

PART I

# Stories

## 1.

Who can forget those moments when something that seems inanimate turns out to be vitally, even dangerously alive? As, for example, when an arabesque in the pattern of a carpet is revealed to be a dog's tail, which, if stepped upon, could lead to a nipped ankle? Or when we reach for an innocent looking vine and find it to be a worm or a snake? When a harmlessly drifting log turns out to be a crocodile?

It was a shock of this kind, I imagine, that the makers of *The Empire Strikes Back* had in mind when they conceived of the scene in which Han Solo lands the Millennium Falcon on what he takes to be an asteroid—but only to discover that he has entered the gullet of a sleeping space monster.

To recall that memorable scene now, more than thirty-five years after the making of the film, is to recognize its impossibility. For if ever there were a Han Solo, in the near or distant future, his assumptions about interplanetary objects are certain to be very different from those that prevailed in California at the time when the film was made. The humans of the future will surely understand, knowing what they presumably will know about the history of their forebears on Earth, that only in one, very brief era, lasting less than three centuries, did a significant number of their kind believe that planets and asteroids are inert.

## 2.

My ancestors were ecological refugees long before the term was invented.

They were from what is now Bangladesh, and their village was on the shore of the Padma River, one of the mightiest wa-

terways in the land. The story, as my father told it, was this: one day in the mid-1850s the great river suddenly changed course, drowning the village; only a few of the inhabitants had managed to escape to higher ground. It was this catastrophe that had unmoored our forebears; in its wake they began to move westward and did not stop until the year 1856, when they settled once again on the banks of a river, the Ganges, in Bihar.

I first heard this story on a nostalgic family trip, as we were journeying down the Padma River in a steamboat. I was a child then, and as I looked into those swirling waters I imagined a great storm, with coconut palms bending over backward until their fronds lashed the ground; I envisioned women and children racing through howling winds as the waters rose behind them. I thought of my ancestors sitting huddled on an outcrop, looking on as their dwellings were washed away.

To this day, when I think of the circumstances that have shaped my life, I remember the elemental force that untethered my ancestors from their homeland and launched them on the series of journeys that preceded, and made possible, my own travels. When I look into my past the river seems to meet my eyes, staring back, as if to ask, Do you recognize me, wherever you are?

Recognition is famously a passage from ignorance to knowledge. To recognize, then, is not the same as an initial introduction. Nor does recognition require an exchange of words: more often than not we recognize mutely. And to recognize is by no means to understand that which meets the eye; comprehension need play no part in a moment of recognition.

The most important element of the word *recognition* thus lies in its first syllable, which harks back to something prior, an already existing awareness that makes possible the passage from ignorance to knowledge: a moment of recognition occurs when a prior awareness flashes before us, effecting an instant

change in our understanding of that which is beheld. Yet this flash cannot appear spontaneously; it cannot disclose itself except in the presence of its lost other. The knowledge that results from recognition, then, is not of the same kind as the discovery of something new: it arises rather from a renewed reckoning with a potentiality that lies within oneself.

This, I imagine, was what my forebears experienced on that day when the river rose up to claim their village: they awoke to the recognition of a presence that had molded their lives to the point where they had come to take it as much for granted as the air they breathed. But, of course, the air too can come to life with sudden and deadly violence—as it did in the Congo in 1988, when a great cloud of carbon dioxide burst forth from Lake Nyos and rolled into the surrounding villages, killing 1,700 people and an untold number of animals. But more often it does so with a quiet insistence—as the inhabitants of New Delhi and Beijing know all too well—when inflamed lungs and sinuses prove once again that there is no difference between the without and the within; between using and being used. These too are moments of recognition, in which it dawns on us that the energy that surrounds us, flowing under our feet and through wires in our walls, animating our vehicles and illuminating our rooms, is an all-encompassing presence that may have its own purposes about which we know nothing.

It was in this way that I too became aware of the urgent proximity of nonhuman presences, through instances of recognition that were forced upon me by my surroundings. I happened then to be writing about the Sundarbans, the great mangrove forest of the Bengal Delta, where the flow of water and silt is such that geological processes that usually unfold in deep time appear to occur at a speed where they can be followed from week to week and month to month. Overnight a stretch of riverbank will disappear, sometimes taking houses

and people with it; but elsewhere a shallow mud bank will arise and within weeks the shore will have broadened by several feet. For the most part, these processes are of course cyclical. But even back then, in the first years of the twenty-first century, portents of accumulative and irreversible change could also be seen, in receding shorelines and a steady intrusion of salt water on lands that had previously been cultivated.

This is a landscape so dynamic that its very changeability leads to innumerable moments of recognition. I captured some of these in my notes from that time, as, for example, in these lines, written in May 2002: "I do believe it to be true that the land here is demonstrably alive; that it does not exist solely, or even incidentally, as a stage for the enactment of human history; that it is [itself] a protagonist." Elsewhere, in another note, I wrote, "Here even a child will begin a story about his grandmother with the words: 'in those days the river wasn't here and the village was not where it is . . .'"

Yet, I would not be able to speak of these encounters as instances of recognition if some prior awareness of what I was witnessing had not already been implanted in me, perhaps by childhood experiences, like that of going to look for my family's ancestral village; or by memories like that of a cyclone, in Dhaka, when a small fishpond, behind our walls, suddenly turned into a lake and came rushing into our house; or by my grandmother's stories of growing up beside a mighty river; or simply by the insistence with which the landscape of Bengal forces itself on the artists, writers, and filmmakers of the region.

But when it came to translating these perceptions into the medium of my imaginative life—into fiction, that is—I found myself confronting challenges of a wholly different order from those that I had dealt with in my earlier work. Back then, those challenges seemed to be particular to the book I was then writing, *The Hungry Tide*; but now, many years later,

at a moment when the accelerating impacts of global warming have begun to threaten the very existence of low-lying areas like the Sundarbans, it seems to me that those problems have far wider implications. I have come to recognize that the challenges that climate change poses for the contemporary writer, although specific in some respects, are also products of something broader and older; that they derive ultimately from the grid of literary forms and conventions that came to shape the narrative imagination in precisely that period when the accumulation of carbon in the atmosphere was rewriting the destiny of the earth.

### 3.

That climate change casts a much smaller shadow within the landscape of literary fiction than it does even in the public arena is not hard to establish. To see that this is so, we need only glance through the pages of a few highly regarded literary journals and book reviews, for example, the *London Review of Books*, the *New York Review of Books*, the *Los Angeles Review of Books*, the *Literary Journal*, and the *New York Times Review of Books*. When the subject of climate change occurs in these publications, it is almost always in relation to nonfiction; novels and short stories are very rarely to be glimpsed within this horizon. Indeed, it could even be said that fiction that deals with climate change is almost by definition not of the kind that is taken seriously by serious literary journals: the mere mention of the subject is often enough to relegate a novel or a short story to the genre of science fiction. It is as though in the literary imagination climate change were somehow akin to extraterrestrials or interplanetary travel.

There is something confounding about this peculiar feedback loop. It is very difficult, surely, to imagine a conception of

seriousness that is blind to potentially life-changing threats. And if the urgency of a subject were indeed a criterion of its seriousness, then, considering what climate change actually portends for the future of the earth, it should surely follow that this would be the principal preoccupation of writers the world over—and this, I think, is very far from being the case.

But why? Are the currents of global warming too wild to be navigated in the accustomed barques of narration? But the truth, as is now widely acknowledged, is that we have entered a time when the wild has become the norm: if certain literary forms are unable to negotiate these torrents, then they will have failed—and their failures will have to be counted as an aspect of the broader imaginative and cultural failure that lies at the heart of the climate crisis.

Clearly the problem does not arise out of a lack of information: there are surely very few writers today who are oblivious to the current disturbances in climate systems the world over. Yet, it is a striking fact that when novelists do choose to write about climate change it is almost always outside of fiction. A case in point is the work of Arundhati Roy: not only is she one of the finest prose stylists of our time, she is passionate and deeply informed about climate change. Yet all her writings on these subjects are in various forms of nonfiction.

Or consider the even more striking case of Paul Kingsnorth, author of *The Wake*, a much-admired historical novel set in eleventh-century England. Kingsnorth dedicated several years of his life to climate change activism before founding the influential Dark Mountain Project, “a network of writers, artists and thinkers who have stopped believing the stories our civilization tells itself.” Although Kingsnorth has written a powerful nonfiction account of global resistance movements, as of the time of writing he has yet to publish a novel in which climate change plays a major part.

I too have been preoccupied with climate change for a long time, but it is true of my own work as well, that this subject figures only obliquely in my fiction. In thinking about the mismatch between my personal concerns and the content of my published work, I have come to be convinced that the discrepancy is not the result of personal predilections: it arises out of the peculiar forms of resistance that climate change presents to what is now regarded as serious fiction.

#### 4.

In his seminal essay “The Climate of History,” Dipesh Chakrabarty observes that historians will have to revise many of their fundamental assumptions and procedures in this era of the Anthropocene, in which “humans have become geological agents, changing the most basic physical processes of the earth.” I would go further and add that the Anthropocene presents a challenge not only to the arts and humanities, but also to our commonsense understandings and beyond that to contemporary culture in general.

There can be no doubt, of course, that this challenge arises in part from the complexities of the technical language that serves as our primary window on climate change. But neither can there be any doubt that the challenge derives also from the practices and assumptions that guide the arts and humanities. To identify how this happens is, I think, a task of the utmost urgency: it may well be the key to understanding why contemporary culture finds it so hard to deal with climate change. Indeed, this is perhaps the most important question ever to confront *culture* in the broadest sense—for let us make no mistake: the climate crisis is also a crisis of culture, and thus of the imagination.

Culture generates desires—for vehicles and appliances, for

certain kinds of gardens and dwellings—that are among the principal drivers of the carbon economy. A speedy convertible excites us neither because of any love for metal and chrome, nor because of an abstract understanding of its engineering. It excites us because it evokes an image of a road arrowing through a pristine landscape; we think of freedom and the wind in our hair; we envision James Dean and Peter Fonda racing toward the horizon; we think also of Jack Kerouac and Vladimir Nabokov. When we see an advertisement that links a picture of a tropical island to the word *paradise*, the longings that are kindled in us have a chain of transmission that stretches back to Daniel Defoe and Jean-Jacques Rousseau: the flight that will transport us to the island is merely an ember in that fire. When we see a green lawn that has been watered with desalinated water, in Abu Dhabi or Southern California or some other environment where people had once been content to spend their water thriftily in nurturing a single vine or shrub, we are looking at an expression of a yearning that may have been midwived by the novels of Jane Austen. The artifacts and commodities that are conjured up by these desires are, in a sense, at once expressions and concealments of the cultural matrix that brought them into being.

This culture is, of course, intimately linked with the wider histories of imperialism and capitalism that have shaped the world. But to know this is still to know very little about the specific ways in which the matrix interacts with different modes of cultural activity: poetry, art, architecture, theater, prose fiction, and so on. Throughout history these branches of culture have responded to war, ecological calamity, and crises of many sorts: why, then, should climate change prove so peculiarly resistant to their practices?

From this perspective, the questions that confront writers and artists today are not just those of the politics of the carbon

economy; many of them have to do also with our own practices and the ways in which they make us complicit in the concealments of the broader culture. For instance: if contemporary trends in architecture, even in this period of accelerating carbon emissions, favor shiny, glass-and-metal-plated towers, do we not have to ask, What are the patterns of desire that are fed by these gestures? If I, as a novelist, choose to use brand names as elements in the depiction of character, do I not need to ask myself about the degree to which this makes me complicit in the manipulations of the marketplace?

In the same spirit, I think it also needs to be asked, What is it about climate change that the mention of it should lead to banishment from the preserves of serious fiction? And what does this tell us about culture writ large and its patterns of evasion?

In a substantially altered world, when sea-level rise has swallowed the Sundarbans and made cities like Kolkata, New York, and Bangkok uninhabitable, when readers and museumgoers turn to the art and literature of our time, will they not look, first and most urgently, for traces and portents of the altered world of their inheritance? And when they fail to find them, what should they—what can they—do other than to conclude that ours was a time when most forms of art and literature were drawn into the modes of concealment that prevented people from recognizing the realities of their plight? Quite possibly, then, this era, which so congratulates itself on its self-awareness, will come to be known as the time of the Great Derangement.

## 5.

On the afternoon of March 17, 1978, the weather took an odd turn in north Delhi. Mid-march is usually a nice time of year

in that part of India: the chill of winter is gone and the blazing heat of summer is yet to come; the sky is clear and the monsoon is far away. But that day dark clouds appeared suddenly and there were squalls of rain. Then followed an even bigger surprise: a hailstorm.

I was then studying for an MA at Delhi University while also working as a part-time journalist. When the hailstorm broke, I was in a library. I had planned to stay late, but the unseasonal weather led to a change of mind and I decided to leave. I was on my way back to my room when, on an impulse, I changed direction and dropped in on a friend. But the weather continued to worsen as we were chatting, so after a few minutes I decided to head straight back by a route that I rarely had occasion to take.

I had just passed a busy intersection called Maurice Nagar when I heard a rumbling sound somewhere above. Glancing over my shoulder I saw a gray, tube-like extrusion forming on the underside of a dark cloud: it grew rapidly as I watched, and then all of a sudden it turned and came whiplashing down to earth, heading in my direction.

Across the street lay a large administrative building. I sprinted over and headed toward what seemed to be an entrance. But the glass-fronted doors were shut, and a small crowd stood huddled outside, in the shelter of an overhang. There was no room for me there so I ran around to the front of the building. Spotting a small balcony, I jumped over the parapet and crouched on the floor.

The noise quickly rose to a frenzied pitch, and the wind began to tug fiercely at my clothes. Stealing a glance over the parapet, I saw, to my astonishment, that my surroundings had been darkened by a churning cloud of dust. In the dim glow that was shining down from above, I saw an extraordinary panoply of objects flying past—bicycles, scooters, lampposts,

sheets of corrugated iron, even entire tea stalls. In that instant, gravity itself seemed to have been transformed into a wheel spinning upon the fingertip of some unknown power.

I buried my head in my arms and lay still. Moments later the noise died down and was replaced by an eerie silence. When at last I climbed out of the balcony, I was confronted by a scene of devastation such as I had never before beheld. Buses lay overturned, scooters sat perched on treetops, walls had been ripped out of buildings, exposing interiors in which ceiling fans had been twisted into tulip-like spirals. The place where I had first thought to take shelter, the glass-fronted doorway, had been reduced to a jumble of jagged debris. The panes had shattered, and many people had been wounded by the shards. I realized that I too would have been among the injured had I remained there. I walked away in a daze.

Long afterward, I am not sure exactly when or where, I hunted down the *Times of India's* New Delhi edition of March 18. I still have the photocopies I made of it.

"30 Dead," says the banner headline, "700 Hurt As Cyclone Hits North Delhi."

Here are some excerpts from the accompanying report: "Delhi, March 17: At least 30 people were killed and 700 injured, many of them seriously, this evening when a freak funnel-shaped whirlwind, accompanied by rain, left in its wake death and devastation in Maurice Nagar, a part of Kingsway Camp, Roshanara Road and Kamla Nagar in the Capital. The injured were admitted to different hospitals in the Capital.

"The whirlwind followed almost a straight line. . . . Some eyewitnesses said the wind hit the Yamuna river and raised waves as high as 20 or 30 feet. . . . The Maurice Nagar road . . . presented a stark sight. It was littered with fallen poles . . . trees, branches, wires, bricks from the boundary walls of various institutions, tin roofs of staff quarters and dhabas and scores of

scooters, buses and some cars. Not a tree was left standing on either side of the road.”

The report quotes a witness: “I saw my own scooter, which I had abandoned on the road, during those terrifying moments, being carried away in the wind like a kite. We saw all this happening around but were dumbfounded. We saw people dying . . . but were unable to help them. The two tea-stalls at the Maurice Nagar corner were blown out of existence. At least 12 to 15 persons must have been buried under the debris at this spot. When the hellish fury had abated in just four minutes, we saw death and devastation around.”

The vocabulary of the report is evidence of how unprecedented this disaster was. So unfamiliar was this phenomenon that the papers literally did not know what to call it: at a loss for words they resorted to “cyclone” and “funnel-shaped whirlwind.”

Not till the next day was the right word found. The headlines of March 19 read, “A Very, Very Rare Phenomenon, Says Met Office”: “It was a tornado that hit northern parts of the Capital yesterday—the first of its kind. . . . According to the Indian Meteorological Department, the tornado was about 50 metres wide and covered a distance of about five k.m. in the space of two or three minutes.”

This was, in effect, the first tornado to hit Delhi—and indeed the entire region—in recorded meteorological history. And somehow I, who almost never took that road, who rarely visited that part of the university, had found myself in its path.

Only much later did I realize that the tornado’s eye had passed directly over me. It seemed to me that there was something eerily apt about that metaphor: what had happened at that moment was strangely like a species of visual contact, of beholding and being beheld. And in that instant of contact something was planted deep in my mind, something irreduc-

ibly mysterious, something quite apart from the danger that I had been in and the destruction that I had witnessed; something that was not a property of the thing itself but of the manner in which it had intersected with my life.

## 6.

As is often the case with people who are waylaid by unpredictable events, for years afterward my mind kept returning to my encounter with the tornado. Why had I walked down a road that I almost never took, just before it was struck by a phenomenon that was without historical precedent? To think of it in terms of chance and coincidence seemed only to impoverish the experience: it was like trying to understand a poem by counting the words. I found myself reaching instead for the opposite end of the spectrum of meaning—for the extraordinary, the inexplicable, the confounding. Yet these too did not do justice to my memory of the event.

Novelists inevitably mine their own experience when they write. Unusual events being necessarily limited in number, it is but natural that these should be excavated over and again, in the hope of discovering a yet undiscovered vein.

No less than any other writer have I dug into my own past while writing fiction. By rights then, my encounter with the tornado should have been a mother lode, a gift to be mined to the last little nugget.

It is certainly true that storms, floods, and unusual weather events do recur in my books, and this may well be a legacy of the tornado. Yet oddly enough, no tornado has ever figured in my novels. Nor is this due to any lack of effort on my part. Indeed, the reason I still possess those cuttings from the *Times of India* is that I have returned to them often over the years,



hoping to put them to use in a novel, but only to meet with failure at every attempt.

On the face of it there is no reason why such an event should be difficult to translate into fiction; after all, many novels are filled with strange happenings. Why then did I fail, despite my best efforts, to send a character down a road that is imminently to be struck by a tornado?

In reflecting on this, I find myself asking, What would I make of such a scene were I to come across it in a novel written by someone else? I suspect that my response would be one of incredulity; I would be inclined to think that the scene was a contrivance of last resort. Surely only a writer whose imaginative resources were utterly depleted would fall back on a situation of such extreme improbability?

*Improbability* is the key word here, so we have to ask, What does the word mean?

*Improbable* is not the opposite of *probable*, but rather an inflexion of it, a gradient in a continuum of probability. But what does probability—a mathematical idea—have to do with fiction?

The answer is: Everything. For, as Ian Hacking, a prominent historian of the concept, puts it, probability is a “manner of conceiving the world constituted without our being aware of it.”

Probability and the modern novel are in fact twins, born at about the same time, among the same people, under a shared star that destined them to work as vessels for the containment of the same kind of experience. Before the birth of the modern novel, wherever stories were told, fiction delighted in the unheard-of and the unlikely. Narratives like those of *The Arabian Nights*, *The Journey to the West*, and *The Decameron* proceed by leaping blithely from one exceptional event to another. This, after all, is how storytelling must necessarily proceed,

inasmuch as it is a recounting of “what happened”—for such an inquiry can arise only in relation to something out of the ordinary, which is but another way of saying “exceptional” or “unlikely.” In essence, narrative proceeds by linking together moments and scenes that are in some way distinctive or different: these are, of course, nothing other than instances of exception.

Novels too proceed in this fashion, but what is distinctive about the form is precisely the concealment of those exceptional moments that serve as the motor of narrative. This is achieved through the insertion of what Franco Moretti, the literary theorist, calls “fillers.” According to Moretti, “fillers function very much like the good manners so important in [Jane] Austen: they are both mechanisms designed to keep the ‘narrativity’ of life under control—to give a regularity, a ‘style’ to existence.” It is through this mechanism that worlds are conjured up, through everyday details, which function “as *the opposite of narrative*.”

It is thus that the novel takes its modern form, through “the relocation of the unheard-of toward the background . . . while the everyday moves into the foreground.”

Thus was the novel midwifed into existence around the world, through the banishing of the improbable and the insertion of the everyday. The process can be observed with exceptional clarity in the work of Bankim Chandra Chatterjee, a nineteenth-century Bengali writer and critic who self-consciously adopted the project of carving out a space in which realist European-style fiction could be written in the vernacular languages of India. Chatterjee’s enterprise, undertaken in a context that was far removed from the metropolitan mainstream, is one of those instances in which a circumstance of exception reveals the true life of a regime of thought and practice.

Chatterjee was, in effect, seeking to supersede many old and very powerful forms of fiction, ranging from the ancient Indian epics to Buddhist Jataka stories and the immensely fecund Islamicate tradition of Urdu *dastaans*. Over time, these narrative forms had accumulated great weight and authority, extending far beyond the Indian subcontinent: his attempt to claim territory for a new kind of fiction was thus, in its own way, a heroic endeavor. That is why Chatterjee's explorations are of particular interest: his charting of this new territory puts the contrasts between the Western novel and other, older forms of narrative in ever-sharper relief.

In a long essay on Bengali literature, written in 1871, Chatterjee launched a frontal assault on writers who modeled their work on traditional forms of storytelling: his attack on this so-called Sanskrit school was focused precisely on the notion of "mere narrative." What he advocated instead was a style of writing that would accord primacy to "sketches of character and pictures of Bengali life."

What this meant, in practice, is very well illustrated by Chatterjee's first novel, *Rajmohan's Wife*, which was written in English in the early 1860s. Here is a passage: "The house of Mathur Ghose was a genuine specimen of mofussil [provincial] magnificence united with a mofussil want of cleanliness. . . . From the far-off paddy fields you could descry through the intervening foliage, its high palisades and blackened walls. On a nearer view might be seen pieces of plaster of a venerable antiquity prepared to bid farewell to their old and weather-beaten tenement."

Compare this with the following lines from Gustave Flaubert's *Madame Bovary*: "We leave the high road . . . whence the valley is seen. . . . The meadow stretches under a bulge of low hills to join at the back with the pasture land of the Bray country, while on the eastern side, the plain, gently rising, broad-

ens out, showing as far as eye can follow its blond cornfields."

In both these passages, the reader is led into a "scene" through the eye and what it beholds: we are invited to "descry," to "view," to "see." In relation to other forms of narrative, this is indeed something new: instead of being told about what happened we learn about what was observed. Chatterjee has, in a sense, gone straight to the heart of the realist novel's "mimetic ambition": detailed descriptions of everyday life (or "fillers") are therefore central to his experiment with this new form.

Why should the rhetoric of the everyday appear at exactly the time when a regime of statistics, ruled by ideas of probability and improbability, was beginning to give new shapes to society? Why did fillers suddenly become so important? Moretti's answer is "'Because they offer the kind of narrative pleasure compatible with the new regularity of bourgeois life. Fillers turn the novel into a 'calm passion' . . . they are part of what Weber called the 'rationalization' of modern life: a process that begins in the economy and in the administration, but eventually pervades the sphere of free time, private life, entertainment, feelings. . . . Or in other words: fillers are an attempt at rationalizing the novelistic universe: turning it into a world of few surprises, fewer adventures, and no miracles at all."

This regime of thought imposed itself not only on the arts but also on the sciences. That is why *Time's Arrow*, *Time's Cycle*, Stephen Jay Gould's brilliant study of the geological theories of gradualism and catastrophism is, in essence, a study of narrative. In Gould's telling of the story, the catastrophist recounting of the earth's history is exemplified by Thomas Burnet's *Sacred Theory of the Earth* (1690) in which the narrative turns on events of "unrepeatable uniqueness." As opposed to this, the gradualist approach, championed by James Hutton (1726–97) and Charles Lyell (1797–1875), privileges slow processes that unfold over time at even, predictable rates. The central credo

in this doctrine was “nothing could change otherwise than the way things were seen to change in the present.” Or, to put it simply: “Nature does not make leaps.”

The trouble, however, is that Nature does certainly jump, if not leap. The geological record bears witness to many fractures in time, some of which led to mass extinctions and the like: it was one such, in the form of the Chicxulub asteroid, that probably killed the dinosaurs. It is indisputable, in any event, that catastrophes waylay both the earth and its individual inhabitants at unpredictable intervals and in the most improbable ways.

Which, then, has primacy in the real world, predictable processes or unlikely events? Gould’s response is “the only possible answer can be ‘both and neither.’” Or, as the National Research Council of the United States puts it: “It is not known whether the relocation of materials on the surface of the Earth is dominated by the slower but continuous fluxes operating all the time or by the spectacular large fluxes that operate during short-lived cataclysmic events.”

It was not until quite recently that geology reached this agnostic consensus. Through much of the era when geology—and also the modern novel—were coming of age, the gradualist (or “uniformitarian”) view held absolute sway and catastrophism was exiled to the margins. Gradualists consolidated their victory by using one of modernity’s most effective weapons: its insistence that it has rendered other forms of knowledge obsolete. So, as Gould so beautifully demonstrates, Lyell triumphed over his adversaries by accusing them of being primitive: “In an early stage of advancement, when a great number of natural appearances are unintelligible, an eclipse, an earthquake, a flood, or the approach of a comet, with many other occurrences afterwards found to belong to the regular course of events, are regarded as prodigies. The same delusion prevails as to moral phenomena, and many of these are ascribed to the

intervention of demons, ghosts, witches, and other immaterial and supernatural agents.”

This is exactly the rhetoric that Chatterjee uses in attacking the “Sanskrit school”: he accuses those writers of depending on conventional modes of expression and fantastical forms of causality. “If love is to be the theme, Madana is invariably put into requisition with his five flower-tipped arrows; and the tyrannical king of Spring never fails to come to fight in his cause, with his army of bees, and soft breezes, and other ancient accompaniments. Are the pangs of separation to be sung? The moon is immediately cursed and anathematized, as scorching the poor victim with her cold beams.”

Flaubert sounds a strikingly similar note in satirizing the narrative style that entrances the young Emma Rouault: in the novels that were smuggled into her convent, it was “all love, lovers, sweethearts, persecuted ladies fainting in lonely pavilions, postilions killed at every stage, horses ridden to death on every page, sombre forests, heartaches, vows, sobs, tears and kisses, little skiffs by moonlight, nightingales in shady groves.” All of this is utterly foreign to the orderly bourgeois world that Emma Bovary is consigned to; such fantastical stuff belongs in the “dithyrambic lands” that she longs to inhabit.

In a striking summation of her tastes in narrative, Emma declares, “I . . . adore stories that rush breathlessly along, that frighten one. I detest commonplace heroes and moderate sentiments, such as there are in Nature.”

“Commonplace”? “Moderate”? How did Nature ever come to be associated with words like these?

The incredulity that these associations evoke today is a sign of the degree to which the Anthropocene has already disrupted many assumptions that were founded on the relative climatic stability of the Holocene. From the reversed perspective of our time, the complacency and confidence of the emergent

bourgeois order appears as yet another of those uncanny instances in which the planet seems to have been toying with humanity, by allowing it to assume that it was free to shape its own destiny.

Unlikely though it may seem today, the nineteenth century was indeed a time when it was assumed, in both fiction and geology, that Nature was moderate and orderly: this was a distinctive mark of a new and “modern” worldview. Chatterjee goes out of his way to berate his contemporary, the poet Michael Madhusudan Datta, for his immoderate portrayals of Nature: “Mr. Datta . . . wants repose. The winds rage their loudest when there is no necessity for the lightest puff. Clouds gather and pour down a deluge, when they need do nothing of the kind; and the sea grows terrible in its wrath, when everybody feels inclined to resent its interference.”

The victory of gradualist views in science was similarly won by characterizing catastrophism as un-modern. In geology, the triumph of gradualist thinking was so complete that Alfred Wegener’s theory of continental drift, which posited upheavals of sudden and unimaginable violence, was for decades discounted and derided.

It is worth recalling that these habits of mind held sway until late in the twentieth century, especially among the general public. “As of the mid-1960s,” writes the historian John L. Brooke, “a gradualist model of earth history and evolution . . . reigned supreme.” Even as late as 1985, the editorial page of the *New York Times* was inveighing against the asteroidal theory of dinosaur extinction: “Astronomers should leave to astrologers the task of seeking the causes of events in the stars.” As for professional paleontologists, Elizabeth Kolbert notes, they reviled both the theory and its originators, Luis and Walter Alvarez: “‘The Cretaceous extinctions were gradual and the catastrophe theory is wrong,’ . . . [a] paleontologist stated. But ‘simplistic

theories will continue to come along to seduce a few scientists and enliven the covers of popular magazines.’”

In other words, gradualism became “a set of blinders” that eventually had to be put aside in favor of a view that recognizes the “twin requirements of uniqueness to mark moments of time as distinctive, and lawfulness to establish a basis of intelligibility.”

Distinctive moments are no less important to modern novels than they are to any other forms of narrative, whether geological or historical. Ironically, this is nowhere more apparent than in *Rajmohan's Wife* and *Madame Bovary*, in both of which chance and happenstance are crucial to the narrative. In Flaubert’s novel, for instance, the narrative pivots at a moment when Monsieur Bovary has an accidental encounter with his wife’s soon-to-be lover at the opera, just after an impassioned scene during which she has imagined that the lead singer “was looking at her . . . She longed to run to his arms, to take refuge in his strength, as in the incarnation of love itself, and to say to him, to cry out, ‘Take me away! carry me with you!’”

It could not, of course, be otherwise: if novels were not built upon a scaffolding of exceptional moments, writers would be faced with the Borgesian task of reproducing the world in its entirety. But the modern novel, unlike geology, has never been forced to confront the centrality of the improbable: the concealment of its scaffolding of events continues to be essential to its functioning. It is this that makes a certain kind of narrative a recognizably modern novel.

Here, then, is the irony of the “realist” novel: the very gestures with which it conjures up reality are actually a concealment of the real.

What this means in practice is that the calculus of probability that is deployed within the imaginary world of a novel is not the same as that which obtains outside it; this is why it

is commonly said, “If this were in a novel, no one would believe it.” Within the pages of a novel an event that is only slightly improbable in real life—say, an unexpected encounter with a long-lost childhood friend—may seem wildly unlikely: the writer will have to work hard to make it appear persuasive.

If that is true of a small fluke of chance, consider how much harder a writer would have to work to set up a scene that is wildly improbable even in real life? For example, a scene in which a character is walking down a road at the precise moment when it is hit by an unheard-of weather phenomenon?

To introduce such happenings into a novel is in fact to court eviction from the mansion in which serious fiction has long been in residence; it is to risk banishment to the humbler dwellings that surround the manor house—those generic out-houses that were once known by names such as “the Gothic,” “the romance,” or “the melodrama,” and have now come to be called “fantasy,” “horror,” and “science fiction.”

## 7.

So far as I know, climate change was not a factor in the tornado that struck Delhi in 1978. The only thing it has in common with the freakish weather events of today is its extreme improbability. And it appears that we are now in an era that will be defined precisely by events that appear, by our current standards of normalcy, highly improbable: flash floods, hundred-year storms, persistent droughts, spells of unprecedented heat, sudden landslides, raging torrents pouring down from breached glacial lakes, and, yes, freakish tornadoes.

The superstorm that struck New York in 2012, Hurricane Sandy, was one such highly improbable phenomenon: the word *unprecedented* has perhaps never figured so often in the description of a weather event. In his fine study of Hurricane San-

dy, the meteorologist Adam Sobel notes that the track of the storm, as it crashed into the east coast of the United States, was without precedent: never before had a hurricane veered sharply westward in the mid-Atlantic. In turning, it also merged with a winter storm, thereby becoming a “mammoth hybrid” and attaining a size unprecedented in scientific memory. The storm surge that it unleashed reached a height that exceeded any in the region’s recorded meteorological history.

Indeed, Sandy was an event of such a high degree of improbability that it confounded statistical weather-prediction models. Yet dynamic models, based on the laws of physics, were able to accurately predict its trajectory as well as its impacts.

But calculations of risk, on which officials base their decisions in emergencies, are based largely on probabilities. In the case of Sandy, as Sobel shows, the essential improbability of the phenomenon led them to underestimate the threat and thus delay emergency measures.

Sobel goes on to make the argument, as have many others, that human beings are intrinsically unable to prepare for rare events. But has this really been the case throughout human history? Or is it rather an aspect of the unconscious patterns of thought—or “common sense”—that gained ascendancy with a growing faith in “the regularity of bourgeois life”? I suspect that human beings were generally catastrophists at heart until their instinctive awareness of the earth’s unpredictability was gradually supplanted by a belief in uniformitarianism—a regime of ideas that was supported by scientific theories like Lyell’s, and also by a range of governmental practices that were informed by statistics and probability.

It is a fact, in any case, that when early tremors jolted the Italian town of L’Aquila, shortly before the great earthquake of 2009, many townsfolk obeyed the instinct that prompts people who live in earthquake-prone areas to move to open

spaces. It was only because of a governmental intervention, intended to prevent panic, that they returned to their homes. As a result, a good number were trapped indoors when the earthquake occurred.

No such instinct was at work in New York during Sandy, where, as Sobel notes, it was generally believed that “losing one’s life to a hurricane is . . . something that happens in far-away places” (he might just as well have said “dithyrambic lands”). In Brazil, similarly, when Hurricane Catarina struck the coast in 2004, many people did not take shelter because “they refused to believe that hurricanes were possible in Brazil.”

But in the era of global warming, nothing is really far away; there is no place where the orderly expectations of bourgeois life hold unchallenged sway. It is as though our earth had become a literary critic and were laughing at Flaubert, Chatterjee, and their like, mocking *their* mockery of the “prodigious happenings” that occur so often in romances and epic poems.

This, then, is the first of the many ways in which the age of global warming defies both literary fiction and contemporary common sense: the weather events of this time have a very high degree of improbability. Indeed, it has even been proposed that this era should be named the “catastrophozoic” (others prefer such phrases as “the long emergency” and “the Penumbra Period”). It is certain in any case that these are not ordinary times: the events that mark them are not easily accommodated in the deliberately prosaic world of serious prose fiction.

Poetry, on the other hand, has long had an intimate relationship with climatic events: as Geoffrey Parker points out, John Milton began to compose *Paradise Lost* during a winter of extreme cold, and “unpredictable and unforgiving changes in the climate are central to his story. Milton’s fictional world, like the real one in which he lived, was . . . a ‘universe of death’ at the mercy of extremes of heat and cold.” This is a universe

very different from that of the contemporary literary novel.

I am, of course, painting with a very broad brush: the novel’s infancy is long past, and the form has changed in many ways over the last two centuries. Yet, to a quite remarkable degree, the literary novel has also remained true to the destiny that was charted for it at birth. Consider that the literary movements of the twentieth century were almost uniformly disdainful of plot and narrative; that an ever-greater emphasis was laid on style and “observation,” whether it be of everyday details, traits of character, or nuances of emotion—which is why teachers of creative writing now exhort their students to “show, don’t tell.”

Yet fortunately, from time to time, there have also been movements that celebrated the unheard-of and the improbable: surrealism for instance, and most significantly, magical realism, which is replete with events that have no relation to the calculus of probability.

There is, however, an important difference between the weather events that we are now experiencing and those that occur in surrealist and magical realist novels: improbable though they might be, these events are neither surreal nor magical. To the contrary, these highly improbable occurrences are overwhelmingly, urgently, astoundingly real. The ethical difficulties that might arise in treating them as magical or metaphorical or allegorical are obvious perhaps. But there is another reason why, from the writer’s point of view, it would serve no purpose to approach them in that way: because to treat them as magical or surreal would be to rob them of precisely the quality that makes them so urgently compelling—which is that they are actually happening on this earth, at this time.