Database and the Future Anterior: Reading *The Mill on the Floss* Backwards

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I. Tables and Vectors

In what may be the most accomplished act of reading in the history of criticism, Roland Barthes identifies two opposed modes of apprehending a text and says, in effect, that we need both. In *S/Z* Barthes (1974, 15) makes the case that, on the one hand, reading must happen outside time, the text encountered as a complete system, "as if it had already been read." Rather than starting at the beginning and ending at the end, in other words, we should meet a novelistic text like *Sarrasine* (1830) as a total object, dechronologized: as a "mass... comparable to a sky" across which acts of reading unconstrained by the text's own sequence might trace any number of codes, meanings, or echoes (Barthes 1974, 14). Thus transformed into something like pure structure, textual objects would be stripped of their "artifice of continuity" (15) and given not one but multiple points of entrance. More importantly, they would have, in effect, no sequence at all. That is because "rereading," says Barthes, "draws the text out of its internal chronology ('this happens *before* or *after*') and recaptures a mythic time (without *before* or *after*)" (16).¹

While absolving them of all responsibility, I want to thank Paul Fyfe, Adam Grener, Jesse Rosenthal, and Daniel Shore for their help in thinking through the questions raised in this essay.

^{1.} Barthes (1974, 30) offers five codes for understanding narrative, of which only three, he says, are reversible, since they operate in the total structure without regard to ordering. Two other codes, hermeneutic and proareitic, "impose their terms according to an irreversible order." I argue that the flood event in George Eliot's *The Mill on the Floss* adds the "symbolic" to the list of "vectored" codes, since the hints or symbols of the flood only become legible as such after an (irreversible) process of accumulation.

On the other hand, however, Barthes argues for what appears to be the very opposite procedure, a progressive apprehension that is given form in the sequentially organized series of tiny readings that comprise his analysis of Balzac's novella. "If we want to remain attentive to the plural of a text," writes Barthes in an apparent contradiction, "we must renounce structuring this text in large masses" (11) and instead proceed by "gradual analysis," a "step-by-step method" in "slow motion" that, "through its very slowness and dispersion, avoids penetrating, reversing the tutor text, giving an internal image of it" (12). Barthes's double injunction asks us to see the text as a synchronic block and a linear sequence at once, as both a table and a line. The classic text, he explains, "is actually tabular (and not linear) but its tabularity is vectorized, it follows a logico-temporal order. It is a multivalent but *incompletely reversible system*" (30; emphasis added). This difficult image of a vectorized table—an "incompletely reversible" system, as he repeats (13)—finds Barthes describing how we might understand the novelistic text as both a synchronic block (akin to a database) and a diachronic process of unfolding (or narrative), a structure and a sequence at once. Barthes places temporality at the heart of the problem of reading and transforms the dialectic between synchrony and diachrony into the structuring dilemma for any act of textual analysis.

I revisit this canonical scene of reading because its terms are also those of George Eliot, and this article will show that Eliot's second full-length novel, *The* Mill on the Floss (1860), draws on the affordances of the novel form to stage as aesthetic effect the dilemmas of readerly method Barthes raises in S/Z and that, I will suggest, have only sharpened since the literary humanities' digital turn. Explicitly and famously, *The Mill on the Floss* is about time. It describes Maggie and Tom Tulliver struggling toward adulthood in a kind of double development story. It shows a charming but outdated village, St. Ogg's, and puts it between a river and its tributary: grand symbols, Eliot's narrator explains, for "the onward tendency of human things" ([1860] 2003, 284). It relates a sequence of modernization from country to city, then to now in which rustic superstition and rough-hewn justice give way to "our present advanced stage of morality" (30). This progressive motion culminates with the apotheosis of that perfectly named embodiment of a rising business rationality, Lawyer Wakem, who awakens the world into law while calling us to memorialize, in a "wake," the customary order he helps displace. The book frames this ambiguous developmental sequence in a golden past, "many years ago" (11). And it depicts, less charmingly, a shocking

flood whose victims, killed by floating refuse and a vortex of water, end up in a grave arranged for our view. "Suffering," Eliot's narrator explains, "whether of martyr or victim . . . belongs to every historical advance of mankind" (284).

I can only touch here on the role suffering plays in Eliot's conception of historical change.² Instead this essay will advance a set of inquiries into temporality and narrative form and suggest how the most famous surprise ending in Victorian fiction refines the antinomy between sequential and systemic reading that is at the heart of S/Z and that also animates recent experiments in machine reading. To argue this involves showing that *The Mill*'s catastrophic deluge—the flood event that scrapes clean the surface of the earth and restarts the novel's temporal-political clock—radicalizes the formal or properly aesthetic tension between duration and event, sequence and structure. Here a theory of time as gradual development sits in tension with a model that imagines short, sharp transitions between discrete temporal periods, one "step" and another.

This caesura or hinge between distinct units is akin to the space between what Barthes (1974, 13) calls a text's "lexias" or "blocks of signification": it is the evental distance between separate slices of (static) time. Given that this tension between continuous durée (duration) and discontinuous structure also animated the developmental philosophies generated by Eliot's advanced liberal colleagues in the late 1850s, Eliot's use of the flood to mark the "historical divide" (Esty 2012, 54) cleaving modernity from its precursor finds her using the full resources of narrative fiction to do something more than her contemporaries. With Barthes, she finds a language for thinking structure and sequence at once, even as she insists, in the formal design of the novel, that no linear or progressive process, however gradual, can be conceived without an instant of transition between one block of time and the next.

The divided critical response to the novel will help us see that its dramatic instant—the flood—manages to be both entirely unexpected and perfectly probable. The retrospective necessity with which Eliot endows this death event thus finds her exploiting to full capacity what Barthes (1974, 17) calls the "hermeneu-

^{2.} As Jed Esty (2012, 55) notes, "Modernization in this novel kills off central characters and social practices." Eliot's (1963) recasting of liberal progressivism in the shape of tragedy finds an antecedent in her essay on Sophoclean tragic form, "The *Antigone* and Its Moral" (1856). For a sharp addition to criticism of the novel as a modified bildungsroman, see Esty 2012, 63–64. My account runs parallel to Esty's and rhymes too with Garrett Stewart's (2009, 164) claim that *The Mill* "may be the most Hegelian thing, let alone the most Lukácian thing, that the philosophic Eliot ever wrote."

tic code" and what Franco Moretti (1988, 146) calls the "poetic" affordances of clues, which break apart the intimacy between signifier and signified, such that a given detail might mean nothing at one moment and everything later on. Eliot maximizes this gradient quality by conscripting her readers in a cumulative and therefore necessarily diachronic process of readerly encounter, a slow task of revelation by which clue becomes hint becomes suggestion becomes flood. This vectored procession depends on the linear flow of readerly time that this novel about rivers and temporality describes at the level of plot. Among other things, this means that Eliot's novel allegorizes as diegetic action its most salient formal effect. It means also that *The Mill on the Floss* proves disobedient to methods that would transform it into pure structure, a block of desequentialized data that would respond to the random access methods that structuralist analysis shares with computational distant reading.

Locating Eliot's vision of readerly data processing in our contemporary digital sensorium suggests how attention to the slow-tech capacities of the novel form might ask new questions of even our fastest apparatuses for machine reading. This, in turn, insists on the conceptual productivity of Eliot's disaster novel at a moment when data itself has been construed as both catastrophe and utopia, its own kind of (ambiguous) world-historical shift: a "revolution," "tipping point," or "event horizon" allegedly separating then from now (Jockers 2013, 3–4). In this context Eliot's more sophisticated account of world-historical rupture might turn out to provide models for relating database reading and the old-fashioned kind.

II. Before the Flood

Appearing in editorial asides throughout its pages, *The Mill on the Floss*'s explicit descriptions of temporal process have inspired a long tradition of criticism that views the novel in terms of something called "history." Readers have noted Eliot's belief in the priority of historical forces over individual wills (Crosby 1991); documented her engagement with evolutionary thinking in its Darwinian and Spencerian modes (Beer 1986; Paxton 1991); and explained more particularly how *The Mill on the Floss* seems driven by a single historical motion, a forward flow or vector well symbolized by the sweeping currents of the Ripple and the Floss themselves (Arac 1979). Nicholas Dames (2007), writing of *Daniel Deronda* and not *The Mill*, nonetheless identifies Eliot's investigations into "temporal form" (127) and "the language of interval" (160) and dates these inquiries to the late

1850s, the period of *The Mill*'s composition. Existing readings of *The Mill on the Floss* note how Eliot's theory of history imagines land, people, and politics as tied into a single course of time—a unified, nearly geological process in which time accumulates and the present takes its place literally on top of what preceded it. "History" is the name Eliot and her later readers give to this sedimentary wash of time

As this language suggests, *The Mill*'s diegetic action is described not in the language of revolutions and events—of history understood as a series of transitions between discrete epochs—but in terms of the slow unfolding that characterizes Eliot's gradualist theory of social change. By the time of *Middlemarch* Eliot's ([1871–72] 1997, 785) emphasis on gradual process over instantaneous transition was total, as "unhistoric acts" slowly accrue as part of an effort, Eliot (1987, 391) wrote to John Blackwood, "to show the gradual action of ordinary causes rather than exceptional." Prefiguring *Middlemarch*'s decelerated, antiexceptional temporal-formal scheme, *The Mill*'s country village of St. Ogg's has "developed" in "a long growth" that is not unlike the growth of a plant (Eliot [1860] 2003, 254). Giving voice to the organicist social historicism Eliot was in these years developing in dialogue with Herbert Spencer, *The Mill*'s narrator uses biological metaphors that themselves stand in for another, geological language, where sedimented years and the residue of them are legible as the "traces" marking this "spot." The narrator reports,

It is one of those old, old towns which impress one as a continuation and outgrowth of nature, as much as the nests of the bower-birds or the winding galleries of the white ants: a town which carries traces of its long growth and history like a millennial tree, and has sprung up and developed in the same spot between the river and the low hill from the time when Roman legions turned their backs on it from the camp on the hill-side, and the long-haired sea-kings came up the river and looked with fierce, eager eyes at the fatness of the land. It is a town "familiar with forgotten years." (123)

In this often-cited passage Eliot's narrator quotes the Wanderer from the first book of William Wordsworth's *Excursion* to emphasize the accumulated sense of history in St. Ogg's, its paradoxical ability to remain "familiar" with what it has "forgotten." The physical town and the ground it occupies register this extending *durée* in "traces," even if their living inhabitants do not.

Here any dramatic event that might seem to have introduced disjunction between blocks of time is folded into the long, slow sedimentation of a gradually accumulating and (in Barthes's language) vectorized history. As my own metaphors of stratification and accumulation have already suggested, this is the

realm of geological history, of the long ages and layered time described in Charles Lyell's *Principles of Geology* ([1830–33] 1860), the work that influentially helped extend the horizon of early Victorian thinking about temporality. *Principles* has become famous for refuting Georges Cuvier's (1825) belief that a lost world had been demolished in short, violent interruptions—"révolutions de la surface du globe," as the title of his 1825 treatise puts it. Eliot encountered a version of Cuvier's catastrophist thesis in biblical terms in Leveson Venables Vernon-Harcourt's *Doctrine of the Deluge* (1838), whose subtitle is *Vindicating the Spiritual Account from Doubts Which Have Been Recently Cast upon It by Geological Speculations*. Against long-durational histories, Harcourt claimed that the world had been renovated forever in a single watery event. Against catastrophist models both secular and Christian, Lyell, whom Eliot read in preparation for *The Mill*, argued for a long and unbroken view of history, a "*slow motion*" plot, in the words of Barthes, in which apparent ruptures are contained within the grand, equalizing extension of geological continuity.

From Lyell's uniformitarian perspective, that is, the momentary interruptions of historical change certainly had effects (volcanoes, earthquakes, and what he calls "aqueous causes"—floods—are his signal examples), but these forces were best interpreted as mere blips, tiny exceptions legible as nuances in the rocky texts of England's long past. In ways that prefigure the method of reading for "sedimented" generic signals that Fredric Jameson elaborates in *The Political Unconscious*, interpretation and reading were the favored metaphors for describing geological analysis. For Lyell and Cuvier as for Jameson, stratographic marks are best understood as a repository of traces that any modern analyst must interpret to access the past, what Martin Rudwick (2014, 82) refers to as the geological "archive."

The interpretable layers of long, slow growth in St. Ogg's certainly appear to place it under the auspices of geological uniformitarianism and the continuous time this theory imagined. As Eliot's narrator explains in the passage cited above, even the apparent ruptures of imperial incursion (waged by "Roman legions")

^{3.} Eliot's research program for *The Mill on the Floss* has been well documented. See Rignall 2000 for an overview and Eliot 1981 for her notes on floods and geological events.

^{4.} This metaphor of history as inscription persists in contemporary geology and historicist method alike, confirming that what seem to be the objects of our later speculations are performing theories of historicism themselves.

and "long-haired sea-kings") have become part of the town's process of temporal accretion. Here traces of what might be seen as epoch-making events have been flattened into the past, stripped of their evental status and written into the ground itself. At this early point in *The Mill on the Floss*, that is, the novel's emphasis is on process and slow time, and Eliot's metaphors are more natural than rocks. "Like a millennial tree," Eliot's narrator explains, St. Ogg's has experienced its development as a kind of Burkean organic accretion, the adding of rings to its social trunk. The town and its inhabitants are literally a part of its physical location, a "continuation" and "outgrowth" of the earth itself—what Eliot's narrator, taking another trope from Wordsworth, calls "this spot."

Eliot's (1963, 289) often-cited 1856 program essay "The Natural History of German Life" makes the political stakes of this theory explicit, since it argues that the contemporary moment is what she calls "incarnate history," the living accrual of the past realized in the present. The short, sharp shocks of popular revolution, she explains, disturb the normal growth of the state's social body. What is needed before political change can be introduced safely is time. Only eventually will "a purely rational society" break free from "the sweet and bitter prejudices of hereditary affection and antipathy" (287). Eliot invokes the prejudice and hereditary allegiances of premodernity's inhabitants, then pits these against the disinterested rationality of the modern subjects in her imagined audience. This is a theory of time with two categories, old and new ("heredity" versus "rationality"), but the stress, here as in St. Ogg's, is on gradual process, on the slow growth of the social plant. Even Eliot's apparent conservatism, then, understands that an unhurried, long growth will eventually culminate in equality, commercial modernization, and even suffrage for the someday-to-be liberated peasantry. At the moment, however, these specimens live in what Dipesh Chakrabarty (2000, 9) calls liberalism's "not yet."

The point is not to critique Eliot for subscribing to this widespread notion of uneven developmental time but to suggest that Eliot's historicism evinces what seems to be a contradiction at the level of narrative form. Here we have a theory of two-stage difference (between peasant blindness and "our" insight) that also puts faith in long, Lyellian processes of geological accumulation, the growth of a Burkean "millennial tree" that will engender insight in the peasantry in due time. Insofar as it imagines historical change to result from both slow development and instantaneous transitions, the model is uniformitarian and catastrophist

at once.⁵ In Barthes's terms, time has been imagined as both structure and flow: it is sequentially ordered on a continuous "vector" and broken into two discrete categories: "blocks of signification" that have been "separat[ed], in the manner of a minor earthquake" from one another (Barthes 1974, 13). For now, the residents of St. Ogg's have been lulled into what we might call a naive uniformitarianism. They are locked into an extending temporal structure that appears to them as a serially recurring contemporary, a perpetual present. "It's just as if it were yesterday, now," Mr. Tulliver exclaims (Eliot [1860] 2003, 246). Perhaps because he does not believe in interruptive events in the first place, "anxiety about the future had never entered [his] mind" (198). But this is his own oversight.

The world's apparent uniformity may be symbolized by the grinding revolutions of the mill itself, with its "unresting wheel" (10) that turns and turns without ever moving. But in Eliot's complex symbolic economy, the very emblem of an apparently static, eternal return is driven by the novel's central figure for vectored motion, the river. For while Tom and Maggie may believe that they live in a static present or block of time, the narrator emphasizes, abruptly, that they are wrong. "Life did change for Tom and Maggie" (45), and if St. Ogg's other residents believe that the "giant forces that used to shake the earth forever" (126) have been equalized into stability, the flood of the novel's final book will dramatically prove them wrong. Catastrophic events do happen in St. Ogg's, and reordering, geological ruptures—"aqueous causes," as Lyell named them—do take place. What Barthes called the "minor earthquake" separating discrete blocks of time will be, for Eliot, more than minor. If such disruptions fold, in the long run, into the accumulating strata of an extending geological-political now, it remains the case that for at least two of the event's human witnesses the results are lethal. At once biblical and scientific, the "rupture with what exists" that the flood effects will chasten transgression and restart the clock of world-historical time (Badiou 2005b, 24).

^{5.} The biological notion of punctuated equilibrium, developed in the 1970s to counter a modified form of Lyellian gradualism, holds that periods of rapid speciation (we could term them *events*) are separated by dilated periods of relative stasis (Eldridge and Gould 1972). Rather than imagining biological stability between hinge events, Eliot presents a picture of how such an event can build to inevitability over time, moving from possible to probable to necessary.

III. In the Flood

Eliot started work on *The Mill on the Floss* in January 1859, when she began pulling Annual Registers at the British Library to research what she called "inundations." She completed the novel in 1860, sending the final seventeen pages—the flood scene—to Blackwood in March of that year (Haight 1968, 321). Eliot's novel of catastrophe and slow time is not mentioned in J. W. Burrow's Evolution and Society (1966), though that work provides an otherwise wide-ranging survey of historicisms appearing in and around the year 1859. There were many. Burrow cites Charles Darwin's On the Origin of Species (1859), Henry Sumner Maine's Ancient Law (1861), and John Stuart Mill's On Liberty (1859), though he might also have mentioned Spencer's "Progress, Its Law and Its Cause" (1857) and even Samuel Smiles's Self Help (1859). In discussing the progressive historical schemes of Mill and Maine, Burrow notices not just the often-cited racism implied in their two-step models, which placed an impossible gulf between archaic and modern societies—status and contract, custom and liberty—but also their shared confusion about time. On the one hand, Mill, like Maine, implies a natural course of growth from savagery to civilization and thus assumes the continuity of these categories on the same evolutionary timeline. "But the whole force of his argument," Burrow (1966, 158–59) continues of Mill, "rests on a rigid distinction between 'barbarism' and civilization." He goes on: "It is precisely this distinction, quite as much as the evolutionary element which is also apparent, that [also] underlies much of Maine's social thought. When he wants to emphasize the fact of continuity, the similarity between 'barbaric' institutions and those of the European past or even present, Maine speaks in an evolutionary, 'gradualist' manner. But almost equally often he speaks in terms of a straight dichotomy—status and contract, progressive and non-progressive, barbarous and civilized." What Burrow notices is that a temporal confusion between gradual time and radical rupture the geological difference between "uniformitarianism" and "catastrophism"—is written into the very heart of both of these archetypal liberal historicisms. Neither Mill's 1859 narrative of custom giving way to liberty nor Maine's 1861 story of status turning into contract can decide, at narrative or conceptual level, when, precisely, and how their shifts to modernity occur.6

^{6.} The dilemma is not local to liberal theory. Jameson's (2002, 39) Singular Modernity describes the gradual processes of historical change—and critiques searches for the breaks and ruptures that separate then from now—but itself ultimately refers to "the moment of the overcoming of feudalism

This tension is narratological. Maine's story of status turning to contract, like Mill's story of custom turning to liberty, presumes an event of rupture or switch, a moment of transition from one order of time to another. When was it? Neither can say, and both oscillate between an implicit theory of instantaneous change between static epochs and a gradualist model of slowly accumulating time, an irreversible linear process by which (in Mill's [(1859) 1989, 31] words) truth will triumph "in the course of ages." Darwin ([1859] 2008, 354), for his part, thought that "many slight variations, accumulated during an almost infinite number of generations," only slowly coalesce into something we might recognize as change. Lyell's gradualism, which sponsored Darwin's, similarly refused what Lyell ([1830–33] 1860) called the "romance" theory of time, where change happened in instantaneous, often miraculously imagined events.

This intellectual context helps clarify why Eliot's layered metaphors of longdurational political time—rocks, erosion, oak trees—sit alongside Victorian literature's most famous aqueous cause. This flood event forms the switchpoint between the novel's temporal-political orders, separating forever the harvest temporalities of the Dodson and Tulliver clans from the legal rationality awakened by Lawyer Wakem and embodied, just barely, by the narrator himself, who recalls the novel's cataclysmic action in dreamy retrospect, arms "benumbed" (Eliot [1860] 2003, 11). Yet this caesura between static periods—the final severing of the "systole and diastole" motion between town and country that Paul Fyfe (2015, 200) reads in Eliot's Felix Holt (1866)—also builds in the novel inexorably, accumulating bit by bit in a gradual process of (linear) accumulation. The catastrophe arrives. As the waters rise in this final scene, Maggie commandeers a boat and, floating, finds her eye drawn to the threats closing around her. She and Tom cling to the boat, avoiding once their "anticipated clash" with the "hurrying, threatening masses" (Eliot [1860] 2003, 542). But they are overturned finally by pieces of "wooden machinery" (542): floating shards of modernization. What kills them, as Eliot's prose specifies, is broken wood and the refigured violence of popular revolt, recalling not just implements in the water but Chartists at the barricades. Here are their deaths:

by capitalism," of which all other modernity stories are alleged to be a simple recoding. Paul Fyfe (2015, 200–203) reads the railroad in *Felix Holt* as modeling a similarly forward-driving or "tracked" narrative structure, one that Eliot's coachman sees as marred by unforeseeable but inevitable accidents. "The railway disaster," writes Fyfe, "represents total annihilation" (201).

Huge fragments, clinging together in a fatal fellowship, made one wide mass across the stream.

"It is coming, Maggie!" Tom said, in a deep hoarse voice, losing the oars, and clasping her.

The next instant the boat was no longer seen upon the water—and the huge mass was hurrying on in hideous triumph. (542)

Criticism has differed on how to read this denouement, calling it a psychologized weather event or an incestuous apocalypse. My sense is that it is best seen as a transcoded revolutionary event—the term *mass* is repeated four times in less than a page, linked here in "fatal fellowship." But however we understand it, it is an instant of shocking, reordering violence metaphorized into cataclysm: a "supreme moment" (542), as the narrator calls it.

I mentioned "their deaths," but now we can observe that "death" itself is not presented. The instant of Maggie and Tom drowning, the moment of this catastrophe, is skipped over in the temporal complexities of sequence Eliot's text stages here. Tom warns that "it is coming, Maggie!," but there is no referent for the "it" of his exclamation. "It" can be read as the flood or the "mass," but Eliot's prose allows for both of these readings. The "it" may refer most of all to death itself. After pages of past-tense narration, the ambiguous referent of Tom's utterance arrives in a conspicuous present tense ("it is coming"). A series of verbs follows this, likewise calling attention to the lengthening function of the participle's incomplete action ("losing," "clasping"). They grammatically prolong the instant of the event. Time slows here, a moment extends, and a paragraph break vaults us from these static verbs past the event itself, skipping "it." "The next instant," the narrator tells us, all is over. The past tense returns: the boat was no longer seen on the water, and the huge mass was hurrying on in hideous triumph.

What Eliot's staging underscores is that the instant of overturning itself—the deaths—eludes representation: it is not, cannot be shown. My point is that Eliot's denarration of the "hideous mass's" epoch-switching violence conforms not just to Garrett Stewart's (1984, 5) sense that death scenes push fiction to its limits as a medium but also to what philosophers of the event describe as the peculiar temporality of evental moments—of which political revolutions are the signal example. According to Alain Badiou (2005a), for example, and to Eliot's narration here, any transitional event in historical time is like a point in geometric mathematics: it cannot be presented. A hinge between before and after, the event is itself nothing, an atemporal zero point. In Hannah Arendt's (1991, 206) terms, it is a "hiatus" outside the order of calendric or "ordinary" time. In S/Z Barthes (1974,

13) uses small black stars to represent these impossible sutures or nonmoments between discrete textual instances. As Maggie notes before she is sucked down, "It was the *transition* of death, without its agony" (Eliot [1860] 2003, 538). In the lines just after this brutal but unfigurable transition, we are told that "nature repairs her ravages" (543). Seen in the narratological terms I am developing here, that statement transforms rupture back into continuity, catastrophism back into gradualism. It folds into a vectored narrative of flow and development the novel's cataclysmic rupture between structures, transforming into slow time the revolutionary transitions that would be forestalled definitively in *Felix Holt* and effaced entirely from *Middlemarch*'s chronicle of unhistoric acts.⁷

IV. After the Flood

The vexed critical responses to the novel's aqueous disruption help underscore what Eliot's modernity plot means for the act of textual processing we call reading. Already in 1956 Larry Rubin (1956, 18) could refer with exhaustion to the "critical controversy long standing" concerning the flood, a dispute to do with narrative probability. The flood has been read as both utterly unexpected and totally predicable: at once a spectacular rupture with the protocols of fictional probability and their perfect fulfillment. It is in fact both, and the disagreement itself stands as evidence of how successfully Eliot encoded into novelistic form the tension between flow and structure that animates both her own plot and Barthes's dialectical theory of reading.

In an often-cited denunciation of *The Mill on the Floss*, Henry James ([1866] 1968, 33) is forced to concede that there is nothing "inherently illegitimate" about the flood. "What I object to," he says, "is [the flood's] relation to the preceding part of the story. The story is told as if it were destined to have, if not a strictly happy termination, at least one within ordinary probabilities. As it stands, the *denouement* shocks the reader most painfully. Nothing has prepared him for it; the story does not move towards it; it casts no shadow before it" (33). In the volume that helped enshrine probabilistic realism as the standard of novelistic art, *The Great Tradition*, F. R. Leavis ([1948] 1950, 45–46) too calls the flood a "day-

^{7. &}quot;What I am striving to keep in our minds," Felix tells the "Working Men," "is the care, the precaution, with which we should go about making things better, so that the public order may not be destroyed, so that no fatal shock may be given to this society of ours, this living body in which our lives are bound up" (Eliot 1963, 422).

dream indulgence," a "dreamed-for, perfect accident" that belongs to "another kind of art." A later critic refers to the flood as a "deus ex machina of sudden death" (quoted in Rubin 1956, 18). These critiques of the flood's disruption of probabilistic order charge the novel with an improper switch in mode, bringing the story from realism into the world of what Lyell (1830, 72) himself, in reference to geology, called catastrophe's "air of . . . romance."

Even granting the conclusion's unreal surprise, other readers have risen to Eliot's defense by noting the simple fact that the flood was "the part of the story that George Eliot planned first" (Haight 1968, 168n). There are hints of the flood, these critics say, planted throughout the novel. The mass of the text is shot through with rain and drowning, tides and cataclysm. One primitive data analysis (mine) shows that fourteen of the novel's fifteen uses of the word drown, for example, come before Tom and Maggie's deaths. Such points of information can only bolster the case that, as one partisan explains correctly, "James was clearly wrong in one respect, since the ending is prepared for in a formal sense by various allusions and foreshadowings" (Rignall 2000, 266). Readers need only turn six pages of the novel before Mrs. Tulliver sees her rebellious daughter "wanderin" up an' down by the water, like a wild thing: she'll tumble in some day" (Eliot [1860] 2003, 15). The passage goes on, using terms no rereader of the novel can mistake: "'Maggie, Maggie,' continued the mother . . . , 'where's the use o' my telling you to keep away from water? You'll tumble in and be drownded some day, an' then you'll be sorry you didn't do as mother told you'" (16). It is difficult to picture a reader so attentive as James missing such (in retrospect) obvious foreshadowings or hermeneutic clues. But the point is that to recognize that such moments "refer" in semiotic equivalence to a specific future event—the moment of "predication" when the text's "enigma" is resolved (Barthes 1974, 76), such as when Maggie is actually and not just subjunctively "drownded"—is impossible here until that event has already arrived. Before one knows what happens at the end, these hermeneutic enigmas cannot function as enigmas. So early in the novel, that is, such references do not function properly as references at all. Of course one anxiety the dispute exposes concerns the generic register of the novel. Is this probabi-

^{8.} The novel knows all of this, of course. As the swirling evidence around her coalesces into the flood event soon to kill her, Maggie notes, "The whole thing had been so rapid—so dream-like—that the threads of *ordinary association* were broken" (Eliot [1860] 2003, 538; emphasis added). Fyfe (2015, 202) explains that probabilistic realism casts off providential chance in favor of secularized happenstance, such that "literary realism may . . . represent the technologizing of accident in generic form."

listic realism and thus "destined" (in James's words) to have an ending "within ordinary probabilities"? Or is it instead, as James ([1907] 2013) said of his own early work, the "disconnected and uncontrolled experience . . . which romance . . . palms off on us"? What matters here is that both camps of readers—the Jamesians who see the flood as "cast[ing] no shadow before it" and the others who see it as perfectly in accord with probability—share an assumption that sufficiently preparing the reader for this event would involve a certain number of individual referential instances or data points. What is debated is whether there are enough.

Neither position grasps that the status of the novel's hints might change over the course of the book. The status of the hints does change, though, because the individual bits of information that might prepare us for the flood—the gradually sedimenting suggestions of waters and drowning, rain and calamity that flicker into visibility and recede only to coalesce into an event in the novel's final pages—these are only visible as such once the flood has occurred. In exactly the way that, in Badiou's analysis, political revolutions cannot be viewed as probable until after they have occurred, at which point they seem to have always been inevitable, so is the novel's thicket of anticipatory details only activated as information retrospectively. Like the flying sticks in Joseph Conrad's Heart of Darkness that become recognizable as arrows only after the process of what Ian Watt (1979, 270) calls delayed decoding, *The Mill*'s proliferating notations of flood and drowning only "cast [their] shadow" (in James's words) if you know how the book will end. In Barthes's (1974) terms, the "hermeneutic code" of these allusions only becomes soluble at the moment of that enigma's resolution: in the "complete disclosure" (209) that in Sarrasine is the realization that Zambinella is a castrato and that in *The Mill* is the flood event itself.

Looking back from the vantage of this disclosure, we seem always to have been building toward it. But those hinting particulars cannot properly have become readerly data—factual information capable of analysis—except in what Barthes calls rereading: that is, until the novel has been transformed from a diachronic or vectored process of accumulating information into a dechronologized thing, a completed structure inside which, for example, one could search for the term *flood* and find that it appears twenty-six times, thirteen of them before the final chapters. Before the novel freezes into this totality it is experienced not as structure but as process, not as table but as line. The numerous details foreshadowing the evental overturning to come can be activated *as* information only later: downstream, as it were, in the onward tendency of human things. The character-

istic temporality of this process of delayed decoding, like that of revolutionary events in Badiou, is the future anterior: the event will have been probable.

I am claiming that Eliot's novel self-consciously matches this formal procedure to its content. The novel that is about a gradual process of modernization culminating in disastrous renovation is written so that its formal catastrophe builds gradually but arrives as though from nowhere. "Maggie's destiny," summarizes the narrator, "is at present hidden, and we must wait for it to reveal itself like the course of an unmapped river; we only know that the river is full and rapid, and that for all rivers there is the same final home" (Eliot [1860] 2003, 418). It is significant, given this reflexivity, that Gérard Genette and Mieke Bal explain the function of what they call "advance mention" using exactly the vocabulary Eliot deploys to unfold her novel's organicist theory of social and historical change. For Genette ([1980] 1993, 76), hints are "insignificant seed[s]," while for Bal (1999, 97), the advance mention is "a germ, of which the germinating force can only be seen later." Both theorists refer to Barthes's notion in the "Introduction to the Structural Analysis of Narrative" that "the 'soul' of any function is, as it were, its seedlike quality, which enables the function to inseminate the narrative with an element that will later come to maturity" (quoted in Genette [1980] 1993, 76n). I note these canonical statements because their vocabulary of seeds, organic growth, and maturity is (now obviously) Eliot's own. The Mill on the Floss is degree zero for what Neil Hertz describes as "the wealth of allusions to seeds, germination, insemination, and the temporality of organic growth" in Eliot's work (quoted in Dames 2007, 159). Maggie herself, the novel tells us, is a "living plant-seed" who must push into the world and "make a way for [itself], often in a shattering, violent manner" (Eliot [1860] 2003, 248).

What the twentieth-century narratologists confirm, then, is the nineteenth-century realist's understanding that the narrative function of "advance notice" is the fictional effect proper to a social theory of development that is both vectorized and structural, gradualist and catastrophist at the same time. It is an aesthetic tool, I mean, for narrating how status might emerge from contract slowly but inevitably and how that unfigurable shift in historical time might emerge from nowhere but seem, once it has happened, always to have been building. The effect Genette, Barthes, Bal, and Moretti associate most closely with the detective novel is, for Eliot, a political-aesthetic technology by which a model of sedimentation and flow can exist alongside, and be made unthinkable without, a revolutionary theory that would insist on violent hinges between discrete blocks of time. One

way to construe this dialectical procedure is to recall the difference between cinematic time in film, transpiring across a series of static images spun together sequentially with blank space in between, and cinematic time on video, which is technically and ontologically continuous. Eliot's novel, I am suggesting, seeks an aesthetic idiom for thinking these antagonistic models together.

In the online article "Swimming or Drowning in the Data Ocean? Thoughts on the Metaphors of Big Data" Deborah Lupton (2013) observes that the metaphors that have arisen to structure our so-called digital turn would be familiar to readers of The Mill on the Floss. The central figures "are those related to water or liquidity: streams, flows, leaks, rivers, oceans, seas, waves and so on. Both academic and popular cultural descriptions of big data have frequently referred to the 'fire hose' of data issuing from a social media site such as Twitter and the data 'deluge,' 'flood' or 'tsunami' that as internet users we both contribute to and which threaten to 'swamp' or 'drown us.'" Lupton's observation is confirmed symptomatically in James Gleick's (2011) popular history of information culture, The Information: A History, a Theory, a Flood, which reports on its jacket that "we sometimes feel we are drowning, swept by a deluge of signs and symbols, news and images, blogs and tweets." If this deluge seems to represent, as the flood does for Maggie, a threatening overflow of previous regimes of containment and ordering, then the title of Gleick's late chapter, "After the Flood," suggests that our new wash of information also marks a historical rupture or tipping point separating then from now.

After the information flood, beyond the digital divide, how do we read? Despite the rise of antidigital jeremiads, the question is not moralistic but conceptual. Search engines and tools for textual analysis encounter a text as structure. They scan an entire text or corpus or some slice of it instantly to count terms, map sequences, or graph grammatical structures. By contrast, human readers encounter a novel diachronically, river-like, along a vector that is not reversible and that builds only as this process unfolds in time. Barthes (1974, 13) himself works heroically to disaggregate the continuous unfurling of *Sarrasine* into discrete chunks, "blocks of signification" or "units of reading" that he names "*lexias*." These are then dealt with as independent analytic objects, tiny synchronic structures within the larger one that is the text-structure of Balzac's novella. Within each block the constituent parts are dechronologized and available for analysis outside of sequence. No matter how big or small these blocks of signification might be, they are analytically static and can be scanned internally for "reversible con-

nections, outside the constraint of time" (30). Such frozen or motionless blocks might of course (as in Barthes) be placed in a series, but that sequentialization of dechronologized structures should be imagined not as a river-like flow but as a set of panes or slices. They do not produce continuity but step-by-step transition between static instances. To view a text this way is to ensure that its apparently natural ordering be (in Barthes's terms) "ceaselessly broken, interrupted" (15).

Barthes is of course well aware that any step-by-step approach generates a kind of Zeno's paradox, since like an arrow that is imagined to be at rest at each separate instant of its flight, motion conceived as flow or continuous process becomes impossible once time has been construed not as a ribbon or flow (a river) but as a series of individuated blocks. He works to overcome this paradox by noting that "the movement of sentences, the flowing discourse of narration" is what somehow "solder[s]" the text's discrete units together (13). Like Barthes, Eliot aims to think in both synchronic blocks and linear flows simultaneously. She goes further to link this antinomy of narrative experience to the political-aesthetic problem of historical change and indeed modernization itself. Eliot thus harnesses the resources of the novel form to an effect that challenges models of reading that work, as all digital methods must, on dechronologized textual objects like databases, textual corpuses, or (at smaller scales) sentences or *lexias*.

In *The Language of New Media* Lev Manovich (2001, 225) calls narratives and databases "natural enemies," because data is arranged into desequentialized blocks, while narratives rely on cause-effect trajectories or vectors that can only ever unfold in time. Jerome McGann (2007, 1589), among others, has critiqued Manovich's "loose way of thinking" about this alleged enmity, but as McGann notes, Manovich's moral-historical agon between old media and the new kind is better conceived as a methodological friction, whereby the power of digital instruments "to draw sharp, disambiguated distinctions" (1590) sits in tension with "the n-dimensionality of literary works" (1591). In the terms I have been developing, this tension between literary multivalence and the categorical logic of database reading inflects these media forms' capacity to configure temporality. As Andrew Piper (2012, 145) summarizes, "The computational interface tries to give access to a totality, to present sequence as slice."

It may be possible to argue that projects of machine reading in the database age participate in what Barthes called, undercutting his earlier structuralist practice, "a (euphoric) dream of scientificity" (quoted in Culler 1975, 38). It is more consequential to note that insofar as database analysis is constrained to

understand literary objects or sets of them as synchronic things (slices) rather than diachronic processes (sequences), it participates importantly in the "dechronologization" that Paul Ricoeur (1985, 31) in the 1970s and 1980s described as the main problem with structuralism itself. Quantitative approaches shift criticism toward the structural, synchronic half of the dialectical split between structure and flow that Barthes uneasily inhabits, a dualism or dialectical antinomy whose poles Eliot presents as poetically intertwined.⁹

Against such reification, Ricoeur and others have insisted on the essentially diachronic feature of narrative presentation—a form of linear unfolding that is encouraged but not enforced by the codex volume, which you can randomly access if you want—as opposed to the scroll, which you cannot. Rewritten as "information" and bracketed into blocks at scales either large (as in corpuses) or small (*lexias*), textual information can function only in a single way: it either is or is not counted. Chained to this and related models of synchronic observation, digital reading proves unable to move dialectically between the analysis of blocks or chunks and the larger narrative flows into which these artificially bracketed units are synthesized. *The Mill on the Floss* lays bare the poverty of this computational empiricism, since it shows how any number of seeming data points might be zeros at one moment, ones in another, tipping into consequence only retrospectively, down the river of its own unfolding and after a final event has arrived to activate their relevance.

Reading *The Mill on the Floss* backwards is, in this sense, happily impossible. But imagining such a procedure might help us appreciate how Eliot maximizes, even expands the capacities of the novel form to dynamic political-aesthetic affect. Attention to Eliot's irreversible catastrophe, in other words, helps disclose the changes she made to the stories of liberal time blossoming around her at what we might call the high-water mark of Victorian modernity, 1859. It also lets us see how analog narrative theory might ask new questions of an emergent

^{9.} A 2007 *PMLA* forum on databases is instructive here, particularly N. Katherine Hayles's (2007, 1605) description of the "indeterminacy that databases find difficult to tolerate." Like Barthes and, I am arguing, Eliot, Hayles parts from Manovich to note that database and narrative modes exist in "symbiosis" and "entwinement" rather than antagonism (1606). Piper (2015, 69) aims valuably at defusing the antagonism between what he terms "qualitative" and "quantitative" methods, arguing (as I am here) that seemingly opposed practices are dialectically related and therefore that it is "impossible not to move between [those] poles." While his analysis moves nimbly between scales of synchronic analysis, it does not address the antinomy of synchronic and diachronic analysis, structure and flow, which is perhaps surprising, given the essay's emphasis on novels of conversion "marked by a strong sense of before and after, by a singular sense of temporal difference" (64).

database rationality that even Lawyer Wakem might have quailed to face. In the last paragraph of S/Z Barthes (1974) meditates on the character of the Marquise, who stands "pensive" in the final image of *Sarrasine* and is, Barthes says, a kind of figure for novels as such. At the "discreet urging" of the novel itself, Barthes notes, "we want to ask the classic text: *What are you thinking about?*" (217). We want the text to give up its answers, to provide some "last closure" that we could hold onto, as data. But the novel, says Barthes happily, "wilier" than its own readers, never does reply (217).

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