The Garden Is the Machine: New Media and Technology in American Studies

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Digital Memory and the Archive. By Wolfgang Ernst. Edited by Jussi Parikka. Minneapolis: University of Minnesota Press, 2013. 256 pages. $75.00 (cloth). $25.00 (paper).

Life after New Media: Mediation as a Vital Process. By Sarah Kember and Joanna Zylinska. Cambridge, MA: MIT Press, 2012. 288 pages. $32.00 (cloth).

Networks without a Cause: A Critique of Social Media. By Geert Lovink. Cambridge: Polity, 2011. 220 pages. $69.95 (cloth). $22.95 (paper).

In his editorial for *American Quarterly*'s 2006 special issue on technology, Siva Vaidhyanathan invited American studies scholars to grapple with the strong influences of techno-fundamentalism—the "misguided faith in technology and progress."[1] To challenge this faith, Vaidhyanathan asserted, one must ask the following questions: Who decides what technologies are developed, bought, sold, and used? Who creates technology and for whom? What are the cultural and economic assumptions influencing a particular technology's operations and its effects?[2] This special issue displayed how the fields of technology studies, communication, and history of technology can come together through the critical endeavor of American studies.

One salient example is Caitlin Zaloom's complex study of technology through the creation of a new trading floor for the Chicago Board of Trade in 1930 and the opening of a Chicago-style dealing firm in 2000 London.[2] Zaloom claims that the design of spaces for market processes, either face-to-face or face-to-screen, marked an important event in the articulation of neoliberal ideals. As Zaloom argues, technological and social arrangements presume a conscious effort in designing around constraints exerted on the process. She notes that "focusing attention not only on a single new technology, but also on the blend of devices, social forms, and human skills that are necessary to make them work . . . expand[s] both the empirical frame and the analytic

categories for cultural studies of technology."[3] Zaloom reframes the study of technology in a broader milieu of human power relations, interventions, and limits. Yet machine agency and machinic time remain out of the frame. What can technological specificity tell scholars about the arrangements that Zaloom and American studies wish to elucidate? How can scholars approach the ways that technology demarcates and challenges what is possible? What does it mean when life itself is mediated? These are some of the questions that *Networks without a Cause: A Critique of Social Media*, *Digital Memory and the Archive*, *Life after New Media: Mediation as a Vital Process,* and the present essay address.

Machines and technology have been subjects of inquiry in our field for many decades. One of the foundational works in American studies, Leo Marx's *Machine in the Garden: Technology and the Pastoral Ideal in America* (1964), casts machines as tropes of industrial power in the writings of canonical US authors. Marx elaborated this trope to explain how machines suddenly intruded on the sanctity and serenity of the natural environment—the "garden" of the title.[4] Literary images of the-machine-in-the-garden underscored the tensions between civilization and nature; they also functioned as tactical maneuvers against industrialization. The 2006 special issue of *American Quarterly* revisited Marx's critical examination of how technology was conceived, represented, and used. Like Marx, the issue's authors criticized the narrative of technological progress and how it obscures many of the injustices produced by technological change.

The garden, nonetheless, is a design, a construction appeasing our nostalgic longing for "nature" and the "real," which are themselves constructions. Even "in the garden" subjects are not outside the machine and its software of representation and power/knowledge. The issue at stake, then, is not to think of new media and technologies as mere extensions of human agency but to scrutinize their specific operations, procedures, and structures while engaging their associations across agents (both human and nonhuman). From this perspective, not only are new media tools through which human subjects enact their desires; they also produce and delineate those same subjects as they autonomously associate with other agents. Though the books reviewed here fall "outside" American studies, they have much to say to its practitioners embarking on analyses of new media and technology. Historians, sociologists, and literary scholars will also find these titles useful, for they offer novel methods for engaging (new) media specificity and their materiality as mediation bound to life itself. To talk about new media and technology is to account for the complex, autonomous processes they generate while thinking critically about how they enclose users' experiences and constitute them as beings.[5]

Geert Lovink, Wolfgang Ernst, and Sarah Kember and Joanna Zylinska are united in believing that our interactions with (new) media are deeper than our senses can perceive. Behind the flow of remediated sounds, moving images, 3-D maps, motion graphics, websites, and social media are the operations and structures of hardware and software. At a time when "digital" becomes a catchall term, the contemporary moment cannot be grasped without considering the mediation of life itself. Mathematical flows and logics are, to borrow from Wendy Chun's conceptual contributions, obfuscated; hidden from "plain view," meaning and discourse are but a layer of a machine's body made possible by computational logics operating underneath. Software, including new media and technology, works through obfuscation, as it "disciplines its programmers and users, creating an invisible system of visibility"; software both obscures and reveals this knowledge.[6] A video on YouTube is not only images in motion but the product of algorithmic processes predicated on gendered notions of command and control.

Therefore, assessing the impacts of technologies like the Internet, digital archives, or smart phones necessarily entails looking past their content (what is represented) and scrutinizing the (im)materiality of their circuits, algorithms, signals, and designs—the field of what Chun calls "programmable visions." Lovink echoes Chun in his call to move beyond the application of cultural approaches (representation, content, and reception analysis) and "consider the digital networked realm as a distinct sphere that demands its own theoretical vocabulary and methods" (77). Though I would caution against overstating this separateness, Lovink's exhortation to develop new conceptual vocabulary and methods addressing the particularities of new media points scholars in a productive direction.

Networks without a Cause positions itself against an "internet culture caught between self-referentiality and institutional arrangements" (3) while it articulates a critical framework igniting "speculative futurism and celebrat[ing] singular modes of expression rather than institutional power plays" (23). Instead of reviewing the usability of a particular platform or ruminating on how the Internet is influencing our lives, Lovink invites academics to study specific forms of expression and aspects of everyday Internet use, particularly in social media. These take place on the Web 2.0, defined as an expansive and comprehensive set of web applications, aided by broadband and free content production and publishing platforms, and containing programmed features such as "search," "share," and "like" for easy use (5). The companies running and creating these applications, Lovink argues, profit from users' production

by controlling the channels of production and distribution—they generate what Mark Andrejevic calls digital enclosures.[7] Within this web, social media is the signature and dominant component in the articulation of vast power networks of production and control.

In the first half of the book, which reads like a theoretical treatise, Lovink seeks to develop a method that transcends moralizing Internet use and more fruitfully analyzes the politics and aesthetics of networked architectures. His method, *net criticism*, investigates "that slippery nexus between the Internet's reinforcement of existing power structures, and parallel—and increasingly in-terpenetrating—worlds where control is diffused" (9). The second half surveys the Internet to find a wide range of creative and innovative practices (from blog-ging in Iraq, France, and Germany to networked organizations and Wikileaks). Lovink analyzes power, as expressed in the production and management of the self, through social media's push for self-disclosure and transparency—but for whom? Self-disclosure and self-management have become, through certain social network sites like Facebook, signature practices in the constitution of a neoliberal "we"—an imbrication of the corporate owners of our privatized data bodies with ourselves. The publicity of the self is enclosed in and by the privatizing computational logics of social media. There is, however, danger in positing the existence of a "true" self, a knowable and stable subject outside the digital realm, which Lovink does not fully delineate but rather presumes its existence. The "true" self that is abandoned for this neoliberal "we" is affirmed a priori without delving, for example, into its contingent and historical pro-duction through an assemblage of associations. A flattening universal subject traverses this book as well as Kember and Zylinska's, something I elaborate on below. Despite this slippage, the overall method of net criticism remains useful to examine the production of subjects in our contemporary neoliberal political economy and in what Lovink calls "networks without a cause."

Net criticism seeks "to hardwire self-reflexivity into the feedback loop to change the architecture" of networked spaces while developing "long-lasting concepts and insights that dig deep into the network architectures" with the hopes "to collaboratively navigate, search, and filter" content and commentary (69, 72). This method focuses on critically engaging "user cultures," the sites where they occur and the distinct practices they develop. Hence site, medium, and practice specificity are key elements. In "Treatise on Comment Culture," for example, Lovink identifies the myriad ways that comment cultures (i.e., the blogosphere and its reader comments) are a defining expression of the Inter-net, and observes that scholars rarely discuss how these "are not self-emergent

systems but orchestrated arrangements" (52). Whereas previous commenting cultures like scholasticism were invested in interpreting texts, web designers and engineers now create systems that include reading, producing, and circulating texts. In this social ecology of labor, reader, writer, and machines become materially diffuse. Whereas Leo Marx focused on literary commentary on industrialization and *American Quarterly*'s special issue on technology grappled with labor's social conditions producing technological change, Lovink's book investigates how free labor and everyday life are reorganized through new media and technology into expressions of contemporary capitalism.

American studies scholars could surely benefit from Lovink's method of net criticism to understand the interconnected, corporatized, and surveillant web as constitutive of the neoliberal condition. Moreover, from emerging MOOCs (massive open online courses) to the extensive enclosure of public–private discussions by social media, the everyday practices of Internet users and programmers challenge traditional research practice. Interpreting them requires new archives, methods, and vocabularies that address the particularities of their sites of production; a number of scholars have begun to develop these tools, which are likely to be of great utility to American studies scholars.[8] Lovink, whose *Networks without a Cause* is a productive point of departure, is among them.

Meanwhile, "technical media," instead of subjects, animate *Digital Memory and the Archive*, the first book-length publication in English by Wolfgang Ernst—the German media scholar whose work has become an influential force in new media studies. The essays collected, edited, and introduced here by Jussi Parikka focus on defining media archaeology as method and aesthetic while also assessing how "technical media" have affected the archive, temporality, and memory. Parikka defines technical media as "media of mathematical codes" that in their execution "become processes defined by patterns of signals unfolding in time" (18). Studying technical media, according to Ernst, entails diving deep into a kind of noncultural realm dominated by computational logics that operate within and through machinic nonhistorical time. Divided into three parts, *Digital Memory* proposes an archivological project questioning how our historical knowledge, conditioned by the archive, is dependent on the media of its transmission (42). "The set of rules governing the range of what can be verbally, audiovisually, or alphanumerically expressed at all" relies on the types of media it can preserve (55). Hence, historical knowledge is grounded on the materiality of its sources, the (media) matter of times past.

Media archaeology, according to Ernst, involves "both a method and an aesthetics of practicing media criticism, a kind of epistemological reverse

engineering, and an awareness of moments when media themselves, not exclusively humans anymore, become active 'archaeologists' of knowledge" (55). A computer screen is no longer a transparent gateway to sounds, images, and texts, but a coded apparatus constantly translating discrete data into discernible and coherent objects for our minds. Discontinuity and discreteness mark technical media. Not to be confused with their content, technical media are nondiscursive entities belonging to a different temporal regime that require alternative means of description (56). What a user encounters as a song played by her iPod, for example, Ernst would say is in fact a momentary sequence of digital bits of information that reproduce a discernible representation of melody, harmony, and rhythm—an imaginary "analog" or continuous experience. The essence of the iPod as a technical medium, however, becomes manifest in its operation when it translates archived discrete bits into a recognizable signal of culture. In other words, Ernst's media archaeology conceives of technical media as organizing the conditions of existence for the production of historical knowledge and cultural meaning.

The archive comprises one of those mechanisms "regulat[ing] entry into the discourse of history or exclusion from cultural memory," which are part of the media-archaeological investigation (42). To talk about media is to elucidate the processes by which digital archives discretely enclose data in a performative mode of communication. Data do not merely stand waiting for discursive integration; the machine and its programming automate its circulation without human intervention. Similar to social media practices in Lovink's net criticism and lacking a teleological trajectory, the archivological project, as an analytic tool, first describes the logical structures of technical media and through their foregrounding it proceeds to analyze the temporal regimes technical media produce. Whereas history, from Ernst's perspective, is intricately linked to narrative and causality, media archaeology seeks to highlight technical media's discontinuities through time's transformations, "the indication of other levels of media tempor(e)alities: their governing principles and archaic essentials" (28). The operations of technical media recode and internalize the workings of time; time is no longer historical but machinic. Ernst argues that media allow scholars and users to transcend narrative and discourse by revealing a kind of knowledge from within the visual, acoustic, or textual endodata—its constitutive, discrete data structure (27). When scholars enter the digitized record, they immerse themselves in a specific media's *Eigenzeit* (its proper time) and dispense with linear, historical time. Scholars then move from the arrow of time to a discrete, machinic time, from cultural memory to machine memory.

Turning from the deep investment in human subjects and agency evident in *Networks without a Cause* and much American studies work on technology, Ernst's media archaeological project looks into nonhuman processes—which is why media archaeology is usually identified as a posthumanist enterprise somewhat resonant with Bruno Latour's actor-network-theory or the work of object-oriented ontology. This should not, however, deter humanists from engaging and being challenged by Ernst's generative scholarship. For example, humanists would do well to consider the transcoding of a JPEG format into the distribution of pixilated and recognizable forms in a visual image. This image is the result of processes rescinding human action—these processes "are not 'historical' (i.e., narratable) but rather consist of 'autochthonic transformations' (Foucault) within the realm of machines and their symbols" (69–70). Technical media processes occur, Ernst insists, in a (somewhat) discontinuous noncultural regime affecting how users perceive and access visual content. Literary criticism's attention to form is translated in media archaeology into *formats*—the media-specific organization of data to be stored, replicated, and transferred. Formats, then, regulate the field of possibility for cultural signals that historians or literary scholars make use of in their study of discourse. Whereas close reading and discourse analysis address the content layer of technical media, the task is to interrogate the content layer's conditions of existence through hardware–software analytics.

Digital Memory provides a glimpse of the potential utility of media archaeology to American studies scholars as well as its limits as a method. Ernst forces new media scholars to rethink their approach to media by taking them beyond the circulation, reception, and interpretation of representations to scrutinize machinic processes like the algorithmic organization of visual space in a screen. Yet Ernst takes as axiomatic that "the language of new media is not just what interfaces offer to the human user; it is also machine language on the operative, that is, archaeological, level of computer programming" (25). Machine language, for him, is split from its human creators. Such a scission of humans from the operative logics of technical media might make it difficult for scholars writing about populations, identities, and human agency to adopt Ernst's perspectives. On the one hand, as academics lift the veil of the interface to coldly gaze at media's logic structures and hardware, they risk breaking the coconstitutive bind between humans and machines. On the other hand, human-centered scholarly work in many fields too often fails to recognize the Heideggerian insight that technology, as bringing-forth and setting-upon, is not only a way to do something or act on the world but a form of *enframing*

human existence and turning humans, as well as the nonhuman, into standing-reserves—into resources at its disposal.[9] Bodies, content, software, and hardware are assembled in complicated manners that require scholars to innovate ways of rethinking or circumventing the human–nonhuman split.

What is especially troubling in Ernst's approach is how technical media are produced by and produce particular kinds of subjects, or more specifically how coloniality manifests in their operative logics. I am thinking, for example, of how computers are the product of a global assemblage and multiplication of labor spanning from copper mines in Africa to software–hardware companies in Silicon Valley and social media users. Humans, in this formulation, are subjected to technological processes turning them into standing-reserves, nodes in the flow of production in a neoliberal political economy. Severing technical media's associations with humans or addressing technical media as mere tools obfuscates their operations across a modulating assemblage of ever-shifting ideological and machinic structures.

Technology is not mastered; it avoids dominion by enfolding and hailing its creator; it enframes and defines, subsumes and defies our becoming, as Kember and Zylinska contend in *Life after New Media*. In it, they invite scholars to engage media technology, far from being the transparent backdrop of our existence, as an autonomous force on its own terms. And, like Ernst, Kember and Zylinska recommend an approach whereby scholars immerse themselves in technical media's proper time (*Eigenzeit*) while defying and transforming—and being defied and transformed by—technical media's operations.

Life after New Media argues that the vital process of mediation is the essence of media. The study beckons readers to move beyond their fascination with or fear of new media "to critically examine the complex and dynamic processes of mediation that are in operation at the biological, social, and political levels in the world, while also remaining aware of the limitations of the stand-alone human 'we' that can provide such a rational critique" (xiii). A critical examination of media's intricate flows cannot take place outside what media hail and who questions it. Media are in play not simply because of the vast array of objects "we" use to produce matter and meaning but because "we have always been technical . . . *we have always been mediated*" (18). It is not the things at our disposal like mobile phones or social media that interest Kember and Zylinska but our entanglement with media on sociocultural and biological levels.

This focus on entanglement distinguishes *Life after New Media* from other scholarship on new media. Moving past representations (chapter 3 is a critique of representationalism and photography), a move Lovink and Ernst also make,

Kember and Zylinska focus on the "vitality of media"—"the possibility of the emergence of forms always new or [the] potentiality to generate unprecedented connections and unexpected events" (24). Their use of "mediation" complements Martin Heidegger's understanding of technology as enframing, always becoming by bringing-forth and challenging; technology is "another term for 'life,' for being-in and emerging-with the world" (22–23). As Lovink argues, media specificity is important to understand practices and cultures growing from each discrete object (i.e., computers and iPads) or broadcasting practices (i.e., radio and the Internet). Yet Kember and Zylinska show the potential of foregrounding technical media as processes, rather than objects, being both generated by and generating society.

To do this, the authors begin by conceptualizing technology using the philosophical tools of Heidegger, Bernard Stiegler, Henri Bergson, and Jacques Derrida, as well as Jay David Bolter and Richard Grusin's concept of remediation. Kember and Zylinska use these tools to explore the blurred boundary between flesh and wire and between organic matter and media. Focusing on process, specifically on *becoming* or the not-yet of media and mediation, the authors transform the vantage point from where scholars gaze "at" the technological landscape. Distancing themselves somewhat from Leo Marx and the authors in *American Quarterly*'s 2006 special issue on technology, they argue that

> media cannot have *effects* on society if they are considered to be always already social. From this perspective, the questions we can ask about the media events and their effects change from whether, or to what extent, media events integrate (or *dis*integrate) society—as if the latter were something separate, simply existing *out there*—to how media produce or enact the social. (31)

The vitality of mediation is enfolding and being molded by interrelated processes going from the conditions of labor and the culture industries to the operations of empire. Women of color, for example, have been consistently implicated in the manufacture of electronic media (i.e., maquiladoras in the US–Mexico borderlands). Analyses of the vitality of media could help historians, sociologists, and anthropologists understand the production of gendered and racialized labor and also how these subjectivities constitute and push against the operative logics of media. Such inquiries might help us move away from a perception of electronic devices as "neutral" media for user agency and instead redefine them as nodes in a complex of modulating, contested, and negotiated flows of power.

Whereas Ernst shies away from engaging subjects through his media archaeological project, for Kember and Zylinska the subject is integral to mediation. The idea of becoming, so important for philosophers of process, is fundamental to how Kember and Zylinska conceive the constitution of the self. "Becoming," they write, "offers a way of describing life as an ongoing, open-ended process of differentiation and individuation, a process of creative [transformation]" (129). This open-ended process is a productive approach for questions of mediation, subjectivity, and power in American studies, as the sixth chapter of *Life after New Media* shows. It examines "the ethical implications of the ultimate instability and transience of the mediated subject" through the lenses of biopolitics, the political economy of media, and bioethics (153). The authors suggest that media ethics are not only about the law, which much scholarship on copyright and new media tends to claim, but also require attention to mediation. The question is not fixed on the individual, single user but on a vast mediascape constituting and being constituted by larger assemblages of subjects and objects. A full acknowledgment of the vitality of media requires that scholars reflect on how mediated cultural subjects become entangled in the technocapitalist management of life. Readers can think of the production of wearable technologies as a good example. These keep track of multiple data points to measure and analyze a user's bodily flows, presumably for her or his benefit, but these technologies also commodify user data and the user herself/himself.

There are, however, limits to these scholars' approaches. In encouraging an expansive approach to mediation, for example, Kember and Zylinska generate a conceptual framework that muddies local particularities. In other words, *Life after New Media*'s limit might be found in loosely understanding mediation as a vital process in a universal(izing) fashion, displacing the unequal and uneven ways disparate populations are incorporated to and discarded from media. The universalizing tendency in some of the works commented on here runs the risk of oversimplifying the varying and distinct operations of technical media across locales. Here is where I see American studies offering its insights to new media scholars to understand how ideology, power, capital, labor, and empire, to mention a few, get coded into and circulate through mediation and technical media. Drawing on theoretical and methodological contributions such as net criticism, media archaeology, and the vitality of media, American studies scholars can engage the techno-mediascape and trace the various associations across the human–nonhuman split by articulating a context to understand them together.

Lauren Frederica Klein's recent review essay "American Studies after the Internet" invited scholars to "continue to seek out methodologies that do not merely deploy the digital but employ the digital to facilitate new modes of inquiry, new forms of scholarship, and new pathways of exchange."[10] This essay has focused on three new studies that, despite their differences, jointly seek to articulate such methodologies. The study of new media necessitates more than merely inquiring about the social relations "embodied" in them or interpreting the content they enable and convey. Technology is more than a means to an end; it is the contingent bringing-forth and revealing of groups of subjects and objects across time. New media, as a technology, must be addressed in its own proper time to unravel the flows of its circuits. To address its proper time and the specificity of its codified structures does not require that scholars abandon, for example, how power and ideology are constituted and operate through them. Indeed, to talk about power and ideology is to engage the users embroiled in new media. It is much more than the machine irrupting in the pleasant serenity of the garden. The garden, as a trope for "nature," is but an idyllic real or an "out there" to which some hope to go or return. The assemblage of media and human bodies gives space to the intricate flows of data-knowledge-ideology, to the enfolding quality of technology and mediation that transforms human and nonhumans into standing-reserves; boundaries as well as associations across groups of subjects and objects are blurred and reinforced through the operative logics of media and technology. In the end, the garden is the machine.

Notes

1. Siva Vaidhyanathan, "Rewiring the "Nation": The Place of Technology in American Studies," *American Quarterly* 58.3 (2006): 557.
2. Caitlin Zaloom, "Markets and Machines: Work in the Technological Sensoryscapes of Finance," *American Quarterly* 58.3 (2006): 817.
3. Ibid., 818.
4. Leo Marx, *The Machine in the Garden* (1964; rpt. Oxford: Oxford University Press, 2000), 373–74.
5. Along those lines, Wendy Chun argues that a computer's assemblage of software and hardware constitutes ideology machines producing users and imaginary relationships (Wendy Hui Kyong Chun, "On Software, or the Persistence of Visual Knowledge," *Grey Room* 18 [Winter 2004]: 43).
6. Ibid., 27–28.

7. Mark Andrejevic, "Surveillance in the Digital Enclosure," *Communication Review* 10 (2007): 295–317.
8. See, e.g., Lisa Nakamura, *Digitizing Race: Visual Cultures of the Internet* (Minneapolis: University of Minnesota Press, 2007); Mary L. Gray, *Out in the Country: Youth, Media, and Queer Visibility in Rural America* (New York: New York University Press, 2009); E. Gabriella Coleman, *Coding Freedom: The Ethics and Aesthetics of Hacking* (Princeton, N.J.: Princeton University Press, 2012); Trebor Scholz, ed., *Digital Labor: The Internet as Playground and Factory* (New York: Routledge, 2012); Jonathan Sterne, *MP3: The Meaning of a Format* (Durham, NC: Duke University Press, 2012).
9. Martin Heidegger, *The Question concerning Technology and Other Essays*, trans. William Lovitt (New York: Harper Torchbooks, 1977), 13–24.
10. Lauren Frederica Klein, "American Studies after the Internet," *American Quarterly* 64.4 (2012): 872.