

ROMANTIC SHOCK AND INDUSTRIAL CATASTROPHE

Stephanie O'Rourke

DOI: <https://doi.org/10.14712/2571452X.2025.69.5>

Abstract: This essay examines two seemingly different manifestations of shock under the sign of British Romanticism, one associated with electricity and the other associated with mining. In both popular and scientific discourses about electricity, shock named an embodied experience characterized by intense vulnerability and perceptual deactivation. A similar kind of experience was invoked in descriptions of catastrophic mining accidents, as well as in prints of mined landscapes. Attending to mining landscapes and to the language used to report on mining accidents, I argue that industrial resource extraction meaningfully prompted and shaped shock as a category of aesthetic experience in the early nineteenth century.

Keywords: electricity, extraction, industrial accidents, landscape, Romanticism, shock

At the turn of the nineteenth century, the term “shock” had both technical and colloquial resonances. It could refer to a collision, a sudden movement, an attack, a source of offence or displeasure, or the production of a nervous or electric discharge.¹ The word was widely used to characterize extreme embodied and psychic responsiveness to a range of phenomena. One might be “shocked” by a work of art, as Horace Walpole famously was when he first saw Henry Fuseli’s painting *The Nightmare* exhibited at the Royal Academy in 1782. Or one might be physically “shocked” when taking part in a demonstration of electricity, as happened in fashionable drawing rooms, scientific academies, and popular entertainment venues in European capitals.

Meanwhile, another form of shock was coming into view that accompanied the growing dominance of an economic system predicated on mechanization, fossil-based energy, and industrial resource extraction.² This essay examines two

¹ “Shock,” *Oxford English Dictionary*, 2nd edition, Vol. 15 (Oxford: Clarendon Press, 1989), 296.

² Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (New York: Verso, 2016).

seemingly different manifestations of shock under the sign of Romanticism, one associated with electricity and the other associated with mining. One appeared to act directly upon the human body and the other upon the natural world. As I have argued elsewhere, however, the logic of industrial resource extraction and its catastrophic consequences were experienced in intimate, embodied terms in the early decades of the nineteenth century.³ In this essay I propose that mining landscapes from this period – which are rarely commented on by historians of art and literature – diagrammed an experience of the world that bore many of the features that came to define other kinds of shock, especially electric shock. Attending to these images and to the language used to report on mining accidents, this essay considers how industrial resource extraction may have prompted and shaped shock as a category of aesthetic experience in the early nineteenth century.

Electricity As Science and Spectacle

Electricity featured prominently in both scientific discourses and popular forms of entertainment.⁴ In the second half of the eighteenth century, it was widely accepted that human and animal bodies were an ideal medium through which to transmit electricity.⁵ So closely was electricity linked with living bodies that some scientists argued that electricity constituted a vital force that animated living biological organisms.⁶ Luigi Galvani's famous experiments using electricity to produce muscular convulsions in the legs of dead frogs were part of a much larger genre of experiments and parlour tricks in which electricity was used to bring about spectacular transformations in human and animal bodies. Kits were even sold that enabled people to perform the "electric kiss" in their own homes: for this experiment, a young man or boy would be suspended from silk cords so that his feet did not touch the ground.⁷ An electric charge was applied to his body, and when he was touched by a member of the opposite sex, the small sharp bite of an

³ Stephanie O'Rourke, *Picturing Landscape in an Age of Extraction: Europe and its Colonial Networks 1780-1850* (Chicago, IL: The University of Chicago Press, 2025), esp. 101-36.

⁴ See Simon Schaffer, "Natural Philosophy and Public Spectacle in the Eighteenth Century," *History of Science* 21 (1983): 1-43.

⁵ Paola Bertucci, "Shocking Subjects: Human Experiments and the Material Culture of Medical Electricity in Eighteenth-Century England," in *The Uses of Humans in Experiments*, ed. Erika Dyck and Larry Stewart (Leiden: Brill, 2016), 111-38.

⁶ Marcello Pera, *The Ambiguous Frog: The Galvani-Volta Controversy on Animal Electricity*, trans. Jonathan Mandelbaum (Princeton, NJ: Princeton University Press, 1986).

⁷ The "electric kiss" was illustrated on the frontispiece of Jean-Antoine Nollet, *Essai sur l'électricité des corps*, 2nd edition (Paris: Chez les Frères Guerin, 1750).

electric shock would pass between them. Public displays of similar phenomena were featured in spectacular attractions, such as Robertson's phantasmagoria in Paris, and James Graham's "celestial bed" in Pall Mall. One of the most spectacular formats was the "human chain," in which electricity would pass rapidly between a group of people as they held hands. The electric chain could be accomplished on a small scale within a private drawing room but it was also done – to much fanfare – on a larger scale. Jean-Antoine Nollet famously produced a human chain with 200 Carthusian monks in 1746.⁸

Across both scientific and spectacular manifestations of shock as an electric discharge, we can pick out a handful of features that surfaced consistently. First, a sudden, luminous discharge.⁹ Karl Bohrer, in his investigation of "suddenness" as a nineteenth-century temporal modality, characterizes it in terms of discontinuity and non-identity. Friedrich Schlegel and Heinrich von Kleist, writing about the French Revolution *circa* 1800, invoked suddenness as what Bohrer calls "a mode of aesthetic perception" rooted in "radical temporalization" that "cannot be measured, not even logically, by what is already in existence."¹⁰ Related to this is the perceptual phenomenon of bright, concentrated, fleeting luminosity. Importantly, electricity itself is extremely difficult to see – due, in no small part, to the brevity with which a shock traditionally appears as it is transmitted from one object to another. Electric shocks were also a subject of much complaint among scientists because their appearance tended to blind rather than to illuminate. The deactivation of ordinary perceptual powers can therefore be taken as another structural feature of how the electric shock was understood at the turn of the nineteenth century.

The electric shock short-circuited legible forms of *causality*, too. While the secondary effects of electrification, such as making a body move, glow, or spark were relatively straightforward, the mechanisms by which the effects were produced were less apparent. Indeed, one of the reasons electricity was a popular feature of various forms of entertainment was the ease with which the showman could conceal it. An electrified object could be presented to an unsuspecting

⁸ Word of this had reached Britain by the second half of the eighteenth century. Joseph Priestley described Nollet's public demonstrations of the human chain in his influential book *The History and Present State of Electricity* (London: J. Dodsley et al., 1767), 97.

⁹ I am not the first to make this observation. Paul Gilmore notes that in early nineteenth-century literature electricity was characterized by "the fleeting, instantaneous, and elusive qualities of such aesthetic encounters." Paul Gilmore, *Aesthetic Materialism: Electricity and American Romanticism* (Stanford, CA: Stanford University Press, 2009), 12.

¹⁰ Karl Heinz Bohrer, *Suddenness: On the Moment of Aesthetic Appearance*, trans. Ruth Crowley (New York: Columbia University Press, 1994), 10-11.

handler or audience member, and only when coming into contact with a body would electricity visibly and briefly leap between them and disclose its presence.

Finally, the electric shock acted directly upon the human body. Not always, of course, but that was one of its most notorious and scintillating uses. Electricity breached the physical boundaries of the individual body, migrating with stunning ease across its cutaneous outer barriers, pulsing vividly through its muscular depths where it could trigger powerful contortions, setting strands of hair radiating outwards, and doing all of this independently of any mental action or control. While this was regularly demonstrated in public venues, it was also rigorously theorized and debated in scientific circles.¹¹ In both popular and technical discourses electricity revealed that the human body was porous and penetrable, receptive to the action of luminous forces. It announced the intense precarity of the human body. The electric shock could overpower the body, deactivate or bypass the conscious mind, and transgress the boundaries between alive and dead, self and other, interior and exterior.

As I have discussed elsewhere, the electric shock possessed a kind of radical potential to call into being an embodied political collective.¹² This was especially true in relation to the French Revolution, which was repeatedly compared to an electric experiment. And while it was more often invoked in relation to France, Joseph Priestley – himself an important figure in the study of electricity – observed that “the English hierarchy (if there be anything unsound in its constitution) has equal reason to tremble, even at an air-pump or an electrical machine.”¹³ These political metaphors hinged on the fact that, as exemplified in the “human chain,” electricity moves through human bodies nearly instantaneously and non-hierarchically. The speed with which electricity travels and its ability to evade mechanisms of surveillance rendered electricity an apt metaphor for a model of revolutionary spirit that could not be constrained or diverted by the enforcing procedures of the political status quo.

At the turn of the nineteenth century, electricity was widely cited. It featured in literature and artworks as well as popular forms of entertainment. Scientific studies of electricity were debated in the Royal Society and more widely

¹¹ Victoria Carroll, *Science and Eccentricity: Collecting, Writing, and Performing Science for Early Nineteenth-Century Audiences* (London: Pickering and Chatto, 2008).

¹² Stephanie O'Rourke, *Art, Science, and the Body in Early Romanticism* (Cambridge: Cambridge University Press, 2021), 104-46.

¹³ Joseph Priestley, *Experiments and Observations on Different Kinds of Air* (Birmingham: Thomas Pearson, 1790), xxiii. On the larger topic see Iwan Rhys Morus, “Radicals, Romantics and Electrical Showmen: Placing Galvanism at the End of the English Enlightenment,” *Notes and Records of the Royal Society of London* 63, no. 3 (2009): 263-75.

disseminated through public lecture series. Prints and newspapers recorded its powers, not infrequently employing it as a metaphor for radical political change. In other words, when Walpole noted in the margins of his exhibition catalogue that Fuseli's *The Nightmare* was "shocking," he would have been familiar with electricity as both a science and a spectacle. And while the electric shock was the mode of embodied shock most commonly referenced in Romantic Britain, other manifestations of it were becoming increasingly visible.

Industrial Peril

Robert Seymour was among the British satirists who sought to give pictorial form to the bodily perils that accompanied the supposed conveniences of steam-power in the early nineteenth century. His satires were particularly attentive to the absurdities visited upon the human body by novel forms of mechanization. In *Locomotion: Walking by Steam, Riding by Steam, Flying by Steam* (c. 1830), one man wears oversized mechanical boots that walk for him, two ladies ride in a carriage powered by "Gunpowder Tea," and another man sits astride a monstrous-looking flying device. Tellingly, in the distance an explosion or accident has thrown several bodies high into the air. The steam-powered locomotion in the foreground clearly comes at the expense of the lives of those in the background. By contrast, Seymour's *Going it by Steam* (1829) (Fig. 1) brings industrial peril into the foreground of the image. It depicts the explosion of a steam-powered carriage whose blast has ensnared eight men and four women. The print captures, among other things, the extent to which industrialization was transforming the relationship between the body and the landscape in a much broader sense.

The fullest expression of this shift would be found in the swift large-scale expansion of the railroads across Britain in the decade following the publication of Seymour's print. The new experience of travelling by rail proved to be a source of tremendous anxiety. Wolfgang Schivelbusch notes the frequent reference to the train as a projectile hurling through space.¹⁴ Newspapers luridly reported on the deadly consequences when trains collided, stalled on collapsing bridges, or were derailed. Even normal rail travel was thought to be a source of bodily peril. There seems to have been almost no limit to the range of bodily functions that were said to be negatively impacted by railway travel. The simple act of observing the landscape from a moving train was described as literally "pulling at the eyeballs."¹⁵ One 1866 book describes cases of concussions and spinal shocks in which patients might not experience an ailment until years after an accident or

¹⁴ Wolfgang Schivelbusch, *The Railway Journey: The Industrialization of Time and Space in the Nineteenth Century* (Berkeley, CA: University of California Press, 1977), 58.

¹⁵ Schivelbusch, *Railway Journey*, 121.

sudden jerk. Symptoms of rail travel included defective memory, confusion, irritability, sleeping difficulties, impaired sense of touch, altered posture, pain, weight loss, unusual sexual behaviour, numbness, and paralysis.¹⁶ Railroads were said to inflict violence upon the human body in ways that could not always be readily perceived, that expressed themselves non-synchronously, and that often lacked legible causality.



Fig. 1. Robert Seymour, *Going It by Steam*, 1829.
Hand coloured etching, 22 cm x 33 cm. Ironbridge Gorge Museum Trust.

Seymour's print (Fig. 1) is surprisingly sensitive to this dynamic. As bodies go flying through space, stretched and bent into unnatural positions, a thick wall of smoke throws up a barrier to our vision. This is an event whose causality is not accessible to either the spectator or the victims. Spatial depth is likewise cut off; while trains supposedly grant us access to distant spaces, our *visual* access to distance has actually been distorted and largely occluded. Such accidents dramatized the violent interventions in the human body attributed to the experience of steam-powered travel more broadly.

¹⁶ John Eric Erichsen, *On Railway and Other Injuries of the Nervous System* (London: Walton and Maberly, 1866).

In short, the introduction of steam-powered transportation was articulated in both textual and visual terms as producing an experience akin to shock. The Seymour prints supply useful reminders of the widely distributed experience of steam-powered mechanization as a threat to bodily integrity and perceptual power. The railroad maps out, in surprisingly literal terms, the coupling of violent resculpting of the physical environment – that is, of landscape – with the violent reshaping of the human body. It introduced a new genre of fatal catastrophe to nineteenth-century British life, but also because its routine operations were themselves regarded as a source of bodily harm or shock.

But the railroad is also instructive insofar as it was originally created not for leisure travel but for use at mines and metalworks. Steam-powered railways were invented and improved initially for use in mining: for the first half-century of their existence, the “rail ways” took the form of embedded metal rails along which a wagon or car would be drawn by horse. In short, steam-power was only one of the conditions of possibility for the railroad; the other was the mine. Mining landscapes therefore offer a key site for understanding how bodily experience was being reshaped under the sign of what Andreas Malm has called “fossil capital,” an economic regime predicated on self-accelerating systems of resource extraction and a reliance on fossil-based energy.¹⁷ To an extent, we might say that shock gave compressed expression to a form of aesthetic experience being shaped by extraction more broadly. As David Higgins and Tess Somervell have noted, the word “catastrophe” was used in Romantic literature to describe an event that subverted the existing order of things, a disaster that was widespread.¹⁸ Extraction did not *produce* catastrophes. Extraction *was* the catastrophe.

Landscapes of Catastrophe

Extraction informed the early nineteenth-century experience of several sites we traditionally associate with the pastoral and the picturesque. Neath Abbey and Tintern Abbey were regarded at the turn of the nineteenth century as two of the most historically significant Cistercian abbey ruins in Britain. Both were also industrial sites. There has been some debate about the extent to which Tintern Abbey, for example, was a site of “industrial despoilation.”¹⁹ At the very least, the

¹⁷ Malm, *Fossil Capital*.

¹⁸ David Higgins and Tess Somervell, “Catastrophe,” in *The Cambridge Companion to Literature and the Anthropocene*, ed. John Parham (Cambridge: Cambridge University Press, 2021), 181-95.

¹⁹ An influential account of its industrial state was put forward in Marjorie Levinson, *Wordsworth's Great Period Poems: Four Essays* (Cambridge: Cambridge University Press,

active iron and wireworks would have been unavoidable to those travelling to the abbey, and the furnaces and forges emitted smoke and loud noises that would have been difficult to ignore for those painting it, to say nothing of the extensive charcoal-burning in the adjacent woods. William Gilpin – who introduced the picturesque as an aesthetic category – even went so far as to suggest that atmospheric pollution produced a harmonious blending effect that visually smoothed over the jarring contrast of the industrial metalworks and the abbey ruins.²⁰ Gilpin's commentary more precisely underlines that Tintern Abbey, as a landscape, produced effects of discontinuity and non-identity, which might be remedied, Gilpin seemed to hope, by the blurring effects of industrial waste itself.



Fig. 2. "Neath Abbey," in Edward Donovan, *Descriptive Excursions through Wales and Monmouthshire*, Vol. 2. London, 1805. Image source: Wellcome Collection.

1986), 29-32. Charles Rzepka summarizes scholarly debates about this in *Selected Studies in Romantic and American Literature, History, and Culture: Inventions and Interventions* (Farnham: Ashgate, 2010), 193-212.

²⁰ In his *Observations on the River Wye*, Gilpin observed that the production of charcoal to power the furnaces "is manufactured on the spot; and the smoke, issuing from the sides of the hills; and spreading its thin veil over a part of them, beautifully breaks their lines, and unites them with the sky." William Gilpin, *Observations on the River Wye, and Several Parts of South Wales, Made in the Summer of the Year 1770* (London: R. Blamire, 1782), 12.

The decisive parallel trajectory of metal rails that wove their way through the area around Neath Abbey can be seen in the foreground of an 1805 print (Fig. 2).²¹ In the second half of the eighteenth century, such railways were installed in and around metalworks, manufactories, and mines (a given industrial site often combined these activities in the late eighteenth and early nineteenth centuries), physically mediating one's access to this ostensibly picturesque setting. The railway's trajectory, forking to two separate paths, functions compositionally as an echo of the pre-industrial path in the midground leading to the abbey, but as its dark twin: deeply shaded where the abbey path is luminous, and never resolving into a single trajectory on the left but remaining in a state of fluctuation as it extends past the margins of the print. In the right foreground, wooden infrastructure looms over the pithead, whose bold geometry echoes the ruined stone towers of the entrance to the abbey in the midground.

The print tests out Gilpin's assertion about the aesthetically harmonizing effects of atmospheric pollutants. The viewer encounters effects of perceptual occlusion and the erasure of seemingly fixed boundaries in the landscape – effects that were also attributed to electric shocks and steam-powered transit. In the context of mining, one of the fixed boundaries repeatedly overturned was the physical distinction between above and below, evident in the print where particulate waste can be seen emanating from the works on the right. It replicates in pictorial terms the more literal extraction taking place within the landscape: namely, converting the dense materiality of the hills into smoke and thereby dissolving a fixed topographical feature. Doing so renders unavailable the distinction between land and sky through which nearly all representations of landscape were structured and made comprehensible.

As Mary-Ann Constantine recently observed, Welsh mining created “unstable ground” in the sense that travellers learned to distrust the material stability and fixity of the landscapes through which they journeyed.²² In her 1794 account of travelling through Wales, Mary Morgan described the precarity of the land and dwellings in mining regions – with every wall bearing, in her words, “a chasm.”²³ In the same text, Morgan also recounted a story in which her husband's grandparents nearly died while travelling on horseback in the dark when they rode over the edge of a coal pit. (If his travel companion Joseph Cottle is to be

²¹ An excellent account of Edward Donovan's travels through mining works in Wales can be found in Mary-Ann Constantine, *Curious Travellers: Writing the Welsh Tour, 1760-1820* (Oxford: Oxford University Press, 2024), 130-38.

²² Constantine, *Curious Travellers*, 127.

²³ Mary Morgan as quoted in Constantine, *Curious Travellers*, 225-26.

believed, Samuel Taylor Coleridge had a similar experience, almost riding over the edge of an old open-pit mine on his way to visit Tintern Abbey.²⁴) The threat of catastrophe, of extraction fatally deranging the relationship between body and landscape, was something one did not need to visit a mine to experience.

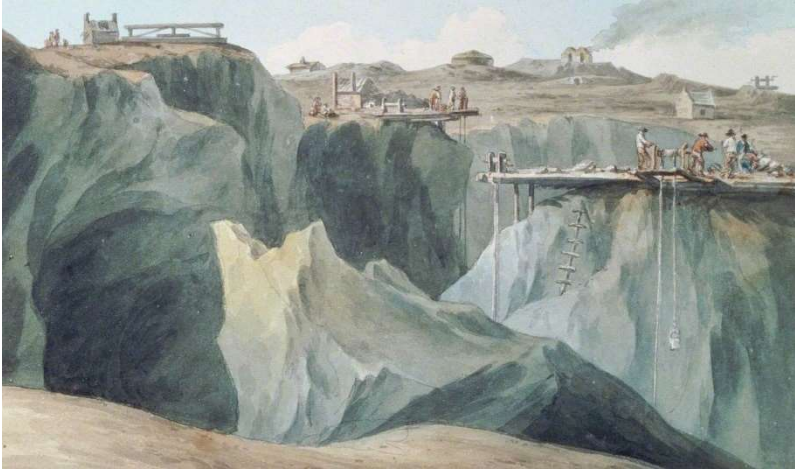


Fig. 3. John “Warwick” Smith, *Junction of Mona and Parys Mountain Copper Mines*, 1790. Watercolour and pencil, 27.3 cm x 32.4 cm. Amgueddfa Cymru – National Museum Wales.

Some illustrations of mining landscapes did indeed register this dynamic. At the turn of the nineteenth century, the largest copper mine in the world was in Wales at the Parys Mountain. John “Warwick” Smith and Julius Ibbetson were among those whose images recorded the uncanny scale on which open-pit mining could resculpt the physical terrain. Smith’s 1790 watercolour *Junction of Mona and Parys Mountain Copper Mines* (Fig. 3) portrays the mining landscape as, in effect, an inverted mountainous topography – in which it is the absence of earth, the jagged peaks of dark air extending downwards, that have become the defining features of landscape. The extremely high horizon line (itself very unusual in topographical landscapes of the period but which features more often in mining landscapes) creates a vantage point that sits quite deep. At the same time, it denies us the extensive visual access to a scene that typically accompanied topographical

²⁴ Joseph Cottle, *Reminiscences of Samuel Taylor Coleridge and Robert Southey* (London: Houlston and Stoneman, 1847), 33.

illustration. The emphatic cutting off of pictorial depth in such landscapes makes vivid the extent to which mining introduced spectacular constraints on the perceptual capacities of the human observer.

The primary space available to the viewer – the space of the mine – is itself remarkably noncommunicative. This dynamic comes into even sharper focus in a 1790 Ibbetson print of the same mine (Fig. 4). Here the horizon line is even higher; the viewer is granted effectively no visual access to the surface-level world, and the worked subterranean surface of the mine remains largely inexpressive and difficult to perceptually disambiguate. The Ibbetson print places greater emphasis on what this configuration has done to human bodies. Most are cantilevered off the land on wooden structures. They hover precariously over the jagged depths of the mine working pulleys to haul up buckets of ore. Two men in the foreground are more securely situated on *terra firma*, but this is premised, in compositional terms, on their placement far below the surface of the earth, far removed from the domain of human labour and human habitation. In the distance, a single solitary figure in shadow dramatizes this uncanny inversion of landscape: in which the human is *below* earth rather than above it. His body is fully encircled by mineral-rich rock, and he is glimpsed as if through an aperture, a frame that delimits our vision: the frame of the mine.



Fig. 4. Julius Ibbetson, *Paris Mine*, 1790.

Aquatint engraving. Reproduced by permission of The National Library of Wales.

One of the mines that consistently attracted visitors in the late eighteenth and early nineteenth centuries was the Carclaze tin mine in Cornwall.²⁵ The earliest published image of it was made by the landscape painter Joseph Farington in 1814. A similar composition was produced several years later by Thomas Allom (Fig. 5) for inclusion in a book detailing the features of Devon and Cornwall. In keeping with the illustrations of copper mining in Wales, the print features a vertiginously high horizon line with the viewer placed far below its surface, although the viewer is afforded greater perceptual access to the recessional space within the mine. The sharp, towering peaks of the rock-face – which bore a white hue because of the presence of kaolin – recall the Alpine landscape most closely associated at the time with the sublime, as if mining had effected an aesthetic transformation upon its environment as well as a physical one.



**Fig. 5. Thomas Allom, *Carclaze Tin Mine, Near St. Austle*, 1831.
Engraving, 11.3 cm x 15.7 cm. Public domain.**

Such prints registered the perceptual barriers that industrial mining installed within the British landscape. The Allom print, for example, creates a lithic frame that encircles a portion of the foreground. The worked surface of the mine fully

²⁵ Colin Bristow, "The Role of Carclaze Tin Mine in Eighteenth- and Nineteenth-Century Geotourism," *Geological Society, London, Special Publications* 417 (2015): 187-97.

occupies the lefthand and bottom margins of the print, curling some way up the righthand side as well. Not only are we as viewers placed *within* the mine, but our view is more explicitly being mediated by its contours: the rock serves as a frame through which sight is directed. Nor does this aperture enhance our perceptual access to the scene. In fact it rather awkwardly blocks our view of the two men in the foreground. Ours is a contingent view, not a masterful one.

Early nineteenth-century mining landscapes did not portray shock as an embodied experience, but they nonetheless replicated some of its structural features – both through how they portrayed the physical environment and how they mediated the viewer's access to that environment. The effects visited upon the body in Seymour's print of a steam-powered carriage crash took on a different pictorial guise in the visual culture of mineral resource extraction. But in each case, the relationship between the body and the natural environment was distorted. Seemingly permanent topographical features were dismantled and spatial distinctions were overturned. The landscape became increasingly difficult to make sense of, perceptually. And the body itself, often only partially glimpsed, occupied positions of precarity and dislocation.

A Most Awful and Melancholy Catastrophe

The most acute expression of extractive catastrophe in this context took the form of mining accidents. My focus here is on explosions, but gas poisoning, cave-ins, and underground flooding were also fatal. Higgins and Somervell have proposed that Romantic environmental catastrophe is best understood as a "sudden overturning."²⁶ Mining accidents fit this description neatly. They were physically destructive but they also brought about a literal overturning, in which that which was formerly below the surface of the earth was thrown violently upwards and that which was formerly above collapsed downward. It is perhaps unsurprising, then, that the language of mining accidents was emphatically catastrophizing at the turn of the nineteenth century. Writing of an explosion at Carville Colliery near Newcastle in 1821, an item titled "Dreadful Event" in *The Times* began: "On Tuesday morning last, about 8 o'clock, another of those awful catastrophes which, within these few years, it has too often been our melancholy duty to mention, occurred."²⁷ The explosion at Jarrow Colliery in 1826 was "another of those awful visitations"²⁸ according to *The Times*. Even in the restrained, procedural language

²⁶ Higgins and Somervell, "Catastrophe," 181.

²⁷ "Dreadful Event (from a Newcastle paper)," *The Times* (30 October 1821).

²⁸ "Distressing Accident (from the Newcastle Chronicle)," *The Times* (24 January 1826).

of the 1835 *Report from the Select Committee on Accidents in Mines* for the Houses of Parliament, an accident at Wallsend Colliery was termed “a most awful and melancholy catastrophe.”²⁹

Reporting on mining accidents described the bodies of men and horses thrown from deep underground high into the air. Comparing them to earthquakes and volcanic eruptions, such reports dramatized the overturning of the spatial distinction between “above” and “below” I have attributed to illustrations of mining landscape more generally. A handful of other features we can take to be characteristic of the popular and technical literature on mining explosions of the early nineteenth century: firstly, its suddenness. One of the startling features of mining accidents is that they killed people on a large scale almost immediately. “In an instant,” reads the sober Parliamentary report about a later explosion at Wallsend Colliery, “101 men and boys were killed.”³⁰ The firedamp, it continues, was “sudden and violent in its consequences.” Of the Wallsend explosion in the previous decade, *The Times* typified the newspaper reports of mining accidents when it wrote that “50 men and boys were instantaneously killed in the pit.”³¹

The violent luminosity of mining explosions was especially resonant with accounts of electricity. For example, local clergyman John Hodgson wrote a widely read and translated account of one of the most famous nineteenth-century mining accidents at Felling Colliery in 1812. In it he attributed both temporal non-identity and blinding luminosity to the moment of the explosion, observing, “the whole mine is instantly illuminated with the most brilliant lighting.”³² William Reid Clanny, the inventor of one version of a miner’s safety lamp, remarked that “in cases where large quantities of inflammable air are extricated in the mines; the miners who have been present at explosions, have not noticed anything very particular by which they were guided; it comes as rapidly upon them as a flash of lightning does in the atmosphere.”³³ We may assume that mining accidents and electricity had little to do with one another, but those writing in the early nineteenth century were quick to note their similarities.

Clanny was hardly alone in remarking on the lack of legible causality of such accidents. In practical terms, this was due to the fact that flammable gases were

²⁹ *Report from the Select Committee on Accidents in Mines*, House of Commons, Parliament of Great Britain (1835), v.

³⁰ *Report*, v.

³¹ “Dreadful Event.”

³² John Hodgson, *An Account of the Explosion Which Killed Ninety-Two Persons in Brandlin Main Colliery, at Felling, near Newcastle upon Tyne on May 25, 1812* (Newcastle: Edward Walker, 1813), 96.

³³ *Report*, 30.

invisible and often odourless. Equally, the event of the explosion deactivated the perceptual powers of those who experienced it. It was often vigorously asserted that the ventilation of the mine was in perfectly good order at the time of an explosion. *The Westmorland Gazette*, for example, informed readers that at the time of an 1826 explosion at Jarrow, "[t]here was no appearance of danger; but, on the contrary, the pit seemed well ventilated, and in a perfectly safe state."³⁴ The overman of Jarrow testified in the coroner's enquiry: "I cannot form any idea of the immediate cause of the accident." George Hope, the wasteman at Jarrow, similarly stated that he "saw nothing to be complained of" when examining the site. "I never heard nor saw anything till I was thrown down," observed the pitman Thomas Scott, who sustained serious burns. "I then heard the blast."³⁵ Indeed, *The Westmorland Gazette* informed readers that "the cause" of the 1826 Jarrow explosion "will probably remain for ever unknown, as none are saved who were in the place where the blast originated."³⁶ This was often the case. In their examination of another explosion the Parliamentary Committee complained of the difficulty of locating an accident's cause when "no one survived to tell the tale of how these occurrences took place."³⁷ "Conjecture," the report complained, "supplied the want of positive knowledge most unsatisfactorily." Even when some did survive, the precise cause of the event remained unknown. As one wasteman testified about survivors of an explosion before the Select Committee, "the parties themselves, I believe one or two of the persons who came out, could give no description of how it happened."³⁸ Direct experience of the event, it was reported, did not yield knowledge of its mechanisms or causality.

Finally, the industrial extraction of mineral resources called into being a state of ongoing bodily peril. "The risk," reported the Select Committee to Parliament in 1835, "is constant and imminent."³⁹ "From minute to minute," a later portion of the report reads, "one act of omission of assigned duty, one solitary momentary neglect, may cause the instant destruction of life and property to an indefinite extent."⁴⁰ Under the sign of industrial resource extraction the body was constantly exposed to grave risks with unknown causes and indefinite power.

Across this range of examples, we can pick out certain features that might be characteristic of both Romantic shock and Romantic extraction: temporalities

³⁴ "News," *The Westmorland Gazette* (4 February 1826).

³⁵ "Distressing Account."

³⁶ "News," *The Westmorland Gazette*.

³⁷ *Report*, vii.

³⁸ *Report*, 43.

³⁹ *Report*, iii.

⁴⁰ *Report*, vi.

characterized by suddenness, discontinuity, and non-identity; the limitations imposed upon and in some cases the complete obliteration of human perceptual powers; the violent transmission through and breaking apart of bodies, often numerous bodies at the same moment; the short-circuiting of legible forms of causality; the overturning of seemingly fixed hierarchies and seemingly absolute binaries (such as life and death, above and below, material and atmospheric); and, finally, an accompanying understanding of embodied experience as something in a prolonged state of mortal precarity. These elements, I propose, speak to a form of aesthetic experience that was widely distributed in the late eighteenth and early nineteenth centuries.

Insofar as the panorama was a paradigmatic early nineteenth-century mode of visibility, it would seem to stand in opposition to the precarity and the perceptual obliteration of industrial catastrophe. Offering a 360-degree immersive view of an environment from an elevated vantage point, the panorama is often held up as an expression of a new model of bourgeois subjectivity premised on visual mastery.⁴¹ Yet it bears recalling that the first truly successful panorama in London represented the view from the roof of Albion Mill, the first mill to employ steam power to process large quantities of grain. Based on painted sketches made in the winter of 1790-91, the panorama actually staged a viewpoint *from* a site of notorious industrial catastrophe. Just a few months after the preparatory sketches were made, the building burned down in a widely publicized and spectacular blaze. In other words, even the supposed stability and mastery of the viewpoint enshrined in the panorama was, from early on, premised on the viewer occupying the now-fictional space above a destroyed mill, a space Nathan Hensley might call “the catastrophe from within” nineteenth-century extractive modernity.⁴² The panorama’s viewer may not have been entirely dissimilar, then, from the figure cantilevered over the yawning chasm of the world’s largest copper mine, or those travelling through the British landscape who found themselves, suspended like the cartoon roadrunner, in the moment just after having boldly and unwittingly stepped over the threshold of an industrial quarry.

BIBLIOGRAPHY

Bertucci, Paola. “Shocking Subjects: Human Experiments and the Material Culture of Medical Electricity in Eighteenth-Century England.” In *The Uses of Humans in Experiments*, edited by Erika Dyck and Larry Stewart, 111-38. Leiden: Brill, 2016.

⁴¹ Jonathan Crary, “Géricault, the Panorama, and Sites of Reality in the Early Nineteenth Century,” *Grey Room* 9 (Autumn 2002): 5-25.

⁴² Nathan Hensley, *Action without Hope: Victorian Literature after Climate Collapse* (Chicago, IL: The University of Chicago Press, 2025), 4.

- Bohrer, Karl Heinz. *Suddenness: On the Moment of Aesthetic Appearance*. Translated by Ruth Crowley. New York: Columbia University Press, 1994.
- Bristow, Colin. "The Role of Carclaze Tin Mine in Eighteenth- and Nineteenth-Century Geotourism." *Geological Society, London, Special Publications* 417 (2015): 187-97.
- Carlyle, Thomas. *The French Revolution*. London: Chapman and Hall, 1837.
- Carroll, Victoria. *Science and Eccentricity: Collecting, Writing, and Performing Science for Early Nineteenth-Century Audiences*. London: Pickering and Chatto, 2008.
- Constantine, Mary-Ann. *Curious Travellers: Writing the Welsh Tour, 1760-1820*. Oxford: Oxford University Press, 2024.
- Cottle, Joseph. *Reminiscences of Samuel Taylor Coleridge and Robert Southey*. London: Houlston and Stoneman, 1847.
- Crary, Jonathan. "Géricault, the Panorama, and Sites of Reality in the Early Nineteenth Century." *Grey Room* 9 (Autumn 2002): 5-25.
- "Distressing Accident (from the Newcastle Chronicle)." *The Times*, 24 January 1826.
- Donovan, Edward. *Descriptive Excursions through South Wales and Monmouthshire*. London: Printed for the Author, 1805.
- "Dreadful Event (from a Newcastle paper)." *The Times*, 30 October 1821.
- Erichsen, John Eric. *On Railway and Other Injuries of the Nervous System*. London: Walton and Maberly, 1866.
- Gilmore, Paul. *Aesthetic Materialism: Electricity and American Romanticism*. Stanford, CA: Stanford University Press, 2009.
- Gilpin, William. *Observations on the River Wye, and Several Parts of South Wales, Made in the Summer of the Year 1770*. London: R. Blamire, 1782.
- Hensley, Nathan. *Action without Hope: Victorian Literature after Climate Collapse*. Chicago, IL: The University of Chicago Press, 2025.
- Higgins, David and Tess Somervell. "Catastrophe." In *The Cambridge Companion to Literature and the Anthropocene*, edited by John Parham, 181-95. Cambridge: Cambridge University Press, 2021.
- Hodgson, John. *An Account of the Explosion Which Killed Ninety-Two Persons in Brindlin Main Colliery, at Felling, near Newcastle upon Tyne on May 25, 1812*. Newcastle: Edward Walker, 1813.
- Levinson, Marjorie. *Wordsworth's Great Period Poems: Four Essays*. Cambridge: Cambridge University Press, 1986.
- Malm, Andreas. *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming*. New York: Verso, 2016.
- "News." *The Westmorland Gazette*, 4 February 1826.
- Nollet, Jean-Antoine. *Essai sur l'électricité des corps*, 2nd edition. Paris: Chez les Frères Guerin, 1750.

- O'Rourke, Stephanie. *Art, Science, and the Body in Early Romanticism*. Cambridge: Cambridge University Press, 2021.
- O'Rourke, Stephanie. *Picturing Landscape in an Age of Extraction: Europe and Its Colonial Networks 1780-1850*. Chicago, IL: The University of Chicago Press, 2025.
- Pera, Marcello. *The Ambiguous Frog: The Galvani-Volta Controversy on Animal Electricity*, translated by Jonathan Mandelbaum. Princeton, NJ: Princeton University Press, 1986.
- Priestley, Joseph. *Experiments and Observations on Different Kinds of Air*. Birmingham: Thomas Pearson, 1790.
- Priestley, Joseph. *The History and Present State of Electricity*. London: J. Dodsley et al., 1767.
- Report from the Select Committee on Accidents in Mines*. House of Commons, Parliament of Great Britain (1835).
- Rhys Morus, Iwan. "Radicals, Romantics and Electrical Showmen: Placing Galvanism at the End of the English Enlightenment." *Notes and Records of the Royal Society of London* 63, no. 3 (2009): 263-75.
- Rzepka, Charles. *Selected Studies in Romantic and American Literature, History, and Culture: Inventions and Interventions*. Farnham: Ashgate, 2010.
- Schaffer, Simon. "Natural Philosophy and Public Spectacle in the Eighteenth Century." *History of Science* 21 (1983): 1-43.
- Schivelbusch, Wolfgang. *The Railway Journey: The Industrialization of Time and Space in the Nineteenth Century*. Berkeley, CA: University of California Press, 1977.