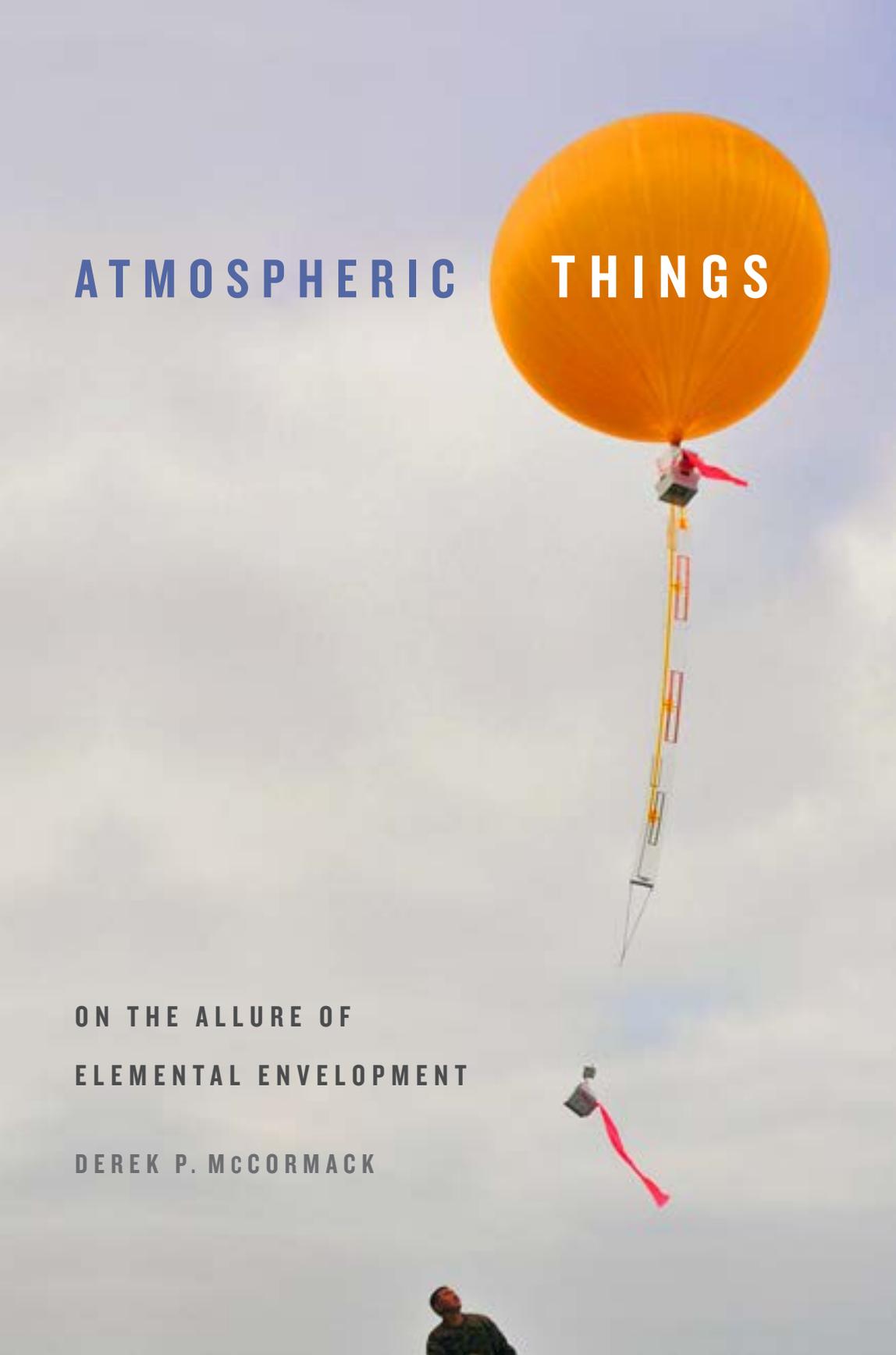


ATMOSPHERIC THINGS

A large, bright orange balloon is the central focus, floating in a pale, overcast sky. The balloon is tethered to a basket and a long, thin vertical structure that extends downwards. At the bottom of this structure, another basket is visible, with a red ribbon trailing behind it. In the bottom left corner, the top of a person's head and shoulders is visible, looking upwards towards the balloon. The overall mood is contemplative and serene.

ON THE ALLURE OF
ELEMENTAL ENVELOPMENT

DEREK P. MCCORMACK

ATMOSPHERIC THINGS

ELEMENTS *A series edited*
by Stacy Alaimo and Nicole Starosielski



ATMOSPHERIC THINGS

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ELEMENTAL ENVELOPMENT

DEREK P. MCCORMACK

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Cover art: *Marine releases a Combat Sky satellite communication
balloon, December 3, 2008. Courtesy of Specialist Second Class,
Daniel Barker/U.S. Navy.*

For Cillian and Fiachra

According to
the ontological principle
there is nothing which
floats into the world
from nowhere.

—ALFRED NORTH WHITEHEAD,
Process and Reality

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UP

At the end of his speech, John Kerry stepped away from the lectern, and looked up. At that point, 100,000 red, white, and blue balloons were scheduled to drop on Kerry and the delegates attending the 2004 Democratic National Convention in Boston. The balloons seemed hesitant, however, reluctant to fall from the roof of the convention center. The interval between the end of the address and the balloon drop lengthened, and convention producer, Don Mischer, a member of the Event Industry Hall of Fame, recipient of fifteen Emmy awards, offered some encouragement: “Go balloons! Go balloons! Go balloons! I don’t see anything happening. . . . Go balloons! Go balloons! Go balloons! Stand by, confetti. Keep coming, balloons. More balloons. Bring it—balloons, balloons, balloons! We want balloons, tons of them. Bring them down. Let them down!”¹

Some balloons did fall, but only in small clusters, or as scattered individuals. Without their arrival in any significant numbers, the affective intensity of the moment immediately following Kerry’s address began to dissipate, and Mischer could feel it: “We need more balloons. I want all balloons to go, God damn it! Go confetti. More confetti. I want more balloons. What’s happening to the balloons? We need more balloons. We need all of them coming down. Go balloons! Balloons! What’s happening, balloons? There’s not enough coming down! All balloons! What the hell? There’s nothing falling! What the fuck are you guys doing up there? We want more balloons coming down!”

At some point, someone noticed that Mischer’s words were being broadcast live on CNN. The feed was cut, followed quickly by an apology and explanation by the network. It might be a bad omen, the political commentators said. They recalled that before he lost to Reagan, Jimmy Carter also had a bad time with balloons: Carter’s speech to the 1980 Democratic Convention was followed by an underwhelming balloon drop, and unlike



FIGURE I.1 Hillary Clinton and Tim Kaine on stage as the balloons drop at the DNC in Philadelphia, Pennsylvania, July 28, 2016. Photo by Lorie Shaull. Wikimedia Commons.

Reagan, he received no convention bounce. Reagan, in contrast, seemed to know how to handle balloons. He, and the things with which he surrounded himself, felt at home at a party: Republicans had initiated the tradition of the balloon drop at Eisenhower's 1956 convention.² With the exception of a failed balloon drop in 1964, the Democratic Party began using the technique only in 1980, and then not very successfully.

The comparative lack of balloons left the moment at the end of Kerry's speech feeling a little empty, feeling like it lacked something. Convention centers, like airship hangers, are big empty spaces of enormous physical volume. Ticker tape, confetti, and balloons allow the volume of these spaces to become atmospheric in distinctive ways. But balloons seem particularly alluring and captivating in this respect, as the more recent 2016 DNC demonstrated (see figure I.1.). Such experiences are highly choreographed. As Treb Heining, organizer of some of these balloon drops, puts it, "It's like a symphony—you've got to have a system that works. It's a celebratory thing, it's the final thing people see, and it's something everyone anticipates. I gotta believe there is a connection between the balloon drop and the convention bounce."³ While it is unlikely that Kerry's underwhelming balloon drop made a crucial difference to the eventual failure of his candi-

dacy, it contributed to an atmosphere of affective uncertainty around its prospects, to the feeling of unease about his affective capacities. If his balloons were not decisive enough to fall, if he could not control such simple things, if he was incapable of feeling the simple but shared force of their allure, then what did that say about him and his capacity to lead the nation?⁴

DOWN

The line of white illuminated balloons was approximately nine miles long, snaking through Berlin. It formed *Lichtgrenze*, or *Border of Light*, designed by artist Christopher Brauder and his brother, filmmaker Marc Brauder. The installation was at the heart of a series of planned events marking the twenty-fifth anniversary of the fall of the Berlin Wall in 1989. Filled with helium, the eight thousand biodegradable balloons were positioned on 3.6-meter-high poles, matching the approximate height of the wall.

For a few days before the anniversary, this line of balloons became a feature in Berlin, redrawing the line of a structure whose physical and affective presence had in many ways faded and in some respects been forgotten, save for a discreet line of bricks embedded in the ground along the line of the wall. In anticipation of the anniversary, and lured, perhaps, by the presence of the balloons, people walked, cycled, and jogged along the line, (re) familiarizing themselves with the arbitrary, angular geography of its bisection of the city. At the appointed time on the evening of November 9 the balloons were released into the sky, one by one, to symbolize the breaching of the wall. As they floated up, they trailed short lines to which messages written by volunteers had been attached. The balloons and the messages floated up into the night sky, disappearing, withdrawing from the crowd below, with the question of whether they would ever be found again remaining an open one. In doing so they performed the dream of a distinctive form of memorialization, in which an event is marked in the feeling of an atmosphere that never materializes as an entity.⁵

FLYING AROUND

In mid-2013 Google announced it had been undertaking experiments with balloons launched from a site in Christchurch, New Zealand. The launches took place under the aegis of Project Loon. Conceived by Google as a “network of balloons travelling on the edge of space,”⁶ Project Loon is designed to provide a cost-effective and feasible technological solution to the problem

of how to bring the Internet to the two-thirds of the world's population not currently connected. Specially designed antennas on the ground communicate with the balloons, which in turn talk to each other and to the base station of the local Internet provider. Floating in the stratosphere, the balloons are steered from Loon "mission control" in California by taking advantage of the winds moving at different directions and altitudes. Initially thirty balloons were launched over New Zealand, and a small group of "pilot testers" were recruited on the ground to assess the reliability and speed of the Internet coverage they provided.

The engineers behind the project were enthusiastic about its possibilities, and about the distinctive mode of collaboration it promised. While people and devices were involved, so also were the elemental conditions of the atmosphere. As one of the project team members, the wonderfully aptly named Astro Teller, put it, "We can sail with the wind, and shape the waves and patterns of these balloons, so that when one balloon leaves, another balloon is set to take its place."⁷ For the Loon team, this was an experiment with a new kind of stratospheric infrastructure. An experiment, currently ongoing, with the technical capacity to choreograph the position and possibilities of a relatively simple device—the balloon—in the midst of the elemental variations of the atmospheres in which forms of life on Earth are enveloped.

THIS BOOK IS ABOUT the relation between atmospheres and envelopment. It uses a deceptively simple thing—the balloon—as a speculative device for exploring how atmospheres are disclosed, made palpable, and modified through practices and experiences of envelopment. By atmospheres I mean elemental spacetimes that are simultaneously affective and meteorological, whose force and variation can be felt, sometimes only barely, in bodies of different kinds. By "envelopment" I mean two related things. The first is a condition. From the point of view of a body (which could be but need not be human), envelopment is the condition of being immersed within an atmosphere. Being enveloped is a condition that can be sensed, although it is not always. Such sensing is always partial, insofar as an atmosphere is never fully disclosed to something immersed in that atmosphere—hence its allure. Nor is this sensing a distinctively human capacity: it is found in bodies, entities, and agencies of myriad kinds. For instance, variations in atmospheric humidity are sensed and expressed in

the wrinkling shape of paper as much as they are sensed and expressed through the clamminess of skin.

Envelopment is not only a condition of being immersed in an atmospheric milieu, however. To think of it solely in these terms is to risk making too clear-cut and static a distinction between entities and atmospheres, with the former floating in or being surrounded by the latter. Envelopment therefore also names a process: a kind of “extrusive” shaping of things in relation to an atmospheric milieu.⁸ Because of this, in this book I also use “envelopment” to denote a process of fabrication through which the folding of a membrane of some kind generates something within an atmospheric milieu with the capacity to sense variations in that milieu. My argument is that envelopment is critical for thinking about atmospheres because it allows us to hold in generative tension a relation of material continuity between entities and the elemental conditions in which these entities are immersed and in which they participate. Envelopment is a process for sensing a condition; it is a process through which atmospheric things emerge whose form, shape, and duration depends upon their capacity to sense and respond to the atmospheres in which they are immersed. It is the process by which entities emerge within a milieu from which they differ without becoming discontinuous, in the same way that a cloud is a process of differentiation within an atmosphere without necessarily being discontinuous with it.

This emphasis on envelopment involves a certain kind of formalism, one inspired to some degree by the work of Peter Sloterdijk.⁹ However, this is a formalism that is always in formation. Inspired just as much by Michel Serres and Luce Irigaray, it is about following shapes of change as much as about attending to enduring entities.¹⁰ As these thinkers remind us in different ways, forms of life and bodily capacities can be defined by their relative envelopment in relation to the elemental conditions of air. To foreground this is not to emphasize building rather than dwelling; rather, it is to focus on processes of fabricated envelopment as a necessary dimension of both, as part of attention to the practices via which life becomes air-conditioned from inside and out.¹¹

Envelopment is therefore not only the condition of being within atmospheres; it is also, as James Ash reminds us, a process through which atmospheres are disclosed and become palpable as elemental conditions of experience via different configurations of bodies, materials, and devices.¹² This is simultaneously a technical, aesthetic, and ethicopolitical matter of

concern. It is technical because it involves fabricating envelopes that modify and mediate the exposure of bodies to an outside.¹³ It is aesthetic because in certain circumstances it exposes bodies to elemental forces that, in remaining withdrawn from apprehension or cognition, are characterized by a degree of allure or enchantment.¹⁴ And it is ethico-political insofar as the question of how bodies can be exposed to elemental forces is often circumscribed by assumptions about what kinds of bodies can be exposed to these forces, and under which circumstances.

ENVELOPMENT PROVIDES AN IMPORTANT way of speculating, experimenting with, and disclosing atmospheres. For many of us in the social sciences and humanities, atmosphere has become one of the most theoretically and empirically alluring of concepts.¹⁵ It provides a way of grasping affective spacetimes that acknowledges their force and palpability even if they remain vague and unformed.¹⁶ It connects (or provides what Tim Ingold calls the “denominator” between) the affective as a field of potentially sensed palpability with the meteorological as the variation in the gaseous medium in which much life on Earth is immersed.¹⁷ It resists any reduction, either to the terms of individual experience, or to the status of an object. Rather, and residing as it does in excess of and between bodies as much as within them, thinking about and with atmospheres requires us to develop a conceptual vocabulary for distinctive kinds of materialist accounts of spacetimes, while also drawing our attention to how these spacetimes become the focus of intervention, action, and experiment.

In this book I pursue the development of such a vocabulary by exploring different possibilities for apprehending the properties and qualities of atmospheres through envelopment. This requires engagement with a number of important questions precipitated by attention to atmospheres. Some of these questions are ontological: they concern the different ways in which the speculative realities of atmospheres can be grasped. In *Atmospheric Things* I work between two currents of thinking about atmospheres. The first is an atmospheric materialism geared toward exploring the qualities and forces of the diffuse, airy, affective spacetimes that operate across, between, and beyond bodies and things.¹⁸ And the other is an entity-oriented ontology that foregrounds the qualities and properties of nonhuman things or objects as the elemental basis for a philosophical, ethical, and political account of reality in which the human is no longer placed at center stage.¹⁹ *Atmospheric Things* is positioned between both: it

develops an account of agencies excessive of the category of entity—the atmospheric—through attending to what Jane Bennett calls the “force of things.”²⁰ As such, it resists the logic of “entification” that underpins some object- or entity-oriented accounts of reality (or what Tim Ingold calls a “blobular ontology”) while nevertheless attending to the processual emergence of entities with capacities to act and sense the atmospheric.²¹ Rather than trying to figure out what kind of thing or entity an atmosphere is, or identifying and cataloguing atmospheres as if they were relatively stable envelopes of experience, my concern here is with accounting for the potentially palpable affective materiality of the elemental spacetimes in which bodies—human and nonhuman—are enveloped, spacetimes that never present themselves as fully tangible, discrete, or unified entities.

If atmospheres raise ontological questions, they also pose empirical and methodological ones. At stake here is the question of how the force of the atmospheric can be “grasped” through the variations, perturbations, or affects it generates in entities of any kind without necessarily reducing this process to the terms of a representational or cognitive relation. To attend to and through the atmospheric requires, as Kathleen Stewart reminds us, the cultivation of particular modes of attunement.²² As Timothy Choy and Jerry Zee argue, following Stewart, this is about a “form of attention that is also a mode of relation, a way of being suspended. This form of thought looks up and around, at plumes, clouds, and sky. It looks inward through the vital interiors that render bodies channels, containers, and filters for airs and the things they hold. More significant than the directionality of its gaze, however, is its manner of attunement to the potentials of substances to shift from states of settlement or condensation to ones of airborne agitation, to settle again in time, or to activate a reaction, somewhere else.”²³

On one level, then, atmosphere appeals to an expanded empiricism through which capacities to sense vague and fleeting variations in elemental conditions become foregrounded. In turn, this raises questions about what it means to sense, about what is being sensed, and about how envelopes of sensing can be stretched through forms of experiment. It requires us to think about how far sensing might go beyond the sphere of human capacities and experience, and about the techniques, technologies, and devices that facilitate such forms of sensing, while also generating opportunities for making something palpable in experience.

In thinking through these questions there is a temptation to invoke atmosphere as shorthand for an empiricism that privileges presence, immediacy,

and immersion.²⁴ Atmosphere can be too easily affirmed as a concept for reclaiming some kind of authentic experience of a world as a counter to the alienating and distancing tendencies both of contemporary life and of certain flavors of critical thinking. For instance, Hans Ulrich Gumbrecht writes, “Concentrating on atmospheres and moods offers literary studies a possibility for reclaiming vitality and aesthetic immediacy that have, for the most part, gone missing.”²⁵ While experiences of vitality are possible, atmosphere complicates claims about what Mitch Rose calls “dreams of presence.”²⁶ Even as it seems to privilege immersion, atmosphere is haunted by something in excess of immediacy: that which is withdrawn from apprehension, even when actively manipulated by devices and technologies that hold out the promise of immersion.²⁷ Moreover, the question of how atmospheres are sensed is complicated further because this question can also be extended to nonhuman entities and agencies, from animals to technological devices, with the capacities to sense processes, gradients, and variations. Atmospheres do not only register as the “intersubjective” feeling of a variation in an elemental milieu; they also register through what might be understood as an “interobjective” capacity to sense such variation.

These ontological and methodological questions are also entangled in political questions. Some of these have to do with how different kinds of bodies are differentially enveloped by atmospheres. And some have to do with how the capacities to generate, sense, and modify atmospheres are distributed. At stake politically in accounts of atmosphere are the terms of the relations between different bodies, the infrastructures and devices that condition the atmospheres in which they move, and the capacities of these bodies to exercise some influence over these conditions. Atmospheres are necessary conditions for the security of forms of life but can also be threatened by those forms of life.²⁸ Because of this, atmospheric politics not only involves mobilizing capacities to generate senses of involvement around the promise of being and feeling enveloped; as scholars such as Ben Anderson, Peter Adey, Marjin Nieuwenhuis, and Andreas Philippopoulos-Mihalopoulos have argued, it also involves capacities to withdraw from, to puncture, and to modify exposure to atmospheres that can just as easily function to numb, distract, and occlude as they can to disclose, make palpable, or heighten attunement.²⁹ Atmospheric politics operate through experiments (some more careful than others) with different techniques or devices for heightening or diminishing capacities to modify the conditions of envelopment that sustain diverse forms of life. To foreground envelopment is therefore by no means to naively affirm its capacity to generate

shared atmospheric spacetimes of affective solidarity. Processes of envelopment are differently implicated in an infrastructural politics of immersion, awareness, and exposure that draws some bodies in and excludes others.

Ethically, at stake here is the question of how to live in relation to the elemental energies of air and atmosphere, and in ways that balance the twin requirements of envelopment and exposure as necessary conditions for the flourishing of forms of life.³⁰ This question is not only a matter of theoretical formulation or distanced judgment. It also involves pursuing forms of modest experiment that make atmospheres explicit in different ways while also distributing and stretching capacities to sense their force. As scholars such as Timothy Choy and Sasha Engelmann have suggested, this might involve the elaboration of a “poetics of air” through which variations in the force of atmospheres and the capacities of bodies can unfold together.³¹ It might involve cultivating capacities to sense variations in the affective-meteorological spacetimes in which forms of life take shape, not necessarily in order to generate spaces of common ground but in order to produce infrastructures, composed of arrangements of devices, concepts, and bodies; these are infrastructures for generating value from an elemental commons.³²

In this book I pursue such possibilities by tracking experiments with envelopment that open up different modes of being and becoming more attuned to the elemental. I invoke the elemental in order to signal the entanglement of a number of matters of concern. The elemental gathers together concerns about the meteorological and affective force of atmospheres as environmental milieus; ontological concerns about the nature of things; as well as concerns about the properties and capacities of particular substances and materials, including gases. Envelopment is elemental, in this sense, because it is a condition and process that mixes these different matters of concern. While experiments with elemental envelopment are by no means always benign, animating this book is the possibility that under the right circumstances, such experiments might renew a certain kind of atmospheric awareness of the elemental conditions that mix the affective, the meteorological, and the technical. In the process, such experiments might generate resources for reimagining, reinventing, and fabricating collective forms of atmospheric life.

MY METHOD FOR EXPERIMENTING with elemental envelopment is to focus on the shape of a particular thing, at once familiar and uncanny,

modest and sometimes spectacular—the balloon. I mobilize the balloon to show how the process of envelopment affords important opportunities for experimenting with the condition of being enveloped by elemental atmospheres. Put another way, the balloon figures here as a speculative device for doing atmospheric things. By “atmospheric things” I mean objects, processes, or events that in some ways disclose, generate, or intensify the condition of being enveloped by the elemental force of atmospheres. Critically, by developing the concept of atmospheric things here I designate a sense of something happening as much as I do an entity or object.³³

The balloon is not the only device for doing atmospheric things. But it is a particularly useful and alluring one, as the opening vignettes reveal. The phenomenon of the balloon drop is an obvious reminder that the choreographed staging of atmospheres is central to the generation of a sense of occasion that gathers around the performance and promise of an event. While the importance of this promise is heightened by the political affects of a presidential convention, it also gathers around innumerable other events, many of which are more familiar, from product launches to birthday parties. In the case of each event, because we expect some sense of an atmosphere, we feel its absence as a failure and a sense of deflation, as both John Kerry and Don Mischer did. Of course, such events, and the atmospheres that gather around them, do not need to be light, happy, or positive; they can be heavy, sad, or disturbing. However different, the allure of atmospheric things resides in a distributed and vague spacetime of palpability: it resides in the sense that something unformed is happening in the elemental milieu in which bodies move.³⁴

While the balloon may participate in the generation of the palpable sense of an atmosphere, it also has an uncanny capacity to point to the limits of our envelopes of atmospheric experience. It holds in tension the capacity to generate a condition of palpable envelopment that itself remains somewhat withdrawn from the sensory grasp of the bodies and entities it envelops. It reminds us that atmospheric things are therefore alluring precisely because something of them always remains beyond cognition or tangibility. Something of them always continues to be evanescent and unsubstantiated; they are always partially vague and vaporous, forms variously precipitating and dissolving, becoming present while also withdrawing from bodies. As the balloon event marking the twenty-fifth anniversary of the fall of the Berlin wall suggests, an act of release can become, through the disappearance of an object into the sky, an event through which an atmosphere becomes palpable through a certain kind of withdrawal.

Through this act of release an atmosphere becomes palpable without becoming permanent or fully present. In the air above Berlin, the release and withdrawal of a series of discrete devices generates something atmospheric that never substantiates itself in the form of an entity. Atmospheric things, in other words, remain excessive of efforts to both grasp them in thought and to define their material form even when they are disclosed, generated, or modified by particular arrangements of objects.

It would be wrong to suggest that atmospheres are important only in relation to the affective or sensory capacities of humans, however.³⁵ Or to think of them as purely emotional phenomena. Atmospheres are also meteorological, and not only metaphorically so: atmospheres are elemental spacetimes from which forms (such as clouds) and patterns (such as winds) emerge and into which they dissolve. They are elemental spacetimes within which myriad things, living and nonliving, are immersed and enveloped. Some, but not all, of these forms and patterns are of course palpable in the mundane worlds of living things, including humans. But some are sensed only remotely, via devices operating beyond the orbit of everyday experience. This means that experiments with envelopment in the form of the balloon—as a device for doing atmospheric things—are alluring in part because they reveal the properties and qualities of the *meteorological* atmosphere. The balloon has been and continues to be central to how this atmosphere has been disclosed and understood. Google's Loon experiment is a further iteration of this: it is based upon the dream of disclosing the dynamics of the stratosphere via an operational assemblage of devices that, in turn, also stretch the kinds of experiences that cohere around screens and surfaces of different kinds as part of contemporary forms of atmospheric media.³⁶

But even as these experiments are framed and financed in technical and commercial terms, the engineers working on Project Loon describe what they are doing in terms that are far from the narrow, objective, metric understanding of atmosphere by scientists and engineers:³⁷ theirs is a joyous, emphatic, exuberant sense of the meteorological atmosphere as an elemental medium for doing things. They express a way of working *with*, and articulate a certain feeling *for*, the elemental conditions of the atmosphere as collaborators in distinctive kinds of speculative experiment. For the Google engineers, the allure of experimenting with atmospheric things is therefore about configuring different combinations of practices, devices, and technologies in order to generate capacities to sense, feel, and value elemental spacetimes.

I dally with this speculative promise here but do so in order to pursue possibilities for generating other sources of value. In the process I deploy the balloon as a philosophical as much as a technical device. Philosophically, the balloon is a device for speculating and moving between the primacy of intensive process and the extrusive presence of affective materials taking shape but never quite stabilizing as objects. Thinking with the balloon allows me to settle, at times, on the form of a thing as a lure for thinking. There is some overlap here with what Ian Bogost calls “alien phenomenology,” in as much as my approach is to deliberately foreground the strange and uncanny sense of an everyday thing, recognizing that something of the balloon is always withdrawn from or inaccessible to other entities, while also working with its capacities to move us to think.³⁸ And yet, while the form of the balloon provides a constraint for thinking, my use of it here is not quite the same as what others have called “following the thing.”³⁹ Rather, I attend to the shape of this thing as a method for remaining attentive to how a process—envelopment—takes form in ways that can sensitize us to the elemental force and allure of atmospheric things whose condition exceeds the category of entity. Put another way, the form of an object becomes a way of holding in view, and becoming attuned in certain circumstances, to what Kathleen Stewart calls the “unformed objects” of atmospheres.⁴⁰

My argument in *Atmospheric Things* is informed by engagements with and experiences of experiments with the balloon as a device for doing atmospheric things. I draw upon archives of visual and textual material related to particular episodes of balloon travel and experiment. This is layered, in turn, by readings of depictions of the balloon in various cultural forms and genres, including literature, poetry, and cinema. At the same time, and building upon my approach in an earlier book, the arguments here are informed by minor experiential encounters at sites associated with different scientific, expeditionary, and aesthetic experiments.⁴¹ *Atmospheric Things* does not so much offer a cultural history of the balloon or ballooning, however, not least because it remains focused on a largely western, modern context, and is confined to a period beginning in the late eighteenth century with the first practical balloon flights in Europe.⁴² The rich if contested traditions of doing atmospheric things with sky lanterns in China, Taiwan, Thailand, and Brazil are for the most part absent here.

Nevertheless, these qualifications notwithstanding, throughout the book, the balloon performs as a speculative device with which to sound out how envelopment makes the elemental force of atmospheres poten-

tially present and palpable (although never fully). As a device for thinking-with, the balloon has some obvious risks, however. Its apparent levity might appear too trivial or whimsical to bear the weight of the work demanded of it. There is the danger, also, that it becomes a vehicle for a speculative philosophy based upon ascension, transcendence, and elevation. And, usually lacking dirigibility, it has a waywardness that short-circuits directness of thought, or clouds the development of a clear line of argument. Acknowledging these risks, in *Atmospheric Things* I work with them. I show how, rather than solely an object of levity and lightness, the balloon can also become a device for modulating and distributing geographies and experiences of grief, sadness, and terror. I show that its capacity to facilitate ascension is not reducible to the terms of a critique of the god trick as a mode of thinking and seeing that privileges distance and objectivity;⁴³ it also facilitates practices for sensing envelopment in ways that complicate such well-rehearsed critical moves, although in perhaps surprising ways. Critically, I show how a lack of dirigibility is not necessarily a disadvantage: the balloon moves with the conditions in which it is immersed, offering an image of thinking and moving sustained by the currents and trajectories of the atmosphere.

As the philosopher Michel Serres reminds us in a reading of the novels of Jules Verne, the balloon offers a vehicle for a style of semirandom wandering that links together different spacetimes according to the quality of aerial/earthly circumstances, albeit within certain limits. These are journeys that become a series of landing sites strung together by lines of open-ended drift. These are journeys whose arcs can be traced via the ongoing processes of ascending and descending, expansion and contraction. In this sense, the narrative spaces of which the balloon as a technology of movement and mobility are generative—as a *spacetemps* machine—are not strictly directional. They are composed of all kinds of loops and deflections, shortcuts and wormholes, creating opportunities for telling stories that fold in and back on themselves in multiple ways. These are what Serres, particularly attentive to the qualities of Verne's spacetime machines, calls "strange journeys." As Serres reminds us, to travel with the balloon is to undertake "voyages through a plurality of spaces, by means of an exfoliated multiplicity of maps." To tell the story of these journeys, "one must lose oneself from space to space, from circle to circle, from map to map, from world-map to world-map."⁴⁴ Serres's own writing exemplifies the qualities of these journeys, with the topological logic of his pages and paragraphs, frequently tracking back and forth across times and places.

As Laura Salisbury puts it, this style reflects Serres's own view that the "philosopher is simply attentive to the way in which things become unexpectedly close or distant within a temporality that is chaotic and turbulent, a time that is more meteorological in its movements than classically historicist."⁴⁵ So, if we take Serres at his word, the balloon provides an imaginative-conceptual vehicle via which to undertake journeys—and perform histories and geographies—that move across topological surfaces stretching between circumstances that gather as—and around—atmospheric things.

The balloon is a partially dirigible device for experimenting with the relation between envelopment and the elemental force of atmospheres. By "experiment" here I mean, broadly, a loosely organized set of practices—which include thinking—geared toward the undertaking of an operation whose outcome, while potentially predictable, remains unguaranteed. I take experiment to be an ethos as much as a well-policed set of technical protocols. Equally, experiments are always circumstance-specific, taking shape as localized arrangements of bodies, devices, and concepts. Experiment is therefore implicated in different ways in how I approach the balloon as a device for doing atmospheric things. On one level, the balloon has and continues to be the locus of scientific experiments with disclosing the condition of the atmosphere. But it has also been used, and continues to be used, in artistic experiments. Admittedly, some of these experiments are reminders that envelopment is by no means always generative. Notwithstanding this, in *Atmospheric Things* I also want to sound an affirmative tone. I follow Kathleen Stewart in affirming that "things hanging in the air are worth describing" because in doing so it might become possible to stretch the envelope of ways of sensing and inhabiting atmospheric worlds.⁴⁶ Through tracking its deployment in a range of practices in different domains of expertise, my aim is to show how, as a device for doing atmospheric things, the balloon is implicated in experiments that disclose the aesthetic, ethical, and political relations between different forms of life and the elemental envelopes that sustain them.

MY ARGUMENT IN *Atmospheric Things* begins, in chapter 1, with a discussion of the importance of envelopment as a condition and a process for thinking about atmospheres. My claim is that focusing on envelopment provides a way of thinking between two broad trajectories of thinking: namely, an atmospheric materialism and an entity-centered ontology. In

this context, envelopment provides a way of holding on to the processual fabrication of the force of atmospheric things while avoiding the reduction of atmospheres to the category of entity or object.⁴⁷ This claim provides the basis for chapter 2, in which I show how, in the shape of the balloon, envelopment affords distinctive modes of sensing the elemental force of an atmospheric milieu whose variations become palpable in bodies as a disquieting kind of stillness in motion. However, rather than affirming pure immersion, thinking about this sensing involves reckoning with a degree of remoteness. In chapter 3 I develop this claim further by focusing more specifically on allure as it relates to atmospheric things. My claim here is that while important, it is not enough to argue that the allure of something resides in the fact of its withdrawal from the world.⁴⁸ Understanding the allure of elemental envelopment also requires attention to the specific ways in which it is fabricated. The allure of elemental envelopment is therefore not only a metaphysical problem; it is also a technical one requiring attention to the capacities of specific materials and practices of envelopment to render bodies susceptible in different ways to a force that exceeds their grasp.

Understanding atmospheric things also requires attention to the distinctive kinds of acts around which they gather. In relation to the balloon, one of the most important of these acts is release. In chapter 4 I use the act of release as a way of thinking about how the allure of elemental envelopment resides in the tension between holding on and letting go. To do this, I turn a nominally happy object into a surprisingly sad one by considering acts of balloon release associated with occasions of grief and loss. These occasions allow the sensing of the atmospheric spacing of love as a condition both of the envelopment of being and of being exposed.

In chapters 5 and 6 my attention turns to thinking about how to account for the spatiotemporality of atmospheres in ways that do not reduce it to the shape of a three-dimensional entity. I develop this in chapter 5 by focusing on the question of volume, arguing that we can understand the extent and intensity of atmospheres by developing a differentiated sense of volume and, more specifically, by distinguishing between the volumetric and the voluminous. In chapter 6 I elaborate upon the sonorous associations of volume further by exploring sounding as a technique for rendering atmospheres explicit, and for experimenting with the limits of the atmospheric, not as that which can be sensed but as the very threshold of sense-ability.

Chapters 7, 8, and 9 explore, albeit in different ways, how the atmospheric becomes political and ethical through forms and practices of envelopment. In chapter 7, I explore how the tensions between envelopment and exposure, ground and air, are translated into structures and bodies. Doing so allows me to explore a minor archive of working with the condition and process of envelopment as it is differentially experienced. It also allows me to point to the value of experiments that unsettle and unground these experiences. In chapter 8 my attention turns to the question of how the meteorological atmosphere becomes a medium for the distribution and dispersal of objects, ideas, and affects designed to target and generate the affective and technical infrastructures that sustain different forms of life. In doing so I argue that the politics of envelopment is not only a matter of elevated vision or persistent presence; it also involves experimenting with the extra-territorial logics of drift as an alternative atmospheric mode of address. In chapter 9, I delineate further the kinds of atmospheric politics that gather around experiments with envelopment by focusing on questions of the elemental. I do so by exploring recent and ongoing experiments with stratospheric infrastructures and devices that disclose and sense elemental variations in atmospheres, mobilizing the figure of the angel as part of my efforts to make sense of these experiments. Even if they raise difficult questions about the question of the atmosphere as a form of commons in motion, these experiments also draw our attention to the question of how, and to what ends, we might generate value from experiments with elemental envelopment.

INTRODUCTION

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CHAPTER I. ENVELOPMENT

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