

## The Partial Truth

*The Vast Extent: On Seeing and Not Seeing Further*, **Lavinia Greenlaw**, Faber & Faber, 2024

The cover of *The Vast Extent* depicts a print by the French astronomer, E. L. Trouvelot. The print shows a nocturnal sky over a dark landscape of hills and trees. Above, the streaks and slices of a meteor shower, scoring the night, resembling the trails of a firework. Beautiful and strange enough, the artwork's full title – *The November meteors: As observed between midnight and 5 o'clock A.M. on the night of November 13-14, 1868* – suggests that Trouvelot's image captures not only the phenomenon but its duration, five hours in a single glance. Creating something like a constellation of bright points and touchstones, their contrails often overlapping, even swerving off course, the meteors provide a fitting analogue for Greenlaw's new collection of 'exploded' essays, a study of the edges of our understanding and the limits of perception. '[T]hrough subjects such as early photography, caves, myopia, bad weather, mountains, microscopes, gliding and the commercial uses of radium,' writes Greenlaw, these essays gather evidence towards questions of seeing and believing: 'How do we make sense of what we see? How do we describe what we have never seen before?'

Written over a decade, *The Vast Extent* – like Trouvelot's image – contains its own hidden duration, ten years of time and thought condensed into a single volume. More than this, the book 'consolidates a thirty-year body of work,' suggests the author, expanding and reflecting on a career-long engagement with the meeting points of art and science. Those familiar with Greenlaw's work will recognize recurring subjects, from J. M. Barrie, Marie Curie, and photographer Garry Fabian Miller to ideas about the geological and personal significance of place. Building on the work of her previous memoirs – most recently *Some Answers Without Questions* (2021) – *The Vast Extent* also serves, in part, to illustrate Greenlaw's poems, giving context to her six collections. One essay, for instance, opens with an episode at London's National Gallery, in which Greenlaw's visually impaired aunt Isla (a retired

anaesthetist) conjures from nowhere ‘a small telescope’, using it to better see a painting by Philip de Koninck; the same incident begins ‘A Dutch Landscape for Isla McGuire’, a sonnet from *The Casual Perfect* (2011). Far from a primer or a user’s guide, however, *The Vast Extent* instead shows the development of Greenlaw’s thinking over time, showing how one thought or idea can come to influence another, changing its shape or revising its consequences. (‘It’s not the theme that interests me,’ read lines from Greenlaw’s poem ‘The Catch’, ‘but the variation.’) That *The Vast Extent* is published in the same breath as the author’s new *Selected Poems* (2024) is far from a coincidence, the two books even sharing a distinctive colour scheme – ocean greens, olive greys – as if to emphasise their shared anatomy. ‘In 1993, I published my first book, *Night Photograph*,’ writes Greenlaw: ‘I’ve been writing about the difficulties and variables of vision ever since.’

*The Vast Extent* begins in darkness. The opening essay knits together deep caves, prehistoric art, and going to cinema with passages on blindness, sleep, and playing in the woods at night. ‘If we open up the question of what happens when we can’t see,’ writes Greenlaw, ‘we find within it further questions sitting one inside the other. What is it that we still see? What are the limits of vision? Why are there limits at all?’ Beginning with the late Colin Blakemore (1944–2022), Greenlaw’s essays reproduce snippets of conversation between herself and leading scientists in the fields of neurology, psychology, and studies of perception. In darkness, suggests Blakemore, ‘You start to discover information which is present in your other senses, which you’re not normally aware of.’ Throughout *The Vast Extent*, Greenlaw is drawn to experiences, to phenomena and places – whether Slovenia’s expansive cave networks or the time-distorting Arctic Circle, her father’s descent into Alzheimer’s or the use of optical devices – that challenge, shape, or contradict the way we understand the world. ‘Science is at its best when the data departs from your expectations,’ continues Blakemore, ‘and you suddenly begin to see a different interpretation emerging.’ Greenlaw lifts her title from a passage of John Locke’s empiricist treatise, *An Essay Concerning Human Understanding* (1689), used here as an epigraph: ‘the comprehension of our understanding comes exceeding short of the vast extent of things’. ‘There is always more to see,’ Greenlaw agrees, ‘whether we choose to or not.’

Brought up in a family of scientists and doctors, Greenlaw has gained

an occasionally misleading reputation for writing poetry *about* or *in response to* science, producing ‘Science for Poets’, to borrow the title of an early poem, or even poetry for scientists. It’s true that Greenlaw’s work is often rooted in the scientific; several poems in her second collection, *A World Where News Travelled Slowly* (1997), were produced during a residency at the Science Museum in London. Nevertheless, Greenlaw seems not so interested in scientific knowledge as the processes and structures of discovery and measurement. More than specific theories or explanations, her work tends to record moments of doubt and revelation, the history of the unexplained or suddenly explainable, a world of outmoded technology and uncharted territories, odd-looking creatures and dangerous chemicals, strange objects and implements collected in museums. This explains her interest – in her poems and *The Vast Extent* – in the technologies of vision, from microscopes and telescopes to high-res cameras, VR headsets, and seventeenth-century perspective boxes; these are the instruments of perception, offering new ways to observe the world, enhancing or disproving how it used to look before. Due to her longstanding interest in radioactive material, particularly the history of radium, discovered by Pierre and Marie Curie in the late-1890s, I was reminded, reading Greenlaw’s book, of Marvel Comics’ Daredevil: blinded by a radioactive substance while trying to save (somewhat prophetically) a blind man from a passing truck, Manhattan lawyer Matt Murdock acquires a kind of radar sense, allowing him to “see” beyond the limits of a human being; in some issues, he sees through walls and solid surfaces; in others, his vision is omnidirectional, from all sides at once.

While she doesn’t mention Daredevil, Greenlaw is clearly curious about the people, objects, and discoveries that help us see the world anew, making it strange again, explaining and presenting it in ways we hadn’t been expecting. When the Darling children first encounter a mysterious boy with no shadow at the start of Barrie’s *Peter Pan* (c.1911), they implicitly trust his confidence in a set of laws entirely at odds with the ones they are used to. ‘The children accept the strange boy with his torn shadow because he knows the rules,’ writes Greenlaw: ‘They do not question that if they jump out of the window, they will be able to fly.’ The slightest alteration to our point of view, Greenlaw suggests, can be enough to help us understand the world in ways we may have learned to overlook. ‘We are strangely affected by seeing the shore from

a moving ship, from a balloon, or through the tints of an unusual sky,' writes Ralph Waldo Emerson in *Nature* (1836), reflecting that 'The least change in our point of view, gives the whole world a pictorial air.' 'Turn the eyes upside down, by looking at the landscape through your legs,' he advises, 'and how agreeable is the picture, though you have seen it any time these twenty years!'

For Greenlaw, our attempts to make sense of the world – scientifically or otherwise – form lasting 'habits of perception'. We create 'a frame, or framework, that we seem to need,' she writes, which we become somehow reliant on, preventing us from seeing differently. 'Consider what night meant in [the year] 1600 beyond the lantern in your hand, the fire in the hearth, the candle by your pillow':

Night would have been both more absolute and more accessible, moonlight less decorative and more of a practical necessity. Was darkness more potent then? Although we now seem to move more safely and swiftly through it, perhaps it increases in power, in mystery, the less of it there is.

In the twenty-first century, Greenlaw continues, 'we enter the dark less and less, and forget how to move through it, thinking the lit path the safest route when in actuality it exposes us and disables our vision.' Speaking to the neuro-psychiatrist Paul Fletcher, Greenlaw explores the notion that 'The brain receives data which it tries to make sense of according to what it already knows, [...] remembering what we've seen before.' 'How do we know that what we're looking at is real?' she asks. 'I don't think we do,' Fletcher replies, 'I think we just rely on its reliability.'

In *Learning to Look: Dispatches from the Art World* (2021), the American philosopher Alva Noë reflects on Rembrandt's painting, *The Anatomy Lesson of Dr Nicolaes Tulp* (1632). The painting shows a group of figures crowded round a pale cadaver. Tulp is in the process of examining the body's arm, stripped of its skin, revealing ligaments and muscles, explaining its anatomy. What's curious about the painting are the gazes of the different students: one peers at the open arm, a couple turn their eyes to Tulp, while others still look over at the pages of a giant book. For Noë, Rembrandt's painting becomes a commentary on understanding, exploring the idea that there is 'no such thing as the direct inspection of reality; that is, there is no encounter with how

things are that is not shaped or at least informed by our thoughts and pictures, and indeed by our scientific theories.’ ‘From this point of view,’ he continues, ‘we can think of what is on display in *The Anatomy Lesson* differently’:

The students are not turning away from reality when they turn their attention to the book in front of them. They are using the books and images in order to see what is there before them. The book teaches them to see what is there by showing them what they are supposed to see. The book gives them the knowledge necessary for comprehending vision.

This cyclicity is all well and good, of course, depending on the textbook (as any Flat Earther will be quick to tell you). After all, writes Adam Phillips, it is often the case that ‘How someone comes to believe in something is more revealing than what they believe.’

Greenlaw, too, explores how our reality is shaped by what we take to be its explanation. ‘No Particular Horse’ – a poem from her residency at the Science Museum – alludes to ‘Gervase Markham’s horse skeleton’, a drawing that ‘misled readers / for twenty-one editions and a hundred years // until Auzoux’s papier-mâché model’ corrected the anatomical record. In ‘The Recital of Lost Cities’, from *Night Photograph*, Greenlaw imagines maps outdated by rising sea levels, a future where ‘The printing plates for the last atlas / were archived unused’, ‘locked in a vault / to save the public from the past / and the danger of wrong directions.’ ‘A map is in its essence and intent an arbitrary selection of information,’ notes Rebecca Solnit. ‘A static map cannot describe change, and every place is in constant change’:

I map your garden. A swarm of bees arrives, or a wind blows the petals off the flowers. You plant an apricot sapling or fell a shattered spruce; the season or just the light changes. Now it is a different garden, and the map is out of date; another map is required; and another; [and] yet another[.]

As if to counter our stale ‘habits of perception’, Greenlaw seems particularly drawn to figures whose work resists this *out-of-date-ness*, who seem to understand that ‘seeing clearly is not a matter of emptying the eye of preconception but of pinpointing the moment when the brain is starting to

make sense of what it sees and before it has crowded out fresh information with those preconceptions.’ Chief among these figures is the Dutch artist Jacques de Gheyn II, whose observational fidelity amounts to an ‘insistence on what is seen rather than what is known’. For Greenlaw, de Gheyn’s depictions of natural subjects ‘seem to reveal their essence’, restoring to his finished work the strangeness of a first encounter ‘so that we too see a mouse, a rose, a frog as if for the first time.’ What Greenlaw values in de Gheyn applies to others in *The Vast Extent*, from the artists Rachael Whiteread and J. M. W. Turner to the natural observations of Luke Howard, Gilbert White, and the godfather of empirical microbiology, Antonie van Leeuwenhoek. A steady influence on her own poetry, Greenlaw also draws attention to the descriptive powers of Elizabeth Bishop, whose writing (in poet Mark Ford’s phrase) ‘consistently charts her longing to evade the premises and strictures of her seeing.’ ‘This is not the poetry of the corner of the eye,’ writes Greenlaw. Instead, ‘Bishop adjusts her gaze but keeps looking, unwavering, alive to revision, and always outwards.’ ‘What she shares, to a remarkable degree,’ Greenlaw concludes, ‘is how she sees. The thrill is in the live-action replay of her adventure with her subject: the initial surprise, the feeling out, the determination to describe.’

Illustrated generously with colour reproductions, *The Vast Extent* offers a thoughtful exploration of believing and its origins, considering not only how ideas are formed but how they come to be revised. The book is dedicated to Greenlaw’s younger brother, Reynold, who died in 2021; an astrophysicist by profession, it is he who ‘gently showed me,’ Greenlaw notes, ‘that my ‘seeing’ was qualified by habits of perception of which I was unaware.’ ‘Over time we learn how to predict what we are going to see and how to navigate the world,’ she writes, ‘but in another sense we see less clearly because more of what we see is coming from us and less from outside.’ If this notion has ramifications beyond the scientific or aesthetic, so much the better. The book ends with a letter from Greenlaw’s brother, written in his early twenties, describing ‘how the elements were formed,’ ‘the clearest description of the vast extent that I have ever read.’ It’s a moving ending, quietly earned, and a valuable reminder that ‘Both artists and scientists depend upon peering and noticing, but also on a readiness to flit and swerve, to move backwards or sideways, take a leap or let go.’