talks from the convention

Technique and the Time of Reading

JONATHAN SACHS AND ANDREW PIPER

"Time is too difficult," he said.

—Don DeLillo, *Zero K*

WHAT TIME IS IT WHEN WE READ? THERE ARE MANY ANSWERS TO THIS QUESTION. TIME MIGHT REFER TO A PARTICULAR DAY OF THE WEEK, as in Sunday reading, a practice that Christina Lupton finds has spanned both religious and secular contexts. Or time might imply a sense of pace, that reading is something we do quickly or slowly, which Rolf Engelsing suggests when he distinguishes between intensive and extensive reading. Or perhaps time is more periodic, an argument one finds in Deidre Lynch's work on nineteenth-century habitual reading or Christopher Cannon's work on medieval practices of rereading. Or time could be closer to an idea or topos, as in Mikhail Bakhtin's notion of the chronotope like idyllic time. Finally, for someone like Gerard Genette the time of reading is fundamentally about anachronism, the nonlinear nature of narrative time.

In each of these cases the time of reading is constructed by the act of reading itself. It is brought into being through an interaction between a context (a lifeworld) and a particular type of text. Our reading material participates in the making of time, just as our ingrained habits or techniques of reading (themselves time- but also technology-bound) also participate in the making of time. We use the term *technique* here in the sense of a *Kulturtechnik* ("cultural technique"), one that combines the interpretive technologies of reading with particular modes or habitual practices of textual attention (Winthrop-Young). *Technique* in this sense encompasses the material and mental dispositions that surround the act of reading. Reading, whether done slowly, nonlinearly, periodically, or even just on the weekend, manifests its own time as texts interact with technique.

We envision this essay as a conversation between two times of reading associated with two techniques of reading, which we call for simplicity's sake the enumerative and the bibliographic, as a way of drawing a contrast between new, computationally driven techniques of

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reading and more traditional book-based practices. As we will see, the tempos that arise in their stead are far more complicated than what those terms might initially convey. Our aim is to understand better how the construction of time in a single text or even an entire corpus is itself constructed by different techniques of reading. How is the time of our reading manifested in our textual invocations of time?

This work grows out of a series of conversations about what we saw as a relatively widespread consensus concerning a regime of temporality that is thought to have emerged around the turn of the nineteenth century and is often associated with the British and German Romantic movements. This sense of time appeared to us to underwrite many methodological conventions still operative in the field of literary studies. It was also precisely this Romantic sense of time that the turn toward quantitative or enumerative reading seemed to be putting under pressure.[1] We felt that in both cases, whether it be defenses of close reading or critiques of the distant kind, the sense of time being discussed was at once underelaborated and also in need of more-balanced consideration. As in many debates, the sides were becoming unnecessarily polarized.

Consider, for example, the emphasis on slowness and the resistance to eventfulness that one sees in the poetry and commentary of someone like Wordsworth, which together have served as the basis of classic accounts of lyric poetry more generally (Hartman). So many of Wordsworth's poems turn on slow movement and a seeming lack of eventfulness, exemplified by the careful and deliberate transit of old men walking across barren landscapes—in poems characterized by qualities of stillness, silence, and barely perceptible movement, like "Old Man Travelling," "The Old Cumberland Beggar," the Peddlar poems (including "The Ruined Cottage" and the works that later became *The Excursion*), and "Resolution and Independence." In this last poem, for example, the speaker encounters the leech gatherer in "naked wilderness" (line 58), standing "motionless" (82) as "a huge stone" (64) by a pond:

> At length, himself unsettling, he the Pond
> Stirred with his Staff, and fixedly did look
> Upon the muddy water, which he conn'd
> As if he had been reading in a book[.] (85–88)

This calm and careful "conning" of the water—not coincidentally likened to the act of reading—is virtually the only action in the poem. By his own account, the leech gatherer lives with a slow perseverance that mirrors the slowness with which the leeches have "dwindled long by slow decay" (132). Slowness and inactivity in the poem work to focus attention, but the effect, at least initially, is the opposite: the speaker's mind wanders and his failure to listen requires him to ask the old man the same question again. Through such failures of communication, the poem emphasizes the threat to attentiveness and reveals the intricate links between pace and patient, deliberate concentration. Reading becomes the symbolic placeholder ("as if he had been reading in a book") for the slow, back-and-forth movements of the mind.[2]

Wordsworth's poetry serves as a corrective to what he elsewhere identifies as the "gratifications" of "the rapid communication of intelligence" that are fed by a conjunction of "great national events," urban population growth, industrialization, and an expanding culture of news ("Preface" 249). Though he doesn't identify them explicitly, Wordsworth is profoundly influenced by political events like the French Revolution and its aftermath—events that dominated both the first half of Wordsworth's long poetic career and the British Romantic movement more generally. The French revolutionaries initiated new kinds of political time, both in their assumption that reason would expedite legislative processes and in their adoption of the revolutionary calendar, which seemingly started time itself anew (Perovic). But Wordsworth suggests that

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such political events create a craving for new kinds of writing that is then satisfied by an emergent media culture of newspapers and periodicals, forming a recursive loop between an intensified eventfulness and its rapid communication. Wordsworth explicitly worries over how this loop affects readers. He argues that poetry, especially his poetry, is crucial for enlarging the capability of the human mind to become "excited without the application of gross and violent stimulants" ("Preface" 248). Such a claim suggests that for Wordsworth the slow time of reading becomes a kind of hortatory slowness, one that responds to a perceived excess of speed by engaging and developing formal problems related to the representation of slowness. By being minimally stimulating, poetry, and the type of reading it makes possible, can reciprocally heighten responsiveness.

Wordsworth's perception of the fast pace of daily life, the product of increasingly rapid communication, chimes with a variety of accounts that have all taken acceleration as their diagnostic starting point (Koselleck; Rosa; Crary). For Reinhart Koselleck, late-eighteenth-century understandings of temporal change as a form of progress suggested possibilities so vast that they made the future difficult to imagine, thus producing a disjunction between past, present, and future. Koselleck links the intensification of this process to the French Revolution, by which "the previous world of social and political experience, still bound up in the sequence of generations, was blown apart" (282). The ensuing sense of transition is marked, in Koselleck's account, by two temporal determinants: "the expected otherness of the future and, associated with it, the alteration in the rhythm of temporal experience: acceleration, by means of which one's own time is distinguished from what went before" (252). Acceleration comes to stand for a new experience of time, and the rapid and widespread acceptance of modernity as a concept becomes "an indicator of an acceleration in the rate of change of historical experience and the enhancement of a conscious working-over of the nature of time" (245). Hartmut Rosa puts the point even more flatly: "the experience of modernization is an experience of acceleration" (21).

Recent work by Laura Bear and Georgina Born has emphasized instead the multidimensional as well as heterogenous nature of modern time (heterochrony) found in cultural artifacts like poetry or narrative fiction. While noting the acceleration of print communication, critics have also drawn attention to the period's fascination with the remnant and the ruin, with residues that live on through time and also out of time, or perhaps in another time.[3] Seen in this light, Wordsworth's project suggests a different possibility for understanding time: What if the oscillation between the craving for rapid communication and the counterforce of slow reading attuned to engagement without eventfulness were reflective of a more holistic sense of time, one that shadows forth the advance of the nineteenth century? What if we see this tension between two times of reading not as a story of from/to but of both/and? This moment of perceived acceleration after all coincides with the creation of the field of geology, which offered increasingly long estimates for the age of the earth and called attention to the slow and often unseen processes that shaped the earth's development (Rossi; Rudwick; Heringman). This is the "abyss of time" that John Playfair recognized in James Hutton's *Theory of the Earth* (qtd. in Rudwick 169) and the "the slow agency of existing causes" that Charles Lyell saw operating continuously over almost unimaginable spans of time (16). Seeing such slowness all at once posed profound representational and intellectual challenges. As Hutton asks, "How shall we describe a process which nobody has seen performed, and of which no written history gives any account?" (22). Hutton's answer is that "though we have not this immediate observation of those changes of bodies, we have, in science, the means of reasoning from distant

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events; consequently of discovering, in the general powers of nature, causes for those events of which we see the effects" (30–31). Distance becomes the condition through which something that is not directly observable may yet be imaginatively possible. The graph or diagram would emerge as a key tool through which such synoptic time could be rendered visible, whether in the line graphs of William Playfair, the global isotherms of Alexander von Humboldt's maps that connected distant geographic regions through lines charting their mean annual temperatures, or Charles Darwin's tree of life. Such nineteenth-century visual practices provide a different lens for understanding those rippling waves that the leech-gatherer's "conning" produces in Wordsworth's imagery. Instead of slowness as an antidote to acceleration, the implied ripple becomes a sign of compression, the containment of speed in the simultaneity of the all at once. There is an expansiveness to the idiosyncratic pond, one that conjoins the fast and slow in the concentrated bibliographic epicenter.

The Romantic and the lyric in our account are not entities that stand in opposition to the present, but rather underwrite a graphical imaginary that emerged in the nineteenth century and that has become integral to what we now call distant or enumerative reading (Piper). At the same time, if we look more closely at the operations of enumerative reading, if we close read distant reading, we see how claims about acceleration or about synoptic time that often attend its practices are inadequate to account fully for the range of procedures involved. It is precisely this too easy association between the distant and the instant that we aim to complicate.[4] As we will try to illustrate, there is a problematic incommensurability among the different scales of time encoded in enumerative reading, one that stands in stark contrast to Wordsworth's synoptic mindfulness.

Our point thus far is that those who presume that close reading should be slow, an idea inherited from the Romantic lyric, overlook an important element of compression, acceleration, and swiftness that was also integral to that project.[5] Close reading is more heterochronic than its proponents make it out to be. At the same time, those who presume that compression, acceleration, and swiftness are elements of enumerative reading are similarly partial in their perspective. They overlook the intense slowness and particularity that attends the act of enumeration. In the space remaining we highlight the way time is constructed in the context of enumerative reading.

At its core, enumerative reading entails the aggregation of entities. Computers help us tally and then model the patterns and expectations that are built up around what we might call the lexical unconscious of texts (Long and So). But what are these entities, these elements of reading? In some cases, their identification can be straightforward. Alphabetic characters, morphemes, phonemes, lexemes, punctuation, or even sentences, line breaks, and paragraphs are all relatively uncontroversial as entities. Other things, like time, are less so.

When reflecting on the representation of time in language, linguists tend to emphasize the following components: tense, aspect, event type, and discourse.[6] Tense is by far the most familiar. Verbs anchor our understanding of an event in the past, present, or future (which can also be conditional or hypothetical). Aspect is less familiar, but in its simplest sense it refers to whether an event is completed or ongoing. "Eva was closing the door" and "Eva closed the door" are both in the past tense, but the former is ongoing (imperfective) while the latter is completed (perfective). Zeno Vendler proposed four event types to capture the possible aspectual states:

Stative (atelic):	
Activity	Successive ("to walk")
State	Homogenous ("to know")
Dynamic (telic):	
Accomplishment	Successive ("to build")
Achievement	Instantaneous ("to fall")

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Definiteness	Definite	"I had a thousand times as much reason to be uneasy **now**"; "but the fact is, I have been disappointed in the City **today**"
	Indefinite	"though it **sometimes** happened that her interest"; "we promise that we will separate for **ever**"
	Relative	"his family had left Venice, **early** in the morning"
Duration	moment, day, month, year, year_plus	"Look at the reports of murders and robberies for the last ten **years**"; "he had made it a rule for many years of his life on the first Sunday-night of every **month**"
Type	Clock Time	"I impatiently look forward to the **hour** when I shall be admitted"
	Natural Time	"the brilliant smiling young woman seemed to be appearing at the doorway withered and frosted by many **winters**"

FIG. 1
Table of three primary discursive dimensions of time. Quotations are drawn from a collection of 1,069 novels published in the eighteenth and nineteenth centuries. See Andrew Piper, Supplementary Data for "Technique and the Time of Reading"; *Harvard Dataverse*, 11 Oct. 2018, doi:10.7910/DVN/XMM1IB.

"Stative" is meant to capture events that are continuous, homogenous, and without a specified end (atelic), while "dynamic" captures events that are finite (telic), whether successive or instantaneous. One can also see how the context of the action matters—"to walk home" is aspectually different from "to go for a walk." Finally, a variety of lexical indicators signify certain spans of time or time frames, such as now, yesterday, always, currently, and so on. These can be grouped into different qualities, from which we identify three for our overall model of time (fig. 1).

In figure 2 we map out the three primary dimensions of time and their component parts discussed above that could inform an enumerative reading of time on a large scale.[7] While they expand considerably on the binary fast/slow, they are by no means meant to be exhaustive, instead providing one way of modeling time in multidimensional space (we will keep coming back to the space-time continuum). Even more important to note is that at least some of these units come from reading the texts that we aim to analyze. Identifying and defining these elements is the product of many hours of close reading, or, as we will discuss below, closer reading. Enumeration requires intense engagement with the entities to be enumerated. While this may sound obvious, it is by no means how the practice has commonly been framed.

If we return to the Wordsworth passage cited above we can begin to get a sense of how these elements might help us understand the temporal structure of a given passage and how they allow us to describe the work of Wordsworth's lyric in new terms. Of the five verbs used by Wordsworth, all but the first are stative, and all but one of those are ongoing, atelic activities:

unsettling—dynamic—achievement
stirred—stative—activity
did look—stative—state
conn'd—stative—activity
had been reading—stative—activity

We see an accumulation of stative actions and an emphasis on undirected, homogenous time. And yet, when the passage's potential parallel structure (activity-state-activity-state) is interrupted, we see a key substitution being made, as a mental state is swapped out for a particular type of action—in this case, reading. The time of reading is endowed with the open-endedness of the act of looking. At

Time Element	Technique	Number of Dimensions
Tense	part-of-speech tagger	8
Event Type	situation-entity-type	14
Discourse	lexicon	10

FIG. 2
Overall model of time, techniques of identification, and number of dimensions for each type.

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the same time, the adverb "fixedly," which represents the definite dimension of time in our model, potentially transforms that open state into a single moment. "Fixedly" reverses the ambiguous temporality at work in the passage's opening words, "at length." It offers to compress the ongoing and perpetual nature of experience into a single (visual) moment. Book reading here both has no end (atelic) and is constituted by an intense compressive force (telic). The book's telos, we might say, is the homogenous expansiveness that informs a model of reading that can move unproblematically from the direct experience of constituent parts of a page into transcendent claims about reading itself.

In our experience, enumeration tells a different story about the time of reading. Instead of emphasizing the seamless simultaneity of part and whole, enumerative reading draws attention to disparities of scale. In our attention to, say, the accumulations of clock time or the stativeness in a genre, period, or corpus, we lose sight of the meaning encased in each local moment of reading. We can no longer be certain that what we have captured in the aggregate is the same thing as the single instance. At the same time, as we work our way toward identifying the units or entities of time that will be used for the purposes of enumeration, we lose a sense of the whole from which each of these parts is drawn. As we move ever closer to the text, we are estranged from the ripples that follow.

Take for example two representations of time, the first a graph of clock time in the English-language novel between 1700 and 1900 (fig. 3) and the second a sentence from Frances Burney's *Camilla* annotated with our time variables. In the first, we see points that represent the average frequencies, in words per page, of a vocabulary related to a type of time that, in Stuart Sherman's words, is concentrically serial: "beginning with the small intervals clicked out at the clock's core, and radiating outward to the markings on the dial, to encompass a whole system of measurement and calibration: ticks, seconds, minutes, hours and (on calendrical clocks) days and years as well" (5). This is the regula-

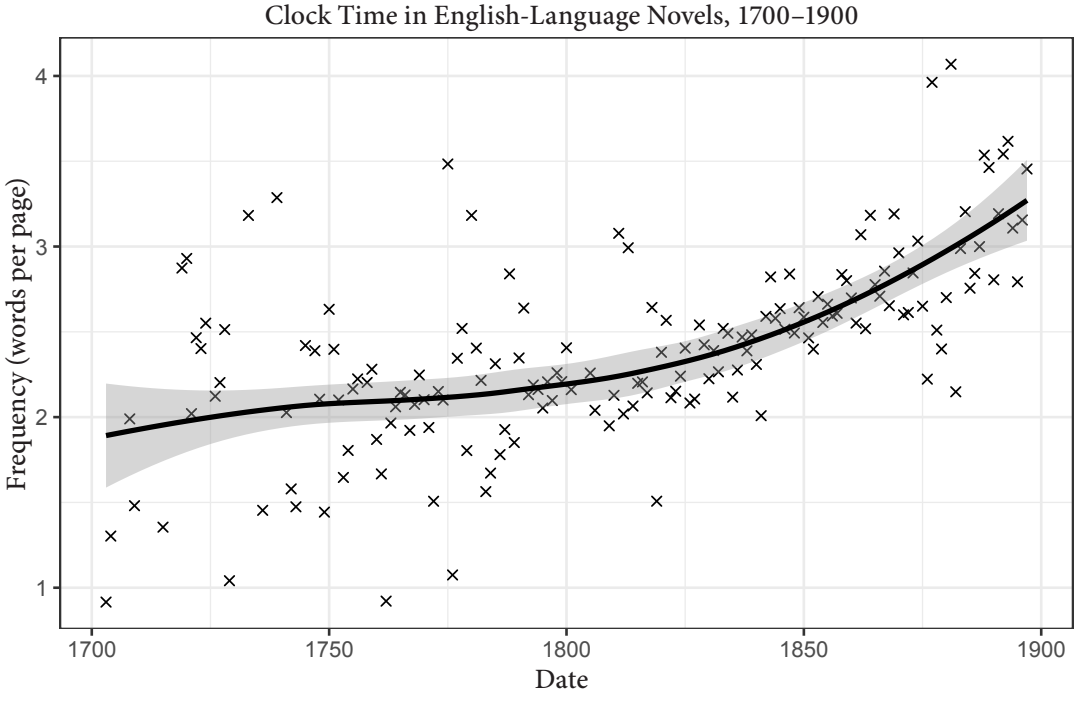


FIG. 3
A graph of clock time in 1,069 English-language novels published between 1700 and 1900.

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tory time that according to Lynch underpins the nineteenth-century novel and its canonization (187). It is a sense of time captured in the literal invocations of Sherman's seconds, minutes, hours, days, years, and related expressions of serialized time. These instances, too numerous to be accounted for in their particularity, are then collapsed into a single type and reserialized in graphical form. At least in our sample, the novel's invocation of this kind of time appears to rise after 1830, almost precisely the time that Lynch predicts.

Compare this serial representation of a single type of time in numerous novels with a single sentence from Burney in which the words in boldface indicate the types of time discussed in figure 2, which combine tense, event types, and discourse.

Once more she **conceived** some hope of what she **wished**, and she **determined** upon seeing Edgar **before** her departure.

Once more	definiteness="INDEFINITE"
conceived	entity_type="STATIVE_STATE"
wished	entity_type="STATIVE_STATE"
determined	entity_type="DYNAMIC_ACHIEVEMENT"
before	definiteness="RELATIVE"

Broadly speaking, we can see how this sentence invests in a future-oriented mental state, one whose serial projection into the future mirrors the underlying syntactical logic of the sentence itself. It begins without a clear sense of boundedness ("once more") and ends with a sense of closure that is tied to a future anterior ("before her departure"). But how can we not also pause over the meaning of "once more"—is it really indefinite, like "again," something that does not happen at a specific point in time but spills forward indefinitely, or does "once" overwhelm "more" to point to a single moment? As we try to identify time, time quickly transforms into a place, as when turns to where. So too we might ask if "conceive" is really static, something that does not have specific boundaries. Is it truly atelic? How long does it take to conceive of something? What is the time of conception? And is the point of the sentence in fact to juxtapose the decisiveness of conceiving with the longing of "what she wished" rather than to accumulate indeterminate states? The longer we linger on its parts, and the more we think about their interaction, the more difficult it becomes to say what time it is when we are reading. As the time of reading expands—the longer it takes us to linger over the dimensions of time within this single sentence—the diegetic time within our reading dissipates. Unlike in Wordsworth's effortless conjunction of disparate time frames, here time seems to be moving in opposite directions. How are we ever to reconcile this experience of time, which is both too close and too much, with the synoptic sense from our graph that clock time becomes more frequent in the nineteenth century?

In his essay on time and criticism, Ted Underwood asks, "Why is experience measured in seconds or minutes more appropriately literary than experience measured in weeks or months?" (342). Underwood too has developed persuasive models, at once conceptual and computational, that trouble our reliance on time frames that favor the short and the slow while overlooking the long and the durable. Our hope in walking through the exercise above—in seeing the components of reading rather than simply the outcomes of reading—is to demonstrate that like Underwood's the methods and materials we use impact both our sense of time when we read and the time that we see when we read. Time is an ideal case study because it is not observable. We only have models of time, as we continually turn this linear object into a series of spatial constructs, in whatever medium we are working with. Wordsworth is useful here because he shows us how a particular type of technology is premised on a movement between two types of time, from the homogenously stative to the pointedly dynamic,

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from the ambiguous and explicit time of the "length" to the fixated and unstated time of the ripple, or to put it more succinctly, from the moving part to the fixated whole. The normativity of close reading within our discipline is in part premised on the unproblematic relation between the time of particularity and the time of generalization that is so elegantly figured in Wordsworth's "conn'd" surface.

One way to understand the resistance, quite natural in our view, to enumerative reading is that it troubles the seamlessness of this association between part and whole. Data do not remove us from the trials of generalization. Instead they highlight the costs of scale, drawing attention to the too small or too close ("once more") as well as the too far or too large, the way clock time in the nineteenth century exceeds any one individual's grasp. In the words of Hutton, it offers a case where "we have not this immediate observation of those changes of bodies" (30). In place of Wordsworthian resolution, enumerative reading forces us to acknowledge if not the impossibility then at least the troublesomeness of this passage between scales. The time of enumerative reading is indeed troubling. It is this absence of immediacy, the awareness of the incommensurability of reading's different tempos, that an attention to the techniques of reading brings into sharper relief.

Notes

1. For a more detailed account of the temporal orientations of different technologically informed reading practices, see Underwood.

2. For a longer account of time in Wordsworth's early poetry, see Sachs, "Slow Time." For other works that engage with questions of Romantic time, see Ferris; Jordheim; Lupton; Miller; Mitchell; Molesworth; Purinton; Sussman. On nineteenth-century temporality more generally, see Zemka.

3. For a discussion of the remnant, see Ferris. For a discussion of Romantic ruins and the time of decline, see Sachs, *Poetics*; Dubin.

4. For the explicit opposition between the simultaneity of data and the graph with the drawn out time of narration and close reading, see Rosenthal.

5. On Friedrich Hölderlin's emphasis on swiftness, see Corngold 59–78.

6. We have distilled variations down to a core set of recurring concerns in the literature. As should be obvious, linguistic debates about time are far more elaborate and conflicted. See Klein for a useful overview. For a different view on time, as a sense of modality or probability, see Jaszczolt.

7. Our model combines three systems to build its feature space. The first is part-of-speech detection using the OpenNLP package in R. The second is our custom list of time discourses described in figure 1. And the third relies on the situation-entity-type model implemented by Friedrich et al. For another project that explores the quantitative modeling of time in the novel at the level of the diegetic time frame, see Underwood.

Works Cited

Bakhtin, Mikhail. "Forms of Time and of the Chronotope in the Novel: Notes toward a Historical Poetics." *The Dialogic Imagination: Four Essays*, by Bakhtin, edited by Michael Holquist, translated by Caryl Emerson and Holquist, U of Texas P, 1981, pp. 84–258.

Bear, Laura. "Doubt, Conflict, Mediation: The Anthropology of Modern Time." *Journal of the Royal Anthropological Institute*, vol. 20, no. S1, 2014, pp. 3–30.

Born, Georgina. "Making Time: Temporality, History, and the Cultural Object." *New Literary History*, vol. 46, no. 3, 2015, pp. 361–86.

Burney, Frances. *Camilla; or, A Picture of Youth*. London, 1796. *A Celebration of Women Writers*, digital.library.upenn.edu/women/burney/camilla/camilla.html.

Cannon, Christopher. "The Art of Rereading." *ELH*, vol. 80, no. 2, 2013, pp. 401–26.

Corngold, Stanley. *Complex Pleasure: Forms of Feeling in German Literature*. Stanford UP, 1998.

Crary, Jonathan. *24/7: Late Capitalism and the Ends of Sleep*. Verso, 2013.

Dubin, Nina L. *Futures and Ruins: Eighteenth-Century Paris and the Art of Hubert Robert*. Getty, 2010.

Engelsing, Rolf. *Der Bürger als Leser: Lesergeschichte in Deutschland, 1500–1800*. Meltzler, 1974.

Ferris, Ina. "'On the Borders of Oblivion': Scott's Historical Novel and the Modern Time of the Remnant." *Modern Language Quarterly*, vol. 70, no. 4, 2009, pp. 473–94.

Friedrich, Annemarie, et al. "Situation Entity Types: Automatic Classification of Clause-Level Aspect." *Proceedings of the Fifty-Fourth Annual Meeting of the Association for Computational Linguistics*, 7–12 Aug. 2016, Berlin, pp. 1757–68.

https://doi.org/10.1632/pmla.2018.133.5.1259 Published online by Cambridge University Press

Genette, Gerard. *Narrative Discourse: An Essay in Method*. Translated by Jane E. Lewin, Cornell UP, 1980.

Hartman, Geoffrey. *Wordsworth's Poetry, 1787–1814*. Harvard UP, 1987.

Heringman, Noah. *Romantic Rocks, Aesthetic Geology*. Cornell UP, 2004.

Hutton, James. *The Theory of the Earth, with Proofs and Illustrations*. Edinburgh, 1795.

Jaszczolt, K. M. *Representing Time: An Essay on Temporality as Modality*. Oxford UP, 2009.

Jordheim, Helge. "The Present of Enlightenment: Temporality and Mediation in Kant, Foucault, and Jean Paul." *This Is Enlightenment*, edited by Clifford Siskin and William Warner, U of Chicago P, 2010, pp. 189–208.

Klein, Wolfgang. "How Time Is Encoded." *The Expression of Time*, edited by Klein and Ping Li, De Gruyter, 2009, pp. 39–81.

Koselleck, Reinhart. *Futures Past: On the Semantics of Historical Time*. Translated by Keith Tribe, MIT P, 1985.

Long, Hoyt, and Richard Jean So. "Literary Pattern Recognition: Modernism between Close Reading and Machine Learning." *Critical Inquiry*, no. 42, Winter 2016, pp. 235–66.

Lupton, Christina. "Immersing the Network in Time: From the Where to the When of Print Reading." *ELH*, vol. 83, no. 2, 2016, pp. 299–314.

Lyell, Charles. *Principles of Geology*. 1830–33. Edited by James Secord, Penguin Books, 1997.

Lynch, Deidre. *Loving Literature: A Cultural History*. U of Chicago P, 2015.

Miller, Christopher. *The Invention of Evening: Perception and Time in Romantic Poetry*. Cambridge UP, 2006.

Mitchell, Robert. "Suspended Animation, Slow Time, and the Poetics of Trance." *PMLA*, vol. 126, no. 1, Jan. 2011, pp. 107–22.

Molesworth, Jesse. "Gothic Time, Sacred Time." *Modern Language Quarterly*, vol. 75, no. 1, 2014, pp. 29–55.

Perovic, Sanja. *The Calendar in Revolutionary France: Perceptions of Time in Literature, Culture, Politics*. Cambridge UP, 2012.

Piper, Andrew. *Enumerations: Data and Literary Study*. U of Chicago P, 2018.

Purinton, Marjean. "Watches and Watching Time in British Romantic Comedy." *Wordsworth Circle*, vol. 39, nos. 1–2, 2008, pp. 46–49.

Rosa, Hartmut. *Social Acceleration: A New Theory of Modernity*. Translated by Jonathan Trejo-Mathys, Columbia UP, 2013.

Rosenthal, Jesse. "Narrative against Data." *Genre*, vol. 50, no. 1, 2017, pp. 1–18.

Rossi, Paolo. *The Dark Abyss of Time*. Translated by Lydia Cochrane, U of Chicago P, 1987.

Rudwick, Martin. *Bursting the Limits of Time: The Reconstruction of Geohistory in the Age of Revolution*. U of Chicago P, 2005.

Sachs, Jonathan. *The Poetics of Decline in British Romanticism*. Cambridge UP, 2018.

———. "Slow Time." *PMLA*, forthcoming.

Sherman, Stuart. *Telling Time: Clocks, Diaries, and English Diurnal Form, 1660–1785*. U of Chicago P, 1996.

Sussman, Charlotte. "Time Wandering: Problems of Witnessing in the Romantic-Era Novel." *Novel: A Forum on Fiction*, vol. 43, no. 1, 2010, pp. 140–47.

Underwood, Ted. "Why Literary Time Is Measured in Minutes." *ELH*, vol. 85, no. 2, 2018, pp. 341–65.

Vendler, Zeno. "Verbs and Times." *The Philosophical Review*, vol. 66, no. 2, 1957, pp. 143–60.

Winthrop-Young, Geoffrey. "Cultural Techniques: Preliminary Remarks." *Theory, Culture, and Society*, vol. 30, no. 6, 2013, pp. 3–19.

Wordsworth, William. "Preface." *Lyrical Ballads*, by Wordsworth and Samuel Taylor Coleridge, edited by R. L. Brett and A. R. Jones, 2nd ed., Routledge, 1991, pp. 241–72.

———. "Resolution and Independence." *Poems in Two Volumes*, edited by Richard Matlak, Broadview, 2015.

Zemka, Sue. *Time and the Moment in Victorian Literature and Society*. Cambridge UP, 2011.

https://doi.org/10.1632/pmla.2018.133.5.1259 Published online by Cambridge University Press