Staging Climate Science

No Drama, Just the Facts

Ashley Chang

"I cry every time," says my friend upon hearing Swedish climate activist Greta Thunberg speak. Thunberg first heard of global warming at the age of eight. That humans were capable of disrupting planetary systems—and failing to treat those disruptions as serious threats to planetary survival—struck Thunberg as "unreal." She spoke up about it at her high school, hoping to convince her classmates to join her in a strike called "Fridays for Future" during the early autumn months of 2018. Images of her protest quickly spread on social media, and by November of that year, she had amassed a global following. At TEDxStockholm, her first appearance on a major platform, she explained why she had spent so many Fridays on the steps of the Swedish parliament: "What is the point of learning facts in the school system, when the most important facts given by the finest science of that same school system clearly means nothing to our politicians and our society?" Ever since, Thunberg has spoken often—and with stirring conviction—at conferences, conventions, summits, strikes, and protests around the world.

In late 2019, Thunberg spoke at the 25th Conference of the Parties to the United Nations Framework Convention on Climate Change in Spain, just a few hours after *Time* magazine named her Person of the Year. At COP25, she discussed the rhetorical strategies that she had found more or less useful during her long year of public speaking. "When you talk in public," she began, "you should start with something personal or emotional to get everyone's attention, say things like, 'Our house is on fire,' 'I want you to panic,' or 'How dare you!' But today I will not do that, because then those phrases are all that people focus on." When she used heightened language, listeners seemed to forget what was most important: the expert consensus on the state of the climate. In order to underscore the significance of scientific research and its hard-won conclusions, she went on to share the dismal findings of the Intergovernmental Panel on Climate Change (IPCC)'s *Special Report on Global Warming of 1.5 °C* from 2018—a litany of percentages

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and page numbers—before finally asking: "How do you react to these numbers without feeling at least some level of panic? How do you respond to the fact that basically nothing is being done about this, without feeling the slightest bit of anger? And how do you communicate this without sounding alarmist?" That audiences were roused by her pithy appeals, but not by the actual assessments of scientists, troubled her.

Thunberg's predicament is clear: people prefer beautiful rhetoric to scientific reports, but to replace meticulous descriptions of global warming with captivating interpretations of global warming is to lose too much.[1] There's a faint anti-theatricalism to Thunberg's thinking, a desire to separate the plain facts from the rapturous entreaties that too often outshine them that recalls Jonas Barish's influential book *The Antitheatrical Prejudice* (1981). She has grown impatient with the vexing obligation to gild science with storytelling and speechifying, elements conventional to rhetoric and theatre alike. Thunberg wouldn't say so in these terms, but with its capacity to stir audiences to fear and pity through embodied imitation, theatricality might just get in the way. The data alone ought to be enough to affect people and effect change.

The problem Thunberg raises is one theatre practitioners know well. A sense of unease has long attended the theatre for its ties to dissimulation and deception, conferring upon it a bad reputation for passion, spectacle, and artifice. In announcing her decision to ditch those phrases that audiences happily commit to memory in lieu of scientific facts, Thunberg, like others before her, makes a subtle turn away from the value of theatricality.

Thunberg holds what we might call a *weak* version of the anti-theatrical prejudice: the perspective that the elevated gestures common in theatrical performance are excessive and ecliptic, though not necessarily contemptible, particularly in the context of ecological crisis. Though her brand of anti-theatricalism does not cast theatricality as a force for moral corruption, it does sustain the view of theatricality as ornamentation, as emotional solicitation, and as extraneous—if not opposed—to fact. It also suggests that theatricality ("Our house is on fire!") threatens to supersede scientific ways of knowing. The danger here is that reasoning—a vital mode of engaging with the world—might give way if it keeps playing second fiddle to drama.

For Barish, the history of theatre's disparagement begins with the writings of Plato, whose animus towards theatre is sometimes taken, at its most extreme, as an outright rejection of performance as a vehicle for philosophy, the base pleasures of mimesis and mimicry being contrary to the higher aims of theoretical inquiry. By contrast, in his 2002 book *Stage Fright: Modernism, Anti-Theatricality, and Drama*,

Martin Puchner reads in Plato not a total rejection of theatre but a constructive revision of it, one that prefers imagined or impossible dramas of ideas over staged scenes played out by actual performers. For Puchner, anti-theatricalism rarely ever entails a complete disavowal of theatre. On the contrary, anti-theatricalism is present in many theatrical projects, often bent on the transformation of the theatre rather than on its riddance once and for all.[2]

Yet even Puchner's less polemic approach feels too extreme to describe Thunberg's position. Thunberg finds nothing false or base about theatricality *per se*, and she expresses no interest in alternative models of theatricality that push against dramatic convention. Thunberg's disinclination to frame facts with catchphrases is borne out of a sense of urgency and frustration, not out of any pointed distrust of theatricality itself. Her thinking is tactical. Again and again, she has implored world leaders to take immediate action against global warming, but, as she observed at COP25, the data is still being ignored. Oratorical eloquence might capture the attention of the people, but the assessments of scientists are difficult to dispute and therefore indispensable in the face of denial and disbelief: "We no longer have time to leave out the science."

Among contemporary theatre artists, particularly those who participate in environmental discourses, this kind of weak anti-theatricalism is not unpopular. Since the early 1990s, theatre-makers have sought to discover the dramatic forms best suited to representing the environment onstage, and for some, theatrical idioms have felt inadequate for the task. Such is the case for two productions at the Royal Court Theatre, both helmed by director Katie Mitchell: *Ten Billion* (2012) and *2071* (2014). These pieces featured working scientists performing as themselves in solo shows styled as lectures. *Ten Billion* and, to a greater extent, *2071* resisted the conventions of drama in order to present scientific knowledge with as little pretense and emotional pitch as possible. Just as Thunberg wishes to elevate the facts alone, at the expense of rousing words, so too did these productions experiment with a more naked science, draped in little that might detract from its full and startling recognition. Here, anti-theatricalism constituted an antidote against the unwelcome possibility that audiences might lose sight of the actual outcomes of scientific research.

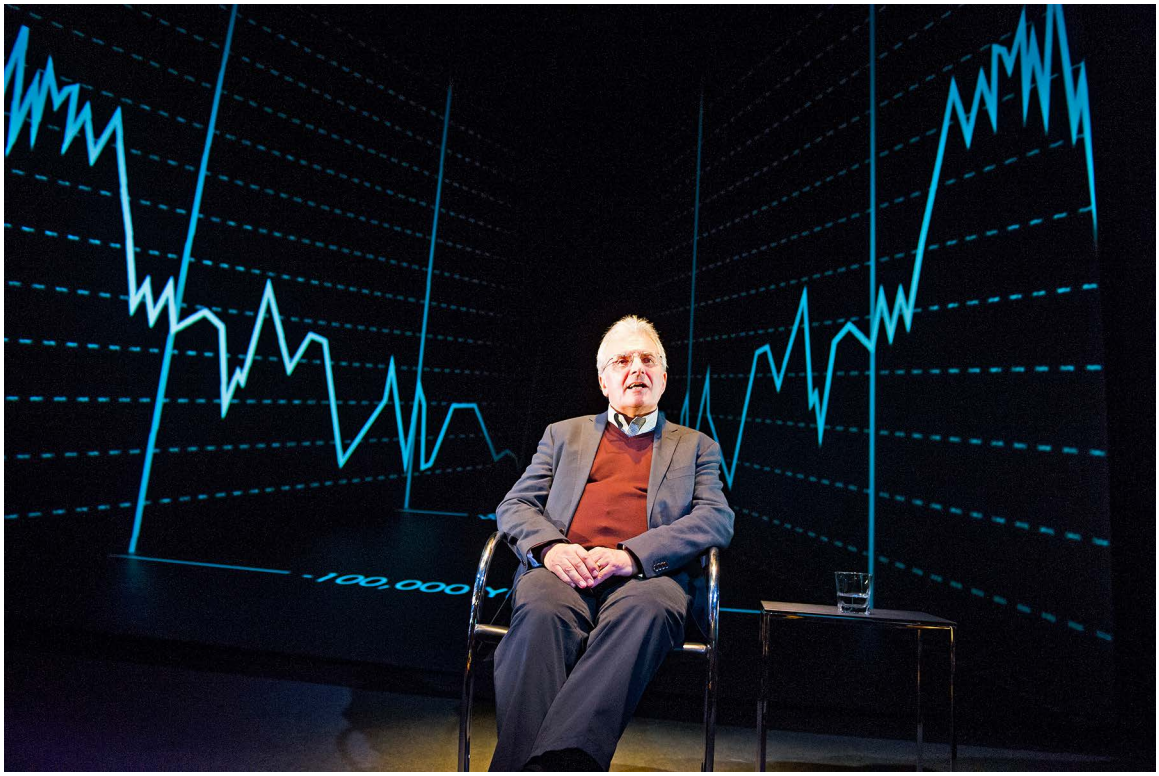
In *Ten Billion*, Stephen Emmott, the Head of Microsoft Research's Computational Science Laboratory at Cambridge University, drew upon a dossier of statistics to describe the consequences of overpopulation for the climate. For a little over an hour, Emmott performed as himself in a replica of his Cambridge office on the stage of the Jerwood Theatre Upstairs, explaining in simple terms the sobering relationship between population growth, resource management, and energy expenditure. The Royal Court called *Ten Billion* "a new kind of scientific lecture"

emphasizing the play's proximity to academic communities and especially to academic authority. *Ten Billion* purported to deliver information unmediated and, as such, made promises of legitimacy, accuracy, and correctness: here the science issued straight from the scientist's mouth. No actor stood in for a scientific expert, mimicking scientific expertise. Instead, a professional scientist with real-world affiliations gave a talk informed by his own decades-long career developing computational solutions to environmental problems. In this way, *Ten Billion* made bold claims to veracity. It cast the scientist as a reliable source of scientific knowledge, placed the scientist center stage, and eliminated the kinds of theatrical frames and filters that, if kept, might have obscured or distorted the scientist's statements.

As director Katie Mitchell told *The Guardian*'s Stephanie Merritt, more conventional theatrical forms felt "a bit cheesy or ridiculous" and "seemed to oversimplify and sensationalize the subject." In her view, "Using existing theatrical formats was not going to work." Along these lines, Mitchell eschewed such fundamentals as scenic action and imitation through acting. *Ten Billion* did retain certain theatrical elements including the presence of a speaker; a speech that bent to a narrative arc, ending with Emmott's punchy downer of a prognosis, "I think we're all fucked"; a set and props that, however realistic, satisfied the imaginative priorities of the stage, including an elaborate projection design that likely exceeded the capacities of Emmott's actual office; and a social context that prepared audiences for an evening of theatre (complete with curtain call) rather than for an academic talk (complete with Q&A). However, Mitchell submerged these aspects of *Ten Billion*'s theatricality so that its scientific content might rise to the surface. "The only way to do it," Mitchell concluded, "was to get the scientist up there."

Two years later, Mitchell again got the scientist up there, this time with even fewer theatrical overtures. In *2071*, Chris Rapley, a Professor of Climate Science at University College London, sat center stage with a glass of water, making the theatre feel more like an auditorium and the play more like a keynote address. The stage was empty save for an atmospheric stream of projections, ranging from informational slides to abstract animations to satellite images. For just over an hour, as flurries of globes, grids, graphs, charts, and timelines filled the darkness behind him, Rapley walked the audience through a vision of the future grounded in his own research. He began by introducing himself as a climate scientist with experience directing the International Geosphere-Biosphere Program, the British Antarctic Survey, and the Science Museum in London—credentials that confirmed his scientific authority. His introduction also laid necessary groundwork for the rest of his speech, a lecture explicit in its address from expert to laity: "I'm here to communicate the results of the science, their implications, and the options we

Greta Thunberg speaking at COP25 in Madrid on December 11, 2019. Photo: Kiara Worth.



Chris Rapley in *2071*, Royal Court Theatre, London, 2014. Photo: Tristram Kenton.

have before us." Rapley made no assumptions about his listeners' fluency with science, except that they probably had none.

Though *2071* began by drawing neat divisions between scientist and non-scientist, what followed had a spirit of inclusivity. Rapley's orientation towards his audience is striking for the amount of care he took to clarify how scientists—himself included—have been able to do things like make observations and draw conclusions. Without wandering into the vagaries of debate, consensus, and peer review, Rapley tried to explain not just *what* we know but also *how* we know it. He paused often to offer insights into the techniques and logic of scientific reasoning, explaining, for example, that radars and satellites can "see detail at the level of metres," that scientists can use "computer models to bring together the data with our understanding of the underlying physical laws," and that it is possible to "observe the change in atmospheric concentration over time, by looking at data from ice cores drilled from ice sheets and glaciers in the Antarctic and Greenland."

Though Rapley made frequent reference to scientific concepts beyond common knowledge, such as the relationship between the Hydrosphere and the Cryosphere, he articulated such concepts in friendly terms, usually by making familiar references: the Thames freezing over, the origins of the iceberg that sunk the Titanic, the whole hour it took to drill down into a glacier for an ancient piece of ice. In addition to foregrounding his professional expertise, then, Rapley's first-personal account allowed him to inflect the science with intimacies and idiosyncrasies. He offered citations alongside remembrances and fears and hopes. He shared what it was like for him to hold a chunk of ice almost half a million years old, and in light of what science has revealed, he wondered, "What kind of Future do we want to Create?" 2071 is the year his granddaughter will be as old as he was in 2014 when the show premiered.

If *2071* attempted to elevate scientific expertise, it did so only by leveraging dramatic expertise. Its text was the product of a collaboration between Rapley and playwright Duncan Macmillan, who devised the script from their conversations. Rapley recalled afterwards, "We talked for something like 80 or 90 hours in total—thousands and thousands of words—and so what we ended up with was a set of words, every one of which is mine, but not in the order that I would ever have thought of delivering them." Rapley acknowledged his own artistic limitations, describing Macmillan as "somebody who understands how to build drama and narrative in a way that an academic doesn't." This distinction between the professional scientist and the professional playwright helps to illuminate the piece's complementary roots in science and drama. "There was the formal challenge of how to express [Rapley's] science, and what we could bring

to him as theatre-makers—not just with a different audience for those issues, but in terms of technique and how to structure the material," Macmillan told *The Guardian* when the show opened. "For example, if Chris is writing a scientific paper or delivering an academic lecture, the convention is that you begin with your finding and go on to explain it. But that's like Hamlet avenging his father's death in the first five minutes. The simultaneous challenge we've had is how to take the anger and emotion out of the issue and at the same time make the data dramatically compelling to listen to."

Macmillan's task was not merely to communicate scientific information about global warming but to deliver it with a uniquely theatrical sensitivity to dramatic structure and, moreover, to discharge some of its affective intensities. So in pursuit of a theatrical form that felt both commensurate with the complexity of climate change *and* capable of illustrating those complexities to non-scientists, Macmillan bucked with dramatic convention. Here no conflict played its course and no actors played their parts. *2071* resisted even the familiar Aristotelian definition of mimetic representation: the imitation of an action that stirs pity and fear. The piece preferred, instead, the presentational, the unmediated, the anti-theatrical.

2071 fell in line with Thunberg's sentiments that the cumulative findings of the scientific community should be sufficient to command people's attentions. To be sure, *2071* was not just about the facts. The piece embroidered scientific knowledge with threads from Rapley's own life, both personal and professional, and wove those threads into a cogent narrative with beginning, middle, and end. But *2071* avoided overt theatrical gestures wherever possible, foregrounding facts while forgoing fictional storytelling and rapturous overtures. His talk was direct and subdued, leaving the science plain for all to see.

Unenthralled by its no-frills approach, critics widely condemned *2071* for its lack of drama—its failure, in their eyes, to simulate action and stimulate emotion. Many described it as too dry (or a synonym thereof). In *Nature*, for example, Richard Van Noorden called *2071* a "climate trance," a "multisyllabic drone," and a "monochrome recital." Van Noorden went on to note that *2071* was "not a play" but "a scientific lecture," voicing an opinion widely shared among critics: that the piece did not meet the basic criteria of theatre. Similarly, Sarah Hemming, writing for *The Financial Times*, rejected "the idea of the event as a play," arguing that "there's nothing to identify it as such here—no plot, no characters, no dialogue" and scant "emotional upheaval." Even the hybrid label "performance lecture" went too far for her: "this is a lecture," she said, "and a dry one." As Aleks Sierz wrote for *The Arts Desk*, "there's no conflict so there's no drama." The piece left Sierz desperate for "imaginative metaphors." For these critics, *2071* failed as theatre because it placed too great an emphasis on the transmission of information. As

Charlotte Valori puts it in her blog, *2071* was "an academic experience, not a dramatic one." Providing too few opportunities for feeling, the piece fell short of fulfilling its generic requirements.

In these regards, *2071* is far surpassed by other projects that have held faster to theatricality. For example, director Lars Jan's public art installation *Holoscenes*, which premiered at the 2014 Scotiabank Nuit Blanche Festival in Toronto, staged a live performance inside a free-standing aquarium the size of an elevator. Robust hydraulic machinery, hidden beneath the monolith's sarcophagal base, drained and filled the tank, on repeat, with 3,500 gallons of chlorinated water. As the water moved rapidly in and out of the tank, a performer moved through what Jan described in the program as "simple, everyday behaviors." She read the newspaper or tuned a guitar or watered the lawn, applied blush or drank tea, mopped or napped, sometimes completely underwater, her breath held, her clothes billowing. A spectacular metaphor for the losses to be incurred by global warming, *Holoscenes* replaced scientific facts with a single, striking image. "How can we feel climate change in our gut?"

While *Holoscenes* solicited visceral responses through visual means, Timur and the Dime Museum's *COLLAPSE*, a post-punk requiem for the natural world, used music. Performed at BAM in 2015, *COLLAPSE* laced environmental critique with glam-rock flair. Each song in the apocalyptic mass documented a human-caused disaster, from global warming to garbage in the ocean. One song, modeled after a Latin *Dies Irae*, took its lyrics verbatim from the International Atomic Energy Agency's International Nuclear and Radiological Event Scale (INES), which catalogues the safety protocols for accidents involving radioactive material. Though the song, called "Demon Chora," moved methodically through the INES, the pulsing instrumentation built to a wild operatic climax, transforming an administrative text into a sublime reckoning with the profanities of nuclear activity.

For the theatre company The Civilians, the narrative and affective dimensions of climate activism are key. The program for their environmentalist musical thriller *The Great Immensity*, which had its New York premiere at the Public Theater in 2014, states, "Information alone is not enough to inspire the large changes that must be made in the coming years to protect our future on this planet." For The Civilians, data must be conditioned by feelings. In *Resilience: A Journal of the Environmental Humanities*, Nicole Seymour noted the piece's emotional ballast: "At a time at which emotions around climate change find little outlet in public media—instead, we are bombarded with facts and figures and left to cope on our own—*The Great Immensity* has achieved a significant cultural coup simply by putting emotion on stage." If *2071* retreated from emotion, *The Great Immensity* did just the opposite.

In the staging of climate science, it remains to be seen whether theatricality is something to avoid or something to court. Scientists have given us detailed accounts of the world with reports of remarkable heft and solidity. But how should theatre artists handle these reports? By holding them close or regarding them from a distance? *2071* demonstrated deep fidelity to the facts of climate change, the accuracy of their presentation, and the academic communities and material practices that produced them. In this way, the production assumed a posture of care for (and even protectiveness over) scientific knowledge, including its conventions alongside its conclusions. For *2071*, science seemed to be a method worth guarding even onstage. In the face of trenchant denial and ruinous gullibility, the clear communication of scientific research has become a basic necessity, though the hazards are many. The makers of *2071* needed not only to get the science right, honoring its findings as well as its methodologies, but also to do so in a way that could be received by an audience of non-scientists. Robert Butler of *The Economist* marveled at the achievement of Mitchell and Macmillan "to strip away the noise" by inviting "a scientist to speak calmly and lucidly about what can reasonably be said." Aligning with the many critics who contested *2071*'s status as a play, Butler called the piece "anti-theatre" because its protagonist was uncharismatic and its staging anti-climactic. However, Butler understood *2071*'s anti-theatricality as a strength, not a weakness. For him, the piece was "an invitation to share in a journey in which, bit by bit, an argument was patiently assembled." *2071* proceeded slowly for good reason: it aimed to offer a precise and accurate portrait of the present circumstances. "If we hadn't gone through every step," Butler observed, "and appreciated the weight each point had carried, it would have been extremely human and tempting to dismiss the place where we now found ourselves." The constellation of considerations that had led scientists to understand the current situation as an environmental catastrophe was, for *2071*, the point. Here, the drama was in the facts that had been generated through years of scientific study. If the facts lacked drama, as they did for many, then perhaps this should be cause for concern of the future.

Thunberg's dilemma mirrors the one faced by *2071*. In both cases, winning the attentions of an audience—whether on an international stage or at the Royal Court—requires some measure of drama. Is climate science without drama? If so, then how might it be made emotional, or personal, or theatrical without veering into hyperbole, oversimplification, or untruth? If climate science already contains elements of the dramatic, then how might those elements be impressed upon non-scientists? Both for Thunberg and the makers of *2071*, the safeguarding of scientific knowledge remains paramount. What remains elusive is how, exactly, to make that knowledge stick.

NOTES

1. Thunberg's difficulties getting people to understand climate science may have something to do with her wide appeal. An intrepid young person, she has all the makings of a hero. In 2019, she refused the Nordic Council's Environment Award and 350,000 Danish kroner in prize money (something like $52,000), writing on Instagram that "the climate movement does not need any more awards." She has twice opted to cross the Atlantic in sailboats—slowly, surely, and carbon-neutrally—rather than give in to a culture of convenience and celerity. And she has been on strike for over two years. Her mettle is compelling, apparently even more so than the perils of climate change.

2. According to Puchner, anti-theatricalism might look like an "exuberant" excess of scenic action, with overlarge casts and restless shifts in scenery, willfully defying what is practical or even feasible to represent on a stage. But anti-theatricalism might also look like a "restrained" resistance to the selfsame, a stance of withdrawal from the theatrical mode that favors estrangement, abstraction, and an aversion to the particularities of the human actor. This strategy is evident especially in the work of modernist dramatists like Brecht, Stein, and Beckett (the lattermost, for example, asking actors to please refrain from imitating real people).

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