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Thirteen Ways of Looking at Weather

SARA J. GROSSMAN

I.

In a sleeping city, the only moving thing is the city itself.

It is the middle of the night in Philadelphia. I am sleeping, until at three-thirty a.m. my phone starts to buzz. I see an alert from the national weather service, “*Tornado Warning in effect until 3:45 a.m. Get in. Get Down. Cover Up. Take Shelter.*”¹

I huddle above the phone light with the wind whipping tree branches onto the windows. I head to the basement and wait for the storm to pass. It does. I fall back asleep.

The next day, walking in the neighborhood, I hear two residents . . .
A tornado in Philly—what a joke.

II.

The weather was of three minds all at once. Like a tornado, in which there are always three seasons.

The city is in the middle of a heat emergency; then comes the flood. Rain and heat hurl themselves toward brick. The Delaware River rises like a blue gown, drifting onto shore while the rain brings back the ancient waterways beneath the subfloors. Superfunds and brownfields, basements and highways, flood; the sewer systems overload and spill into the Delaware and Schuylkill Rivers.

People say *the weather is crazy*. The climate reports predict this is the new normal. The weather shows us that this is the new normal.

Between 1971 and 2000, the city experienced only four days with an

average heat index over one hundred degrees Fahrenheit. Between 2036 and 2065, scientists report that the city will see an average of twenty-nine days with a heat index over one hundred and sixteen days over one hundred and five. Between 2070 and 2099, when my nephew is fifty-two, the average number of days over one hundred will rise to fifty-five.²

III.

Denial whirled in the summer winds. It was a small part of the pantomime.

In June of 2019, California experiences the largest die-off of mussels in fifteen years.³ The June heatwave cooks the mussels in their shells. The die-off is expected to “affect the rest of the seashore ecosystem,” as mussels provide food for other elements in the ecosystem. “[O]n a 75-degree Fahrenheit day . . . the tissues inside a marine creature glued to a rock out of the water might rise to 105 degrees,” says marine ecologist Brian Helmuth. In July of 2021, another die-off. It’s even worse this time.

I go to the coast and sit in front of the Atlantic for hours. I sink into the sand. There are so many of us here to watch the land remake itself with each wave. *This is an edge.* Shells catapult to the coast. A storm is rolling in. People pack up their beach chairs. They retreat. The water teaches, I think. The water could teach.

IV.

Water and body are one. Water and body and Superfund are one.

The Gowanus Canal spills into the street, makes the street a sea. Located in Brooklyn, the Gowanus Canal is a one-hundred-foot-wide, roughly two-mile-long canal and one of the nation’s most polluted Superfund sites.⁴ The canal holds more than a dozen contaminants, including polycyclic aromatic hydrocarbons, polychlorinated biphenyls, and heavy metals, including mercury, lead, and copper. When it rains, it pours sewage into the water, too, due to the combined sewer overflow system. Combined sewer systems collect stormwater, sewage, and wastewater in the same pipe. During wet weather, these pipes overflow into the canal.

The canal frequently overflows into Carroll Street. Residents wade through the water. When it rains, it pours.

V.

I do not know which to prefer. The cumulus cloud, or the way the stratus forms on top of it. The clouds before a rainstorm, or just after.

In February of 2019, scientists warn that stratocumulus clouds may disappear when CO₂ levels rise above twelve hundred ppm.⁵ A primary function of stratocumulus clouds is that they cool the earth. But when CO₂ levels rise above twelve hundred ppm, the higher part of the cloud is expected to break up, dissolving the structure of the cloud and its function as a shading mechanism for the earth's surface.

The cirrus-stratus forms around the summit of the cumulus, "reposing thereon as on a mountain," wrote Luke Howard in his 1803 *On the Modification of Clouds*.⁶ "Has the reader any distinct idea of what clouds are?" wrote John Ruskin in *Of leaf beauty, Of cloud beauty. Of ideas of relation*.⁷

With the clouds gone, the earth will continue to warm at an unprecedented rate. A friend says *People will care about the clouds. We just need the thing people will care about.*

VI.

The cooling station filled with elders. The houses melted into the earth, puddled it. The mood was of mercury, a new record on the thermometer.

In June of 2021, the Pacific Northwest experiences a heatwave for seven days.⁸

Across the country, there's another tornado warning in Philadelphia. After the text warning, I step outside to look at the sky. My neighbor, Rita, whose family has lived on the block for three generations, sits on her front stoop smoking a cigarette. *Some weather*, she says. *I can't wait for this heat to break.* I tell her there is a tornado warning and she should take shelter. She says she is going to watch the storm from the stoop. It's too hot to be inside because she doesn't have air conditioning.

VII.

O nation of petro-blues, why do you dream the end when it is right in front of you? Do you not see how extinction crowds around you?

In the nineteenth century, climate data was a powerful part of US settler environmental culture. Volunteers and institutions across the US settler states produced numerical climate reports and products and provided them to the US government with the expressed purpose of understanding weather and climate across the lands they had stolen and claimed.

The numbers were supposed to save them. But they haven't. Despite data's overabundance, sixty-four percent of US adults report that they "never" discuss climate change.⁹ Though settler scientists and environmentalists imagined that more environmental data would increase environmental action and change, quite the opposite has happened.

More data did not produce a livable future.

VIII.

The basic facts were known. Keeling, Calendar--they warned of warming. The science was clear. The basic facts were known.

On June fifth, 2019, Dr. Rod Schoonover testifies before the Permanent Select Committee on Intelligence, US House of Representatives, on "The National Security Implications of Climate Change."

Dr. Schoonover's testimony does not enter the permanent congressional record because the White House did not approve it. But Roger Revelle's testimony did, and James Hansen's did, and Naomi Orsekes's did.

The history of testimony: they knew and did nothing.

IX.

When the hurricane sat still in motion, it marked the edge of one world and the beginning of another.

"Hurricane Dorian, Advisory Number 26, NWS National Hurricane Center Miami FL, 5 p.m. eastern: Present movement . . . near the northwestern Bahamas . . . a slower motion . . . the hurricane should move . . . a slower motion . . . 9 miles per hour . . . Hazards . . . Storm

*Surge, life-threatening . . . raise waters by 10 to 15 feet above tide level . . . present movement . . . near the northwestern Bahamas . . . a slower motion . . . Near the coast, the surge will be accompanied by large and destructive waves . . . Rainfall, 10 to 15 inches, 20 inches . . . Swells, life-threatening a slower motion . . . 9 miles per hour . . . Advisory, Advisory.*¹⁰

X.

In Pennsylvania, a seventy-degree week in February. Even the birds cry out sharply.

The weather is changing. Abnormally warm winter. The peach trees bloom. Peach trees have one opportunity a year to produce blossoms and then fruit. In March, a deep freeze. The blossoms die.

XI.

Scott Pruitt flew over the country on a gold coach. Once, a fear pierced him. *We've got some weather up here*, the pilot said.¹¹

Scott Pruitt is confirmed to lead the EPA on January nineteenth, 2017. In his previous career, he sued the EPA nineteen times to stop clean air and water protections.¹²

XII.

The clouds are moving. The seasons are flying.

In 2019, the IPCC publishes a new report. I sit on a porch in New Jersey. The slow going away of Mars. September is ending. I try to make the world big by making it small. I don't use plastic wrap, foil, and grocery bags. The dew point describes a change: a greening light, an off-season storm.

Across the street, kids play hide and seek--the little boy in the mountain laurel, the peering buds. He practices domination on the sidewalk, holding his sister's hands down until she screams. Later I drift into sleep then wake again to hear the cherry tree knocking on the bedroom window.

The reports say *There is no significant possibility for unanticipated changes*. Even though just one hundred companies produce seventy-

one percent of global emissions, it is not enough. The boy will still violate the sister. The tree cannot return its blooms.

XIII.

It was the end of one world all afternoon. It was hot and it was going to get hotter. The weather sat on our bodies.

In 2019 and 2021, the IPCC releases two reports on the “Emissions Gap.” The reports track progress toward globally agreed upon goals. The reports focus on bridging the gap between current emissions and projected targets. “The summary findings are bleak,” the introduction to the 2019 report says. “Countries collectively failed to stop the growth in global GHG emissions, meaning deeper and faster cuts are now required.”¹³

“[M]ost governments have so far failed . . .” the 2021 report reads.¹⁴

“Decarbonizing the global economy will require fundamental structural changes . . .” the 2019 report reads.

If effectively implemented . . . this would lead to

this would lead to . . .

this would lead to . . .¹⁵

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