L. Bond et al. (eds.), *The Palgrave Handbook of Literary Memory Studies*
https://doi.org/10.1007/978-3-031-69594-0_11

11. Literature Between Archive and Memory in David Mitchell's *Cloud Atlas* and Thomas Pynchon's *Bleeding Edge*

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Archives have never simply been cultural memory's other. They have never been neutral repositories of the past, and, as we will show, they have increasingly become the site where the afterlife of the past is *managed* and its future actively *produced*. This intrinsically *performative* dimension of the archive brings it into the orbit of literature—an institution dedicated to, among other things, conjuring, reanimating, and recovering real as well as fictive pasts. This chapter begins by theorizing the archive and cultural memory as two moments in an ongoing dynamic of (de)actualization. It then turns to the field of archive theory to cement the affinities between memory, archive, and the literary, before turning to a discussion of how David Mitchell's novel *Cloud Atlas* (2004) dramatizes these connections. If *Could Atlas* explores the affordances of the literary in contexts of archival *scarcity*, we argue, it misses one crucial aspect of the contemporary interface of memory, the archive, and the literary: the fact that in a digital age of instant archiving and infinite retrieval, archives are marked less by the fear of obliteration (which calls for preservation and retrieval) than by *superabundance* (which calls for data management). Our last section reads Thomas Pynchon's *Bleeding Edge* (2013) to show how contemporary literature does its archival work not only by undoing historical erasures, but also by canny interventions in accelerated media ecologies.

The Dynamics of (De)actualization

There is an obvious conceptual tension between cultural memory and the archive: if the former refers to the ways societies *actualize* the past in the present, the latter names a record of the past that remains *unactualized*. If the former is dynamic, the latter is static and tied to particular sites and carriers—"archeological remains, bones, videos, CDs, all these items supposedly resistant to change" (Taylor 2003, 19). For Aleida Assmann, the relevant opposition is between active and passive memory: if "actively circulated memory … keeps the past present," the "passively stored memory" in the archive "preserves the past past" (A. Assmann 2008, 98). Yet the archive is not exactly the opposite of cultural memory. After all, the stability and dormancy of the archive are very different from non-remembrance and forgetting: by gathering traces of the past, it keeps the past potentially retrievable; by preserving the past as something that can still be actualized in some undefined future, it refuses to let the past "vanish on the highway to total oblivion" (A. Assmann 2008, 101). While cultural remembrance is active and the archive is passive, then, what they share is *selectivity*. Both cultural memory and the archive are subject to what Ann Rigney (following Foucault) has called "the principle of 'scarcity'"—the fact that "[c]ulture is always in limited supply" and constantly requires selection, representation, and updating (Rigney 2005, 16). The archive selects from the infinite multiplicity of historical events, actions, and documents, while it serves as one of the resources on which cultural memory draws, even if, as Rigney remarks, "many potential memories remain perpetually unnoticed and unrecalled in the archive" (Rigney 2005, 17). The archive is then "a potential memory or a material precondition for future cultural memories" (A. Assmann 2011, 330).

Rather than a strict opposition between active remembrance and passive archives, it is more accurate to consider acts of remembering and archiving *as co-participants in an ongoing dynamic of (de) actualization*. Archiving, in this sense, is a necessary but insufficient condition for the production of cultural memory. When we return to the roots of cultural memory studies, we can observe this dynamic in, for instance, the oeuvre of Aby Warburg. Warburg's art-historical work emphasizes the transcultural and transhistorical power of particular *Pathosformeln*—particularly intense expressions that, in Astrid Erll's words, "store 'mnemic energy' and are able to release it under other historical circumstances or at far distant locations" (Erll 2011, 19). Such images remain ambient in what Warburg himself called "social memory" and are activated in (the details of) works of art (J. Assmann 2008). Warburg's own critical effort was essentially an archival one. In the famous *Mnemosyne* project, also known as the *Bilderatlas*, that occupied him in the years before his death in 1929, Warburg suggested connections, continuities, and historical echoes through the almost wordless juxtaposition of reproduced images.

Warburg imagined his *Mnemosyne* project as "a 'savings bank' of classical and Renaissance imagery" and as a "treasure chest of woe" (Johnson 2012, x). The economic metaphors are telling: the *Bilderatlas* is a repository of ancient value that awaits recirculation and reinvestment in present or future cultural remembrance. *Mnemosyne* is a carefully selected archive that is primed for actualization, and such actualization would confirm Warburg's central point about the peculiar vitality (*Nachleben*) of potent historical images. The agency for this actualization—as for different processes of selection—is distributed between artist, audience, critic, and, importantly, the images themselves (which are a kind of *imagines agentes*; Erll 2011, 19). The case of Warburg shows that the slippage between canon (or actualization) and archive (which stores the past as a possible occasion for actualization) generates a constant dynamic.

Often, this dynamic is energized by anxieties about the imminence of destruction and forgetting—and here literature often comes into play. Paul K. Saint-Amour diagnoses the 1920s—the period when Warburg worked on his *Mnemosyne* project, but also when Maurice Halbwachs published his seminal *Les cadres sociaux de la mémoire*—with a "pre-traumatic stress syndrome," as to many contemporaries a repetition of the disasters of World War I seemed preordained (Saint-Amour 2015, 8–9). Saint-Amour shows how this sensibility informs encyclopedic (and rigorously anti-monumental and anti-epic) oeuvres like those of James Joyce, Robert Musil, and, we can add, Aby Warburg. This archival endeavor to preserve the potential of a future cultural memory was also a conscious act of resistance against an all too inclusive and authoritative official memory codified in the form of the epic (for Saint-Amour, the encyclopedic novel is emphatically anti-epic). It is, in other words, as much a *preservation of potentiality* as a deliberate act of *deactualization* that deconstructs an all too homogenous collective memory into archive.

This dynamic of (de)actualization is particularly instructive for the role of literature in negotiating the relation between cultural memory and the archive—a role, we argue, that is never simply that of an archival medium. For one thing, the focus on (de)actualization underlines that processes of archiving and the construction of shared memories are invariably shaped by power relations. In recent decades, this observation has inspired literature, and especially the booming genre of testimony, to serve as a counterforce that helps undo the omissions and exclusions of the archive (even while, as we will see, it often showed its awareness of the political limits of such recovery work). The theoretical work of Michel Foucault, Jacques Derrida, Giorgio Agamben, Ann Laura Stoler, and others has emphasized that the studied neutrality and objectivity of the archive has historically performed violent exclusions and served

particular hegemonic interests (Erll 2011, 50–51). One kind of literary response to this has been an emphasis on *recovery*—on retrieving traces from the archive that have fallen outside the purview of cultural memory.

Toni Morrison's 1987 novel *Beloved* presents a canonical example: inspired by a newspaper article from the 1850s about one Margaret Garner, a runaway slave who killed one of her children when she was about to be caught, the novel manages to retrieve the deprivations and horrors in the lives of the enslaved for late-twentieth-century American audiences. Yet *Beloved* at the same time highlights the limits of archival recovery: Beloved, the dead child, haunts the novel as a ghost; it continues to disturb the present and refuses to be fully integrated in everyday life. *Beloved* anticipates concerns over the limited affordances of recovery that have only become more prominent since then. The selectivity that already marks the archive (and not just its actualization as cultural memory) makes it a less than foolproof tool for restitution. This is what Laura Helton and her colleagues call "the impossibility of recovery when engaged with archives whose very assembly and organization occlude certain historical subjects" (Helton et al. 2015, 1). Indeed, "the violence of Atlantic slavery was so great, and the limits of its archive so absolute, that no amount of historical recovery could properly describe it, let alone begin to undo its damage" (2). Because of the selectivity of the archive, literature not only visits the archive for historical recovery, but also to confront its constitutive gaps and omissions. If literature's archival work tries to actualize the past as cultural memory, it also attempts to deactualize the authority of the archive's front of neutrality and objectivity.

Managing the Past: Archives in History and Theory

Attention to operations of deactualization foregrounds a troubling feature of contemporary archives. Even if archives, as we have seen, are fated to be radically incomplete, in the age of Big Data and computer servers' ever-increasing storage capacities, they have also become so ubiquitous that customary selection processes have been rendered inoperative. What historian Charles Maier has called the "surfeit of memory" is now compounded by the surfeit of data. When information remains stubbornly available on the Internet, the literary recovery of obliterated material risks surrendering (often painful and sensitive) testimonies to the blurry indifference and "the detemporalizing processes that characterize a culture of consumption and obsolescence" (Huyssen 2003, 10). When our cellphones track our every movement, conversation, and consumer transaction and when servers have the capacity to archive everything, memorial genres like testimony and the memoir operate in radically altered media ecologies. As conceptual poet Kenneth Goldsmith notes, "our browser history is the new memoir" (Goldsmith 2016, 75) and "archiving is the new folk art" (89). In this media ecology, *almost everything*

is always already recovered, and literature has to find new ways to engage with this superabundant archive. As archival selectivity becomes less of a *practical* challenge (even if it remains a theoretical necessity and an ethically and politically charged activity), the dynamic of (de)actualization becomes key. In the case of Goldsmith, this informs a radical practice of "uncreative writing," which simply transcribes seemingly randomly selected archives: all the words spoken by Goldsmith in one week (in *Soliloquy*), every word written in one particular issue of the *New York Times* (in *Day*), or an attempted printout of the Internet (in *Printing out the Internet*). Goldsmith's surrender to the exuberance of the digital archive is of course not the only literary approach available, yet it shows that contemporary literature engages the axis of memory and archive not only as a repository for alternative voices and minoritarian perspectives, but increasingly also to intervene in contemporary media and attention ecologies.

The shift from concerns over impermanence to questions of superabundance is also observed in the domains of archive theory and history. Prior to the modern age, archives existed primarily as repositories of legal documents that conferred the ownership of land (Giannachi 2016; Taylor 2003). Medieval and early modern archives were predominantly private and disparate collections, and it is only with the arrival of the modern state that centralized and publicly accessible archives came into being. While the state's responsibility for such a repository was written into several Republican decrees after the French Revolution, the most significant shift was the designation of archives as sites for the conservation of a newly redundant past (Groys 2016, 49). In its effort to distance itself from the *ancien régime*, the Revolution deployed archives as sites in which history could be encountered. This reflects the emerging role of historicism in constructing modernity's self-understanding as "the telos of historical development itself," for which the past was mobilized as "the basis for the new secular community of the nation" (Hunt 2008, 25). The archive, in other words, formed the basis for the construction of a national past and a cultural memory.

It is not hard to see that initially, the role of archives ran parallel to that of literature, and especially the genre of the historical romance, in forging an imagined community and an invented tradition. Still, the culturally formative role of archives was officially denigrated by the reductive nineteenth-century historicist ideal of writing history *wie es eigentlich gewesen* (Blouin and Rosenberg 2011, 14–15), which, in line with the ideas of the German historian Leopold von Ranke, held that the historian should be nothing but a "recording surface, a describer of what *really* happened" rather than an agent of cultural remembrance (Parikka 2013, 7). This positivism was initially reflected in the growing commitment to the arrangement of documents according to the principle of *provenance*, which preserved all documents issued from a single source at a singular point of time in one place (what archivists would call a *fonds*;

Cook 1997, 21; Giannachi 2016, 7), and which went hand in with a conception of the archivist as what Hilary Jenkison, in his influential 1922 *Manual of Archive Administration*, described as "perhaps the most selfless devotee of Truth the modern world produces" (qtd. in Cook 1997, 23). This combination of an alleged experiential actualization of the past (through an encounter with the archive) and a disciplined resistance to the creative drift of cultural memory already inscribes the nineteenth-century archive in the dynamics of (de)actualization that we proposed in the previous section.

These arcane nineteenth-century developments within the field of archival classification are not as distant from the world of literature as they might first appear. As Marco Codebò has highlighted, the organization of archival repositories along principles of provenance can be related to the development of the novel of social realism through their shared role in the construction of the individual. For Codebò both the archive and the novel of social realism aimed to construct realistic characters by collecting individualized data and storing them within a coherent frame of reference. Indeed, as Codebò argues, "Realistic characters can coalesce into credible human figures because archival and novelistic discourse participate in the same project" (2010, 49).

In the twentieth century, both arrangement by provenance and the purported objectivity of the archivist were challenged by developments in storage technology and an exponential growth in the production of documentary records in at least two ways. First, the interval between a document's creation and preservation became much shorter, meaning that rather than a collection of records of a long defunctionalized past, the archive often began to store the very recent past. Second, to allow for efficient preservation, the archivist began to play a more active role in the structure—but not yet the content—of a document's production by codifying document collection through forms, stipulating the style of expression, and standardizing reporting practice. It is here, with the proliferation of documents ahead of technologies of retrieval (if not storage) that selectivity first became a key practical issue, and that the notion of the archive as a neutrally conserved repository of the past made way for that of a deliberately curated selection of documents. Within archival science itself, this inspired direct calls by the American archivist T. R. Schellenberg in the 1940s for a system of classification arranged along principles of management and retrieval rather than conservation (Cook 1997, 26–27).

As the notion of the archive as a neutral repository becomes increasingly untenable, the nineteenth-century division of labor between archive and memory became less strict. The archive increasingly became visible as a site shaped by particular interests and competing powers. This critical awareness informed what has been referred to as an "archival turn" in the humanities and social sciences (customarily situated in the 1980s and 1990s). This turn had at least a double lineage. In the field of historiography, there was a growing interest in cultural history that looked to examine lives *outside* the

administrative annals of sovereign government, which demanded a more active interpretive engagement with sources (think of Emmanuel Le Roy Ladurie's 1975 study *Montaillou*, which uses the records of a thirteenth-century inquisition to write a multi-layered account of day-to-day life in a Languedoc village). Stemming from the *Annales* school and flourishing with the microhistories of the 1970s and 1980s, such an approach to cultural history demanded a more reflexive archival encounter that reads sources as documents that can hold a number of different traces depending on their interpretation. In the domain of philosophy, the archival turn participated in a larger philosophical exploration of the limits of reason and empirical evidence. As Simon Critchley has noted, continental philosophy has long stressed both "the radical finitude of the human subject" and "the thoroughly contingent or created character of human experience" (Critchley 2001, 62–64). This contingency not only informs a skeptical attitude, it also opens the possibility of change and difference, and this motivated the archival turn, even while it informed the shift to the ethos of recovery in the literary field: if the desire for change required active participation in the production of new or alternative forms of knowledge, then the archivist and the literary writer became crucial participants in that renegotiation.

The archival implications of these twin lineages found one of their earliest renditions in the work of Michel Foucault. Foucault defines the archive as an apparatus constituted by processes of filtering and selection that "governs the appearance of statements as unique events" rather than purely semantic units (Foucault 2002, 143–145). The archive, that is, determines the truth value and the reach of the statements it allows. If Foucault's explicit theorizations of the archive are rather sparse, his own active engagement with archives is at least as important. There is not only his own histories of madness, the clinic, and sexuality, but also collaborative projects such as *Moi, Pierre Rivière*, in which the subjective interpretation of archival documents by a variety of archival users is a principal objective (Sheringham 2011). Foucault's work, then, both theorizes and exploits the contingency of the archive.

In Jacques Derrida's *Archive Fever*, the other key theoretical oeuvre in the archival turn, this archival contingency is more explicitly linked to cultural memory. *Archive Fever* develops a reading of historian Yosef Yerushalmi's *Freud's Moses*, which in its turn traces the vagaries of Jewish collective memory through a reading of Freud's *Moses and Monotheism* (Yerushalmi 1993, xvi). For Derrida, the archive is energized by the conflict between a destructive death-drive and a conservational drive linked to the pleasure principle. Archival contingency is most prominent in the archival technologies and the role of the archivist, as both, for Derrida, *produce* the event even as they record it: "Archivable meaning," he writes, "is also and in advance codetermined by the structure of the archive" (Derrida 1995, 18). Archivists, for Derrida, can only encounter the archive by inscribing themselves into it, and this means that the desire to contain the past ends up as a projection into the future. In Derrida's work, critical

theory catches up with more mundane and pragmatic developments in the field of archive science, which had already shifted its emphasis from preservation to management and production. As the archive increasingly became a productive and creative force, it also became an active constituent of cultural memory.

Intriguingly, the challenges to archival authority that arose in the twentieth century are reflective of an earlier crisis of authority that took place within literary realism. Codebò reads Gustave Flaubert's 1881 novel *Bouvard et Pecuchet* as problematizing not only the claims of literary realism but also those of archival storage. As Codebò stresses, *Bouvard et Pecuchet* "exposes the realist novel's and the archive's truths as the products of dubious, politically motivated procedures rather than coherently and epistemologically sound operations" (Codebò 2010, 50–51). Literature, here, thus emerges not simply as a reflection of the conditions of archival storage, but a key site for their critique.

Scarcity and the Archive: David Mitchell's *Cloud Atlas*

These shifting understandings of the agency and the affordances of the archive have led to different ways to imagine the role of literature: as a technology for forging an imagined community, as a medium for recovering lost archival traces, and, increasingly, as a site for negotiating the competing demands for preservation and production. Few twenty-first-century novels have interrogated the role of literature in the shifting constellation of cultural memory and the archive more insistently than David Mitchell's 2004 novel *Cloud Atlas*. The novel contains six narratives, which are all set in different times and rendered in different genres with different archival and memorial affordances: the "Pacific Journal" of an American traveler in the Pacific in the mid-nineteenth century, the letters of a young composer residing in Flanders in 1931, a corporate thriller set in 1975, a British farce set in the early twenty-first century, a high-tech science fiction story situated in Korea (rebranded Nea So Copros) around 2100, and finally a post-catastrophe fiction in which civilization has made way for a bare and brutal existence. The last story sits at the center of the novel, after which the narrative revisits the other five story worlds in inverse chronological order. This remarkable structure makes questions of historical (dis)continuity unavoidable. The novel toys with different forms of connectedness—there are thematic echoes between, for instance, the account of colonial violence in the nineteenth-century Pacific and the enslavement of cloned fabricators in the science fiction future, and several of the characters share a comet-shaped birthmark—but its very form underlines that historical continuity depends on material archives: the earlier stories all resurface in later story worlds—as a found manuscript, as a feature film, or as a hologram.

"The Pacific Journal of Adam Ewing," the novel's first chapter (and also its last one), connects to the paradigm of archival retrieval that, as we have seen, has long defined the relation between literature and the archive. Adam Ewing, an American notary adrift in the Pacific, encounters Autua, a Moriori who testifies to the ongoing genocide of his people by the Maoris. In a sense, Autua serves as the last representative of his people, and Ewing's diary becomes the archive through which his voice is preserved. Yet *Cloud Atlas* does more than archive a nearly forgotten genocide: the extinction of the Moriori also prefigures the almost total extinction of the human species that takes place between the science fiction (Chapters 5 and 7) and the post-catastrophe futures (Chapter 6) (the novel only refers to the catastrophe as "the Fall," as the specifics of the events seem not to have been archived, and therefore not remembered; Boulter 2011, 133). This transition is marked by a near-total breakdown of cultural memory and the eerie and unpredictable persistence of archival traces. In the Korean future, language still bears traces of cultural history: brand names circulate as nouns ("sonies," "nikes," "fords"), and capitalism has become a religion that recycles traditional religious vocabulary (there are "Catechisms," there are "Souls," even if that term now refers to social and financial credit; Mitchell 2004, 187); after the Fall, language in a far-future Hawaii is a much more concrete version of English, "studded with onomatopoeia and puns," and the few ancient terms that have survived are orphaned (Mitchell 2005). "Gear there was what we ain't mem'ried on Ha-Why so its names ain't mem'ried neither," as Zachry, the first-person narrator, has it (Mitchell 2004, 290). Remarkably, *Cloud Atlas* shows the regeneration of cultural remembrance even in these dismal conditions. People have begun to assemble "icons" during their lives—"what we carved'n'polished'n'wrote words on durin' our lifes" (255). After death, these icons are brought to the "Icon'ry," in which "the gone-lifes outnumber the now-lifes like leafs outnumber trees" (256). The "Icon'ry" serves as "*a common mem'ry o' faces'n'kin'age'n'all*" (270). At the very end of the post-catastrophic story, we learn that Zachry's first-person narration (his "yarnin'"; 324) is actually embedded in the story of his son—and is thus the result of a successful (if minimal) form of oral transmission.

Both the remembrance of the dead and the transmission of the story are inspired by an archive that has survived the Fall: a so-called orison, an egg-shaped device that preserves sounds and images it projects as holograms. The particular orison that survives into the far-future is the interview between an archivist and a fabricator (Sonmi ~ 451) that makes up the novel's fifth (and later its seventh) chapter. Even if the survivors of the Fall can no longer understand the meaning of Sonmi's words, they revere her as a goddess who warrants the afterlife and provides the occasion for the reconstruction of a memory community—even if it is a memory community that is united more by an affective orientation to a transmitted past rather than to the particular content of that transmission: "if you warm the egg in your

hands a beautsome ghost-girl appears in the air an' speaks in an' Old'un tongue what no'un alive und' stands nor never will, nay" (324). In spite of this failure of understanding, the community continues to "wake up the ghost-girl jus' to watch her hov'rin'n'shimm'rin" (324–325). Continuity is created, in other words, through the mere persistence of the archive; it totally bypasses meaning and understanding. *Cloud Atlas* invites us to imagine a novel relation between archive and cultural memory in a situation of radical scarcity: archiving suffices for the recreation of a memory community, even if a shared meaning horizon remains to be elaborated.

When the survivors of the Fall are visited by a superior—if still radically diminished (285)—civilization, these "Prescients" make it clear that "orisons" are primarily communication and archiving devices: "*An orison is a brain an' a window an' it's a mem'ry. Its brain lets you do things like unlock observ'tree doors … Its window lets you speak to other orisons in the far-far. Its mem'ry lets you see what orisons in the past seen'n' heard, an' keep what my orison sees'n'hears safe from f'getting*" (290). *Cloud Atlas* shows that saving the media preserving the past from oblivion leaves the past open to recuperation and distortion (for instance, Zachry believes that the genetically modified Sonmi "'d been birthed by a god o' Smart named Darwin"; 291). *Cloud Atlas* invests its political hope in this contingency and unpredictability of the archive (a commitment that firmly situates it in the archival turn). Indeed, in the novel's dystopian future Korea, it is the very drive to archive everything that ultimately undoes the "corpocracy's" totalitarian ambitions. The interview between Sonmi ~ 451 and a state archivist takes place to record the story of her rebellion against her fate as a genetically modified drone, forced to do menial work and eat the "liquefied biomatter" of her ilk (359). The regime has managed to overcome the insurrection, but in its drive for total control, its "Ministry of Testaments" insists on recording her story (187). The archivist assigned to Sonmi's case is aware that this archiving of a story of resistance risks preserving the past as a spur for future resistance (193). At the end of the interview, Sonmi remarks that this self-undermining feature of the archive is what motivates her to comply with the archivist: she cooperates because she "sees a further endgame," in which her ideas are "reproduced a billionfold" as a warning but can ultimately be repurposed as an inspiration (364–365). Without the corpocracy's archive fever, then, Somni's orison would not have had the post-catastrophic afterlife it has in the novel.

If *Cloud Atlas* begins with a familiar act of testimonial retrieval (in "The Pacific Journal of Adam Ewing"), it unfolds as a complex engagement with the dynamic of (de)acualization that marks the relationship between cultural memory and the archive. Indeed, the novel is itself an archive—or as Jonathan Boulter has remarked, it is "a series of archive texts, texts archived within the larger sepulchral archive that is *Cloud Atlas*" (2011, 132). Narrated in light of the collapse it imagines, the novel's

different chapters take on an archival urgency—they are marked, in Paul Saint-Amour's terms again, by a "pre-traumatic stress syndrome." The novel itself is a repository of genres and styles—notably late-1960s farce and Russell Hoban's novel *Riddley Walker*, to whose linguistic experiments the novel's post-catastrophic English is overtly indebted (Mitchell 2005). As Martin Eve has argued, this makes *Cloud Atlas* an essentially conservative text, as even its imagining of the future is filtered through past presentations of the future. This conservatism, we would argue, is also reflected in the novel's commitment to the agency of *the literary as such*. In *Cloud Atlas's* different worlds, literature and storytelling are endowed with the capacity to make a real difference—as repositories of the past, as spurs to action, as sources of consolation, and ultimately (in the case of the orison of Sonmi) as occasions for the regeneration of human culture. At the very center of the book, Zachry's son addresses readers directly and invites them to "[h]old out [their] hands" and look at the orison together (Mitchell 2004, 325). The novel then continues the story of Sonmi—that is, the story contained in the orison. *Cloud Atlas* positions its reader in a desolate future—a future where the archive is almost void and where retrieval and preservation are the central archival imperatives. As we have been arguing, this situation of scarcity is less acute today. Today, archiving is as much about the management and the production of the past and the present and about the abundance of data they generate. *Cloud Atlas*'s commitment to the powers of the literary arguably fails to appreciate different dimensions of the literary that may be more attuned to the digital present that *Cloud Atlas* conveniently evacuates from its narrative center. In the last section of this chapter, we explore the challenges and possibilities for such an updated archival literature.

Cultural Memory and The Archive in a Digital Age: Thomas Pynchon's *Bleeding Edge*

The interpenetration of archive and memory is especially intense in the digital age. The ease and speed with which digital records can be produced has rendered the distinction between document creation and document preservation negligible. Documents are no longer stable records held in *fonds* but rather dynamic datasets held in bits and bytes that are arranged not by location but across multiple networks and nodal connections. Increasingly, the power of algorithms to process archives of behavioral data in real time enables them to predict and actualize the future (Finn 2017). The instantaneity with which digital information is produced and consumed has transformed archiving into an everyday activity that is performed at the very moment when a document is created or an email is received and that is creating shared memories *in real time*. Even if a novel like *Cloud Atlas* still imagines the literary as a power that can exploit the loopholes of such archival operations, such technological developments have come to

affect the ways contemporary literature imagines itself as a *participant* in the archival process of producing the present and the future.

In this context of ubiquitous computing and instantaneous archiving, archaeologist Michael Shanks has observed a shift to a new archival moment. If archives based on provenance and on contingency are understood as Archive 1.0 and 2.0, the rise of digital technology and the increased archiving of everyday life provide "a new prosthetic architecture for the production and sharing of archival resources," which Shanks calls the "animated archive" or "Archive 3.0" (Shanks 2008). Archive 3.0 conceives of the archive as an active engagement with the past, as the holdings of museums, libraries, galleries, and public collections are opened up to personalized use, and as curation and information management increasingly aim to tailor services to different needs and desires (Shanks 2008). Archive 3.0 collapses the distinction between archive and memory, as everything is instantaneously retrievable as an occasion for an experience of the past, and as the past persists in a way that makes it readily available for actualization as memory. Gabriella Giannachi describes a "mixed reality archive" that operates less as a static repository than as a set of interrelated objects and spaces that co-constitute reality. Giannachi turns to Foucault's later work on the notion of "*dispositif*" (apparatus) to define Archive 3.0: "The apparatus of the archive," she writes, "is the network of strategies we use to map everything in space *and* time precisely so that we may find what is as yet unlived in our lives" (Giannachi 2016, xvii). The archive here no longer connotes a manner of interacting with a pre-established world and past, but rather the very frame through which we interact with the world and with the new: "Archive 3.0 is therefore no longer just an 'impulse' or a 'fever,' it is the lens or interface through which we perceive, interact, and often extract value from our environment and, increasingly, the apparatus through which the latter can, quite literally, (in)form us" (21). In a digital age, the archive, far from being a passive collection from which memories can be retrieved, becomes a dynamic interface through which memories are actualized; it is a vibrant exchange network through which memories are always already retrieved from the moment they are produced.

If *Cloud Atlas* does not address these most recent alterations to the relation between cultural memory and the archive, Thomas Pynchon's 2013 novel *Bleeding Edge* is a sustained engagement with the ways ubiquitous computing affects that relation. Sonmi ~ 451's orison in *Cloud Atlas* shows how the drive for full-scale archiving unwittingly generates counterhistories. Under the conditions of Archive 3.0, it is the very digital detritus that society casually generates that can produce such alternative histories. Set in New York in 2001 against the twin backdrops of the burst of the dotcom bubble and the 9/11 terrorist attacks, *Bleeding Edge* follows the efforts of a private fraud investigator, Maxine Tarnow, in her pursuit of a billionaire tech-CEO named Gabriel Ice. At first glance, the novel appears to give a Pynchonian

gloss to long-standing 9/11 conspiracy theories, with Maxine's investigation uncovering accounting irregularities that see money from Ice's firm being funneled to the Middle East. Yet as her investigation continues aided—and complicated—by an ensemble of characters from across the political, economic, and digital spectrum, the money passing through Dubai turns out to be supporting a faux-jihadist organization that is really a front for the CIA itself. The organizing conceit that 9/11 was a state-sponsored plot starts to emerge as a cover for something else that the novel never fully accounts for.

In a sense, then, *Bleeding Edge* can be aligned with the belief also informing the archival turn—the belief that archival information can be reexamined and reinterpreted in ways that uncover the hegemonic discourses that inform official cultural memory. On this account, archives figure as passive repositories that savvy critical archivists can use to un-pick official accounts of the past. Yet *Bleeding Edge*'s second crucial context—the end of the dotcom boom—aligns it with the prevalence of digital information within the novel and urges a less straightforward reading of history, memory, and the archive (Huehls 2013, 864). *Bleeding Edge* maps the impact of digital archives to show that these are not passive but rather active and instantaneous. It imagines a newly productive role for an amateur archivist who is not, in Maxine's case, always that savvy, but who still finds information readily and rapidly available. At the end of the novel, Maxine as amateur archivist finds that the more accessible and more active interface of the digital archive does not necessarily lead to a more coherent account of the past, but rather becomes a site for the production of multiple versions of the present. If she is no closer to understanding Gabriel Ice or any of her other targets, she has yet become caught by the lure of sheer information, and in particular the endlessly recursive Deep Web interface called DeepArcher. *Bleeding Edge*, we argue, updates familiar accounts of the archive and of cultural memory for the age of Archive 3.0. To the extent that this animated archive encompasses the contemporary lifeworld, Pynchon seems to suggest, it is the job of literature to capture this archival dynamic and intervene in a rapidly changing media ecology.

A crucial feature of Maxine's archival investigation is that finding information is conspicuously easy. A key target in her enquiry is Nicholas Windust, who quickly emerges as the link between the government, Gabriel Ice, and the Middle East. Yet Maxine is able to determine Windust's involvement not through extensive searches of New York or interrogation of suspects, but rather from a dossier compiled by Windust himself and left floating around the Deep Web. Maxine's sons and their school friends manage to extract classified CIA files from a stick drive, which shows that information that was previously inaccessible and classified has become readily available. This becomes still more prevalent as Maxine's own digital competency progresses. If early in the novel Maxine's children have to help her deal safely with a stick drive, by the end of her *Bildung* she has "a purseful of time-sensitive passwords" that allow her to explore the Deep Web (345). Crucially, this trajectory only serves as a process of self-

development, as it does not bring the amateur archivist any closer to the truth. Archival work, in *Bleeding Edge*, is less a matter of getting a grip on the past than of constructing an individual identity.

This is made most explicit through Maxine's engagement with DeepArcher. DeepArcher takes shape as a maze in which everything the avatar encounters can be clicked as a link and thus every possible direction becomes a path. Yet because of the interface's construction, each link only takes the user forward, never back, and thus steps cannot be retraced; the game's creators describe it as a means of getting "constructively lost" (76). By the end of the novel Maxine has taken much of her investigation off the street and into DeepArcher, preferring to scout a digital realm "populated by other real users" (345). DeepArcher dramatizes the abundance of information under the active and instantaneous conditions of the digital archive: information is so replete that attempts to produce a navigable path through it become futile. Rather than providing access to the past, DeepArcher offers an interface through which users interact with the present and construct a sense of self, a constantly evolving site built from archival data and navigated by the whims of users. At one point, Maxine's sons chance upon graphics files that code a version of New York City before 9/11 and Maxine is able to walk through a cityscape that no longer exists (428–429). Yet this pre-9/11 version of New York is not a past conserved or even managed, but rather an experience that is being *produced* for individual users in the present. For all its promises of information and the instantaneous pre-retrieval of previously dormant archival data, the digital archive is only capable of producing ever more archive, just as the archivist-as-user is only capable of producing themselves. Literature, for Pynchon, cannot position itself outside of this dynamic, but can expose it even while it participates in it.

Such assessments are consistent with broader developments in digital culture. In a book entitled *Beautiful Data*, Orit Halpern locates one of the origins of digital information management in the mid-twentieth-century development of cybernetics. Stimulated by the arms race that emerged during World War II and gained full speed with the birth of the Cold War, cybernetics codifies the desire to make predictions about the future based on the rapid recording, storing, and retrieval of information through instant feedback. The facilitation of ever more instantaneous communication left behind a residue of "a vast cumulative space of data and information" (Halpern 2014, 61). The crucial point here is that this marks a shift in the status of information itself: the meaning or provenance of an archival deposit becomes increasingly secondary to its speedy transmission in the same way that the archival information Maxine explores in DeepArcher becomes little more than the route to her next link. This is an archive more invested in the movement and redeployment of information than in any sense of origin, which reframes not only the archive but also the mechanics of memory. As Halpern contends, under the logic of cybernetic feedback, "[p]erception came to be defined by the ability to respond, and memory as the

site of processing" (61). As memory comes to be "viewed not as an endless static repository or archive of stored information but as an active site for the management and execution of these operations" (67), the dynamic of (de)actualization becomes instantaneous, with archive and memory situated only split seconds apart.

Toward the end of *Bleeding Edge*, one of Maxine's allies, the hacker Eric Outfield, comments that he has a strange feeling the Internet has "just something fatal in its own history. There all along" (432). For Eric, as the number of users increases, the web becomes a portal to "what Management wants everybody addicted to, shopping, gaming, jerking off, streaming endless garbage"; "We're being played," he concludes, "and the game is fixed" (432). Eric's weary conclusion and the trajectory of Maxine's growing digital competency are both emblematic of the new technological structures of digital archiving and remembrance. The novel shows how the new archival landscape of instantaneity, pre-retrieval, and declassification occludes rather than uncovers the past, transporting it into a constantly evolving present that exists more for the evolution of individual archivists than for shared historical understanding. In this world, purported freedoms actually serve to reduce the capacity of individual users to comprehend the structure and state of the world.

It is on this latter count that *Bleeding Edge* can be aligned with Pynchon's other works. For all the confusion and occlusion that occurs within a Pynchon novel, the ultimate target of his satire of information surplus is invariably capitalism (Jarvis 2012, 226). In this sense *Bleeding Edge* does not mark a shift from Pynchon's earlier work so much as a relocation within the new terrain in which data is encountered. For all that Archive 3.0 marks a departure from previous forms of collection and remembrance, the continuity of *Bleeding Edge* with Pynchon's ongoing critique of capitalism reminds us that however rendered, archives remain key sites for the production and preservation of power. Just as Toni Morrison studied the archives of slavery to reanimate the nineteenth-century precedents of contemporary racism, so, too, do we users continue to circle available archives to seek out our own terms of confinement. This continuity is a helpful reminder that, for all the changes to the relation between memory and the archive in the course of the modern age, their involvement with power remains a constant and crucial feature, not a bug—which is to say, not something a mere update will fix. For all its evident ability to expose the working of archival power, then, literature cannot avoid complicity with it.

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