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## Causality

TINA YOUNG CHOI AND EDWARD JONES-IMHOTEP

**I**N the days following the 1865 derailment at Staplehurst, *The Times* offered an unsparing analysis of the factors leading to the accident:

“If the plate layer were accurate, and if the trains were punctual, and if the work were successful, and if the signals were properly placed, and if the day were not too bright nor yet too foggy, and if the engine driver were always looking out, and if the breaks [*sic*] were patent, the train might be safe; but a failure in one of these elements might render all the rest abortive.” This enumeration of the multiple, interdependent conditions and circumstances underlying railway safety was as much a sarcastic indictment of “modern railway management” as a recognition of the difficulty of assigning a single cause within what the article terms such a “complex system.”<sup>1</sup>

Literary critics have often associated the representation of complex causality with twentieth-century narrative. Brian Richardson, for example, investigating what he calls “one of the most neglected and undertheorized topics of narrative theory and criticism,” situates his study of causality in the twentieth century, when “the first major cracks in the mechanistic causal models so diligently constructed” in earlier periods appeared.<sup>2</sup> So, too, while recognizing that Modernism’s “increasing specificity, multiplicity, complexity, probability, and uncertainty of causal knowledge” has nineteenth-century origins, Stephen Kern nonetheless locates a critical “historical pivot” in causal understanding only at the century’s end.<sup>3</sup> Still, critics like Gillian Beer and George Levine have uncovered how fully Victorian writers—Darwin, Dickens, Eliot, among others—acknowledged the role of chance and how they moved beyond the teleologies, both theological and scientific, that had governed earlier narratives.<sup>4</sup> A key figure in both critics’ accounts, Darwin expanded the period’s understanding of causality not only by envisioning its secular modes of action but also by extending its temporal scope. The vision he offers in his best-known work (which in fact traces not origins but causes) reads like an inversion of the *Times* article, the latter’s dismay replaced by wonder. But in both lies a recognition that long, complex causalities might become legible in singularity: “we regard every production of nature as one which has had a history; . . . we contemplate every complex structure and instinct . . . exactly in the same way as when we look at any great mechanical invention as the summing up of the labour, the experience, the reason, and even the blunders of numerous workmen.”<sup>5</sup>

What would it mean to look upon the productions of the world, as these two writers do, as systems, as summings-up of multiple, intertwined causes? An appreciation for complex causality took shape, we suggest,

across Victorian scientific, technological, and literary discourse, which investigated the decidedly non-mechanistic ways in which causes operated: the incremental, slow causalities of early-Victorian geology and natural history; the distributed, often latent causalities cited in technological failure; the distant causalities traced by epidemiological writing; the overdetermined causalities of accidents. Narrative could reveal what was invisible—causalities otherwise hidden by time and distance—but it also had the power to constitute relationships, to conjure through causal explanation an intricate and “complex system.”

With a range and complexity often exceeding what the report, history, or novel typically allowed, causal explanation also came to test the very limits of narrative. The size and length of works like Lyell’s *Principles of Geology* and Dickens’s *Bleak House*, their incremental publication and the reader’s incremental progress, all attest to the challenge of representing slow causalities. Lyell dramatizes the gradual, otherwise invisible geological processes on the page, animating the formation of new seas or the rising of layers of earth, whose occurrence is otherwise “only present to our minds by the aid of reflection.”<sup>6</sup> *Bleak House* enacts its own slow process, its marriage and detection plots unfurling over many chapters, through the long causalities of inheritance and descent, of personal memory, social pressures, and intertwined lives. Encouraging readers to look beyond the local and the proximate, Victorian novels uncovered not causes but rather causalities, the “operation[s] or relation[s] of cause and effect.”<sup>7</sup> Who can say, Eliot’s narrator in *Middlemarch* might have asked, what “causes” Nicholas Bulstrode’s downfall or Dorothea Brooke’s second marriage, what combination of circumstances, coincidences, emotions, motives, and events?

Explanations of the preeminent technological accidents of the age—railway disasters—similarly tested the limits of narrative, just as they resisted translation into familiar forms like melodrama.<sup>8</sup> Official accident reports struggled to trace lines of causation that linked the actions of people and machines to catastrophic events. Their explanations often overflowed the columns of the neat tabular forms that recorded the date, victims, “nature” and “cause” of Victorian railway accidents. In his detailed investigation of the 1844 Shields accident, the official inspector, Joshua Coddington, confessed that he was forced to start “a little wide of the mark,” with a short history of the railway, its economic failures, the dilapidated state of its engines, and the sequence of freak coincidences and human errors that sent trains headlong into each other on the morning of 8 October.<sup>9</sup> These reports identified a cast of

characters—not only tragic victims but partially-redeemed culprits: intelligent but overworked signalmen and panicked engine-drivers. They implicated features of landscape—icy inclines; collapsed slopes; blind turns. And they focused heavily on the properties and behavior of materials, pointing to latent flaws in cast iron, “marks of violence,” “points of fracture,” and carefully reconstructed accident scenes.<sup>10</sup> Through their sometimes tortured narration of accidents, they assembled the complex systems that coordinated humans and materials to produce the unforeseen and the unforeseeable.

These systems of narration and narrated systems signaled a new overdetermination in Victorian causality. They furnished structures of culpability and causation that increasingly allowed material causes to be substituted for human causes and vice versa.<sup>11</sup> By the 1860s, the Victorian popular press mirrored these understandings, as the Staplehurst accident showed. By the time of the catastrophic 1868 Abergele accident, the *Saturday Review* warned that the complex, over-determined causation created by the railway system had made accidents inevitable: “It is as though railway accidents were, of some set purpose, so arranged and diversified as to make the impossible possible, and to exhaust every conceivable, or even inconceivable, variety of the remotest and most unlikely danger.” In an appeal to the emerging science of the indeterminate, the article argued that Quetelet himself would have been hard-pressed to calculate the probabilities involved.<sup>12</sup>

These literary, bureaucratic, and journalistic accounts situated events within a wider geography of social, temporal, and spatial relations, one implicated not only in traditional concerns about the individual, technologies, gender, and social class, but also in changing ideas about probability, causation, and the potentialities of complex systems.<sup>13</sup> In doing so, they also created distinctively modern explanatory structures for thinking about responsibility, accident, and social order in an age of complex causality.<sup>14</sup>

#### NOTES

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