Introduction: Reading Infrastructure in the Time of the Glitch

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THE early phases of the Covid-19 pandemic in 2020 and 2021 were revelatory. For many people based in the United States, as the two editors of this special issue were, it was hard not to notice how rampant the language of "exposure" was in national public discourse and private communications. In particular, inequities of race, gender, class, labor, ability, and region were now "exposed." As some public infrastructure slowed down or stopped altogether, it too was now suddenly visible. Hospital infrastructure broke down under the heaving weight of too many sick bodies and not enough employees. Public schools and libraries closed; roads, railways, and ports were disrupted. Meanwhile, private infrastructure surged to meet the demands of the privileged segment of the population who went into lockdown. Zoom, Amazon, Instacart, and Grubhub rely upon state-regulated infrastructure, of course, such as the internet and roads, but they produced their own additional infrastructures to move people, goods, and ideas. The audience for these exposures was a collective "we," putatively unmarked by race, gender, class, labor, ability, or region, whose connections with global others were also now experienced as exposed, especially through the racist and xenophobic rhetoric of contagion. This was not a uniquely

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doi:10.1017/S1060150324000032

American experience but was certainly class-based, extending to the bourgeoisie of the Global North.

This special issue of *Victorian Literature and Culture* was sparked by this particular attention to infrastructure that characterizes our moment, an attention that can be defined as intermittent, constantly surprised or taken aback, and persistently and repetitively becoming aware of that which it has taken for granted, only to forget or disavow it again. In their (prepandemic) essay "The Commons: Infrastructures for Troubling Times," Lauren Berlant distinguishes system or structure from infrastructure. Structure, Berlant writes, creates and shapes how change happens, while infrastructure attaches people to the social world, a world constantly in motion, one "defined by the movement or patterning of social form." Infrastructure is "the living mediation of what organizes life: the lifeworld of structure." For Berlant, the disruptions caused by crisis are *glitches*, attended by collective surprise and often outrage: "A glitch is an interruption within a transition, a troubled transmission. A glitch is also the revelation of an infrastructural failure." "Glitchfrastructures" are produced by the ambivalent nature of sexuality and, according to Berlant, can detach us from fantasies of a smooth and conflict-free future, teaching us instead to endure "the irresolution of ambivalence."[1]

As our opening paragraph and Berlant's definition foreground, we argue that when we attend to infrastructure, we necessarily attend to inequities, and when we do the latter, we cannot help but engage in fantasies of a different kind of future. Infrastructure, inequity, and political optimism are tied together in national debates across North America and Europe in the neoliberal era, as politicians advocate for increased government funding for infrastructure, or argue against it and for the privatization of public services instead. Inequities, too, recur in public discourse as suddenly exposed in repetitive, patterned ways. National publics are in a constant state of surprise and revelation about them, despite the fact that generations of writers, thinkers, artists, activists, and scholars have drawn attention to and critiqued these inequities. In the context of the United States, in particular, scholars and activists have theorized these inequities as the foundation of public life, its *infrastructure*, so to speak, since the formation of the nation.

Infrastructure remains at the heart of how we define and seek to address modern inequity, how we understand the circulation of power, and how we experience the division of the public and the private. It is impossible to think about capitalism, surveillance, imperialism and

coloniality, patriarchy, ableism, or other systems of oppression without confronting infrastructure in some form. Whether invisible until it breaks down, as some scholars maintain, or hypervisible as spectacle, monumentalizing modernity and ethnonational supremacy, as others argue, infrastructure is experienced as constantly revealing itself to us.

While modern infrastructure compels recognition followed by forgetting, in repetitive cycles, it actually has "unparalleled continuity," as the engineer Deb Chachra argues in her recent book *How Infrastructure Works*: "We almost never rip [infrastructural networks] out and start over from scratch."[2] For one ready example, we can turn to this very journal. You are most likely reading these words on an illuminated screen after gaining access to the article via an electronic connection governed by the computing protocols of the internet and the Digital Object Identifier system of contemporary scholarly publishing. However, the formatting and numbering system of *Victorian Literature and Culture* is descended directly from its earlier iteration, *Browning Institute Studies*, first published in 1973 as a hardbound codex, as well as, more broadly, from late eighteenth- and nineteenth-century scientific and intellectual journals. Despite the radically different publication infrastructure undergirding it fifty years after its founding, *Victorian Literature and Culture* is still a "journal," divided into "volumes" and "numbers," with occasional "special issues" like this one.

The nineteenth century is the period when so many of the infrastructures on which we rely for the transmission and distribution of ideas, people, and goods were, on one hand, established and standardized and, on the other, contested and transformed in practice. This is why literary and cultural scholars of the nineteenth century can make major contributions to the transhistorical and transimperial work of critical infrastructure studies. The nineteenth century is the age of steamships and coaling stations, trains and railways, canals, roads, bridges, streetlights, museums, public parks, telegraphy, sanitation systems, the cold chain, and the expansion of legal codes and courts, among many other infrastructural developments within Britain and in its colonized holdings. This was the inflection point for the accelerating transformations of extractive global capitalism; the institutionalization of the pseudoscientific concepts of race, racial difference, and eugenics; urbanization; the thickening and policing of the gender binary and heterosexuality; the emergence of the norm and the normate; and the onset of the Anthropocene.[3] It is also the period during which the term "infrastructure" first appears, in French and then English.[4]

When we announced the call for papers for this special issue, we asked potential contributors to consider the following questions: How do public works shape public and psychic life? What can we learn from turning to the nineteenth century, the period when the state increasingly shaped everyday life in ways that people began to take for granted? What forms of infrastructure underlay the nineteenth-century expansion of empire, capitalism, and transatlantic slavery? What infrastructures were created, used, or repurposed for anti-imperialist, anticapitalist, and abolitionist practices?

We solicited long and short pieces, hoping to get a range of approaches, subjects, and interventions. We were not disappointed. The pieces in this special issue, by scholars located in Canada, the United States, and Britain, give us a picture of Victorian infrastructure that we have loosely organized—imperfectly, noncomprehensively—into four major themes: Water and Waste; Death and Bodies; Periods and Punctuation; and Care and Aid. Rather than organize by length of essay, we have chosen to arrange the issue thematically, grouping long and short essays together. Each theme itself contains two conjoined elements. If we think of joining as moving together, this conjunction is a formal expression of infrastructure itself.

In this issue, we contribute to the efforts of other literary scholars who are at this moment—the time of the "glitch"—also in conversation with the interdisciplinary field of critical infrastructure studies. In their introduction to *The Aesthetic Life of Infrastructure: Race, Affect, Environment* (2023), editors Kelly M. Rich, Nicole M. Rizzuto, and Susan Zieger argue that their collection of essays "updates and redefines infrastructure as the flexible and temporally unstable structures that organize biological and social life: the assemblages that ground the living nexus of modernity as an ongoing project of racialization, affective embodiment, and environmental praxis." Their volume breaks ground by analyzing the political and aesthetic together, thinking about form and function, about the ways in which "infrastructure shapes aesthetic experience and the ways it depends upon it."[5] While Rich, Rizzuto, and Zieger gather articles that address infrastructure from the eighteenth century to the present, Nicola Kirkby, in the introduction to her recently edited special issue of *19: Interdisciplinary Studies in the Long Nineteenth Century*, argues for the specificity of the nineteenth century for understanding infrastructure. Kirkby writes that the special issue of *19* "provides new insight into who nineteenth-century infrastructure was for, whose connectivity mattered, and how public-facing systems reinforced or undermined

social belonging and exclusion."[6] We are fortunate to include essays by both Zieger and Kirkby in this special issue of *Victorian Literature and Culture*, alongside nineteen other brilliant literary scholars.

Our collection of essays adds to this scholarship. Like Kirkby's guest-edited issue, we showcase studies that focus on Victorian infrastructure and literature. Like Rich, Rizzuto, and Zieger, who call for "reading" infrastructure, making it "legible" rather than "visible"—against what they call the "visibility thesis," the idea that we only see infrastructure when it breaks—we highlight the benefits of close reading.

In a fascinating inversion, literary studies in the last twenty years, under the influence of computational and media studies, has come to emphasize "distant reading" and "surface reading," suspicious of close reading as a nonsystematic nonmethod, while at the same time some scholars in the social and technical sciences advocate close reading as an appropriate method for understanding the complexities of infrastructure. They advocate a literary approach to infrastructure, focusing on affect, narrative, and reading. If close reading as a practice developed by the New Critics emerged in opposition to the growing hegemony of science in defining the human and the good in the early years of the Cold War in the United States, appropriating science's language of the universal and form of the rational in the name of antirationality, then we are in an interesting moment when some scientists are drawn to the idea of reading for depth, and to the critical practice of theory, as Jonathan Culler succinctly defines it: "the disputing of . . . common-sense views about meaning, writing, literature, experience."[7] Science and technology studies scholar Susan Leigh Star called for "'reading' infrastructure" in her landmark 1999 essay "The Ethnography of Infrastructure": "It takes some digging to unearth the dramas inherent in system design creating, to restore narrative to what appears to be dead lists."[8] Anthropologist Brian Larkin draws on the linguistic formalism of Roman Jakobson and the structural semiotics of Tzvetan Todorov to emphasize the "poetics" and the sensory experience of infrastructure in "The Politics and Poetics of Infrastructure."[9] From the discipline of engineering, Chachra argues that a "surprisingly good starting point" for defining infrastructure is "all of the stuff you don't think about." "Infrastructural systems," she says, "are easy to see but just as easy to ignore, unless we bring our conscious attention to bear on them."[10] The engineer borrows this method of paying conscious attention from the literary naturalists Helen Macdonald and Richard Mabey.[11] Literary close reading turns out to be a surprisingly good starting point for

analyses of the most complex technical and engineering products of the contemporary world.

Whether close reading literary representations of infrastructure or close reading literature as infrastructure, these essays collectively show how Victorian literature *moved* people. If infrastructure is, as Larkin writes, "matter that enable[s] the movement of other matter," Victorian literature is language organized in such a way as to transport readers from one emotional, psychic state to another.[12] It is perhaps not surprising, therefore, that Charles Dickens appears so frequently across these contributions. The pattern of references to Dickens, especially to *Bleak House* (1853), tells us something about how infrastructure belongs to realism—its spatial and temporal coordinates, its gridding, as Fredric Jameson's "The Realist Floor-Plan" might help us to grasp, its commitment to representing and constructing the ordinary and the everyday—but also to sentimentalism and melodrama. Why does Dickens's social-protest mode appear so often in conjunction with representations of Victorian infrastructure? How did the material structures that moved people, goods, and ideas make people *feel*? How did people's feelings, libidinal energies, and practices affect how infrastructures were imagined, designed, built, used, and transformed—in literature and in the world? Our authors address these questions, among many others, in the following nineteen essays, which we briefly summarize below as encouragement to explore all of their rich contributions to critical infrastructure studies.

WATER AND WASTE

The profound social, economic, and infrastructural transformations to which we have given the shorthand term "the Industrial Revolution" are typically associated with fossil fuels and resource extraction, especially now that we are looking back from the moment of global heating. But the transformations of Victorian Britain were also produced by new methods for the management and control of water: in steam engines, in canal networks and ocean navigation, in municipal water and sewer systems, and so forth.

In "Standpipes, *Chimmeys*, and Memorialization in the Caribbean," **Faith Smith** shows that colonial water infrastructure was a vital, contested social-environmental arena in nineteenth-century British colonies in the Caribbean. Access to relatively clean water and the ability to dispose of waste in effective, sanitary ways became racially- and class-inflected

markers of modernity in the West Indies. At the same time, standpipes became public spaces in an increasingly urbanized Caribbean, catalyzing new constellations of social and sexual life. Smith argues that Caribbean fiction in recent decades has functioned to remember and represent these nineteenth-century infrastructural histories but also to resituate them within longer, traumatic circuits of Caribbean history—enslavement, indentureship, imperialism—as part of the audacious project of contemporary Caribbean writers to "figur[e] out how to fashion themselves in the knowledge of this legacy of waste—of having been valued as waste" (pp. 288–306).

In "Victorian Municipal Waste Management," **Frances Thielman** explores the ways that waste management or sanitation—which we now think of as primary infrastructure, central to modern, well-functioning everyday life—was not systematized and managed by the state in ways that we might expect even in the imperial center itself. Thielman shows how the history of waste management in Victorian England tells a story of the state management of private activity and private interest to accomplish civic and nationalist ends. The state promoted the individual recycling of materials like rags—for the manufacture of paper—and textiles to make England less dependent on foreign imports. Because trash was seen as a resource from which an individual derives profit, citizens did not want to pay for its removal. Their waste, the reasoning went, was someone else's treasure. However, this individualized approach to waste reached its limits as the demand for energy (coal) and text (paper) multiplied, generating far more ash than could be reused and demanding far more rags than the contemporary economy provided. The waste of industrial life was no longer reusable and thus profitable; now it was excess, the remainder that could not be reincorporated. Given the geographically different ways that waste was collected, this history shows us how waste cathected Victorian moral values of thrift, providence, and industriousness with profit, nationalism, and racism.

A similar ambiguity reveals itself in the British network of canals—one of the most enduring symbols of Victorian infrastructure—in **Mary Bowden**'s essay "An Empire of Red Weed: Environmental Infrastructure in H. G. Wells's *The War of the Worlds*." The canals and engineered rivers that facilitate trade and migration within industrializing Britain become the vehicles for an ecological invasion in Wells's novel when they fill with Martian red weed, a fictional analog for the invasive waterweed *Elodea canadensis* that had made its way from Canada to Britain earlier in the nineteenth century. But Wells does not draw the

conclusions that his novel hints at: imperial control and transportation of plant matter across oceans threaten to rebound on the ecological infrastructure of England itself, in a contorted reflection of the real-world devastation of the ecologies and people of colonial and paracolonial territories. At the turn of the nineteenth century, Wordsworth had stood on the banks of the Wye, comforted and inspired to hear its "waters, rolling from their mountain-springs / With a soft inland murmur."[13] As the century ended, Wells conjured a vision of English waterways filled with the rotting vegetation of an invasive foreign species.

In "'The Stepping Stones of Empire': Conrad, Coal, and Oceanic Infrastructure," **Elizabeth Carolyn Miller** and **George William Hegarty** argue that the global network of coaling stations and the charting of steamship routes transformed the ocean into "dead infrastructure" by the end of the nineteenth century. By reading early twentieth-century novels by Joseph Conrad, they show how his literary works mediated the emergence of the "systemic and logistical thinking" (pp. 333–354) ushered in by the exigencies of steam-powered oceanic transportation and the expansion of global trade and empire. Conrad's literary depictions of coaling stations and steamships show the inseparability of capitalism and colonialism, but they also expose the payoffs of attending to specific infrastructural developments, such as the rise of steam and coal, for analyzing these large abstractions. Analysis of specific infrastructures may provide a more effective overarching frame of analysis than the abstractions "capitalism" or "colonialism" often afford. Their essay troubles infrastructure studies in two key ways. First, they ask how far the concept of infrastructure can be pushed or pulled to designate "conceptual or unbuilt categories such as labor, class, or race" (pp. 333–354). Second, their essay shows that infrastructure is impossible to separate from the environment. The nature/culture divide disappears when infrastructure engineers the natural world, including its rivers and oceans, in ways that turn back on built structures, as recent coastal erosion and flooding show only too well.

In **Susan Zieger**'s "Dracula's Cold-Chain," the emergence of logistics as "the science and art of moving goods, people, and information efficiently to maximize profit" (pp. 355–374) becomes a focal point. While Conrad's novels mediate logistics aesthetically, Bram Stoker's novel thematizes it as essential to the vampire's movement and ability to sustain himself. If the network of coaling stations sustained oceanic trade, leading to the sea as a dead infrastructure that reinforced steam routes, the network of the cold-chain, which suspended food's natural

time of decay and enabled its transportation, cheating natural time with its unnatural time, saturated "the times, spaces, and aesthetics of human life with 'un-death,'" as Zieger puts it (pp. 355–374). Zieger demonstrates "how the logistical plot puts that capital into motion—a restless movement of goods that requires infrastructure" (pp. 355–374). She reads logistics and infrastructure as "techniques of capital" (pp. 355–374) that together ensure capitalism's constant surpassing of limits and incessant expansion.

Sarah Bilston's "The Infrastructures of Plant Hunting" demonstrates how the desire for "exotic" plants in England relied upon and expanded colonial and national infrastructures, such as banking systems and ships. Her essay takes us into the world of plant hunters, represented in imperial history as glamorous, dangerous, and heroic figures, but revealed in archival materials to be engaged in mundane toil. Rather than dashing adventurers, they were more likely to be put in humiliating positions by the capitalists in charge of the nurseries. Plant hunters' reliance on international banking systems, in addition to their reliance on ships and railways to transport themselves and their specimens from locations in South America and elsewhere, served to accelerate the expansion of these colonial and national infrastructures. Importantly, Bilston also shows us how British plant hunters, as they traveled through South America and other sites of formal and informal empire, needed local and regional informants and knowledge systems just as much as resources from home. This dependence on local go-betweens and horticultural brokers shows the incompleteness or insufficiency of these official infrastructures, which themselves relied on alternative, indigenous infrastructures to achieve their imperial capitalist ends.

DEATH AND BODIES

As the number of people living in British towns and cities rapidly increased in the first half of the nineteenth century, the number of people dying, being buried, and being mourned likewise increased. While each individual death was its own terrible experience for the survivors, viewed from a wider perspective, this was an infrastructural problem— and an opportunity. With municipal churchyards filling up, a new infrastructure of Victorian death needed to be established.

One scheme, analyzed by **Nicola Kirkby** in her essay "'Fellow Passengers to the Grave,'" was the London Necropolis Railway, which opened in 1854, promising a smooth journey for the deceased and their mourners by train from Waterloo station to an expansive

purpose-built cemetery, owned and operated by the railway, twenty-five miles outside London. This piece of infrastructure—foreshadowing the appeal of green space outside the metropolis that the garden-city movement would offer to the living in the next century—promised city-dwellers the chance to rest in rural peace at a time when urban cemeteries often reburied or otherwise disturbed human remains when space became limited. Kirkby shows that while the marketing of the London Necropolis Railway was slick and effective, its foundations were built culturally and imaginatively a decade earlier in Charles Dickens's *A Christmas Carol* (1843). The "green" cemetery where Tiny Tim is laid to rest, regularly mourned by his devoted family, contrasts with Ebenezer Scrooge's future interment, as shown to him by the Ghost of Christmas Future, in a graveyard "walled in by houses . . . choked up by too much burying" (pp. 381–386). For Londoners facing such a fate, the fourteen shillings charged by the NCR for third-class transportation, burial, and the return to London for two mourners might well have seemed like a bargain.

In "Heredity's Aesthetic Infrastructures," **Amy R. Wong** compares the work of the late Victorian writer Thomas Hardy and contemporary Chinese filmmaker Wang Xiaoshuai to highlight their shared interest in representing inheritance—personal, social, and cultural—in ways fundamentally distinct from typical explanations relying on DNA, family customs, or the collective imprint of social class, nationality, or racial and ethnic identity. Likening the social and economic upheavals of turn-of-the-twentieth-century southwest England and early twenty-first-century China, Wong argues that Hardy and Wang break decisively with the realist ambition to represent social totality. However, their focus on the singular value of individual heredity is neither a Romantic investment in the power of the self nor a modernist skepticism of the possibility of art representing life adequately at all. Instead, Wong's essay suggests the existence of an enormous, but largely unexplored, infrastructure of inheritance, a different way of understanding "the intrinsic value of an individual being" focused not on "who they are" but instead on "what they are made of" (pp. 387–392) in nonbiological, nonsocially determined terms.

Govind Narayan's essay "'The Sickness of Hope Deferred': Infrastructure and Temporality in *Bleak House*" asks us to consider how infrastructure not only moves matter through space but also how it moves time, either accelerating capitalist acquisition or suspending the life of those deemed without value across the British Empire (colonized subjects, women, the poor), deferring hope and justice. By tracking legal

and maritime infrastructures in *Bleak House* and their intimate connection, Narayan shows us how the literary infrastructures at work in Dickens's sentimental realism "not only compress the globe and claim to represent it within the confines of London, but also create an experience of everydayness while holding together temporal antipodes such as past, present, and future, urban and rural, central and peripheral, contemporary and colonial, progressive and prehistoric" (pp. 393–398). Infrastructure also contributes to the attenuation of life: the slow wearing away of Richard Carstone's body in the novel, the shipwreck and emaciation of the crew. Literary infrastructures supplement legal and maritime infrastructures but also contribute to masking the wild diversity of temporalities that exist outside of imperialist capitalist time. For Narayan, literary infrastructures can then repackage those multiple temporalities into a singular representation of liberal progressive telos.

In "Riding Jane Eyre's Stagecoach Rhythm in Jane Re's New York Subway," **Jungah Kim** considers what novels tell us about the gendered, classed, and racialized experience of transportation infrastructure and the way minoritized subjects might harness its capacities to interrupt the patterns in which they find themselves and to change their "rhythm." Paying particular attention to how bodies are affected and, in fact, produced in space by different forms of movement, Kim compares the representation of stagecoach infrastructure in Charlotte Brontë's *Jane Eyre* (1847) to that of the subway in Patricia Park's contemporary retelling, *Re Jane* (2015), whose first-person narrator is Korean American. Kim argues that modes of transportation can "enable female characters to establish a rhythm of their own, breaking free from the strictures of society" (pp. 399–404). In the Victorian novel, it is the rhythm of the stagecoach over roads—sometimes lulling, sometimes jarring—an infrastructure beset by wear and tear. In the contemporary U.S. retelling, it is the rhythm of the subway in New York City, also jarring and irregular at times, but also evoking the history of the iconic U.S. infrastructure of Manifest Destiny, the transcontinental railroad built largely by Chinese immigrant workers. In both cases, Kim argues, these modes of transportation not only take these socially marginalized characters where they want to go, but they also produce bodily, affective sensations that activate their sense of self and their desires. While we typically think of Victorian infrastructure as articulating collective modes of identity and activity, it could also be metabolized into the individualizing imperatives of the Victorian bildungsroman and bourgeois novel of development.

PERIODS AND PUNCTUATION

Infrastructure exists in a curious temporality. Built on and expanding past practices and structures, infrastructure nevertheless aims to make those practices and structures obsolete by imagining a perfected future system. In practice, this means creating unwieldy infrastructure in the present that is "built in anticipation of a not-yet-achieved future," as Akhil Gupta argues.[14] However, infrastructures fail when they are not planned effectively and adaptively for future use—when maintenance and testing are neglected and repairs are postponed—and nostalgia for an earlier, presumed simpler time can be the result of that failure. For example, the cascading contemporary problems of Britain's water and sewage infrastructure have coincided with the rise to prominence of a bathroom-fixture company called Victorian Plumbing. It is hard to imagine that British residents would prefer the lack of running water and the outhouses that characterized nineteenth-century living arrangements, but the multifactor temporality of infrastructure enables a contemporary e-commerce company importing bathroom appliances from China to give its British customers the feeling that they are connected to an imaginary, vaunted Victorian past. Or perhaps, for those in on the joke, we congratulate ourselves on how far we have come from Victorian infrastructure while invoking and lauding it at the same time.

In "Whiteness, Curriculum, and the Infrastructures of Victorian Studies," **Sophia Hsu** reflects on the contemporary experience of teaching Victorian literature at the City University of New York, showing how users of disciplinary infrastructure—students and teachers—can adapt it to new conditions to avoid nostalgic, imperialist versions of the literary past. We are currently experiencing the slow unraveling of the centrality of "periods" to the organization of literary studies.[15] Hsu argues that this unstable moment can be an instance of restorative change, with her students in the Bronx coming to Charles Dickens and the Brontës via José Martí and Audre Lorde as well as their own experiences as descendants of the enslaved and disenfranchised people at the margins of nineteenth-century British fiction. Those students make literary and cultural connections unconstrained by the idea of literary period, which is thereby revealed as the infrastructure of an academic discipline with "white-supremacist and colonial underpinnings" (pp. 405–411). In the future, in a period not long from now, the title of this journal may seem as odd in its commitment to a

historical period as its previous title, *Browning Institute Studies*, does from the perspective of our expanded canon of nineteenth-century literary studies.

In "Ships, Serials, and Infrastructures of Empire in the Nineteenth Century," **Clare Pettit** focuses on the cable-laying steamship as both a vehicle of transportation and as a node in intersecting infrastructures that laid the foundation for empire. Pettitt examines the onboard periodical, printed on the steamship, to be distributed to newspapers when docked, and the steamship itself, tasked as it was with laying the cable for telegraphy. The steamship periodical anticipates its own replacement by telegraphy, enabled by the cable carried by the ship to be laid on the ocean floor. The punctuality of Morse code—in the sense of being timely, but also puncturing sound at regular intervals—replaces the steamship periodical. Telegraphy will itself be replaced by the digital, another mode of communication that also relies on cable. If for Miller and Hegarty, the ocean became dead infrastructure in the wake of steamship routes and the network of coaling stations upon which they relied, Pettitt shows us how, starting in the 1850s, the ocean also became digital infrastructure, as cables were laid undersea, doing the connecting work of empire. Moreover, the documents produced onboard steamships in addition to the steamship periodical—"the tables, almanacs and reckoners, position logs, charts, and texts used and produced by the crew"—participated in "a nautical and imperial culture of 'punctuality'" (pp. 412–418). They were a textual and media infrastructure that spatially and temporally mapped the ocean, producing nautical space and time, in the service of the imperial goals of settler colonialism and resource extraction. In this piece, Pettitt reminds us of the semantic connection between the punctuality of telegraphy and other communication infrastructures and the punctuation of texts.

Punctuation is likewise the catalyst for **Barbara Leckie**'s playful, provocative essay "Climate Period. Punctuation as Infrastructure." Reflecting on multiple meanings of the word "period," Leckie starts with the smallest unit of English punctuation—the period/full stop—and closely analyzes three literary texts to argue that punctuation is language's infrastructure, a generally unnoticed set of standards and practices without which the system would not function. It was in the second half of the nineteenth century that English-language punctuation became associated primarily with written language (grammar) rather than speech (rhetoric). Leckie takes this historical fact as the occasion for a consideration of the period as a unit of time, one whose boundaries are at once clear (the Victorian period, 1837–1901) and ambiguously porous. Leckie

considers the ways in which the Victorian period leaks into and has over-determined our own, the Anthropocene, created by the establishment of a carbon-based economy in the nineteenth century. Leckie's essay shows the heuristic possibilities of close-reading methods—and of experimental writing practices—for analyzing the hidden patterns and subtleties of the infrastructures that we rely on every day.

In "Urban Transportation and London's Imagined Infrastructure," **Tina Young Choi** takes us back to nineteenth-century London to consider how city inhabitants created such patterns and subtleties. She draws attention to the way that city inhabitants visually and bodily mapped pathways, creating the nodes and routes that planners would use for the London Underground. Nineteenth-century London often appears as the chaotic cousin to Baron Haussmann's famously rationalized and gridded nineteenth-century Paris. However, Choi argues that vernaculars of movement, the "everyday practice" of Londoners themselves, rendered London navigable and legible. Drawing on Dickens, Choi shows how an informal imaginative infrastructure emerged, first through omnibuses, then cabs, and eventually urban railways. The recourse to Dickens helps us understand how, as Choi puts it, "a collective experience, organized around a repeated, shared commute into the city on the omnibus" (pp. 425–431) rendered London into a network of nodes, mapped out and made through collective use, rather than engineered by a singular, scientific vision. The regular stops of the omnibus connect us to Kim's stagecoach and subway and to Pettitt's punctuality infrastructures (telegraphy), which puncture (Morse code) and punctuate (regular intervals) and help those engaged in trade to be punctual.

An outlier among our essays, in that it does not engage with a literary or discursive medium, **Andrea Kaston Tange**'s "Photography as Knowledge Infrastructure" foretells how the technology and aesthetics of the visual image will come to dominate and shape national consciousness in the twentieth century and into the contemporary period. Tange asks us to consider the multiple ways that photography both registers and troubles binaries: science *and* art; technology *and* medium; image *and* meaning; representation *and* infrastructure; space *and* time. Providing a succinct history of the major epistemological shift created by the emergence of nineteenth-century photography as a mode of meaning-making, Tange explains how photography worked as infrastructure for the emerging form of the nation. Its circulation of images taken outside the nation, and within it, contributed to national identity in both a public sense and in the most intimate registers of family life, that central unit of the

patriarchal, capitalist, and increasingly imperialist/imperialized population. Photography is a technology and a medium, but it is also an infrastructure that represents a space (spatial arrangement) in time that takes time (in the process of development).

Care and Aid

For the most part—and in spite of its association with public works and the state—infrastructure proceeds incrementally according to the logic of path dependency, building on, extending, and subsuming previous structures and systems: for example, Durham footpaths became colliery packhorse roads became the Stockton to Darlington railway became the London and North Eastern Railway became British Railways. However, when it came to the development of infrastructures of care—medical systems, welfare provisioning, child and elder care, and so forth—nineteenth-century British writers often imagined this process as the establishment of new, depersonalized institutions that replaced existing small-scale communities rather than building on and extending their support networks. For example, the New Fever Hospital in *Middlemarch* (1871–72) is a new building, funded by new money (Bulstrode), with a new doctor (Lydgate) bringing new medical practices that disrupt existing ties and ways of living and caring in the community. Eliot and many other Victorian writers tend to suggest that "infrastructure" and "care" are all but mutually exclusive in the nineteenth century.

In her powerful piece "Care Communities versus Human Infrastructure," **Talia Schaffer** revisits Victorian skepticism about public care infrastructure and asks readers to take seriously their challenges to the idea of social care as an unalloyed public good. We may not agree with Dickens that private charity is always preferable to public support, but attending to nineteenth-century communities of care—familial, neighborly, informal, communitarian—is a vital lens on the manifold failures of the public care infrastructure of the United States (and, despite the beloved National Health Service, Britain too). Schaffer argues that care is not—indeed should not be—infrastructure. As she shows, personal, familial, and private care have always propped up medical and welfare infrastructures that claim to operate for the public good but which in practice rely on the exploitation of fragile communities of care that always burden women, and especially working-class women of color, the most.

Gregory Vargo also contrasts care communities with state infrastructure in his analysis of solidarity campaigns for the transported

"Tolpuddle martyrs" of the 1830s, "Mourning and Melodrama: The Dorchester Labourers, Theatrical Fundraising, and Infrastructures of Mutual Support." The mutual-aid organizations that sprang up to support the families of the six working men tried and convicted for forming a union defined themselves in opposition to the state's explicit refusal of care for the women and children, who were denied parochial aid. Were the mutual-aid organizations themselves new forms of infrastructure? Or were they rather, and appropriately, anti-infrastructure? They created a community of care, in Schaffer's terms, that succeeded where public infrastructure failed—both by providing financial support for the laborers' families and by waging a successful public campaign to overturn the men's convictions and return them to Britain. Vargo goes on to explore the irony that this anti-infrastructure of mutual aid, with its horizontal ties of social solidarity modeling in miniature the broader egalitarian society of which trade unionists dreamed, deployed for its chosen mode of performance the theatrical nautical melodrama—a genre marked by presenting people as inherently good or bad (rather than improvable through the kinds of social organization the mutual-aid groups represented) and by the obligatory reestablishment of social hierarchy as a closing gesture.

In "Pensions as Infrastructure," **Aeron Hunt** deftly shows the ways in which social provisioning of financial support for older Britons developed in the second half of the nineteenth century by building on diverse arrangements that had long existed—state support for military veterans, ad hoc payments by employers to favored employees, and so forth—in spite of the fact that the idea of "pensioners" was at the same time correlated with ideas of corruption and unearned privilege. Social reformers and trade unionists argued at the end of the nineteenth century that working people should be financially supported by the state in their later years because "the worn-out toiler . . . has contributed to the nation's wealth," as Hunt quotes the Liberal MP and trade unionist Thomas Burt, speaking in favor of the Old Age Pensions Act in the House of Commons in 1908 (pp. 469–474). The slow, imperfect establishment of the infrastructure of pensions in Britain was a contradictory affair. Widening the circle of older people falling into the category of "deserving" required recasting hereditary and Civil List pensions as corrupt, as Dickens does in *Bleak House*, and establishing the idea of service to the nation as a qualification for pension entitlement. However, older women and non-Britons were thereby generally excluded from a welfare infrastructure that nevertheless imagined itself to be universal.

In "Sultana Dreams of Infrastructure," **Briony Wickes** and **Rhys Williams** turn to Rokeya Hossain's utopic short story "Sultana's Dream" (1905) to consider how infrastructure expresses political optimism. In the story, solar energy liberates the society of Ladyland from fossil fuels and manual labor but also liberates the women of Ladyland from male domination. While the sun here offers an alternative to destructive mining operations and air pollution, the story also exposes the same colonialist, exploitative, and masculinist phallic belief in using natural resources, converting the unused to the productive: "Most forcefully, the text places faith in the sun's abundance and in the human ingenuity needed to exploit its supply, bringing inhospitable environments to a state of liveliness" (pp. 475–481). Wickes and Williams emphasize how infrastructure underwrites society, both dystopic and utopic. Changing the source of fuel to power a society's reproductive needs might flip unjust hierarchies founded on supremacist beliefs, whether racial, sexual, or gender-based, but it does not eradicate those hierarchies. This piece leads to questions about the relation between infrastructure and social structures—and thus returns us to Berlant's notion of "glitchfrastructures" and how to engineer more equitable and democratic societies, ones not based on "analogical likeness" but rather on the ability to abide ambivalence.[16]

Conclusion

Despite the breadth of topics and approaches in these essays, there are large swaths of nineteenth-century infrastructure and its representations that our essays barely touch. We look forward to future work in critical infrastructure studies that will address some of these omissions or build on bits and pieces from these essays for amplification and critical expansion. For now, we propose two areas of inquiry for expanded work in nineteenth-century literary infrastructure studies: in poetry and in empire.

With the exception of Andrea Tange, our contributors are predominantly focused on narrative, in general, and on what we now call literary fiction in particular. Charles Dickens, Joseph Conrad, George Eliot, Thomas Hardy, and Charlotte Brontë loom large, while nineteenth-century poetry remains largely unexplored. The strong association of realist fiction with everyday (bourgeois) life perhaps explains the strong connection between analyses of fiction and of infrastructure, with the ordinariness of infrastructure a recurring topic of critical infrastructure studies. Lauren Berlant puts poetry (and visual art) at the center of

infrastructural analysis in "The Commons"; we hope to read more work on infrastructural poetry, on meter and rhythm as infrastructure, on the poetry of railways, dams, and communications protocols.[17] The prevalence in critical infrastructure studies of citations to Brian Larkin's essay "The Politics and Poetics of Infrastructure" has not been matched by significant attention to Larkin's own deployment of Jakobson's notion of poetics—linguistic units that draw attention to their own form—to shake infrastructure studies loose from its emphasis on technical and engineering protocols: "In the case of infrastructures, the poetic mode means that form is loosened from technical function."[18]

In many ways, Victorian literary and cultural studies today is the study of the literature and culture of empire. All of our contributors, even those who focus closely on nineteenth-century Britain, recognize and account for the centrality of imperialism in the creation and expansion of Victorian infrastructure. We look forward to more work that connects Victorian literary and cultural studies to Black infrastructure studies, to Indigenous infrastructure studies, and to the writing about infrastructure produced by colonial writers in the nineteenth century, like an English-language archive of native uses of railway.[19] Work by Alisha R. Walters on sugar infrastructure and forthcoming work by Bassam F. Sidiki on British colonial hydraulic projects in Sindh offer exciting new directions.[20] Victorian critical infrastructure studies could also do much with texts by writers of color, including Mary Prince's *The History of Mary Prince* (1831), Mary Seacole's *Wonderful Adventures of Mrs Seacole in Many Lands* (1857), and T. N. Mukharji's *A Visit to Europe* (1889). The areas of poetry and empire might also enable considerations of queer infrastructures, not only in the sense of infrastructures built by queer communities, but also and especially the ways that, following Berlant, we can apprehend how the ambivalence inherent in sexuality (the desires and libidinal intensities driving behaviors, thoughts, and feelings) disrupts and opens up possibilities for moving beyond the impasses of the nineteenth century.

Nineteenth-century infrastructure is the infrastructure of slavery and empire and extractive capital; twenty-first-century infrastructure is built on these foundations. It is notable, therefore, that the most visible contemporary movement to reshape the global financial infrastructure has emerged from the anglophone Caribbean, where a long-standing demand for slavery reparations has converged with the demand for climate-justice reparations. As Mia Mottley, prime minister of Barbados, declared in a 2022 speech to the World Trade Organization, "the global

order is not working" because it was established to benefit "those who came first and in whose image the global order is now set . . . the embalming of the old colonial order."[21] Mottley's Bridgetown Initiative of 2022, updated in 2023, called the international financial architecture "entirely unfit for purpose in a world characterized by unrelenting climate change, increasing systemic risks, [and] extreme inequality."[22] This high-profile demand for "a new financial system that drives financial resources towards climate action"[23] helped push world leaders at the COP27 and COP28 summits in 2022 and 2023 to establish a Loss and Damage Fund that recognizes the need for climate reparations and a new global financial infrastructure.[24]

Time will tell if an infrastructure will emerge that is capable of delivering reparations and keeping global heating from destroying humankind, or if the current infrastructure will adapt itself just enough to absorb these challenges while leaving the old, dead colonial order broadly intact. At the same time as it was developing the Bridgetown Initiative, Barbados became a republic, finally severing its formal ties to the British Crown. In this time of the glitch, most Victorianists imagine we are not bending the knee to the sovereign whose name still, albeit tenuously and tendentiously, defines our field of scholarly inquiry. Perhaps, though, we might give conscious attention to a story that Faith Smith tells in her essay on colonial Caribbean water infrastructure. In 1897 Jamaican politicians debating how to recognize the sixtieth anniversary of Victoria's accession considered building a school, or a hospital, or drilling new wells to improve municipal water access. But they decided in the end that the needs of Jamaican people would be best met by erecting a marble statue of the monarch. In other words, city councilors substituted an actual monument to the queen, a lifelike statue, for an infrastructure that might have encoded the queen's power and love of her subjects in the form of a public good. It is hard to imagine a situation more amenable to a close reading than this.

NOTES

1. Berlant, "The Commons," 393, 396.
2. Chachra, *How Infrastructure Works*.
3. See Davis, "Introduction"; and Garland-Thomson, *Extraordinary Bodies*, 8.
4. On the late nineteenth-century emergence of the term "infrastructure," see Kirkby, "Nineteenth-Century Infrastructures," 3–4.

5. Rich, Rizzuto, and Zieger, "Reading Infrastructure," 1, 3.
6. Kirkby, "Nineteenth-Century Infrastructures," 3.
7. Culler, *Literary Theory*, 4.
8. Star, "Ethnography," 384, 377.
9. Larkin, "Politics and Poetics," 334–35.
10. Chachra, *How Infrastructure Works.*
11. Chachra, *How Infrastructure Works.*
12. Larkin, "Politics and Poetics," 329.
13. Wordsworth, "Lines Composed."
14. Gupta, "The Future in Ruins," 63.
15. Levine, "Infrastructuralism."
16. Berlant, "The Commons," 396.
17. See, for example, Koehler, "A Tale of Two Bridges."
18. Larkin, "Politics and Poetics," 335.
19. See, for example, Brown, *Black Skyscraper*; Nemser, *Infrastructures of Race*; Womack, *The Matter of Black Living*; LaDuke and Cowen, "Beyond Wiindigo Infrastructure."
20. Walters, "The 'Sallow Mr. Freely'"; Sidiki, "Inscribing the Indus."
21. Lustgarten and Larsen, "The Barbados Rebellion."
22. *Bridgetown 2.0.*
23. *Bridgetown Initiative.*
24. Hemingway Jaynes, "COP28."

Works Cited

Berlant, Lauren. "The Commons: Infrastructures for Troubling Times." *Environment and Planning D: Society and Space* 34 (2016): 393–419.

The Bridgetown Initiative for the Reform of the Global Financial Architecture. Office of the Prime Minister of Barbados, September 23, 2022, https://pmo.gov.bb/wp-content/uploads/2022/10/The-2022-Bridgetown-Initiative.pdf.

Bridgetown 2.0: Urgent and Decisive Action to Reform the International Financial Architecture. Office of the Prime Minister of Barbados, May 2023, https://pmo.gov.bb/wp-content/uploads/2023/10/Bridgetown2.0-2pager-2.pdf.

Brown, Adrienne. *The Black Skyscraper: Architecture and the Perception of Race.* Baltimore: Johns Hopkins University Press, 2017.

Chachra, Deb. *How Infrastructure Works: Inside the Systems That Shape Our World*, ebook. New York: Penguin, 2023.

Culler, Jonathan. *Literary Theory: A Very Short Introduction.* New York: Oxford University Press, 2011.

Davis, Lennard J. "Introduction: Disability, Normality, and Power." In *The Disability Studies Reader*, edited by Davis, 1–14. New York: Routledge, 2017.

Garland-Thomson, Rosemarie. *Extraordinary Bodies: Figuring Physical Disability in American Culture and Literature.* New York: Columbia University Press, 1997.

Gupta, Akhil. "The Future in Ruins: Thoughts on the Temporality of Infrastructure." In *The Promise of Infrastructure*, edited by Nikhil Anand, Akhil Gupta, and Hannah Appel, 62–79. Durham: Duke University Press, 2018.

Hemingway Jaynes, Cristen. "COP28 Agrees to Establish Loss and Damage Fund for Vulnerable Countries." *World Economic Forum*, December 1, 2023, www.weforum.org/agenda/2023/12/cop28-loss-and-damage-fund-climate-change.

Jameson, Fredric. "The Realist Floor-Plan." In *On Signs*, edited by Marshall Blonsky, 373–83. Baltimore: Johns Hopkins University Press, 1985.

Kirkby, Nicola. "Nineteenth-Century Infrastructures before 'Infrastructure.'" *19: Interdisciplinary Studies in the Long Nineteenth Century* 35 (2023), https://doi.org/10.16995/ntn.11184.

Koehler, Karin. "A Tale of Two Bridges: The Poetry and Politics of Infrastructure in Nineteenth-Century Wales." *Journal of Victorian Culture* 26, no. 4 (2021): 499–518.

LaDuke, Winona, and Deborah Cowen. "Beyond Wiindigo Infrastructure." *South Atlantic Quarterly* 119, no. 2 (2020): 243–68.

Larkin, Brian. "The Politics and Poetics of Infrastructure." *Annual Review of Anthropology* 42 (2013): 327–43.

Levine, Caroline. "Infrastructuralism, or The Tempo of Institutions." In *On Periodization: Selected Essays from the English Institute*, edited by Virginia Jackson, ebook. Cambridge, Mass.: American Council of Learned Societies, 2010.

Lustgarten, Abrahm, and Erika Larsen. "The Barbados Rebellion." *New York Times Magazine*, July 27, 2022, www.nytimes.com/interactive/2022/07/27/magazine/barbados-climate-debt-mia-mottley.html.

Nemser, Daniel. *Infrastructures of Race: Concentration and Biopolitics in Colonial Mexico.* Austin: University of Texas Press, 2017.

Rich, Kelly M., Nicole M. Rizzuto, and Susan Zieger. "Reading Infrastructure." In *The Aesthetic Life of Infrastructure: Race, Affect, Environment*, ed. Rich, Rizzuto, and Zieger, 1–20. Evanston: Northwestern University Press, 2023.

Sidiki, Bassam F. "Inscribing the Indus: Hydrological Discourse and Travel Writing in British Sindh." *Victorian Studies* 66 (2024), forthcoming.

Star, Susan Leigh. "The Ethnography of Infrastructure." *American Behavioral Scientist* 43, no. 3 (1999): 377–91.

Walters, Alisha R. "The 'Sallow Mr. Freely': Sugar, Appetite, and Unstable Forms of Whiteness in George Eliot's 'Brother Jacob.'" *Victorian Literature and Culture* 50, no. 3 (2022): 431–60.

Womack, Autumn. *The Matter of Black Living: The Aesthetic Experiment of Racial Data, 1880–1930.* Chicago: University of Chicago Press, 2022.

Wordsworth, William. "Lines Composed a Few Miles above Tintern Abbey, On Revisiting the Banks of the Wye during a Tour. July 13, 1798." Poetry Foundation, www.poetryfoundation.org/poems/45527/lines-composed-a-few-miles-above-tintern-abbey-on-revisiting-the-banks-of-the-wye-during-a-tour-july-13-1798.