1

It was getting hotter.

Frank May got off his mat and padded over to look out the window. Umber stucco walls and tiles, the color of the local clay. Square apartment blocks like the one he was in, rooftop patios occupied by residents who had moved up there in the night, it being too hot to sleep inside. Now quite a few of them were standing behind their chest-high walls looking east. Sky the color of the buildings, mixed with white where the sun would soon rise. Frank took a deep breath. It reminded him of the air in a sauna. This the coolest part of the day. In his entire life he had spent less than five minutes in saunas, he didn't like the sensation. Hot water, maybe; hot humid air, no. He didn't see why anyone would seek out such a stifling sweaty feeling.

Here there was no escaping it. He wouldn't have agreed to come here if he had thought it through. It was his home town's sister city, but there were other sister cities, other aid organizations. He could have worked in Alaska. Instead sweat was dripping into his eyes and stinging. He was wet, wearing only a pair of shorts, those too were wet; there were wet patches on his mat where he had tried to sleep. He was thirsty and the jug by his bedside was empty. All over town the stressed hum of windowbox air conditioner fans buzzed like giant mosquitoes.

And then the sun cracked the eastern horizon. It blazed like an atomic bomb, which of course it was. The fields and buildings underneath that brilliant chip of light went dark, then darker still as the chip flowed to the sides in a burning line that then bulged to a crescent he couldn't look at. The heat coming from it was palpable, a slap to the face. Solar radiation heating the skin of his face, making him blink. Stinging eyes flowing, he couldn't see much. Everything was tan and beige and a brilliant,

unbearable white. Ordinary town in Uttar Pradesh, 6 AM. He looked at his phone: 38 degrees. In Fahrenheit that was—he tapped—103 degrees. Humidity about 35 percent. The combination was the thing. A few years ago it would have been among the hottest wet-bulb temperatures ever recorded. Now just a Wednesday morning.

Wails of dismay cut the air, coming from the rooftop across the street. Cries of distress, a pair of young women leaning over the wall calling down to the street. Someone on that roof was not waking up. Frank tapped at his phone and called the police. No answer. He couldn't tell if the call had gone through or not. Sirens now cut the air, sounding distant and as if somehow submerged. With the dawn, people were discovering sleepers in distress, finding those who would never wake up from the long hot night. Calling for help. The sirens seemed to indicate some of the calls had worked. Frank checked his phone again. Charged; showing a connection. But no reply at the police station he had had occasion to call several times in his four months here. Two months to go. Fifty-eight days, way too long. July 12, monsoon not yet arrived. Focus on getting through today. One day at a time. Then home to Jacksonville, comically cool after this. He would have stories to tell. But the poor people on the rooftop across the way.

Then the sound of the air conditioners cut off. More cries of distress. His phone no longer showed any bars. Electricity gone. Brownout, or blackout. Sirens like the wails of gods and goddesses, the whole Hindu pantheon in distress.

Generators were already firing up, loud two-stroke engines. Illegal gas, diesel, kerosene, saved for situations like these, when the law requiring use of liquid natural gas gave way to necessity. The air, already bad, would soon be a blanket of exhaust. Like breathing from the exhaust pipe of an old bus.

Frank coughed at the thought of it, tried again to drink from the jug by his bed. It was still empty. He took it downstairs with him, filled it from their filtered tank in the refrigerator in the closet there. Still cold even with power off, and now in his thermos jug, where it would stay cold for a good long while. He dropped an iodine pill in the jug for good measure, sealed it tight. The weight of it was reassuring.

The foundation had a couple of generators here in the closet, and some

cans of gasoline, enough to keep the generators going for two or three days. Something to keep in mind.

His colleagues came piling in the door. Hans, Azalee, Heather, all red-eyed and flustered. "Come on," they said, "we have to go."

"What do you mean?" Frank asked, confused.

"We need to go get help, the whole district has lost power, we have to tell them in Lucknow. We have to get doctors here."

"What doctors?" Frank asked.

"We have to try!"

"I'm not leaving," Frank said.

They stared at him, looked at each other.

"Leave the satellite phone," he said. "Go get help. I'll stay and tell people you're coming."

Uneasily they nodded, then rushed out.

Frank put on a white shirt that quickly soaked up his sweat. He walked out into the street. Sound of generators, rumbling exhaust into the superheated air, powering air conditioners he presumed. He suppressed a cough. It was too hot to cough; sucking back in air was like breathing in a furnace, so that one coughed again. Between the intake of steamy air and the effort of coughing, one ended up hotter than ever. People came up to him asking for help. He said it would be coming soon. Two in the afternoon, he told people. Come to the clinic then. For now, take the old ones and the little ones into rooms with air conditioning. The schools would have A/C, the government house. Go to those places. Follow the sound of generators.

Every building had a clutch of desperate mourners in its entryway, waiting for ambulance or hearse. As with coughing, it was too hot to wail very much. It felt dangerous even to talk, one would overheat. And what was there to say anyway? It was too hot to think. Still people approached him. Please sir, help sir.

Go to my clinic at two, Frank said. For now, get to the school. Get inside, find some A/C somewhere. Get the old ones and the little ones out of this.

But there's nowhere!

Then it came to him. "Go to the lake! Get in the water!"

This didn't seem to register. Like Kumbh Mela, during which people

went to Varanasi and bathed in the Ganges, he told them the best he could. "You can stay cool," he told them. "The water will keep you more cool."

A man shook his head. "That water is in the sun. It's as hot as a bath. It's worse than the air."

Curious, alarmed, feeling himself breathing hard, Frank walked down streets toward the lake. People were outside buildings, clustered in doorways. Some eyed him, most didn't, distracted by their own issues. Round-eyed with distress and fear, red-eyed from the heat and exhaust smoke, the dust. Metal surfaces in the sun burned to the touch, he could see heat waves bouncing over them like air over a barbeque. His muscles were jellied, a wire of dread running down his spinal cord was the only thing keeping him upright. It was impossible to hurry, but he wanted to. He walked in the shade as much as possible. This early in the morning one side of the street was usually shaded. Moving into sunlight was like getting pushed toward a bonfire. One lurched toward the next patch of shade, impelled by the blast.

He came to the lake and was unsurprised to see people in it already, neck deep. Brown faces flushed red with heat. A thick talcum of light hung over the water. He went to the curving concrete road that bordered the lake on this side, crouched and stuck his arm in up to the elbow. It was indeed as warm as a bath, or almost. He kept his arm in, trying to decide if the water was cooler or hotter than his body. In the cooking air it was hard to tell. After a time he concluded the water at the surface was approximately the same temperature as his blood. Which meant it was considerably cooler than the air. But if it was a little warmer than body temperature... well, it would still be cooler than the air. It was strangely hard to tell. He looked at the people in the lake. Only a narrow stretch of water was still in the morning shade of buildings and trees, and that stretch would be gone soon. After that the entire lake would be lying there in the sun, until the late afternoon brought shadows on the other side. That was bad. Umbrellas, though; everyone had an umbrella. It was an open question how many of the townspeople could fit in the lake. Not enough. It was said the town's population was two hundred thousand. Surrounded by fields and small hills, other towns a few or several kilometers away, in every direction. An ancient arrangement.

He went back to the compound, into the clinic on the ground floor.

Up to his room on the next floor, huffing and puffing. It would be easiest to lie there and wait it out. He tapped in the combination on his safe and pulled open its door, took out the satellite phone. He turned it on. Battery fully charged.

He called headquarters in Delhi. "We need help," he said to the woman who answered. "The power has gone out."

"Power is out here too," Preeti said. "It's out everywhere."

"Everywhere?"

"Most of Delhi, Uttar Pradesh, Jharkhand, Bengal. Parts of the west too, in Gujarat, Rajasthan..."

"What should we do?"

"Wait for help."

"From where?"

"I don't know."

"What's the forecast?"

"The heat wave is supposed to last awhile longer. The rising air over the land might pull in cooler air off the ocean."

"When?"

"No one knows. The high pressure cell is huge. It's caught against the Himalaya."

"Is it better to be in water than in air?"

"Sure. If it's cooler than body temperature."

He turned off the phone, returned it to the safe. He checked the particulate meter on the wall: 1300 ppm. This for fine particulates, 25 nanometers and smaller. He went out onto the street again, staying in the shade of buildings. Everyone was doing that; no one stood in the sun now. Gray air lay on the town like smoke. It was too hot to have a smell, there was just a scorched sensation, a smell like heat itself, like flame.

He returned inside, went downstairs and opened the safe again, took out the keys to the closet, opened the closet and pulled out one of the generators and a jerrycan of gas. He tried to fill the generator's gas tank and found it was already full. He put the can of gas back in the closet, took the generator to the corner of the room where the window with the air conditioner was. The windowbox A/C had a short cord and was plugged into the wall socket under the window. But it wouldn't do to run a generator in a room, because of the exhaust. But it also wouldn't do to

run the generator out on the street below the window; it would surely be snatched. People were desperate. So . . . He went back to the closet, rooted around, found an extension cord. Up to the building's roof, which had a patio surrounded by a rampart and was four floors off the street. Extension cord only reached down to the floor below it. He went down and took the A/C unit out of the window on the second floor, hefted it up the stairs, gasping and sweating. For a moment he felt faint, then sweat stung his eyes and a surge of energy coursed through him. He opened the fourth-floor office window, got the A/C unit balanced on the ledge and closed the window on it, pulled out the plastic sidepanels that closed off the parts of the window still open. Up to the rooftop terrace, start the generator, listen to it choke and rattle up to its two-stroke percussion. Initial puff of smoke, after that its exhaust wasn't visible. It was loud though, people would hear it. He could hear others around the town. Plug in the extension cord, down the stairs to the upper office, plug in the A/C unit, turn it on. Grating hum of the A/C. Inrush of air, ah God, the unit wasn't working. No, it was. Lowering the temperature of the outer air by 10 or 20 degrees—that left it at about 85 degrees as he thought of it, maybe more. In the shade that was fine, people could do that, even with the humidity. Just rest and be easy. And the cooler air would fall down the stairs and fill the whole place.

Downstairs he tried to close the window where the A/C unit had been, found it was stuck. He slammed it downward with his fists, almost breaking the glass. Finally it gave a jerk and came down. Out onto the street, closing the door. Off to the nearest school. A little shop nearby sold food and drinks to students and their parents. The school was closed, the shop too, but people were there, and he recognized some. "I've got air conditioning going at the clinic," he said to them. "Come on over."

Silently a group followed him. Seven or eight families, including the shop owners, locking their door after them. They tried to stay in the shade but now there was little shade to find. Men preceded wives who herded children and tried to induce their single file to stay in the shade. Conversations were in Awadhi, Frank thought, or Bhojpuri. He only spoke a little Hindi, as they knew; they would speak in that language to him if they wanted to talk to him, or confer with someone who would speak to him in English. He had never gotten used to trying to help people he

couldn't talk to. Embarrassed, ashamed, he blasted past his reluctance to reveal his bad Hindi and asked them how they felt, where their families were, whether they had anyplace they could go. If indeed he had said those things. They looked at him curiously.

At the clinic he opened up and people filed in. Without instruction they went upstairs to the room where the A/C was running, sat down on the floor. Quickly the room was full. He went back downstairs and stood outside the door and welcomed people in if they showed any interest. Soon the whole building was as full as it could be. After that he locked the door.

People sat sweltering in the relative cool of the rooms. Frank checked the desk computer; temperature on the ground floor 38 degrees. Perhaps cooler in the room with the A/C unit. Humidity now 60 percent. Bad to have both high heat and high humidity, unusual; in the dry season on the Gangetic plain, January through March, it was cooler and drier; then it grew hot, but was still dry; then with the soaking of the monsoon came cooler temperatures, and omnipresent clouds that gave relief from direct sunlight. This heat wave was different. Cloudless heat and yet high humidity. A terrible combination.

The clinic had two bathrooms. At some point the toilets stopped working. Presumably the sewers led to a wastewater treatment plant somewhere that ran on electricity, of course, and might not have the generator capacity to keep working, although that was hard to believe. Anyway it had happened. Now Frank let people out as needed so they could go in the alleys somewhere, as in hill villages in Nepal where there were no toilets at any time. He had been shocked the first time he saw that. Now he took nothing for granted.

Sometimes people began crying and little crowds surrounded them; elders in distress, little children in distress. Quite a few accidents of excretion. He put buckets in the bathrooms and when they were full he took them out into the streets and poured them into the gutters, took them back. An old man died; Frank helped some younger men carry the body up to the rooftop patio, where they wrapped the old one in a thin sheet, maybe a sari. Much worse came later that night, when they did the same thing for an infant. Everyone in every room cried as they carried the little body up to the roof. Frank saw the generator was running out of gas and went down to the closet and got the fuel can and refilled it.

His water jug was empty. The taps had stopped running. There were two big water cans in the refrigerator, but he didn't talk about those. He refilled his jug from one of them, in the dark; the water was still a bit cool. He went back to work.

Four more people died that night. In the morning the sun again rose like the blazing furnace of heat that it was, blasting the rooftop and its sad cargo of wrapped bodies. Every rooftop and, looking down at the town, every sidewalk too was now a morgue. The town was a morgue, and it was as hot as ever, maybe hotter. The thermometer now said 42 degrees, humidity 60 percent. Frank looked at the screens dully. He had slept about three hours, in snatches. The generator was still chuntering along in its irregular two-stroke, the A/C box was still vibrating like the bad fan it was. The sound of other generators and air conditioners still filled the air. But it wasn't going to make any difference.

He went downstairs and opened the safe and called Preeti again on the satellite phone. After twenty or forty tries, she picked up. "What is it?"

"Look, we need help here," he said. "We're dying here."

"What do you think?" she said furiously. "Do you think you're the only ones?"

"No, but we need help."

"We all need help!" she cried.

Frank paused to ponder this. It was hard to think. Preeti was in Delhi.

"Are you okay there?" he asked.

No answer. Preeti had hung up.

His eyes were stinging again. He wiped them clear, went back upstairs to get the buckets in the bathroom. They were filling more slowly now; people were emptied out. Without a water supply, they would have to move soon, one way or the other.

When he came back from the street and opened his door there was a rush and he was knocked inside. Three young men held him down on the floor, one with a squared-off black handgun as big as his head. He pointed the gun and Frank looked at the round circle of the barrel end pointed at him, the only round part of a squared-off thing of black metal. The whole world contracted to that little circle. His blood pounded through him and he felt his body go rigid. Sweat poured from his face and palms.

"Don't move," one of the other men said. "Move and you die."

Cries from upstairs tracked the intruders' progress. The muffled sounds of the generator and A/C cut off. The more general mumble of the town came wafting in the open doorway. People passing by stared curiously and moved on. There weren't very many of them. Frank tried to breathe as shallowly as possible. The stinging in his right eye was ferocious, but he only clamped the eye shut and with the other stared resolutely away. He felt he should resist, but he wanted to live. It was as if he were watching the whole scene from halfway up the stairs, well outside his body and any feelings it might be feeling. All except the stinging in his eye.

The gang of young men clomped downstairs with generator and A/C unit. Out they went into the street. The men holding Frank down let him go. "We need this more than you do," one of them explained.

The man with the gun scowled as he heard this. He pointed the gun at Frank one last time. "You did this," he said, and then they slammed the door on him and were gone.

Frank stood, rubbed his arms where the men had grasped him. His heart was still racing. He felt sick to his stomach. Some people from upstairs came down and asked how he was. They were worried about him, they were concerned he had been hurt. This solicitude pierced him, and suddenly he felt more than he could afford to feel. He sat on the lowest stair and hid his face in his hands, racked by a sudden paroxysm. His tears made his eyes sting less.

Finally he stood up. "We have to go to the lake," he said. "There's water there, and it will be cooler. Cooler in the water and on the sidewalk."

Several of the women were looking unhappy at this, and one of them said, "You may be right, but there will be too much sun. We should wait until dark."

Frank nodded. "That makes sense."

He went back to the little store with its owner, feeling jittery and lightheaded and weak. The sauna feeling hammered him and it was hard to carry a sack of food and canned and bottled drinks back to the clinic. Nevertheless he helped ferry over six loads of supplies. Bad as he felt, it seemed as if he was stronger than many of the others in their little group. Although at times he wondered if some of them could in fact just keep dragging along like this all day. But none of them spoke as they walked, nor even met eyes.

"We can get more later," the shop owner finally declared.

The day passed. Wails of grief were now muffled to groans. People were too hot and thirsty to make any fuss, even when their children died. Red eyes in brown faces, staring at Frank as he stumbled among them, trying to help get corpses of family members up onto the roof, where they scorched in the sun. Bodies would be rotting, but maybe they would anneal and dry out before that, it was so hot. No odors could survive in this heat, only the smell of scorched steamy air itself. Or maybe not: sudden smell of rotting meat. No one lingered up here now. Frank counted fourteen wrapped bodies, adult and child. Glancing across that rooftop level of the town he saw that other people were similarly engaged, silent, withdrawn, down-gazing, hurrying. No one he could see looked around as he was looking around.

Downstairs the food and drink were already gone. Frank made a count, which he found hard. Something like fifty-two people in the clinic. He sat on the stairs for a while, then went in the closet and stared at its contents. He refilled his water jug, drank deeply, refilled it again. No longer cool, but not hot. There was the can of gas; they could burn the bodies if they had to. There was another generator, but there was nothing to power with it that would do any good. The satellite phone was still charged, but there was no one to call. He wondered if he should call his mom. Hi Mom, I'm dying. No.

The day crawled second by second to its last hour, and then Frank conferred with the store owner and his friends. In murmurs they all agreed; time to go to the lake. They roused the people, explained the plan, helped those who needed it to stand, to get down the stairs. A few couldn't do it; that presented a quandary. A few old men said they would stay behind as long as they were needed, then come along to the lake. They said goodbye to the people leaving as if things were normal, but their eyes gave it all away. Many wept as they left the clinic.

They made their way in the afternoon shadows to the lake. Hotter than ever. No one on the streets and sidewalks. No wailing from the buildings. Still some generators grumbling, some fans grinding. Sound seemed stunted in the livid air.

At the lake they found a desperate scene. There were many, many people in the lake, heads dotted the surface everywhere around the shores, and out where it was presumably deeper there were still heads, people

semi-submerged as they lay on impromptu rafts of one sort or another. But not all of these people were alive. The surface of the lake seemed to have a low miasma rising out of it, and now the stink of death, of rotting meat, could be discerned in one's torched nostrils.

They agreed it might be best to start by sitting on the low lakeshore walkway or corniche and put their legs in the water. Down at the end of the walkway there was still room to do that, and they trudged down together and sat as a group, in a line. The concrete under them was still radiating the day's heat. They were all sweating, except for some who weren't, who were redder than the rest, incandescent in the shadows of the late afternoon. As twilight fell they propped these people up and helped them to die. The water of the lake was as hot as bath water, clearly hotter than body temperature, Frank thought; hotter than the last time he had tested it. It only made sense. He had read that if all the sun's energy that hit Earth were captured by it rather than some bouncing away, temperatures would rise until the seas boiled. He could well imagine what that would be like. The lake felt only a few degrees from boiling.

And yet sometime after sunset, as the quick twilight passed and darkness fell, they all got in the water. It just felt better. Their bodies told them to do it. They could sit on the shallowest part of the lake bottom, heads out of water, and try to endure.

Sitting next to Frank was a young man he had seen playing the part of Karna in one of the plays at the local mela, and Frank felt his blankness pierced again, as when the people had shown concern for him, by the memory of the young man at the moment Arjuna had rendered Karna helpless with a spoken curse and was about to kill him; at that point the young man had shouted triumphantly, "It's only fate!" and managed to take one last swing before going down under Arjuna's impervious sword. Now the young man was sipping the water of the lake, round-eyed with dread and sorrow. Frank had to look the other way.

The heat began to go to his head. His body crawled with the desire to get out of this too-hot bath, run like one would from a sauna into the icy lake that ought to accompany all such saunas, feel that blessed shock of cold smacking the breath out of his lungs as he had felt it once in Finland. People there spoke of trying to maximize the temperature differential, shift a hundred degrees in a second and see what that felt like.

But this train of thought was like scratching an itch and thereby making it worse. He tasted the hot lake water, tasted how foul it was, filled with organics and who knew what. Still he had a thirst that couldn't be slaked. Hot water in one's stomach meant there was no refuge anywhere, the world both inside and outside well higher than human body temperature ought to be. They were being poached. Surreptitiously he uncapped his water jug and drank. Its water was now tepid, but not hot, and it was clean. His body craved it and he couldn't stop himself, he drank it all down.

People were dying faster than ever. There was no coolness to be had. All the children were dead, all the old people were dead. People murmured what should have been screams of grief; those who could still move shoved bodies out of the lake, or out toward the middle where they floated like logs, or sank.

Frank shut his eyes and tried not to listen to the voices around him. He was fully immersed in the shallows, and could rest his head back against the concrete edge of the walkway and the mud just under it. Sink himself until he was stuck in mud and only half his head exposed to the burning air.

The night passed. Only the very brightest stars were visible, blurs swimming overhead. A moonless night. Satellites passing overhead, east to west, west to east, even once north to south. People were watching, they knew what was happening. They knew but they didn't act. Couldn't act. Didn't act. Nothing to do, nothing to say. Many years passed for Frank that night. When the sky lightened, at first to a gray that looked like clouds, but then was revealed to be only a clear and empty sky, he stirred. His fingertips were all pruney. He had been poached, slow-boiled, he was a cooked thing. It was hard to raise his head even an inch. Possibly he would drown here. The thought caused him to exert himself. He dug his elbows in, raised himself up. His limbs were like cooked spaghetti draping his bones, but his bones moved of their own accord. He sat up. The air was still hotter than the water. He watched sunlight strike the tops of the trees on the other side of the lake; it looked like they were bursting into flame. Balancing his head carefully on his spine, he surveyed the scene. Everyone was dead.

2

I am a god and I am not a god. Either way, you are my creatures. I keep you alive.

Inside I am hot beyond all telling, and yet my outside is even hotter. At my touch you burn, though I spin outside the sky. As I breathe my big slow breaths, you freeze and burn, freeze and burn.

Someday I will eat you. For now, I feed you. Beware my regard. Never look at me.

3

Article 14 of the Paris Agreement Under the United Nations Framework Convention on Climate Change called for a periodic taking stock of all the signatory nations' carbon emissions, which meant in effect the total global carbon burn for the year in question. The first "global stocktake" was scheduled for 2023, and then every five years after that.

That first global stocktake didn't go well. Reporting was inconsistent and incomplete, and yet still it was very clear that carbon emissions were far higher than the Parties to the Agreement had promised each other they would be, despite the 2020 dip. Very few nations had hit the targets they had set for themselves, even though they had set soft targets. Aware of the shortfall even before the 2023 stocktake, 108 countries had promised to strengthen their pledges; but these were smaller countries, amounting together to about 15 percent of global total emissions.

So at the annual Conference of the Parties the following year, some delegations pointed out that the Agreement's Article 16, clause 4, specified that the COP "shall make the decisions necessary to promote the Agreement's effective implementation by establishing such subsidiary bodies as are deemed necessary for the implementation of the Agreement." They also pointed to Article 18, clause 1, which allowed the COP to create new "Subsidiary Bodies for Implementation of the Agreement." These subsidiary bodies had previously been understood to mean committees that met only during the annual COP gatherings, but now some delegates argued that given the general failure of the Agreement so far, a new subsidiary body with permanent duties, and the resources to pursue them, was clearly needed to help push the process forward.

So at COP29, held in Bogotá, Colombia, the Parties to the Agreement created a new Subsidiary Body for Implementation of the Agreement, as

authorized by Articles 16 and 18, to be funded using the funding protocols outlined in Article 8, which bound all Parties to the methods outlined in the Warsaw International Mechanism for Loss and Damage. The announcement said:

"Be it resolved that a Subsidiary Body authorized by this twenty-ninth Conference of the Parties serving as the meeting of the parties to the Paris Climate Agreement (CMA) is hereby established, to work with the Intergovernmental Panel on Climate Change, and all the agencies of the United Nations, and all the governments signatory to the Paris Agreement, to advocate for the world's future generations of citizens, whose rights, as defined in the Universal Declaration of Human Rights, are as valid as our own. This new Subsidiary Body is furthermore charged with defending all living creatures present and future who cannot speak for themselves, by promoting their legal standing and physical protection."

Someone in the press named this new agency "the Ministry for the Future," and the name stuck and spread, and became what the new agency was usually called. It was established in Zurich, Switzerland, in January of 2025.

Not long after that, the big heat wave struck India.

4

Above the campus of the Eidgenössische Technische Hochschule, Zurich rises to a forest park on top of the Zuriberg, the hill that forms the eastern flank of the city. Most of the city covers the banks of the river Limmat, which begins as the outlet of the Zurichsee and drains northward between two hills, the Zuriberg on the east and the Uetliberg to the west. Between these two hills the land is pretty flat, for Switzerland anyway, and here almost a quarter of all the Swiss have congregated to make a compact handsome city. Those lucky enough to live on the rise of the Zuriberg often think they have the best location, with a view over the roofs of the downtown, and out to the big lake to the south, and sometimes a glimpse of the Alps. In the late afternoon sun a sense of luminous calm can radiate up from this mixed vista of human and natural features. A good place. Visitors often call it boring, but the locals don't complain.

At the Kirche Fluntern tram stop, about halfway up the Zuriberg, you can get off one of the blue trams and walk north along Hochstrasse, past an old church with a steeple that has a big clockface on it, with a bell that rings the hours. Next door to it is where one finds the offices of the Paris Agreement's Ministry for the Future. They're within easy walking distance of the ETH, with all its geotechnical expertise, and not far above offices of the big Swiss banks, with their immense amounts of capital, all out of proportion to Switzerland's small size. These proximities were not accidental; for centuries now the Swiss have pursued a national policy of creating maximum safety for Switzerland by helping to increase peace and prosperity worldwide. "No one is safe until all are secure" seems to be their principle here, and in that project, geotechnical expertise and lots of money are both very useful.

That being the case, and since Geneva already hosted the headquarters

of the World Health Organization and several other UN agencies, when the Paris Agreement established this new agency of theirs, Zurich forcefully made the case that Geneva was already too crowded with agencies, and expensive as a result, and after some vigorous inter-cantonal tussling, they won the bid to host the new agency. Offering rent-free the compound on Hochstrasse, and several nearby ETH buildings as well, was no doubt one of many reasons their bid succeeded.

Now the head of the ministry—Mary Murphy, an Irish woman of about forty-five years of age, ex-minister of foreign affairs in the government of the Irish Republic, and before that a union lawyer—walked into her office to find a crisis that didn't surprise her one bit. Everyone had been transfixed with horror at the news of the deadly heat wave in India; there were sure to be immediate ramifications. Now the first of these had come.

Her chief of staff, a short slight man named Badim Bahadur, followed Mary into her office saying, "You must have heard that the Indian government is beginning a solar radiation management action."

"Yes, I just saw it this morning," she said. "Have they given us the details of their plan?"

"They came half an hour ago. Our geoengineering people are saying that if they do it as planned, it will equate to about the same as the Pinatubo volcanic eruption of 1991. That lowered global temperature by about a degree Fahrenheit, for a year or two. That was from the sulfur dioxide in the ash cloud that the volcano shot into the stratosphere. It will take the Indians several months to replicate that boost of sulfur dioxide, our people say."

"Do they have the capacity to do it?"

"Their air force can probably do it, yes. They can certainly try, they've got the necessary aircraft and equipment. A lot of it will simply reconfigure aerial refueling technology. And planes dump fuel all the time, so that part won't be so hard. The main problem will be getting up as high as possible, and then it's just a matter of quantity, the number of missions needed. Thousands of flights, for sure."

Mary pulled her phone from her pocket, tapped the screen for Chandra. Head of India's delegation to the Paris Agreement, she was well known to Mary. It would be late in Delhi, but this was when they usually talked.

When she answered, Mary said, "Chandra, it's Mary, can you talk for a minute?"

"For a minute, yes," Chandra said. "It's very busy here."

"I'm sure. What's this about your air force doing a Pinatubo?"

"Or a double Pinatubo, yes. This is what our academy of sciences is recommending, and the prime minister has ordered it."

"But the Agreement," Mary said, sitting down on her chair and focusing on her colleague's voice. "You know what it says. No atmospheric interventions without consultation and agreement."

"We are breaking the Agreement," Chandra said flatly.

"But no one knows what the effects will be!"

"They will be like Pinatubo, or hopefully double that. Which is what we need."

"You can't be sure that there won't be other effects—"

"Mary!" Chandra exclaimed. "Stop it right now. I know what you are going to say even before you say it. Here's what we are sure of in India: millions of people have just died. We'll never even know how many died, there are too many to count. It could be twenty million people. Do you understand what that means?"

"Yes."

"No. You don't understand. I invite you to come see it in person. Really you should, just so you know."

Mary found herself short of breath. She swallowed. "I will if you want me to."

A long silence followed. Finally Chandra spoke, her voice tight and choked. "Thank you for that, but maybe there is too much trouble here now for us to handle such a visit. You can see in the reports. I will send you some we are making. What you need to know now is that we are scared here, and angry too. It was Europe and America and China who caused this heat wave, not us. I know we have burned a lot of coal in the last few decades, but it's nothing compared to the West. And yet we signed the Agreement to do our part. Which we have done. But no one else is fulfilling commitments, no one is paying the developing nations, and now we have this heat wave. And another one could happen next week! Conditions are much the same!"

"I know."

"Yes, you know. Everyone knows, but no one acts. So we are taking matters into our own hands. We'll lower global temperatures for a few years, everyone will benefit. And perhaps we'll dodge another massacre like this one."

"All right."

"We do not need your permission!" Chandra shouted.

"I didn't mean that," Mary said. But the line had gone dead.

5

We drove in with a fuel truck, water truck, all that. It was like going out into nothing. With the electricity out, pumps weren't working, nothing was working. We set to work on the power plants before we did anything about all the dead. In any case there was nothing we could do about them, the bodies were sleeping where they fell. This wasn't just the people, but all the cattle too. Seeing all the bodies, cows, people, dogs, someone said something about the way Tibetans bury their dead, called sky burial—let the vultures eat the bodies. And there were some vultures doing that, yes. Clouds of vultures and crows. They must have flown in afterward. Sometimes the stink was horrible, but then we would move on or the wind would shift, and it went away. It seemed like it was too hot for smells, the air was cooked. The main smell was of burning. And things were burning, yes. Once the power came back on, there were some downed lines east of Lucknow, and brush fires started from them. Next day a wind came and the fire spread and got into the towns and we had to fight the fire before anything else. We got particulate readings of 1500 ppm.

There was a lake we could pump from, next to one town near Lucknow. The lake was filled with dead bodies, it was awful, but we threw the pump intake out into the lake anyway, because we needed the water. We were downwind of a brush fire, it was coming at us fast. So when the pump started filling our water trucks we were relieved.

Then I heard a noise, at first I thought it was something in the pump line, a kind of squeak it was. But then it seemed to be coming from the lakeshore, where there was a sidewalk running around the edge of the water. So I went over to look. I don't know. I guess it sounded alive.

He was lying against a building across the sidewalk from the lake. He

had a shirt draped over his head. I saw him move and shouted to the others and went to him. He was a firangi, with brown hair and skin that was all peeling off. He looked like he had been burned, or boiled, I don't know—he looked dead but he was moving. His eyes were almost swollen shut, but I could see he was looking at me. Once we started helping him he never said a thing, never made another sound. His lips were cracked bloody. I thought maybe his voice was gone, that he was too cooked to talk. We gave him water by the spoonful. We were afraid to give him too much at once. Once we got the word to team command, the medicos were with us pretty quickly. They took over and gave him infusions. He watched them do it. He looked around at us, and back at the lake, but he never said a thing. His eyes were just slits, and so red. He looked completely mad. Like a different kind of being entirely.

6

Following the great Indian heat wave, the emergency meeting of the Paris Agreement signatories was fraught indeed. The Indian delegation arrived in force, and their leader Chandra Mukajee was excoriating in her denunciation of the international community and its almost complete failure to adhere to the terms of the agreement that every nation on Earth had signed. Reductions in emissions ignored, payment into investment funds that were to be spent on decarbonization not paid—in every way the Agreement had been ignored and abrogated. A performance without substance, a joke, a lie. And now India had paid the price. More people had died in this heat wave than in the entirety of the First World War, and all in a single week and in a single region of the world. The stain of such a crime would never go away, it would remain forever.

No one had the heart to point out that India had also failed to meet its emission reduction targets. And of course if total emissions over historical time were totted up, India would come in far behind all of the developed nations of the Western world, as everyone knew. In dealing with the poverty that still plagued so much of the Indian populace, the Indian government had had to create electricity as fast as they could, and also, since they existed in a world run by the market, as cheaply as they could. Otherwise outside investors would not invest, because the rate of return would not be high enough. So they had burned coal, yes. Like everyone else had up until just a few years before. Now India was being told not to burn coal, when everyone else had finished burning enough of it to build up the capital to afford to shift to cleaner sources of power. India had been told to get better without any financial help to do so whatsoever. Told to tighten the belt and embrace austerity, and be the working class for the bourgeoisie of the developed world, and suffer in silence until better times came—but

the better times could never come, that plan was shot. The deck had been stacked, the game was over. And now twenty million people were dead.

The people in the big room in the center of Zurich's Kongresshall sat there in silence. This was not the same silence as the earlier memorial moment, a ritual period of silence to honor the memory of the dead which had stretched on for minute after minute. Now it was the silence of shame, confusion, dismay, guilt. The Indian delegation was done talking, they had nothing more they cared to say. Time for a response, an answer to them; but there was no answer. Nothing could be said. It was what it was: history, the nightmare from which they could not wake.

Finally that year's president of the Paris Agreement organization, a woman from Zimbabwe, stood up and went to the podium. Briefly she embraced Chandra, nodded to the other Indians on stage, and went to the microphone.

"Obviously we have to do better," she said. "The Paris Agreement was created to avoid tragedies like this one. We are all in a single global village now. We share the same air and water, and so this disaster has happened to all of us. Since we can't undo it, we have to turn it to the good somehow, or two things will happen; the crimes in it will go unatoned, and more such disasters will happen. So we have to act. At long last, we have to take the climate situation seriously, as the reality that overrides everything else. We have to act on what we know."

Everyone nodded. They could not applaud, not now, but they could nod. They could raise their hands, some of them with their fists clenched, and commit themselves to action.

That was all very well. It was a moment, maybe even a moment to remember. But very soon they were back to the usual horse-trading of national interests and commitments. The disaster had happened in India, in a part of India where few foreigners ever went, a place said to be very hot, very crowded, very poor. Probably more such events in the future would mostly happen in those nations located between the Tropics of Capricorn and Cancer, and the latitudes just to the north and south of these lines. Between thirty north and thirty south: meaning the poorest parts of the world. North and south of these latitudes, fatal heat waves might occur from time to time, but not so frequently, and not so fatally. So this was in some senses a regional problem. And every place had its

regional problems. So when the funerals and the gestures of deep sympathy were done with, many people around the world, and their governments, went back to business as usual. And all around the world, the CO_2 emissions continued.

For a while, therefore, it looked like the great heat wave would be like mass shootings in the United States—mourned by all, deplored by all, and then immediately forgotten or superseded by the next one, until they came in a daily drumbeat and became the new normal. It looked quite possible that the same thing would happen with this event, the worst week in human history. How long would that stay true, about being the worst week? And what could anyone do about it? Easier to imagine the end of the world than the end of capitalism: the old saying had grown teeth and was taking on a literal, vicious accuracy.

But not in India. Elections were held and the nationalist nativist BJP party was thrown out of office as insufficient to the task, and partly responsible for the disaster, having sold the country to outside interests and burned coal and trashed the landscape in the pursuit of ever-growing inequality. The RSS disgraced and discredited at last as an evil force in Indian life. A new party was voted in, a composite party composed of all kinds of Indians, every religion and caste, urban poor, rural poor, the educated, all banded together by the disaster and determined to make something change. The ruling elite lost legitimacy and hegemony, and the inchoate fractured resistance of victims coalesced in a party called Avasthana, Sanskrit for survival. The world's biggest democracy, taking a new way, India's electrical power companies were nationalized where they weren't already, and a vast force was put to work shutting down coal-fired power plants and building wind and solar plants, and free-river hydro, and non-battery electrical storage systems to supplement the growing power of battery storage. All kinds of things began to change. Efforts were renewed to dismantle the worst effects of the caste system—these efforts had been made before, but now it was made a national priority, the new reality, and enough Indians were now ready to work for it. All over India, governments at all levels began to implement these changes.

Lastly, though this was regretted by many, some more radical portion of this new Indian polity sent a message out to the world: change

with us, change now, or suffer the wrath of Kali. No more cheap Indian labor, no more sell-out deals; no deals of any kind, unless changes were made. If changes weren't made by the countries that had signed the Paris Agreement—and every nation had signed it—then this portion of India was now their enemy, and would break off diplomatic relations and do everything short of declaring military war. But economic war—yes, economic war. The world would see what this particular one-sixth of its population, formerly the working class for the world, could do. Time for the long post-colonial subalternity to end. Time for India to step onto the world stage, as it had at the start of history, and demand a better world. And then help to make it real.

Whether that kind of aggressive stance would be revealed as a true national position or the posturing of a radical faction remained to be seen. It depended, some thought, on how far India's new national government was willing to go to back up this Kali group's threats—to in effect unleash them. War in the age of the internet, the age of the global village, the age of drones, the age of synthetic biology and artificial pandemics—this was not the same as war in the past. If they were serious, it could get ugly. In fact, if even just the Kali faction of the Indian polity was serious, it could get very ugly.

But two could play at those games, indeed everyone could play those games—not just the 195 nations that had signed the Paris Agreement, but all the various kinds of non-state actors, right down to individuals.

And so came a time of troubles.

7

He was having panic attacks whenever he got hot, and then the panic attacks made him hotter still. Feedback loop for sure. When he was stabilized enough to move him, we flew him to Glasgow. He had spent a year abroad there, he said, and we thought that familiarity might help. He didn't want to go home to the States. So we took him to Glasgow and kept him cool, and took walks with him around the neighborhood at night. It was October and so the usual rain and raw sea air. That seemed to comfort him.

One night I was out there walking the streets with him, letting him take the lead. He hardly ever said a word, and I let him be. On this night he was a little more talkative. He pointed out to me where he had gone to school, theaters he had frequented. Apparently he had taken an interest in theater, done some work backstage with lighting and sets and costumes. Then when we found ourselves on Clyde Street, he wanted to walk out onto the pedestrian bridge that ran out over the river to the south bank.

Out there in the dark the city looked foursquare and massive. It's low for a city, not much different than it must have appeared a century or two ago. A little uncanny somehow, like a city in some dark fantasy. He stood there and looked down at the black water, elbows on the railing.

We talked about various things. At one point I asked him again if he would be going home.

No, he said sharply. I'm never going back there. It was the blackest look I ever saw on him. *Never*, he said.

I let it go. I didn't want to ask. We stood there leaning against the railing. It looked like the city was slowly floating in toward the hills.

So why did I survive? he said all of a sudden. Why just me, out of all those people?

I didn't know what to say. You just did, I said. Probably you were the healthiest person there. Maybe one of the biggest, I don't know. You aren't that big, but maybe bigger than most Indians.

He shrugged. Not really.

Even a bit more body mass would help. You have to keep your core temperature under about 104. A few pounds could help with that. And a lifetime of better food and medical care. And you're a runner, right?

I was a swimmer.

That probably helped. Stronger heart, thinner blood. That sort of thing. Ultimately I think it just means you were the strongest person there, and only the strongest survived.

I don't think I was the strongest person there.

Well, maybe you were better hydrated? Or you stayed in the water more? They said they found you by the lake.

Yes, he said. Something I said had troubled him. He said, I did stay submerged as much as I could. Just my face up there to breathe, all night long. But a lot of people were doing that.

It added up to survival, I said. You made it. You were lucky.

Don't say that.

I don't mean lucky. It was chance. I mean there's always an element of chance.

He looked at the dark low city, spangled with its night lights. It's just fate, he said. He put his forehead on the railing.

I put a hand on his shoulder. Fate, I agreed.

8

Humans are burning about 40 gigatons (a gigaton is a billion tons) of fossil carbon per year. Scientists have calculated that we can burn about 500 more gigatons of fossil carbon before we push the average global temperature over 2 degrees Celsius higher than it was when the industrial revolution began; this is as high as we can push it, they calculate, before really dangerous effects will follow for most of Earth's bioregions, meaning also food production for people.

Some used to question how dangerous the effects would be. But already more of the sun's energy stays in the Earth system than leaves it by about 0.7 of a watt per square meter of the Earth's surface. This means an inexorable rise in average temperatures. And a wet-bulb temperature of 35 will kill humans, even if unclothed and sitting in the shade; the combination of heat and humidity prevents sweating from dissipating heat, and death by hyperthermia soon results. And wet-bulb temperatures of 34 have been recorded since the year 1990, once in Chicago. So the danger seems evident enough.

Thus, 500 gigatons; but meanwhile, the fossil fuels industry has already located at least 3,000 gigatons of fossil carbon in the ground. All these concentrations of carbon are listed as assets by the corporations that have located them, and they are regarded as national resources by the nation-states in which they have been found. Only about a quarter of this carbon is owned by private companies; the rest is in the possession of various nation-states. The notional value of the 2,500 gigatons of carbon that should be left in the ground, calculated by using the current price of oil, is on the order of 1,500 trillion US dollars.

It seems quite possible that these 2,500 gigatons of carbon might eventually come to be regarded as a kind of stranded asset, but in the meantime,

some people will be trying to sell and burn the portion of it they own or control, while they still can. Just enough to make a trillion or two, they'll be saying to themselves—not the crucial portion, not the burn that pushes us over the edge, just one last little taking. People need it.

The nineteen largest organizations doing this will be, in order of size from biggest to smallest: Saudi Aramco, Chevron, Gazprom, ExxonMobil, National Iranian Oil Company, BP, Royal Dutch Shell, Pemex, Petróleos de Venezuela, PetroChina, Peabody Energy, ConocoPhillips, Abu Dhabi National Oil Company, Kuwait Petroleum Corporation, Iraq National Oil Company, Total SA, Sonatrach, BHP Billiton, and Petrobras.

Executive decisions for these organizations' actions will be made by about five hundred people. They will be good people. Patriotic politicians, concerned for the fate of their beloved nation's citizens; conscientious hard-working corporate executives, fulfilling their obligations to their board and their shareholders. Men, for the most part; family men for the most part: well-educated, well-meaning. Pillars of the community. Givers to charity. When they go to the concert hall of an evening, their hearts will stir at the somber majesty of Brahms's Fourth Symphony. They will want the best for their children.

9

Down in Zurich's Niederdorf, the old medieval district bordering the east side of the Limmat under the tower of the Grossmünster, Zwingli's austere warehouse of a cathedral, there were still some little bars tucked here and there, too stodgy to attract many tourists. Not that Zurich got many tourists in November. Rain was turning into sleet, and the old black cobbles in their pattern of overlapping fans were getting slippery. Mary Murphy glanced down a broader street that led to the river; there stood the construction crane that wasn't really a construction crane but rather a work of art, a sculptor's joke at the ubiquity of cranes in Zurich. The city was always rebuilding itself.

In one of the smallest bars she sat down with Badim Bahadur, her chief of staff, who was hunched over a whisky reading his phone. He nodded at her in a morose greeting, pushed the ice around in his glass.

"What's the word from Delhi?" she said as she sat across from him.

"It's to start tomorrow."

She nodded at the waiter, pointed at Badim's drink. Another whisky. "What's the reaction?"

"Bad." He shrugged. "Maybe Pakistan will bomb us, and we'll retaliate, and that will start a nuclear winter. That will cool the planet quite nicely!"

"I should think the Pakistanis would want this as much as anyone, or even more. A heat wave like the one that just happened could kill everyone there."

"They know that. They're just piling on. China is doing it too. We are now the pariah of the world, all for doing the needful. We're getting killed for getting killed."

"It's always that way."

"Is it?" He glanced out the window. "I don't notice Europe hurting too badly."

"This is Switzerland, not Europe. The Swiss stay out of shit like this, they always have. That's what you're seeing here."

"Is it so different in the rest of Europe?"

"They killed Greece for getting killed, remember? And the rest of southern Europe isn't doing much better. Ireland neither for that matter. We got killed by the Brits for centuries. Something like a quarter of all the Irish died in the famine, and about as many left the island. That was something."

"Post-colonials," Badim said.

"Yes. And of the same empire too. It's funny how England never seemed to pay too much of a price for its crimes."

"No one does. You pay for being the victim, not the criminal."

Her whisky arrived and she downed half of it. "We're going to have to figure out how to change that."

"If there is a way."

"Justice?"

Badim made a skeptical face. "What is that?"

"Come on, don't be cynical."

"No, I mean it. Consider the Greek goddess of justice. Bronze woman in a toga, with a blindfold covering her eyes to make her be fair. Her scales held up to measure the balance of crime and punishment, no consideration given to individual influence. But nothing ever really balances in those scales. If it's an eye for an eye, maybe. That will balance out. But if someone is killed, no. The murderer gets fined, or jailed for life—is that a real balance? No."

"And thus capital punishment."

"Which everyone agrees is barbaric. Because if killing is wrong, two wrongs don't make a right. And violence begets violence. So you try to find some equivalent, and nothing is equivalent. So the scales are never balanced. Particularly if one nation murders another nation for three centuries, takes all its goods and then says Oh, sorry—bad idea. We'll stop and all is well. But all is not well."

"Maybe India can get England to pay for this casting of dust."

He shrugged. "It costs like ten euros. I don't see why everyone isn't

supporting it one hundred percent. The effect will only last three or four years at most, and during that time we can see what it does, and decide whether we should keep doing it or not."

"Lots of people think it will have knock-on effects."

"Like what?"

"You know them as well as I. If doing this stops the monsoon, you'll have doubled your own misery."

"So we decided to risk it! After that it's no one else's business."

"But it'll be a worldwide effect."

"Everyone wants the temperatures lowered."

"Not Russia."

"I'm not so sure. The sea ice is melting and the permafrost is thawing, that's half their country. If their rivers don't freeze, Siberia has no roads for nine months of the year. They're made for the cold there, they know that."

"There's cold and cold," Mary said.

"But it's colder than ever there, sometimes! You know that. No. They're just piling on, like everyone else. Someone takes the bull by the horns, grabs the wolf by the ears, and everyone takes that opportunity to stick knives in his back. I'm sick of it."

She took another sip. "Welcome to the world," she said.

"Well I don't like it." He downed his drink. "So what are we going to do? We're the Ministry for the Future. We have to take a stand on this."

"I know. We'll have to see what our scientists say about it first."

He gave her a look. "They will prevaricate."

"Well, they don't know enough now to make a considered judgment. So they'll say it's a good experiment, that we should run it and wait a decade and see what happens."

"As usual!"

"But that's science, right?"

"But we have to do more than the usual!"

"We'll say that. And I'm sure we'll end up backing India."

"With money?"

"Ten euros, sure! Cash on the barrel."

He laughed despite himself. But quickly his expression darkened.

"It isn't enough," he said. "What we're doing with this ministry. I'm telling you, it isn't enough."

Mary regarded him closely. This was a reproach. And he wasn't meeting her eye.

"Let's go for a walk," she suggested. "I've been sitting all day."

He didn't object. They polished off their drinks, paid and walked out into the twilight. Down to the crane statue and then upstream by the Limmat in its stone channel, the black surface of water sheeting past them, cracking the light reflected from the other side. Past the old stone cube of the Rathaus; as always, Mary marvelled that the entire city government could have been stuffed into such a small building. Then past the Odeon and across the big bridge spanning the lake outlet, to the tiny park on the other side, where the statue of Ganymede stood, his uplifted hand seeming to hold up the moon, low over the Zurichsee. This was a place she often came to; something in the statue, the lake, the Alps far to the south, combined in a way she found stirring, she couldn't say why. Zurich—life—she couldn't say. The world seemed a big place when she was here.

"Listen," she said to Badim. "Maybe you're right. Maybe there's no such thing as justice, in the sense of some kind of real reparation of a wrong. No eye for an eye, no matter what. Especially historical justice, or climate justice. But over the long haul, in some rough sense, that's what we have to try for. That's what our ministry is about. We're trying to set things up so that in the future, over the long haul, something like justice will get created. Some long-term ledger of more good than bad. Bending the arc and all that. No matter what happened before, that's what we can do now."

She pointed at Ganymede, holding his back hand aloft. The moon lay right there in it, as if he were about to throw it across the sky.

Badim sighed. "I know," he said. "I'm here to try." And the look in his eye—distant, intense, calculating, cold—told Mary that he would. It made her shiver to see it.

More relaxing for Mary, even entertaining, were her meetings with Tatiana Voznesenskaya, head of the ministry's legal division. They were in the habit of meeting on some mornings at the Utoquai schwimmbad, and if it was warm enough, changing into their bathing suits and swimming out into the lake, freestyling in tandem and then chatting as they did the breaststroke for a while, circling out there, looking at the city

from that strange low offshore angle; then back in to shower and sit in the schwimmbad café over hot drinks. Tatiana was tall and dark, dramatic in that Russian way of pale blue eyes and fashion model cheekbones, of grim high spirits and fuligin black humor. She had gotten pretty high in the Russian state department before running afoul of some part of the power structure there and deciding she would be better off in an international agency. Her expertise in Russia had been international treaty law, which she now brought to bear in working to find allies and legal means to advance the cause of defending the generations to come. This she felt was mostly a matter of establishing situations where these generations to come were given legal standing, such that their currently existing lawyers could file suits and be heard by courts. Not easy, given the reluctance of any court to grant standing to anyone or anything outside the magic circle of the law as written. But Tatiana had experience with most of the already-existing international courts, and was now working with the Network of Institutions for Future Generations, and the Children's Trust, and many other groups, all to leverage the power given to the ministry by its origins in the Paris Agreement. Mary often felt that it was really Tatiana who should have been made the head of the ministry, that Mary's experience in Ireland and the UN had been rather lightweight compared to Tatiana's tough career.

Tatiana had waved this off when Mary once mentioned the thought over drinks. "No you are perfect! Nice Irish girl, everyone loves you! I would wreck everything at once, bashing around like a KGB thug. Which I am," she added with a dangerous glint in her eye.

"Not really," Mary said.

"No, not really. But I would wreck things. We need you at the top, getting us in the door. It's similar to legal standing, really. Less formal but just as important. You have to get people to listen to you before you can make your case. That's what you do—people listen to you. Then we can go to work."

"I hope so. Do you really think we can get significant legal standing for people who don't exist yet?"

"I'm not sure. On the one hand, the circle of inclusion has been growing over historical time, which is a kind of precedent. More kinds of people given standing, even ecologies given standing, as in Ecuador. It sets

a pattern, and logically it holds water. But even if we succeed in that part, we have a second problem, maybe bigger, in the weakness of international courts generally."

"Do you think they're weak?"

Tatiana gave Mary a sharp look, as if to say Please be serious. "Nations agree to them only if they like their judgments. But judgments always side with one side or other, so the losing side is never pleased. And there is no sheriff for the world. So, the US does what it wants, and the rest of us also do what we want. The courts only work when some petty war criminal gets caught and everyone decides to look virtuous."

Mary nodded unhappily. The Indians' flouting of the Paris Agreement with their geoengineering, not much different legally than the general disregard for the Agreement's emission reduction targets, was just the latest example of this kind of behavior. "So what do you think we can do to improve that situation?"

Tatiana shrugged. "Rule of law is all we've got," she said darkly. "We tell people that and then try to make them believe it."

"How do we do that?"

"If the world blows up they'll believe it. That's why we got the international order we got after World War Two."

"Not good enough?" Mary suggested.

"No, but nothing is ever good enough. We just make do." Tatiana brightened, although Mary saw the sly look that indicated a joke. "We make a new religion! Some kind of Earth religion, everyone family, universal brotherhood."

"Universal sisterhood," Mary said. "An Earth mother religion."

"Exactly," Tatiana said, and laughed. "As it should be, right?"

They toasted the idea. "Write up the laws for that," Mary said. "Have them ready for when the time comes."

"Of course," Tatiana said. "I have entire constitution already, in here." And she tapped her forehead.

10

We took off from Bihta and Darbhanga and INS Garuda and Gandhinagar, mostly in Ilyushin IL-78s, bought long ago from the Soviet Union. We had some Boeing and Airbus refuelers too. They were old planes, and it was very cold inside them. Our suits were old too, they were hard to move in, and hardly anything as insulation. We got very cold up there, but the flights were relatively short.

We flew to sixty thousand feet, as high as the planes could get. Higher would have been better but we couldn't do it. It took a couple of hours, as we always carried a maximum load. Two planes got caught in the so-called coffin corner and stalled catastrophically, and one of the crews didn't get out.

Once up there we deployed the fuel lines and pumped the aerosols into the air. The plumes looked like dumped fuel at first, but they were really aerosol particulates, we were told mostly sulfur dioxide and then some other chemicals, like from a volcano, but there wasn't ash like in a volcanic explosion, it was a mix made to stay up there and reflect sunlight. Manufactured at Bhopal and elsewhere in India.

We flew most of our missions over the Arabian Sea, so the prevailing winds of late summer would carry the stuff over India before anywhere else. We wanted that, it was for us we were doing it, and some felt we might also avoid some criticism by doing it that way. But soon enough what we released would get carried by the winds all over the stratosphere, mostly in the northern hemisphere but eventually everywhere. There it would be deflecting some sunlight.

Even in India you could hardly see any difference in the sky. For all our lives we were living under the ABC, the Asian Brown Cloud, so we were used to dusty skies. Our operation only made things a little whiter by

day, and the sunsets were sometimes more red than before. Quite beautiful on certain days. But mostly things looked the same. The sunlight we deflected to space was said to be about a fifth of one percent of the total incoming. Very important crucial stuff, but it's not really possible to see a difference that small.

Global effect was said to be like Pinatubo's eruption in 1991, or some said a double Pinatubo. The total release was taken to the stratosphere in several thousand individual missions. We had a fleet of only two hundred planes, so we each went up scores and scores of times, spread out over seven months. That was a lot of work. Of course it was a pretty small effort as these things go. And if it helped to prevent another heat wave, it was worth doing.

We knew the Chinese hated the idea, and Pakistan of course, and although we flew only when the jet streams were running toward the east or northeast, there were times when those countries lay in the path of dispersion. And all over the world people pointed out that the ozone layer would get hurt, which would be bad for everyone. Once a heat-seeking missile flew right by our plane, Vikram dodged it at the last minute, the plane squealed like a cat. No one ever found out who shot it at us. But we didn't care. We did what we were told, we were happy to do it. Everyone had lost someone they knew in the heat wave. Even if they hadn't, it was India. And it could happen again, anywhere in India and really anywhere in the world. As our officials told people, over and over. Even farther north a heat wave could strike. Europe once suffered one that killed seventy thousand people, even though Europe is so far north. Well more than half the land on Earth is at risk. So we did it.

Day after day for seven months. And round-the-clock, what with maintenance and refueling, and the filling of the tanks. It was a routine that took many thousands of people working together. We got tired, exhausted, but also we got into the rhythm of it. There were enough crews to fly once out of every three missions per plane. For many weeks in the middle of it, it felt like it would go on forever. That it was all we were ever meant to do. We felt like we were saving India, and maybe saving the world. But it was India we were concerned with. No more deadly heat waves. So we hoped. It was a very emotional time.

Now, if I go anywhere in the world, and if someone speaks against

what we did, I challenge them. You don't know anything, I tell them. It wasn't your people, so you don't care. But we know and we care. And there hasn't been a heat wave like that since. One may come again, no doubt of that, but we did what we could. We did the right thing. I must admit, I sometimes shout at people if they deny that. I damn them to hell. Which is a place we in India have already seen. So I have no patience for people who object to what we did. They don't know what they're talking about. They haven't seen it, and we have.

11

Ideology, n. An imaginary relationship to a real situation.
In common usage, what the other person has, especially when systematically distorting the facts.

But it seems to us that an ideology is a necessary feature of cognition, and if anyone were to lack one, which we doubt, they would be badly disabled. There is a real situation, that can't be denied, but it is too big for any individual to know in full, and so we must create our understanding by way of an act of the imagination. So we all have an ideology, and this is a good thing. So much information pours into the mind, ranging from sensory experience to discursive and mediated inputs of all kinds, that some kind of personal organizing system is necessary to make sense of things in ways that allow one to decide and to act. Worldview, philosophy, religion, these are all synonyms for ideology as defined above; and so is science, although it's the different one, the special one, by way of its perpetual cross-checking with reality tests of all kinds, and its continuous sharpening of focus. That surely makes science central to a most interesting project, which is to invent, improve, and put to use an ideology that explains in a coherent and useful way as much of the blooming buzzing inrush of the world as possible. What one would hope for in an ideology is clarity and explanatory breadth, and power. We leave the proof of this as an exercise for the reader.

12

Bypassing the imaginary relationship part for a moment, what about the real situation? Unknowable, of course, as per above. But consider this aspect of it:

Recent extinctions include the Saudi gazelle, the Japanese sea lion, the Caribbean monk seal, the Christmas Island pipstrelle, the Bramble Cay melomys, the vaquita porpoise, the Alagoas foliage-gleaner, the cryptic treehunter, Spix's macaw, the po'ouli, the northern white rhino, the mountain tapir, the Haitian solenodon, the giant otter, Attwater's prairie chicken, the Spanish lynx, the Persian fallow deer, the Japanese crested ibis, the Arabian oryx, the snub-nosed monkey, the Ceylon elephant, the indris, Zanzibar's red colobus, the mountain gorilla, the white-throated wallaby, the walia ibex, the aye-aye, the vicuna, the giant panda, the monkey-eating eagle, and an estimated two hundred more species of mammals, seven hundred species of birds, four hundred species of reptiles, six hundred species of amphibians, and four thousand species of plants.

The current rate of extinctions compared to the geological norm is now several thousandfold faster, making this the sixth great mass extinction event in Earth's history, and thus the start of the Anthropocene in its clearest demarcation, which is to say, we are in a biosphere catastrophe that will be obvious in the fossil record for as long as the Earth lasts. Also the mass extinction is one of the most obvious examples of things done by humans that cannot be undone, despite all the experimental de-extinction efforts, and the general robustness of life on Earth. Ocean acidification and deoxygenation are other examples of things done by humans that we can't undo, and the relation between this ocean acidification/deoxygenation

and the extinction event may soon become profound, in that the former may stupendously accelerate the latter.

Evolution itself will of course eventually refill all these emptied ecological niches with new species. The pre-existing plenitude of species will be restored in less than twenty million years.

survivor
Children of Tal-

13

Anytime he broke a sweat his heart would start racing, and soon enough he would be in the throes of a full-on panic attack. Pulse at 150 beats a minute or more. It didn't matter that he knew he was safe, and that this panic reaction was to something that had happened long before. It didn't matter that he lived outside Glasgow now, and had a job in a meat-processing plant that gave him access to refrigerated rooms where the temperature was kept just a few degrees above freezing. By the time an attack started it was too late; his body and mind would be plunged instantly into another terrible tornado of biochemicals, pounding through his arteries like crystal meth at its paranoid worst.

This was what people called post-traumatic stress disorder. He knew that, he had been told it many times. PTSD, the great affect of our time. As one of his therapists had once explained to him, one of the identifying characteristics of the disorder was that even when you knew it was happening to you, that didn't stop it from happening. In that sense, the therapist admitted, the naming of it was useless. Diagnosis was necessary but not sufficient; and what might be sufficient wasn't at all clear. There were differing opinions, differing outcomes. No treatment had been shown to be fully effective, and most were still largely experimental procedures.

Exposure to events like the event: no.

He had tried this on a visit to Kenya, out every day in temperatures that crept closer and closer to the unlivable. That had resulted in daily panic attacks, and he had curtailed the trip and gone back to Glasgow.

Virtual environments in which to explore aspects of the event: no. He had played video games that made him relive parts of the experience in ways he could control, but these games were as ugly as any M-rated travesty. Panic attacks were frequent, during the games or not.

Rehearsal therapy: he had written accounts of the event while on beta-blockers, repeating this exercise over and over. Sleepy all the time because of the beta-blockers, memoir as automatic writing: *I tried to get people inside. I had a water tank in the closet. I hid what I had. The pistol barrel was a little black circle. Everybody was dead.*

No good. Just more blurry sick gasping panic attacks, more nightmares.

About half the time he fell asleep, he had nightmares that woke him in a cold sweat. Sometimes the images were sadistically cruel. After waking from one of these dreams he had to try to warm back up, so he would wiggle his cold toes, toss and turn, try to forget the dream, try to get back to sleep; but it took hours, and sometimes it didn't work. The next day he would operate like a slow zombie, get through the day by working mindlessly, or by playing video games, mostly games in which he bounced from point to point in a low-g environment. Asteroid hopping.

His therapists talked about trigger events. About avoiding triggers. What they were glossing over with this too-convenient metaphor was that life itself was just a long series of trigger events. That consciousness was the trigger. He woke up, he remembered who he was, he had a panic attack. He got over it and got on with his day as best he could. The command not to think about certain things was precisely a mode of thinking about that thing. Repression, forgetting; he had to learn to forget. Perpetual distraction was impossible. He wanted to get better but he couldn't.

Cognitive behavioral therapy was accepted by many as the best way to deal with PTSD. But CBT was hard. He pursued it like a religious calling, like a sidewalk over the abyss. One therapist said to him, when he used that phrase, everyone walks that sidewalk over the abyss, that's life. Mine is a tightrope, he replied. Focusing on balance was necessary at all times. In that sense, distractions were actually contra-indicated. If you were distracted enough, then a single misstep could send you plunging into the abyss. Constant vigilance—but this too was bad, as just another way of thinking about it, of paying attention to it. No. Hypervigilance was part of the disorder. So there was no way out. No way out but dreamless sleep. Or death.

Or certain drugs. Anti-anxiety drugs were not the same as antidepressants. They were meant to foil the brain's uptake of fight-or-flight stimulants. To give consciousness a bit of time to calm the system down

by realizing there was no real danger. These drugs had unwanted side effects, sure. Flatness of affect, yes. It was even part of what you wanted. If you killed all feelings, the bad feelings would necessarily be among them and therefore less likely to appear, even if they were the first ones in line, ready to pop. But if you did accomplish that flattening of all feeling, then what? March through life like an automaton, that's what. Eat like fueling an old car. Exercise hoping to get so tired you could fall asleep and make it through the night. Try not to think. Try not to feel.

So, after many months of that, after years of that, he went back to India.

He needed to try it to see if it would help. Until he tried it, he wouldn't know. It would be something like aversion therapy, or rather immersion therapy. Go right back to the scene of the crime. Plus he had an idea that had begun to obsess him. He had a plan.

He landed at Delhi, took the train to Lucknow, got off at the station and got on a crowded bus out to his town. The sights and smells, the heat and humidity—they were all triggers, yes. But since consciousness was the real trigger, he steeled himself and looked out the bus's dusty window and felt the sweat pouring out of his skin, felt the air pulsing in and out of his lungs, felt his heart pound inside him like a child trying to escape. Take it! Live on!

He got off at the bus stop in the town's central square. He stood there looking around. People were everywhere, all ages, Hindu and Muslim as before, the differences subtle and sometimes not there at all, but his eye had been trained to note the signs—a tikka, a particular rounded cap. The usual mix that this town had always had, back to Akbar and before. All appeared to him as it had been four years earlier. There was no sign that what had happened had ever happened.

Surely there must be a memorial at least. He walked toward the lake, feeling his heart hammer, his skin burn. His clothes were soaked with his sweat, he drank from the water bottle he had in his daypack, just a sip each time, and yet soon it was empty. Everything pulsed, his eyes stung with sweat, behind his wrap-around sunglasses he was weeping furiously. The polarization of the glasses was not enough to keep bursts of light from shattering in his retinas. Sights incoming like needles in the eyeball, everywhere he looked.

The lake was the same. How could it be the same, how could they not have drained it, built over the site with some mausoleum or temple or an apartment block or a bazaar?

Then again, who was there to remember what had happened here, or what it had been like that week? There were no survivors to be haunted by this place. As for those who had come in and cleaned it up, disposed of the bodies, well, it had been just one town of many, all of them the same. There was no reason to fixate on this one. No—he was the sole survivor. No one else had seen what he had seen and survived to remember it. For all the people walking on this crowded narrow sidewalk, this sad little pastiche of a corniche, it was only what it was today. No sign of a plaque, much less a memorial in the old martial style.

He walked back to the bus station. After some thought, and a trip to an open-walled store to buy more bottled water, he walked to his old office. The building was still there. The offices were occupied by lawyers and accountants, and a dentist. Next door was a Nepali restaurant that hadn't been there before. It was just a building. What had happened up there in those rooms—

He sat on the curb, suddenly too weak to stand. He was quivering, he put his head in his hands. It was all there in his head—every hour of it, every minute of it. The water tank in that closet.

He got up and walked back to the bus station and took the next bus back to Lucknow. There he called a number he had been given. A man answered in Hindi. In his bad Hindi he asked if he could speak in English, then switched over when the man said, "Yes, what?"

"I was there," Frank said. "I was here, during the heat wave. I'm an American, I was with an aid group, here doing development work. I saw what happened. Now I'm back."

"Why?"

"I have a friend who told me about your group."

"What group?"

"I was told it's called Never Again. Devoted to various kinds of direct action?"

Silence from the other end.

"I want to help," Frank said. "I need to do something."

More silence. Finally the man said, "Tell me where you are."

* * *

He sat outside the train station for an hour, miserably hot. When it seemed he would wilt and fall, a car drove up to the curb and two young men jumped out and stood before him. "You are the firangi who called?"

"Yes."

One of them waved a wand over him while the one who had spoken patted him down.

"All right, get in."

When he was in the front seat passenger side, the driver took off with a squeal. The men behind him blindfolded him. "We don't want you to know where we are taking you. We won't harm you, not if you are what you say you are."

"I am," Frank said, accepting the blindfold. "I wish I weren't, but I am."

No replies. The car made several turns, fast enough to throw Frank against the door or the restraint of his seatbelt. A little electric car, quietly humming, and quick to speed up or slow down.

Then the car stopped and he was led out and up some steps. Into a building. His blindfold was removed; he was standing in a room filled with young men. There was a woman there too, he saw, alone among a dozen men. All of them regarded him curiously.

He told them his story. They nodded grimly from time to time, their gleaming eyes fixed on him. Never had he been looked at so intently.

When he was done they glanced at each other. Finally the woman spoke:

"What do you want now?"

"I want to join you. I want to do something."

They spoke in Hindi among themselves, more quickly than he could follow. Possibly it was another language, like Bengali or Marathi. He didn't recognize a single word.

"You can't join us," the woman told him after they were done conferring. "We don't want you. And if you knew about everything that we did, you might not want us. We are the Children of Kali, and you can't be one of us, even if you were here during the catastrophe. But you can do something. You can carry a message from us to the world. Maybe that can even help, we don't know. But you can try. You can tell them that they must change their ways. If they don't, we will kill them. That's what they need to know. You can figure out ways to tell them that."

"I'll do that," Frank said. "But I want to do more."

"Do more then. Just not with us."

Frank nodded, looked at the floor. He would never be able to explain. Not to these people, not to anyone.

"All right then. I'll do what I can."

14

We had to leave. It was too dangerous to stay.

I was a doctor, I ran a small clinic with an assistant and three nurses and a couple who ran the office. My wife taught piano and my children went to school. Then rebels from our area began fighting the government and troops moved into town, and people were being killed right on the street. Even some kids from the school my children went to. And one day our clinic was blown up. When I went to it and saw the wreckage, looked from the street right into my examination room, I knew we had to leave. Somehow we were on the wrong side.

I went to a friend who had been a journalist before the war and asked him if he could put me in touch with a smuggler who would get us on the way to someplace safe. I did not have any particular idea about where that might be. Anyplace was going to be safer than where we were. When my friend understood what I was asking him, he rounded the table and gave me a hug. I'm sorry it's come to this, he said. I will miss you. This stuck me like a knife in the heart. He knew what it meant, this move. I didn't know, but he did. And when I saw this, saw what he knew in his face, I sat down on my chair as if shot. My knees buckled. People say this as a figure of speech, but really it is a very accurate account of what happens when you get a big shock. It's something in the body, a physiological thing, although I can't explain the mechanism.

The smuggler was expensive, so much so that only those who had some considerable savings would be able to leave by using one. Most of my townspeople were stuck. But we could afford it. So I met my friend one night at our usual café, and he had a man with him. The man was polite but distant. Professional. He asked to see my money, asked about my family, when I could be ready, that sort of thing. He said he could get us into

Turkey and then Bulgaria, and after that Switzerland or Germany. I
to the bank and withdrew the money, then went home and told my
and we told the children to pack one suitcase each, that we were
on a trip. That night at midnight a car pulled up to our apartment
and we went downstairs and put our suitcases in the trunk and
the back of the car. As we drove off I looked out the car window at
apartment and realized I would never see it again. All that was over.
had had my routines, I liked to go down to the café after work or
night when it had cooled, drink coffee and play backgammon and
friends. My wife and I got together with a few couples, made meals
watched their kids. We knew the people who ran the grocery and
local stores. We had all that, just like anyone. I remember what it was
But just barely.

15

Taking notes for Badim on regular Monday meeting of ministry executive group. I'll clean these up later to give to him.

Mary Murphy, convening her leadership team in seminar room next to her office, Hochstrasse. I should have gone to the bathroom.

Badim on Mary's left, then thirteen division heads seated around the table, the rest of us behind them against the walls. George is going to fall asleep.

Tatiana V., legal. Just heard this morning World Court declined to take up her Indian case. Not happy.

Imbeni Halle. Infrastructure. Poached from Namcor.

Jurgen Atzgen. Zurcher. Gets to commute from his house down lake. Insurance and re-insurance. Swiss Re vet.

Bob Wharton, nat cat. American ecologist. Mitigation and adaptation.

Climate lead Adele Elia. French, coordinating our climate science. Started as a glaciologist, hates meetings like this. Once said so right in meeting. Lived eight years on glaciers, she said. Wants back there. As for world cryosphere, it's still melting.

Huo Kaming, ecologist, Hong Kong. Biosphere studies, habitat restoration, refugia creation, animal protection, rewilding, biologically based carbon drawdown, watershed governance, groundwater recharge, the commons, the Half Earth campaign. She can do it all.

Estevan Escobar. Chilean. Oceans. Prone to despair.

Elena Quintero, agriculture. Buenos Aires. She and Estevan joke about Argentina–Chile rivalry. She cheers him up very skillfully.

Indra Dalit, Jakarta. Geoengineering. Works with Bob and Jurgen.

Dick Bosworth, Australian, economist. A card. Taxes and political economy. Our reality check.

Janus Athena, AI, internet, all things digital. Very digital themself.

Esmeri Zayed. Third of the E gals. Jordanian Palestinian. Refugee liaison to UNHCR.

Rebecca Tallhorse, Canada. Indigenous peoples' rep and outreach.

Mary starts meeting by asking for new developments.

Imbeni: Looking into plans to redirect fossil fuel companies to do decarbonization projects. Capabilities strangely appropriate. Extraction and injection both use same tech, just reversed. People, capital, facilities, capacities, all these can be used to "collect and inject," either by way of cooperation or legal coercion. Keeps oil companies in business but doing good things.

Tatiana looks interested. Rest of group looking skeptical. Carbon capture and reinsertion into empty oil wells are both dubious as a reality.

Mary: Look into it more. We've got to have it, from what the calculations say about how much the natural methods can grab.

Jurgen: Insurance companies in a panic at last year's reports. Pay-outs at about one hundred billion USD a year now, going higher fast, as in hockey stick graph. Insurance companies insured by re-insurance. These now holding short end of stick (tall end of stick?). Can't charge premiums high enough to cover pay-outs, nor could anyone afford to pay that much. Lack of predictability means re-insurance companies simply refusing to cover environmental catastrophes, the way they don't insure war or political unrest etc. So, end of insurance, basically. Everyone hanging out there uninsured. Governments therefore payer of last resort, but most governments already deep in debt to finance, meaning also re-insurance companies. Nothing left to give without endangering belief in money. Entire system therefore on brink of collapse.

Mary: What mean collapse?

Jurgen: Mean, money no longer working as money.

Silence in room. Jurgen adds, So you can see why re-insurance hoping for some climate mitigation! We can't afford for world to end! No one laughs.

Bob Wharton: Some things we can mitigate, some we can't. Some things we can adapt to, others we can't. Also, we can't adapt to some things we are now failing to mitigate. Need to clarify which is which. Mainly need to tell adaptation advocates they're full of shit. Bunch of

economists, humanities professors, they have no idea what talk

Adaptation just a fantasy.

Mary halts Bob rant very skillfully. Sympathetic squint as she chops air with hand. Preaching to choir, she suggests. Moves along to Adele and the rest.

Adele: You think that's bad! Joke gets laugh. The big Antarctic glacial basins, mainly Victoria and Totten, hold ice sliding downhill faster and faster. Will soon be depositing many thousands of cubic kilometers of ice into sea. Now looking like could happen in a few decades. Sea level rise two meters for sure, maybe more (six meters!) but two meters enough. Doom for all coastal cities, beaches, marshes, coral reefs, many fisheries. Would displace ten percent of the world's population, disrupt twenty percent food supply. Like a knock-out punch to dazed fighter. Civilization kaputt.

Jurgen throws up hands. Cost of this cannot be calculated!

Calculate it, Mary orders him.

J. frowns, pondering big picture in his head. A quadrillion. Yes, really. A thousand trillion is not too high. Maybe five quadrillion.

Dick: So just call it infinity.

Adele: Number of species threatened with extinction now at Permian levels. (Piling on here?) Permian the worst extinction ever. Now on course to match it.

Kaming: Ninety-nine percent of all meat alive is made of humans and their domestic beasts. Cattle, pigs, sheep, goats. Wild creatures one percent of meat alive. And suffering. Many species gone soon.

M: Soon?

K: Like thirty years.

Estevan: Only twenty percent of the fish now in oceans are wild fish.

Mary ends discussion, chop chop. Regards team. Speaks slowly.

MftF has budget 60B USD/year. Big. But world GDP 100 trillion/year. Half that GWP is so-called consumer spending by prosperous people, means non-essential buying of things that degrade biosphere. Ship going down. Parasite killing host. Even the productive half of GWP, food and health and housing, burning up world. In short: fucked.

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So. Have to find ways to spend our sixty billion that strike at leverage points.

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Team watches her.

So. Have to find ways to spend our sixty billion that strike at leverage points.

Dick: Our money not enough to matter. Have to change laws—that's our leverage point. Spend our money on changing laws.

Tatiana likes this.

Imbeni: Critical infrastructure needs funding.

Elena: Ag improvements.

Mary chops discussion. Chop chop chop! Stop. We need to lever change, and fast. However we can. By whatever means necessary.

Badim surprised by this last statement, I'm not sure why. Looks at Mary, surprised.

16

Possibly some of the richest two percent of the world's population have decided to give up on the pretense that "progress" or "development" or "prosperity" can be achieved for all eight billion of the world's people. For quite a long time, a century or two, this "prosperity for all" goal had been the line taken; that although there was inequality now, if everyone just stuck to the program and did not rock the boat, the rising tide would eventually float even the most high-and-dry among them. But early in the twenty-first century it became clear that the planet was incapable of sustaining everyone alive at Western levels, and at that point the richest pulled away into their fortress mansions, bought the governments or disabled them from action against them, and bolted their doors to wait it out until some poorly theorized better time, which really came down to just the remainder of their lives, and perhaps the lives of their children if they were feeling optimistic—beyond that, *après moi le déluge*.

A rational response to an intractable problem. But not really. There was scientifically supported evidence to show that if the Earth's available resources were divided up equally among all eight billion humans, everyone would be fine. They would all be at adequacy, and the scientific evidence very robustly supported the contention that people living at adequacy, and confident they would stay there (a crucial point), were healthier and thus happier than rich people. So the upshot of that equal division would be an improvement for all.

Rich people would often snort at this last study, then go off and lose sleep over their bodyguards, tax lawyers, legal risks—children crazy with arrogance, love not at all fungible—over-eating and over-indulgence generally, resulting health problems, ennui and existential angst—in short, an insomniac faceplant into the realization that science was once again right

Dinoney couldn't buy health or love or happiness. Although it has to ou added that a reliable sufficiency of money is indeed necessary to scaffold the possibility of those good things. The happy medium, the Goldilocks zone in terms of personal income, according to sociological analyses, seemed to rest at around 100,000 US dollars a year, or about the same amount of money that most working scientists made, which was a little suspicious in several senses, but there it stood: data.

And one can run the math. The 2,000 Watt Society, started in 1998 in Switzerland, calculated that if all the energy consumed by households were divided by the total number of humans alive, each would have the use of about 2,000 watts of power, meaning about 48 kilowatt-hours per day. The society's members then tried living on that amount of electricity to see what it was like: they found it was fine. It took paying attention to energy use, but the resulting life was by no means a form of suffering; it was even reported to feel more stylish and meaningful to those who undertook the experiment.

So, is there energy enough for all? Yes. Is there food enough for all? Yes. Is there housing enough for all? There could be, there is no real problem there. Same for clothing. Is there health care enough for all? Not yet, but there could be; it's a matter of training people and making small technological objects, there is no planetary constraint on that one. Same with education. So all the necessities for a good life are abundant enough that everyone alive could have them. Food, water, shelter, clothing, health care, education.

Is there enough security for all? Security is the feeling that results from being confident that you will have all the things listed above, and your children will have them too. So it is a derivative effect. There can be enough security for all; but only if all have security.

If one percent of the humans alive controlled everyone's work, and took far more than their share of the benefits of that work, while also blocking the project of equality and sustainability however they could, that project would become more difficult. This would go without saying, except that it needs saying.

To be clear, concluding in brief: there is enough for all. So there should be no more people living in poverty. And there should be no more billionaires. Enough should be a human right, a floor below which no one can fall; also a ceiling above which no one can rise. Enough is as good as a feast—or better.

Arranging this situation is left as an exercise for the reader.

17

Today we're here to inquire who actually enacts the world's economy—who are the ones who make it all go, so to speak. Possibly these people constitute a minority, as it is often said that most people alive today would actively welcome a change in the system.

Only a stupid person would say that.

Well, and yet I've just said it.

Yes.

But to get back to the question in hand, who do we think actually enacts the market as such? By which I mean to say, who theorizes it, who implements it, who administers it, who defends it?

The police. It being the law.

So but can we then assume that those people who make the laws are deeply implicated?

Yes.

But lawmakers are often lawyers themselves, notoriously bereft of ideas. Can we assume they get their ideas about law from others?

Yes.

And who are some of those others?

Think tanks. Academics.

Meaning MBA professors.

All kinds of academics. And very quickly their students.

Economics departments, you mean.

The World Trade Organization. Stock markets. All the laws, and the politicians and bureaucrats administering the laws. And the police and army enforcing them.

And I suppose the CEOs of all the companies.

Banks. Shareholder associations, pension funds, individual shareholders, hedge funds, financial firms.

Might the central banks indeed be central to all this?

Yes.

Anyone else?

Insurance companies, re-insurance companies. Big investors.

And their algorithms, right? So, mathematicians?

The math is primitive.

And yet even primitive math still takes mathematicians, the rest of us being so clueless.

Yes.

Also I suppose simply prices themselves, and interest rates and the like. Which is to say simply the system itself.

You were asking about the people doing it.

Yes, but it's an actor network. Some of the actors in an actor network aren't human.

Balderdash.

What, you don't believe in actor networks?

There are actor networks, but it's the actors with agency who can choose to do things differently. That's what you were trying to talk about.

All right, but what about money?

What about it?

To my mind, money acts as if it worked as gravity does—the more of it you gather together, the more gathering power it exerts, as with mass and its gravitational attraction.

Cute.

Ultimately this is a very big and articulated system!

Insightful.

All right then, back to the ones who administer our economic system as such, and teach others how to work it, and by a not-so-coincidental coincidence, benefit from it the most. I wonder how many people that would turn out to be?

About eight million.

You're sure?

No.

So this would be about one in every thousand persons alive today.

Well done.

Thank you! And the programs they've written.

Stick to the people.

But if the non-human elements of the system were to break?

Stick to the people. You were almost getting interesting.

Who matters the most in that group of eight million?

Government legislators.

That's a bad thought.

No it isn't. Why would you say that?

Corruption, stupidity—

Rule of law.

But—

But me no buts. Rule of law.

What a weak reed to stand on!

Yes.

What can we do about that?

Just make it stick.

18

The PTSD model uses the word "trigger" as both noun and verb, to suggest the speed of a PTSD reaction, and the way it can be switched on by some incident that should be the equivalent of a small curved piece of metal, innocuous except when placed in a gun. One must learn not to pull these things.

Cognitive behavioral therapy is a hard thing to learn. One of the main strategies involved asks you to label the type of thought you are having, identify it as unhelpful or painful, and then switch tracks to a more positive train of thought. Often this strategy fails. You know what's happening, you know it's inappropriate—on it goes anyway. Your palms sweat, your heart pounds in your chest like a child trying to escape, and over that throbbing animal reality, you can be thinking to yourself, Wait, no danger here now—this isn't a situation to be frightened in, you're just sitting at a café table, midday, light wind, low clouds, all well, please don't do this, don't start crying, don't leap up and run away—just still your shaking hands, just pick up your coffee cup—

But the trigger is pulled, and you are looking right down the barrel of the gun.

Enough times like that, and looking down the actual barrel of an actual gun, its trigger under your actual thumb—not your forefinger, because you have the gun pointed at yourself, resting against your sternum, and it's the thumb that can best pull (or in this case push) the trigger—this can be seen as a huge relief, as a promise that the fear will finally stop. This happens all the time. It happens so often that one form of PTSD therapy goes like this—you don't have to worry so much, because if it stays this bad you can always kill yourself. And for some sufferers this thought is a real comfort, sometimes even the anchor point of a way back to sanity.

You can always end this misery by killing yourself; so give it another day and see how it goes.

It's not easy to stay unafraid. It can't always be done. Try as you might, want it ever so much, things are out of your control, even when they are in your mind, or especially because they are in your mind. The mind is a funny animal. If it were just conscious thought; or if conscious thought was something we could control; or if unconscious thoughts were conscious; or if moods were amenable to our desires . . . then maybe things could work. Things like cognitive behavioral therapy, or the project of sanity itself. Just make it happen!

But no. You're swimming in a river. You can get carried out to sea on riptides not of your making, or at least not under your control. You can find yourself swimming against a current much stronger than you. You can drown.

Frank was drowning. He had that same shortness of breath. Therapy had mostly made it crystal clear to him that he would never be cured.

In a sense, maybe that was progress. Abandon all hope, ye who enter here. What did that mean? Could you live without hope? There was a Japanese saying he read in a book: live as if you were already dead. But what did that mean, why would that be encouraging? Was it encouraging? It was enigmatic at best, a kind of double bind—first an injunction to live; but second, "as if you were already dead." How would one do that? Was it part of the samurai code, were you to be careless of your own life in defense of whomever you were charged with protecting? So, a kind of servant's stoicism? To let yourself be used like a shield, to become a human tool? Maybe so. In which case it was a matter of crushing your hopes into the proper channel.

Thus, in his case, no more hoping that he would become normal again. That he would live a normal life. That what had happened would not have happened. Forget all that. Therapy taught him to give up those hopes. Hope would have to reside in something like this: hope to do some good, no matter how fucked up you are.

This was worth writing down on a piece of paper, in shaky block letters, and then pinning the paper onto the mirror in his bathroom, along with various other encouragements in the form of phrases or images;

probably it looked like a madman's mirror, but he wanted to put things up there.

HOPE TO DO SOME GOOD, NO MATTER HOW FUCKED UP YOU ARE

Every time he remembered to brush his teeth or shave, which was getting less and less often, he would see that sign and ponder what he might do. This mainly made him feel confused. But it did seem like the urge to do something was there in him, sometimes so strong it was like a bad case of heartburn. When he was exhausted by sleeplessness, or groggy with too much sleep, that burn still sometimes struck him, radiating outward from his middle. He *had* to do something. Maybe he wasn't going to get to be a Child of Kali, clearly not, but something like that. A fellow traveler. A warrior for the cause. A lone assailant.

Over breakfast, soothing his stomach with a little plastic tub of yogurt, he pondered what he might do. One person had one-eight-billionth of the power that humanity had. This assumed everyone had an equal amount of power, which wasn't true, but it was serviceable for this kind of thinking. One-eight-billionth wasn't a very big fraction, but then again there were poisons that worked in the parts-per-billion range, so it wasn't entirely unprecedented for such a small agent to change things.

He wandered the streets of Glasgow, thinking it over. Up and down the hills to the east and north, enjoying the sidewalks so steep they had staircases incised into them. You could work off a lot of stress walking the streets of Glasgow, and the views kept changing their perspectives under the changing weather, reflecting the storms within, the fear, the sudden bursts of exhilaration, the black depths of ocean-floor grief. Or beautiful dreams, the world gone right. How to share that? How give? Saint Francis of Assisi: give yourself away, give up on yourself and all you thought you had. Feed the birds, help people. The positive of that was so obvious. Do like Saint Francis. Help people.

But he wanted more. He could feel it burning him up: he wanted to kill. Well, he wanted to punish. People had caused the heat wave, and not all people—the prosperous nations, sure, the old empires, sure; they all deserved to be punished. But then also there were particular people, many still alive,

who had worked all their lives to deny climate change, to keep burning carbon, to keep wrecking biomes, to keep driving other species extinct. That evil work had been their lives' project, and while pursuing that project they had prospered and lived in luxury. They wrecked the world happily, thinking they were supermen, laughing at the weak, crushing them underfoot.

He wanted to kill all those people. In the absence of that, some of them would do. He felt the urge burning him from the inside out. He wouldn't live long with that kind of internal stress, he could feel that as surely as he could feel his triphammer heart pumping over-pressured blood through his carotids. Oh yes, high blood pressure. He could feel it trying to burst him from inside. Something in there would break. But first, some kind of action. Vengeance, yes; but also, preemption. A preemptive strike. This might stop some bigger bad from happening.

Twice a week he visited his therapist. A nice middle-aged woman, intelligent and experienced, calm and attentive. Sympathetic. She was interested in him, he could see that. Probably she was interested in all her clients. But for sure she was interested in him.

She asked him what he was doing, how he was feeling. He didn't tell her about his dreams of vengeance, but what he did tell her was honest enough. Earlier that week, he told her, a hot waft of steam from a giant espresso machine in a coffee emporium had caused him to freak out. Panic attack; he had had to sit down and try to calm his beating heart.

She nodded. "Did you try the eye movements we talked about?"

"No." He was pretty sure this was a bullshit therapy, but the truth was that in the heat of the moment, so to speak, he had forgotten about it. "I forgot. I'll try it next time."

"It might help," she said. "It might not. But nothing lost in trying it."

He nodded.

"Do you want to try it now?"

"Just move my eyes?"

"Well, no. You need to do it when you're dealing with what happened. I don't want you to re-experience anything in a way that feels too bad, but you know we've tried having you tell me what happened from various perspectives, and maybe, if you're up for it, we could try that again, and while you tell me about it you could try the eye movements. It would help build the association."

He shrugged. "If you think it will help."

"I don't know what will help, but it can't hurt to try this. If it's too upsetting just stop. Anytime you want to stop, be sure to stop."

"All right."

So he began to tell the story of how he had first come to his town, and how the heat wave had at first seemed like all the other hot weather they had had. As he spoke he moved his eyes, in tandem of course, as that was the only way he could do it, back and forth, looking as far to the left as he could, vague view of her bookshelves, then in a quick sweep to as far right as he could, catching a vague view of flowers in a vase in front of a window looking out onto a courtyard. This was a voluntary effort that stopped the moment he stopped thinking to do it, so he had to devote some of his attention to it, while at the same time continuing with his story, which as a result was halting and disjointed, unrehearsed and different from what he would have said if he was just telling her the same thing again as before. This he presumed was one benefit of the exercise.

"I got there in the winter so it wasn't that hot to begin with . . . but it wasn't cold, no. In the Himalayas it was cold, you could even see the snow peaks to the north on clear days, but most days . . . most days weren't clear. The air was dirty almost all the time. Not that different from anywhere else. So I got settled in and was taking classes in Hindi and working . . . working at the clinic. Then the heat wave came. It got way hotter than it had been up till then, but everyone . . . everyone said it was normal, that the time right before the monsoon was the hottest of all. But then it got hotter still. Then it all happened fast, one day it was so hot even the people were scared . . . and that night some of the older people and the littlest kids died. That sent everyone into shock, but I think they were thinking it was as bad as it could get. Then it got worse, and the power went out, and after that there was no air conditioning . . . and not much water. People freaked out, and rightfully so. The heat was beyond what the human body can stand. Hyperthermia, that's just a word. The reality is different. You can't breathe. Sweating doesn't work. You're being roasted, like meat in an oven, and you can feel that. Eventually a lot of them went down to the local lake, but its water was like bath temperature, and not . . . safe to drink. So that's where a lot of them died."

He stopped talking and let his eyes rest. He could feel muscles behind

his eyes, pulsing at the unaccustomed efforts. Like any other muscles, they welcomed a rest. That felt odd.

The therapist said, "I noticed that this time you didn't really put yourself in the story."

"No? I thought I did."

"You always talked about them. They did things, things happened to them."

"Well, I was one of them."

"At the time, did you think of yourself as one of them?"

"...No. I mean, they were them, I was me. I watched them, I talked with some of them. The usual stuff."

"Of course. So, could you tell me your part of the story, moving your eyes like that?"

"I don't know."

"Do you want to try?"

"No."

"All right. Maybe some other time. And maybe next time we can try to create the bilateral action by having you hold those little buzzers in your hands. Remember I showed you those? They'll pulse left-right-left-right as you talk it through. It's easier than moving your eyes."

"I don't want to do that now."

"Next time, maybe."

"I don't know when."

"You don't want to?"

"No. Why should I?"

"Well, the theory is that if you tell the story, you're shaping the memory of it to some extent, by putting it into words. And if you do that while making the eye movements, or feeling the hand buzzers, that seems to create a kind of internal distance in you between your memory of the story as you told it, and the, what you might call the reliving of it, the spontaneous reliving of it by way of some trigger setting you off. So that if that were to happen and you wanted some relief from it, you could move your eyes and start maybe thinking of your spoken version of what happened, and it would relieve you from reliving it. If you see what I mean."

"Yes," Frank said. "I understand. I'm not sure I believe it, but I understand."

"That makes sense. But maybe worth a try?"

"Maybe."

One fall he took a Scottish friend's offer to work on a project in Antarctica. She was principal investigator of a small scientific team going to the Dry Valleys, to study the stream that ran there briefly every summer, the Onyx River. And she had room on the team for a field assistant, and wanted to help him out. Since he was having trouble handling the heat, she said, Antarctica ought to be a great place for him.

Sounds good, he said. He was running out of money from a small inheritance left to him by his grandmother, and he still didn't want to contact his parents or his organization, so it would help with that too. And so that fall he flew to Denver and went through the interviews, and altered his résumé to omit his time in India, and then he was hired and off to Auckland, then Christchurch, and from Christchurch south to McMurdo Station on Ross Island, just across McMurdo Sound from the Dry Valleys, which lay between the Royal Society Range and the frozen sea. Even the plane flight to McMurdo was cold, its interior a long open room like a warehouse floor. Same with all the old junky buildings of McMurdo, and the newer buildings too—like warehouses, institutional buildings, and never heated to much more than 60 degrees. Even the line that ran through the buffet in the kitchen was a cool experience. All very congenial.

Then, out in the Dry Valleys, the hut they ate their meals in was kept warm, but not exceptionally so; really it was only warm relative to the outside. The dorm huts were a little hot and stuffy, but it was possible to sleep out in a tent of his own. That was really cold, so cold that the sleeping bag he slept in weighed about ten pounds; it took that much goose down to hold in enough of his own heat to keep him warm. He stuck his nose out of this bag to breathe, and that repeating injection of frigid air reminded him that it was really cold out, even though it was sunny all the time. The continuous light was strange but he soon got used to it.

The problem was that extreme cold somehow led to thoughts of temperature itself, and to warm up their freezing hands after a session of field work, they would heat the dining hut to quite a high temperature, which would make for a stuffy steamy room, and Frank found himself slipping

down the slippery slope. Out at this remove from any possibility of relief, freak-outs would be at best inconvenient, at worst a disaster. Medevacs by helo were rare and expensive, he had heard them say. So he had to stay cool. But sometimes he could only hide a freak-out and hope it would go away soon and not come back. Sometimes he torqued his eyes like he was watching a Ping-Pong match.

And they had a sauna hut there. He stayed away from it, of course, but one night, going out to his tent in the bright daylight, he passed it just as a group of scientists burst out of it half naked in bathing suits, shrieking in delighted agony at the instantaneous extreme shift of temperature, evaporative steam bursting off their bodies like they were big pink firecrackers. That sight, which ought to have been beautiful, and their shrieking, which sounded like pain though it was ecstasy, set him off instantly. His heart pounded so fast and hard that he went light-headed, then suddenly fell to his knees and pitched face first onto the snow. No warning, just the sight of the pink firecracker people, a racing heart, then he found himself laid out on the hard cold snow. He had fainted right in front of them. The sauna-goers naturally helped him up, and someone took his pulse as they lifted him and cried out in a panic, Hey feel this tachycardia, my God! Feel it! They said it was 240 beats a minute. Within two hours a helo was thwacking down to medevac him out of there. And once medevacked to McMurdo, and his condition and past experiences made fully known to the NSF brass on site, he was accused of lying on his application form and shipped back home.

19

We had been at sea for something like eight years. They said they would pay us when we landed but everyone knew they wouldn't. Wouldn't pay us, wouldn't land us. We were slaves. If we didn't work they locked us in our cabins and didn't feed us. We went back to work.

The food was trash, including fishheads and guts from the take, but it was that or starve, so we ate it. And we worked, we had to. Set the lines, ran the reels, tried to keep our fingers and arms out of the way. That didn't always happen. The southern Atlantic is rough, the Antarctic Ocean even worse. Accidents were common. Often guys just stepped over the rail into the water. One guy waved goodbye to us before the whitecaps rolled him under. We knew why he did it. It was probably the best option, but it took courage. You could always imagine something would happen to change things.

Then one day it did. A ship came over the horizon, this wasn't unusual, it happened all the time. Not only fishing boats like ours, either slave ships or not, there was no way to tell, but the transport ships that came out to transfer our catch into their holds and resupply us so we didn't have to land. That was the way they did it. We didn't even know what countries they came from.

So it looked like a transport ship, and it approached us, and it was clear the captain and his mates thought the same. The people on this ship must have known the signs and fooled them. Then after it came beside us and we had grappled it, men jumped over the side holding guns pointed at us. We put our hands in the air just like in the movies, but it would have been a funny movie, because most of us were grinning and it was all I could do to keep from cheering.

We were herded into the cabins and locked in. When the newcomers

came into our cabin and asked us questions we answered eagerly. Maybe they were just pirates who would put us back to work for someone else, or even kill us, but even so we told them our stories, and who the captain and every single one of his men were. They left us in there and came back later. Get on our ship, they told us. We did what they said, not knowing what it would mean. All the slaves climbed a ladder onto the bigger ship, that was eight of us. All the captain's men and the captain were left on board our boat. That was five of them. They said some stuff but the men with the guns ignored them.

When we were about a hundred meters away I saw that some of the men on this new boat were filming our old one. Then the bow of our old boat blew up, just above the waterline. The boom wasn't very loud, but the bow shattered. There was a bit of flame but water poured in and doused it. In about fifteen minutes the boat tilted and started going down. Then another explosion in the stern finished the deal. It went down fast. The captain and his men climbed on the roof of the cabin and yelled at us. No one on our savior ship said anything. Everyone just watched it happen.

You're killing them? we asked the sailor nearest us.

He said, They've got life rafts, right?

We don't know, we said. Inflatables, you mean?

Yeah.

I guess so.

So, they'll either get those inflated and over the side or they won't. If they don't, they'll get what's coming to them. We'll post film of it on sites that other fishermen will see. If they get off in a life raft, they can try to make it to land. If they manage that, they can tell the story of what happened to whoever will listen. Either way, the point will be made.

So that meant these people were probably not police. That was not a good thing, but it wasn't as if we could choose who saved us.

What's the point? we asked.

No more fishing.

Good, we said.

20

The Gini coefficient, devised by the Italian sociologist Corrado Gini in 1912, is a measure of income or wealth disparity in a population. It is usually expressed as a fraction between 0 and 1, and it seems easy to understand, because 0 is the coefficient if everyone owned an equal amount, while 1 would obtain if one person owned everything and everyone else nothing. In our real world of the mid-twenty-first century, countries with a low Gini coefficient, like the social democracies, are generally a bit below 0.3, while highly unequal countries are a bit above 0.6. The US, China, and many other countries have seen their Gini coefficients shoot up in the neoliberal era, from 0.3 or 0.4 up to 0.5 or 0.6, this with barely a squeak from the people losing the most in this increase in inequality, and indeed many of those harmed often vote for politicians who will increase their relative impoverishment. Thus the power of hegemony: we may be poor but at least we're patriots! At least we're self-reliant and we can take care of ourselves, and so on, right into an early grave, as the average lifetimes of the poorer citizens in these countries are much shorter than those of the wealthy citizens. And average lifetimes overall are therefore decreasing for the first time since the eighteenth century.

Don't think that the Gini coefficient alone will describe the situation, however; this would be succumbing to *monocausotaxophilia*, the love of single ideas that explain everything, one of humanity's most common cognitive errors. The Gini figures for Bangladesh and for Holland are nearly the same, for instance, at 0.31; but the average annual income in Bangladesh is about $2,000, while in Holland it's $50,000. The spread between the richest and the poorest is an important consideration, but when everyone in that spread is pretty well off, this is a different situation than when everyone across the spread is poor.

Thus other rubrics to think about inequality have been devised. One of the best is the "inequality-adjusted Human Development Index," which is no surprise, because the Human Development Index is already a powerful tool. But it doesn't by itself reveal the internal spread of good and bad in the country studied, thus the inequality adjustment, which gives a more nuanced portrait of how well the total population is doing.

While discussing inequality, it should be noted that the Gini coefficient for the whole world's population is higher than for any individual country's, basically because there are so many more poor people in the world than there are rich ones, so that cumulatively, globally, the number rises to around 0.7.

Also, there are various ways of indicating inequality more anecdotally (perhaps we could say in more human terms) than such indexes. The three richest people in the world possess more financial assets than all the people in the forty-eight poorest countries added together. The wealthiest one percent of the human population owns more than the bottom seventy percent. And so on.

Also, note that these disparities in wealth have been increasing since 1980 to the present, and are one of the defining characteristics of neoliberalism. Inequality has now reached levels not seen since the so-called Gilded Age of the 1890s. Some angles of evidence now suggest this is the most wealth-inequal moment in human history, surpassing the feudal era for instance, and the early warrior/priest/peasant states. Also, the two billion poorest people on the planet still lack access to basics like toilets, housing, food, health care, education, and so on. This means that fully one-quarter of humanity, enough to equal the entire human population of the year 1960, is immiserated in ways that the poorest people of the feudal era or the Upper Paleolithic were not.

Thus inequality in our time. Is it a political stability problem? Perhaps in a controlocracy backed by big militaries, no. Is it a moral problem? But morality is a question of ideology, one's imaginary relationship to the real situation, and many find it easy to imagine that you get what you deserve, and so on. So morality is a slippery business.

So it is that one often sees inequality as a problem judged economically; growth and innovation, it is said, are slowed when inequality is high. This is what our thinking has been reduced to: essentially a neoliberal analysis

and judgment of the neoliberal situation. It's the structure of feeling in our time; we can't think in anything but economic terms, our ethics must be quantified and rated for the effects that our actions have on GDP. This is said to be the only thing people can agree on. Although those who say this are often economists.

But that's the world we're in. And so people invent other indexes to try to come to grips with this issue. In fact we have seen a real proliferation of them.

Recall that GDP, gross domestic product, the dominant metric in economics for the last century, consists of a combination of consumption, plus private investments, plus government spending, plus exports-minus-imports. Criticisms of GDP are many, as it includes destructive activities as positive economic numbers, and excludes many kinds of negative externalities, as well as issues of health, social reproduction, citizen satisfaction, and so on.

Alternative measures that compensate for these deficiencies include:

the Genuine Progress Indicator, which uses twenty-six different variables to determine its single index number;

the UN's Human Development Index, developed by Pakistani economist Mahbub ul Haq in 1990, which combines life expectancy, education levels, and gross national income per capita (later the UN introduced the inequality-adjusted HDI);

the UN's Inclusive Wealth Report, which combines manufactured capital, human capital, natural capital, adjusted by factors including carbon emissions;

the Happy Planet Index, created by the New Economic Forum, which combines well-being as reported by citizens, life expectancy, and inequality of outcomes, divided by ecological footprint (by this rubric the US scores 20.1 out of 100, and comes in 108th out of 140 countries rated);

the Food Sustainability Index, formulated by Barilla Center for Food and Nutrition, which uses fifty-eight metrics to measure food security, welfare, and ecological sustainability;

the Ecological Footprint, as developed by the Global Footprint Network, which estimates how much land it would take to sustainably support the lifestyle of a town or country, an amount always larger by considerable margins than the political entities being evaluated, except for Cuba and a few other countries;

and Bhutan's famous Gross National Happiness, which uses thirty-three metrics to measure the titular quality in quantitative terms.

All these indexes are attempts to portray civilization in our time using the terms of the hegemonic discourse, which is to say economics, often in the attempt to make a judo-like transformation of the discipline of economics itself, altering it to make it more human, more adjusted to the biosphere, and so on. Not a bad impulse!

But it's important also to take this whole question back out of the realm of quantification, sometimes, to the realm of the human and the social. To ask what it all means, what it's all for. To consider the axioms we are agreeing to live by. To acknowledge the reality of other people, and of the planet itself. To see other people's faces. To walk outdoors and look around.

21

We were on the lakefront in Brissago, on the Swiss side of Lake Maggiore, partying on the lawn of Cinzia's place, just above the narrow park between her property and the lake. She had a celebrity chef there who cooked with a welder's torch he used to fire at the bottom of big frypans he held in the air, and a band with a brass section, and a light show and all that. Altogether a righteous party, and lots of happy people there, skewing young because that's the way Cinzia likes it.

But the narrow stretch of grass between her lawn and the lake was a public park, and as we partied we saw a guy down there on the shore, just standing there staring up at us. Some kind of beachcomber dude, holding a piece of driftwood. Nothing Cinzia's security could do about him, they told us. Actually they could have if they wanted to, but they didn't. The local police might make trouble if someone were objected to for just standing on a public beach. This is what one of them told us when we told him to make the guy go away. The guy was skinny and bedraggled and he just kept staring, it was offensive. Like some kind of Bible guy laying his morality on us.

So finally a few of us went down there to do what the security team ought to have done, and send this guy packing. Edmund led the way as usual, he was the one most annoyed, and we followed along because when he was annoyed Edmund could be really funny.

The guy watched us come up to him and didn't move an inch, didn't say a word. It was a little weird, I didn't like it.

Edmund got in the guy's face and told him to leave.

The guy said to Edmund something like, You fuckers are burning up the world with your stupid games.

Edmund laughed and said, "Dost thou think because thou art virtuous, there shall be no more cakes and ale?"