remove them from larger economies of making and exchange. In contemporary networked culture, this observation matters because similar platforms are enabling the distributed, large-scale labor privileged by companies such as CrowdFlower. Cong-Huyen writes, “Within these texts and contexts, *labor* emerges as a subject of representation, and also as an important component of the processes that produce the texts themselves, processes that are celebrated as being collaborative in nature.” Indeed, the texts she examines foreground (among other things) what it means to contribute to transmedia projects, and to what effects on popular assumptions about collaboration.

From Cong-Huyen’s incredibly persuasive argument, we learn that—with labor and social justice in mind—we must not allow the whiz-bang aesthetics of new technologies to overshadow the material particulars of their production, the lived experiences and conditions of workers (for example, South Asian migrant laborers) included. For all involved in collaborative projects, this message is one to consider early and repeatedly in any project’s development. So, too, are the

following questions, posed by Cong-Huyen near her essay's conclusion: "How can migrant workers (or any community often mis- or underrepresented) be most productively represented or given voice? How should collaborators be included in the production processes and textual forms? How do we evaluate their work? And finally, how do we read these processes, and the resulting texts, against the work they are trying to do?" To be sure, responses to these prompts cannot be reduced to matters of attribution and licensing, which are also incredibly important. They must be earnestly invested in letting contributors speak for themselves whenever and however possible, through their own community protocols and expectations. Otherwise, there is no collective in the crowd. It instead becomes the labor source—a "dark mass"—for one person or agenda, thereby increasing the odds of disenfranchisement and exploitation at a remove.

Also engaging questions of digital labor and changing labor dynamics in this issue, Nick Marx's work on cyberlockers (for example, RapidShare, Megaupload, and MediaFire) demonstrates how cloud-based services and demands for ubiquitous access are shaping how people both legally and illegally share and acquire media. As Marx notes, "mounting evidence suggests that cyberlocker websites [. . .] are, more than anything, home to the illegal exchange of copyrighted media." In order for law enforcement to identify such illegal transactions and eventually prosecute contributors, cyberlocker services must cooperate with agencies through their infrastructures, designs, and related use policies. We might, however, call this form of cooperation passive (or tacit) rather than active (or explicit). Instead of focusing on individual users and accounts, observes Marx, cyberlocker services build cloud-based systems of control that "diffuse the collective claims to countervailing power made possible by P2P communities, and isolate users' media consumption according to the commercially driven industry mandates of individual choice

and control.” Echoing Galloway’s work in *Protocol*, the exertion of control through cyberlockers is subtle—a series, if you will, of polite requests, operating at the level of what people want or desire.¹¹ Marx writes, “Whereas the content delivery networks crucial to so many web-browsing are primarily concerned with performance, cyberlockers are concerned with content availability.” By extension, this emphasis on making media available allows cyberlockers to manipulate distribution through controlled user behavior and activity. Again, here’s Marx: “Undoubtedly, the cultural labor of cyberlocker users defies dominant, industry-sanctioned protocols for media distribution. Yet this labor is much more intimately bound up in those protocols than many popular portrayals of cyberlocker users seem to suggest.” Through gestures such as these, Marx not only demystifies the often glorified, consumer-oriented cloud (depicted as an immaterial and inconsequential space of ease, access, and sharing). He also attends to the ways in which the cloud’s technical specificities are tied to bodies, labor, and digital economies, which appeal to individual demands and welcome voluntary contributions while subsuming ostensibly subversive practices (for example, media piracy) into extant and emerging business models. A question, then, is how intervention or resistance is achieved when networked labor and cultural power are constantly diffused and rendered conducive to value production.

Also in this issue, the conversation between Zoe Beloff and Jonathan Kahana demonstrates one way that resistance happens in a networked, digital economy. Describing and reflecting on her installations of *The Days of the Commune* (based on Brecht’s play of the same name) as well her solidarity with Occupy Wall Street, Beloff highlights the intermediations between street demonstrations and web-based content. As a reader of this conversation, I cannot help but notice how both protest and memory are radically compiled through transmedia art. Together with her

collaborators, Beloff created *The Days of the Commune* through listservs, drawings, broadsheets, face-to-face conversations, audio, cardboard, and a website (among others). At one point during her conversation with Kahana, she says, “People kept asking: what are you doing? A film, or a play, or what? I was thinking: why choose? Why not all of the above? Call it ‘mongrel media.’” This approach to installations pressures site-specific work, allowing it to be expressed across a range of places (for example, New York City), venues (for example, cinema), and devices (for example, mobile phones).

Yet at the same time, Beloff closely attends to the affordances of media and their material specificities, repeatedly making gestures such as these: “For me, digital images of the world around us do not say too much”; “[c]ardboard is the medium of protest”; and “[t]o use documentary images, apart from the fact that it is a cliché, implies that we have some kind of unmediated access to history, that these images impart a kind of truth to the text.” For Beloff, a digital image is too anonymous, too effortless. Meanwhile, cardboard sparks new visual vocabularies, and paintings resist the truth claims of documentary images. Of course, what ultimately matters is how people create with and through media, not which media or technologies they choose. Nevertheless, in the context of networked computation and the cloud, this conversation reminds readers that digital culture encourages fresh and often profound uses of old media, reinterpretations of existing texts and historical events, and reinvigorated attention to the relevance of place, situation, and performance for social justice movements. Rather than abandoning all forms of digital production and organization—or responding in a reactionary fashion to web-based networking—emerging forms of inscription, processing, and expression are

integrated into Beloff's transmedia performance, what she calls "a storyboard waiting to come to life."

Learning How Technologies Work

Due (at least in part) to the constant intertwining of computation and culture in this issue, we also see an emphasis on learning how technologies work, echoing a recent push in media studies and its allied fields to better understand digital labor and culture through tacit knowledge, making, tinkering, code, and—returning to Beloff's conversation with Kahana for a moment—performance and transmedia production. For instance, in a conversation with Mark Marino, software studies scholar Matthew Fuller observes, "This is a very interesting moment, I think; a lot of computing is now done in and through the social, and a lot of culture is now carried out or executed in computational environments as they are also, in turn, changed by their involvement in space, cities, systems of semiosis, and so on. This kind of conjunction is the real richness of the present moment." As anyone familiar with Fuller's work will likely know, research in software studies has long been invested in knowing by doing, or in the combination of theoretical and technical fluencies. However, Fuller's comment pushes this combination a step further as it ultimately stages provocative encounters between otherwise disparate fields of inquiry. For Fuller, research in computational culture is not solely about shared content or processes, or about humanities practitioners knowing some code. It is about constructing new methods and infrastructures, which facilitate interventions into status quo computing and related working practices: "The question really, then, is to try and build encounters between fields, between different kinds of methodologies, and also to try and build infrastructures whereby such kinds of

research can be maintained and developed. Hence, for instance, the wide interest we see now in building journals, and other kinds of platforms.” These forms of building would, or so it seems, demand some knowledge of markup and programming (at least among teams of practitioners).

So Marino and Fuller talk briefly about how to learn software from positions peripheral to technology’s alleged home disciplines—that is, how practices such as markup and programming happen in the arts and humanities. Marino asks, “Is there something in [the] linguistic skills [of literary and cultural studies scholars] that makes them a unique kind of programmer once they learned how to program? Has all their time in books been a detriment to their need to pick up a proper programming language?” As a reader of this issue, I find Fuller’s response to Marino quite compelling: “Whilst code is a really important place to site critical attention to software, it’s simply one place.” Or put differently: the sorts of inquiry facilitated by computational culture studies do not direct knowledge production at a particular source. Scholars must also ask how the various components of software are compiled, how those components are embedded in particular infrastructures, and how they function instrumentally for specific regimes of thought. Play, fun, and experimentation are thus also central to the conversation between Marino and Fuller, especially because—in the last instance—code or any other object cannot fully account for the dynamics and opaqueness of computation. Learning always involves workarounds, mods, surprises, hiccups, hacks, and lash-ups. This learning, this encounter between fields, aims not to explain away but rather to reconstitute what Fuller calls “the imaginary of computing,” a phrase that succinctly describes critically affirmative approaches to the cloud.

Elsewhere in the issue, Adeline Koh's conversation with Wendy Chun also touches on learning how technologies work, yet with some notably distinct trajectories. Koh asks Chun, "Do you think that the humanities needs to seriously rethink its commitment to interdisciplinarity, particularly in relation to computer science?" And Chun answers, in part, with the following: "While I think that interdisciplinarity is a good thing, I'm not sure whether I would urge all humanists to learn to code. Coding can also give you a false sense of mastery [. . .] I think the most important thing is to develop theories and practices that can engage many disciplines, and for conversations to take place between disciplines." Rather than privileging fun or play, Chun highlights the need for "a curriculum where students need to be willing to fail." This attention to the relevance of failure seems to correct, or at least resist, student impulses for perfection and mastery, which are only further undermined by the proliferation of promiscuous machines that operate differently from most popular perceptions of them. In other words, learning to code should not be equated with an escape from either mediation or ideology. What's more, a knowledge of the code running on a particular machine (especially a networked machine) is always partial, because code is necessarily at work in the background, generating effects that are typically understood or explained only after the fact.

That said, Chun's engagements with computation in this issue (for example, her encouraging humanities students to learn statistics or genetics) do not conclude with a call for, say, a digital revolution or a meritocracy through making. She instead offers a cautionary statement: "The humanities should not try to use technology to save itself, but through its own special practices, such as critical thinking." To be sure, her conversation with Koh demonstrates how critical thinking is not in any way unique to the humanities. Nevertheless, like Marino and Fuller, Koh

and Chun discuss the various fields of possibility that emerge when the humanities encounter other disciplinary formations and practices. And as their engaging conversation demonstrates, the narratives that congeal around the cloud are as important as the cloud itself.

Transforming the Work of Scholarly Communication

Taken together, the pieces in this special issue ask how the modes, audiences, and aims of scholarly communication are and should be changing. Alyssa McLeod reviews not a monograph but a digital project: Old Maps Online. By examining (through a combination of text, images, and video) the project's use of metadata standards as well as its workflow and toolset, McLeod's writing demonstrates how the very conventions of scholarly reviews are changing. Elsewhere, in the Working Theory section, Eric Hoyt, Wendy Hagenmaier, and Carl Hagenmaier detail their contributions to the Media History Digital Library's (MHDL) website and Lantern, the project's new search engine. This essay's inimitable combination of theoretical and technical inquiry exhibits how history is rearticulated through networked mechanisms that curiously "knit together virtual collections that broaden the territory in which users can search and question." Hoyt, Hagenmaier, and Hagenmaier also show that the process of building digital collections demands attention to how audiences variously invest (for example, their time and labor) in online research spaces. By extension, the essay frequently underscores why digital projects must be relevant to academic and nonacademic audiences, and—for practitioners who create digital collections and tools—this gesture suggests we should expend more of our energies to further study our design strategies, website statistics, and user experiences. When compared with existing models (for example, CrowdFlower and Mechanical Turk), how should humanities-based projects encourage

and assess web-based contributions to public knowledge? Through the cloud, how are our collections of cultural materials expanding, through what relationships, determined by whom? How do we build trust and affinities through this transformative work? And—echoing concerns expressed by Eric Freedman and Hollis Griffin in this issue—how do we support the intellectual labor of early career scholars who are experimenting with these new terrains?

In their review of the 2010 *Flow* conference, Freedman and Griffin note (among other things) the ways in which Twitter was used during the event, specifically its role in shaping networked scholarly communications. They observe that some conference sessions were well covered through the platform, while “[o]ther roundtables, most notably those devoted to identity politics, were largely missing from the Twitter conversations.” Comments such as this stress how, at many humanities conferences, Twitter tends to account for only a particular segment or stream of conversations. For some attendees (especially early career scholars), it can also generate additional pressure to—as Freedman and Griffin put it—“make connections,” professionally contribute to conversations in the field, and publicly represent a given discipline or group (on Twitter, for example). Consequently, scholars and conference organizers who are unfamiliar with the platform should take time to understand its increasing role in both intellectual labor and the public humanities, and—comparable to Kathleen Fitzpatrick’s recent posts on *Planned Obsolescence*—they should also encourage affirmative uses of it toward thoughtful, considerate, and transformative critique that does not shame early career scholars and other practitioners.¹²

Of course, when many scholars of American studies, digital humanities, cultural studies, and media studies hear the word *transformative*, they immediately think of the #transformDH

collective, which—by way of Alexis Lothian and Amanda Phillips—also contributed to this special issue. The #transformDH essay not only provides a brief history of the group, but also points audiences to several #transformDH projects that have emerged from feminist, queer, critical race, and social justice perspectives. Through these specific examples, Lothian and Phillips unpack ways of producing transformative work from within and against digital humanities traditions, claiming, “Perhaps we should inhabit, rather than eradicate, the status of bugs—even of viruses—in the system.” Significantly, then, the collective is self-reflexive in its approach to technologies and culture. Resonating with Sharon Daniel’s community-based activism and research, #transformDH encourages, supports, and draws attention to the “hybrid practices” at work throughout and beyond this special issue. However, as Lothian and Phillips rightly note, “[T]he bright lights and marching bands of the so-called big tent [of digital humanities] outshine less marketable histories of engagement with technology that have emerged from standpoints that critique the privileging of certain gendered, racialized, classed, able-bodied, Western-centric productions of knowledge.” The example projects that Lothian and Phillips include in their narrative achieve transformative critique by inhabiting these standpoints and performing radical technocultural scholarship. Returning for a moment to the conversation between Koh and Chun, these example projects do not assume new technologies will save the humanities. Instead, they articulate unique practices that reimagine humanities work from the inside and collaboratively shape-shift the cloud.

About the Author

Jentery Sayers is assistant professor of English and director of the Maker Lab in the Humanities at the University of Victoria. His research interests include comparative media studies, digital humanities, sound studies, and computers and composition. His work has appeared in *Kairos*; *Computational Culture*; *The Information Society*; *Collaborative Approaches to the Digital in English Studies*; *ProfHacker*; *Sounding Out!*; *The New Everyday*; *The New Work of Composing*; *Off Paper*; *Digital Rhetoric Collaborative*; and *Writing and the Digital Generation*, among others. His research has been supported by the Social Sciences and Humanities Research Council of Canada, the US National Endowment for the Humanities, the Simpson Center for the Humanities, Implementing New Knowledge Environments, the Nebraska Digital Workshop, and HASTAC. His first book project, *How Text Lost Its Source: Magnetic Recording Cultures*, is under construction with the University of Michigan Press.

Endnotes

1. See <http://aws.amazon.com/mturk/>.
2. See <http://crowdfunder.com/>.
3. Chun, *Programmed Visions*, 9.
4. Galloway, *Gaming*, 1–38.
5. Beller, *The Cinematic Mode of Production*, 3.
6. Nakamura, “Don’t Hate the Player, Hate the Game,” 192–200.
7. Scholz, “Introduction,” 8.
8. McPherson, “Why Are the Digital Humanities So White?” 152–155.
9. Kirschenbaum, *Mechanisms*, 11.

10. In *Gramophone, Film, Typewriter*, Kittler famously claims that “[m]edia determine our situation” (xxxix).

11. Galloway, *Protocol*, 241.

12. In “If You Can’t Say Anything Nice,” Fitzpatrick writes, “So what I’m hoping is to start a conversation about how we might maximize those positive aspects of Twitter, and move away from the shame culture that it’s gotten tied to. How can we begin to consider whether there are better means of addressing complaints than airing them in public? How can we develop modes of public critique that are rigorous and yet respectful? How can we remain aware that there are people on the other end of those @mentions who are deserving of the same kinds of treatment—and subject to the same kinds of pain—that we are?”

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