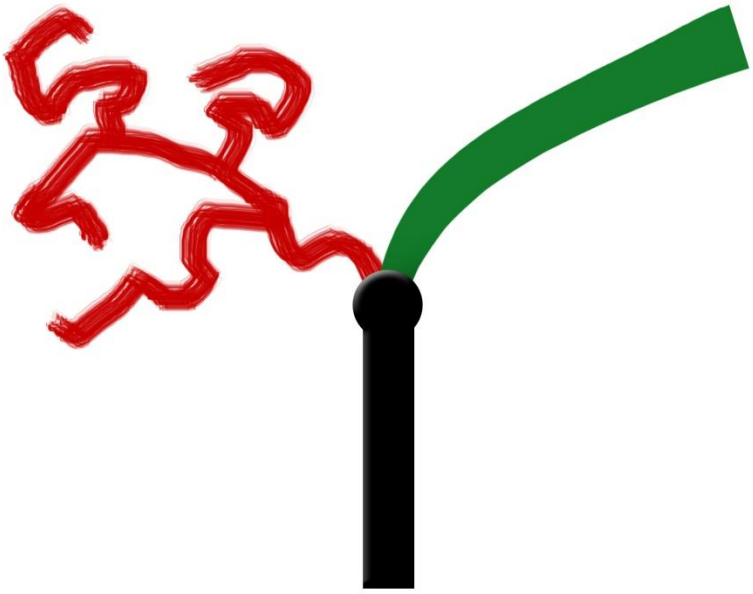
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RISE UP AND ROAR

We have a choice:

The greatest
achievement
in human history,

or centuries of chaos.



John Slade

Chapter One

When I was seventeen, my mother took me to a Greek island, where I held a dying child in my arms.

I was a very normal seventeen-year-old Norwegian girl, which is perhaps why my mother was worried about me. I thought the entire world was inside my Smartphone, which I clung to like an electronic teddy bear. I was as much aware as the other kids of the wars somewhere out there in the world, of the refugees who brought all their problems to our quiet little country, and of this thing called climate change, which our teachers talked about in school, just enough to scare us. So we teenagers turned to the sanctuary of our Smartphones, where with a flick of our fingers we could choose our preferred reality.

My mother, Sofia Alexandra, a nurse who worked with premature infants in the maternity ward at the National Hospital in Oslo—she kept those tiny babies alive in their little incubators—had reached her limit with my blank stare at the little screen on my telephone. She announced in November of 2017 that during the Christmas vacation—from December 20 to January 5—we were going to spend two weeks together on the Greek island of Lesvos, working as volunteers to help the refugees who arrived on the beaches in their little rubber boats.

I stared at her in the kitchen, my phone in my hand. "We're going to *what?"*

She explained with a calm and determined voice—no longer her exhausted and exasperated voice—that she had signed us up as volunteers with the Norwegian organization, Drop in the Ocean. We would be part of a team of about twenty people, most of them Norwegian but some from other countries, who were trained to meet the boats filled with refugees as they arrived, to administer first aid, and to work in the camps when we were not out on patrol. Drop in the Ocean required that volunteers must be at least twenty-five years old, but since I would be with my mother, a nurse, I had been accepted into the program.

Then my mother stared at me, waiting for my reaction.

The truth was, that I was bored—utterly bored, bored, bored—with high school. Most of what I looked at while surfing on my phone were places I wanted to visit: I wanted to ride a red double-decker bus through London, I wanted to visit a cathedral in Paris where I could look up at the stained-glass windows, and I wanted to ride a

trolley-car up and down the hills of San Francisco. Maybe ride an elephant in . . . some far-off country.

The little town where we lived, half an hour by train south of Oslo, was very nice, very tidy, very quiet, very safe, and so utterly, utterly boring.

And the weather was gray, especially in the winter. Cold and gray.

A beach on a Greek island? At the very least, I could buy a Greek t-shirt, pink, and wear it to school in January.

So I said, "All right. But what can I do with a bunch of refugees?"

She smiled. "You're the night owl. Sometimes we'll be out on patrol at night. The little boats cross the sea at night when the Turkish coast guard can't see them. When the refugees approach a Greek island, they shine the lights of their telephones toward the beaches as a signal." Then she laughed. "You can shine your light back, letting them know that we have spotted them. You can finally put your phone to good use."

Yes, well, I could do that. And a beach on a Greek island at midnight . . . well, that was certainly more intriguing than life in a town that shut down at ten.

I tried to smile, letting her know that I was grateful. "All right. Maybe we should learn some Greek before we go."

"And Arabic, Sweetheart. We're going to need to learn some Arabic."

So on December 19, my mother and I, accompanied by my father and brother, took the airport train north to Gardermoen, where we would board an SAS flight to Athens. I must admit that I was excited. My brother would be hanging out for two weeks in all the usual places, while I was getting a suntan and eating Greek yoghurt and . . . helping the refugees.

I was also very glad, though I didn't say so, that my mother and I were friends again. No more arguing about the telephone; it was in my carry-on, and I left it there. No more arguing about my grades. No more arguing about my refusal to wear a nice, traditional Norwegian ski sweater. (Like all the other kids, I had three favorite colors: gray, dark gray, and black.)

Whatever it was we were doing, my mother and I were together on an adventure. We had a book of Beginner's Greek, and we had a book of Beginner's Arabic. I felt a glow of happiness, the first for a long, long time.

* * * * *

The people with Drop in the Ocean—the "Drops", as they called themselves—were wonderful. My mother and I were a little tired by the time we finally arrived at the hotel on the northern coast of Lesvos, but we were welcomed by a jubilant group of people who were making a taco dinner in the restaurant kitchen. They helped us to carry our bags to our room, and explained that if you wanted a really *hot* shower, it was best to try at eight in the morning. Then they led us back to the dining room and into the kitchen, where I was soon working with a woman from Poland, cutting up the most gorgeous red tomatoes I had ever seen in my life.

So much more I could say, but really, we need to get to that beach at night when I—yes, it was me, with my owl's eyes—spotted a faint speck of light maybe three hundred meters out from shore, surrounded by the darkness of a cold December night out on the Aegean Sea.

My mother was driving the little blue car that she had rented along a bumpy, rutted road that wound along at the top of a cliff overlooking a narrow black beach far below, and overlooking as well the broad black expanse of the sea. We were heading west, so that I, in the passenger seat, could look north out my open window, sweeping my eyes back and forth across the dark sea. In the distance, ten kilometers away, I could see lights scattered along the coast of Turkey. Occasionally I spotted the lights of a ship, or a fishing boat heading out before dawn. The night was cold—we had the car's heater on full blast—but I had to keep my window open so that I could see—

"Mom, I saw a light!"

"Where, Honey?" She slowed to a halt, then looked out my window.

"Straight out. Maybe two hundred meters. Can you see it? A tiny speck of a light. It's moving. Yes, I can see that it's moving."

I snapped off my seat belt, swung open the door and stepped out carefully—the road was close to the edge of the cliff, with absolutely no guard rails—then I opened the rear door and grabbed a powerful flashlight from the back seat. I heard the squeak of the emergency brake as my mother set it, then she was out of the car and standing beside me as I shone our beacon toward the speck of light which she too could now see.

"Two lights!" I cheered, spotting a second speck. "They see us."

My mother was on her phone now, calling the Spanish lifeguards who kept their rescue boat in the harbor of the fishing village of Skala Sikamineas, a few kilometers

east of us . . . where the sky showed the first pearly glow of dawn. She told them—in English, the language we all used—where we were along the coastal road, and said that we would head back east about half a kilometer to where the road descended and a lane branched off down to the beach.

The wind atop the cliff was cold. When I had grabbed the flashlight, I had forgotten to put on my gloves. My mother was holding her phone with her bare hand. Neither of us were wearing our wool caps. I could only imagine how cold it must be out there on the open sea.

"All right," said my mother, handing me her phone. "Hop in and call the other Drops while I get us down to the beach."

We got back into the car—the engine was still running, the heat was blasting—and I phoned the Drop on night duty at the hotel while my mother released the brake and slowly drove backwards with a sharp turn, so that our headlights shone out over the sea. She blinked the lights several times, letting them know that we saw them, then she drove carefully forward with a sharp turn to the east. We could not drive fast; the road was too rutted, too close to the edge of the cliff, and in the darkness of night, we had to be especially careful. But she drove at a good steady pace, her eyes staring ahead. While I gave the night-duty Drop our location, and told him that we were now heading down to the beach, I marveled at my mother's courage.

By the time we were rocking from rut to rut down the lane—our headlights shone on the wreckage of previous rubber boats hauled up on shore—we could see the bright lights of those valiant Spaniards as they raced in their small rubber boat toward the cluster of faint specks, now about one hundred meters from shore. The Spaniards would tell the refugees to stay calm—"remain seated, remain seated" in Arabic—and then they would tow the refugee boat toward the spot on the beach where we would be waiting.

Now behind us followed the headlights of somebody's car coming down the lane; the lights bounced up and down as the car jounced over the ruts.

My mother drove to a broad spot where the lane ended, with the cliff to our left and the slope of the beach to our right, and huge boulders ahead of us. As we got out of the car and were reaching into the back for our hats and gloves and a scarf against the cold wind off the water, the lights of the car behind us shone for a moment on our yellow reflective vests. Then the lights went dark, and we stood on a black beach beside a black sea, beneath a dark sky with a few faint stars. My eyes were watering in the cold wind.

This was our first boat. My mother and I had been on night patrol for five nights, including Christmas Eve, without spotting a boat. Now, sometime during the week between Christmas and New Year's Eve, we had spotted our first boat. I was not excited. I was not afraid. But never, never, never before in my life had I felt so keenly alive.

Then I heard a voice from the car behind us, "Anna Katerina, you and your mother are the first to arrive. Did you spot them?"

"Yes," I called back. It was Nikos, one of the Greek lifeguards, a man whom I had gotten to know during the past few days.

"Good work," he called. "Good work." I could see, just barely in the darkness, that he was taking off his jacket, and shirt, down to his skin, then his trousers, down to his shorts. And now he was putting on his black rubber wetsuit. He and the other Greeks would wade out to meet the refugee boat. They would help the refugees, one by one, to shore, where the rest of us would be waiting to help.

We could hear voices now from the two small rubber boats approaching the beach, the Spanish rescue boat bright orange, the refugee boat black. The dinghies bobbed in the waves that grew steeper near shore. I could distinguish between voices speaking Arabic with instructions to stay calm, and voices shouting, wailing, weeping and praying in Arabic because the terrifying voyage was almost over. Some of the refugees, men, were standing up now in their boat, ready to jump overboard onto the beach.

Nikos was shouting now in Arabic, his voice firm, almost angry. The standing men sat back down. I knew the drill from our instructions at the hotel: first the children would be lifted from the boat. Then the women would be helped from the boat to the beach. And then the men would be helped to shore.

My mother and I walked carefully down the slope of the beach—it was not a sandy beach, but a beach of round stones the size of lemons—until we stood above the wash of the waves. My mother carried her physician's medicine bag. I carried a blanket. We could see now that the refugee boat was not only filled with people—25 or 30 in one small rubber boat—but it was filled with water as well. Waves had clearly washed over the low, rounded sides of the boat. Maybe the refugees had a bucket for bailing, though I did not see one.

Some of the people, either unconscious or dead, were held in the arms of others. I looked at my mother. She said to me quietly, "Be strong, Anna. Be strong."

Now the Spaniards in their trim, well-equipped rubber rescue boat nudged the wallowing refugee boat bow-first toward the beach, so that it would not turn broadside to the waves and capsize. Two Greeks took hold of the sides of the bow and braced it as they let a wave carry the bow onto the beach. Another wave carried the boat a bit further up the beach . . . and then the boat, its bow on land, most of it still in the water, was stable enough that Nikos could reach over the side, pick up a child and wade with him to shore. The little boy, wailing with fright, was able to stand as he stared back toward the boat for his mother or father. My mother set down her medicine bag, picked up the wet child and carried him toward our car, where we had dry clothes and blankets stored in the back.

The headlights of three cars came bobbing down the lane. The Drops were arriving. Each car, I knew, was packed with towels, warm clothing and wool blankets. And the metallic blankets that held in body heat. Bottles of water. Chocolate energy bars. Enough to keep these people alive until we got them to the refugee camp near Skala Sikamineas, where fires would be burning in barrels, and hot soup would be served, and warm beds would be ready.

"Anna!" Nikos was calling my name. "Come take this one."

I set down the blanket and walked in my Norwegian winter boots to where Nikos came wading out of the water with a small, limp body in his arms. "She is alive," he said to me as he passed a child gently into my arms. "Hold her so that you can brace her head." I looked down in the first faint glow of dawn at a little girl's face—she was perhaps four years old—her eyes shut, her mouth open, utterly drenched by the cold sea.

Nikos said quickly, "Her mother is in the boat." He glanced at the dark figures running across the beach from the cars. "Magnus! I need your strong arms!"

Magnus, one of our Drops—a dairy farmer from the west coast near Stavanger—ran past me in his yellow vest as I carried the limp girl up the beach toward our car.

Another Drop, Anne Kari, was dressing the little boy—his wet clothing lay in a heap on the ground beside him—with a wool, hand-knit Norwegian sweater, red with blue snowflakes. He wore woolen trousers, such as a child might wear when playing on a kindergarten playground in the winter, and heavy woolen socks. My mother was opening a box in the back of the car, from which she took a child's woolen ski cap.

Bless those women back home, I thought, who knit sweater after sweater and sent them down to Lesvos.

"Mom," I called, "spread a blanket on the ground. This little girl is unconscious."

My mother handed Anne Kari the blue knit cap, then she stepped toward me and examined the child in my arms. She felt for a pulse under the jaw, then opened the lids of an eye. She laid her hand over the child's brow. "Hypothermia. She is deeply cold." I saw the concern in my mother's eyes, the same concern with which she must have examined a thousand premature babies . . . a concern which I had never before witnessed.

She took a blanket from the back of the car, then opened it to form a mattress big enough for a child and spread it on the ground. I gently laid the child on the blanket, while my mother supported her head. "Quick, Anna, fetch my medicine bag, down on the beach. I need my stethoscope."

As my mother knelt over the child and began to unbutton her wet coat, I glanced at Anne Kari, who was putting the little boy on the passenger seat of the car—in the warmth of the blasting heater—then I ran down the beach and grabbed my mother's medicine bag, almost hidden among the refugees now pouring out of their boat. I returned with the heavy black bag to my mother, who opened it, took out the stethoscope, fitted it to her ears and then leaned over the child while she pressed the silver disk on several spots of wet pale skin over the girl's heart. "You're a fighter, Sweetheart," she said to the unconscious child. "Keep fighting. Keep fighting."

Anne Kari now joined us, holding a blanket to block the wind off the sea as my mother undressed the child. I handed my mother a towel. She dried the child's dark hair, then her face and the front of her body. Rolling her over gently, my mother dried the girl's back, the backs of her legs, her feet.

"She is so cold that her heart, her brain, everything is very delicate now."

Rolling her over again, my mother dressed the girl with layers of woolen clothing that I fetched from the car. A traditional Norwegian sweater, red and white, with brown reindeer running across the chest. A white cap with a tassel. Blue-and-white mittens. Wool socks, and then another pair of wool socks. Still the eyes were closed, the mouth was open, but we could see now that the girl was breathing with more than imperceptible shallow breaths.

Magnus came walking toward us with a woman in his arms, a woman who also wore a Norwegian sweater and a cap and woolen trousers and wool socks, a woman who stared at the little girl on the blanket . . . who was safe and warm. "Lamar," she said, calling, as we guessed, the girl's name. Then she spoke in Arabic as Magnus, kneeling, set her on the ground beside her daughter. Apparently too weak to walk, or even to sit

upright, she lay down beside her daughter, wrapped her arm over her child and snuggled with her, their cheeks touching.

Anne Kari wrapped a blanket over them, tucking it beneath the mother's feet against the wind. My mother rolled up a towel and set it beneath their heads as a pillow.

Then the four of us, my mother and I, Anne Kari and Magnus, stood for a moment in a quiet circle, looking down at two survivors who had managed, somehow, to flee from a war, to reach the coast of Turkey, to cross the sea on a winter's night, and to find safety on a stony beach. Where was the husband, the father? Did these two refugees know that all the borders further north into Europe were closed? Did they know that even further north, all across Europe, holiday shoppers were buying champagne and fireworks in preparation for New Year's Eve?

That was the moment when I felt, for the first time in my life, the grief—the huge, black, overwhelming grief—for people who were strangers, to whom I could not even say "Hello", who were the victims of war. That was the moment when I understood, for the first time, that the word "humanity" meant "all of us".

"Magnus," said my mother, "will you help the mother into the car? The heater is on. We can place her daughter in her lap. Then Anna and I will take them to the camp. They can sit in a chair beside the fire burning in a barrel. The child needs real heat. And hot soup. And a bed."

Anne Kari spoke with the boy on the passenger seat. He was still shivering but clearly warmer. He kept asking for someone. He had family on the beach and he wanted to find them. Anne Kari held his hand as they walked toward the noisy crowd of refugees and Greeks and Drops; the boy kept calling out someone's name.

Kneeling again, Magnus lifted the mother and set her carefully on the passenger seat. Then he set the daughter on her mother's lap. The mother wrapped her arms around her child and sent up a wailing prayer.

Magnus looked at us briefly. "The bus should be here soon. We'll meet you at the camp." Then, grabbing armloads of blankets and woolens from the rear of our car, he hurried back down to the beach and disappeared into the crowd.

The Spaniards were pulling away now in their orange rescue boat; they would return to Skala Sikamineas, where they would be on call, ready for the next overloaded rubber boat filled with desperate refugees.

I made room for myself on the back seat. My mother drove the car in tight little turns, forward and back, until she managed to turn around and head up the rutted lane in low gear.

To the southeast, somewhere beyond the brown hills ahead of us, the winter sun was rising above the sea, bringing a new day to the inhabitants of planet Earth.

Chapter Two

My mother drove along the coastal road to the Lighthouse Refugee Relief Camp, built on a flat stretch of land between the brown hills and the blue-gray sea. This sanctuary was the most intelligent, the most compassionate little spot of human habitation that I had yet found in my young life. It was an informal camp, not a United Nations refugee camp with big tents on concrete platforms, but a collection of medium-sized tents of different colors, clustered in an orchard of olive trees. The camp had been built in 2015 by international volunteers who came and stayed for two weeks to a month—as nurses, as teachers, as cooks, as whatever was needed—before they departed and were replaced by other good-hearted people from around the world.

My mother parked our little blue car near the gate, then turned off the engine; the heater blasting warm air became silent. She looked at the mother in the seat beside her—we did not know her name—then she held out her hands as if to the heat of a fire; she mimicked eating soup with a spoon from a bowl; she laid her head on her hands as if sleeping. The woman—we did not know what country she was from—nodded and said something, clearly grateful.

I opened the back door and got out, then opened the passenger door and looked with delight—it was no doubt the greatest burst of happiness that I had ever felt in my life—at the face of the little girl who stared at me with open eyes. No smile, no expression, but she was sitting up, her head was no longer slumped against her mother's shoulder, and she was looking—*looking*—at the world where she now found herself.

I smiled at the mother and could only gesture with my hands toward her child while I cheered, "Wonderful!"

The mother smiled at me, and to this day, when I am now a mother with my own daughter, I can still remember her smile and her dark eyes that told me, "Thank you for keeping my child alive."

My mother stood beside me now. "Anna, carry the child. She will still be very unsteady. If her mother can walk, I will walk beside her."

I held out my arms. The mother said something to her daughter, who let me lift her out of the car into the morning sunshine.

Now the mother managed to swing her feet out and, a little shaky, stand with one hand on the roof of the car. My mother held her arm, bracing her.

We walked toward the gate to the camp, a homemade arch made of various pieces of wood. Across the top were boards painted white, with the word "Welcome" painted in black in four languages: English, Arabic, Farsi, and Urdu. How nice, I thought. How nice.

To the right of the arch was a picture of a light house: the tall tower that kept people safe. To the left were various sheets of information, also in four languages.

Ahead of us, a path sprinkled with white gravel led into the olive orchard. Someone walked past a red tent, glanced at us, then kept walking. Above the path were light bulbs strung between the trees; they were off now, but at night, the camp would be well lit.

The little girl in my arms pointed up at the word "Welcome" in her own language. She spoke the word to her mother, who repeated the word, as if she could hardly believe it. For how many weeks, how many months, had they been walking on highways, riding in dusty trucks, huddled in a cold wet boat . . . until finally, someone did not ask for more money, but told them, "Welcome"?

As we walked beneath the arch, a woman with a clipboard appeared at the far end of the path. Someone had clearly alerted her that we had arrived. She hurried toward us, greeted the mother and her daughter with cheerful words in Arabic, then she spoke with my mother. She wrote down the details: How many refugees had been in the boat? How many children? Women? Men? Any fatalities?

My mother shook her head. "None that we know of."

"Super. We've got a good fire going. Pull up a chair and make yourselves at home. We'll have hot soup and bread ready in ten minutes."

And then the woman hurried back up the trail with her clipboard, calling ahead to alert the cooks that thirty "guests" were soon arriving. Her name was Birgit, she was from Dresden in what had once been East Germany, and she was a wizard at running the camp.

As we made our way along the path into the camp, we passed two signs, one pointing to the left, one to the right. "Women" in four languages, with a picture of a woman and a child: to the left. "Men" in four languages, with a picture of a man: to the right. The toilets, as I knew from previous visits, were neat and well equipped.

We passed an olive tree with red paper hearts strung on a brown cord wrapped around the ancient gray trunk. Each heart, bright red in the sunshine, had the word "love" written on it in one of many languages. The little girl in my arms found the word in her own language. She said it to her mother, who said it back, twice.

We came to an open area beneath a tarp roof, where brightly colored chairs were gathered around an upright, rusted barrel that served as a stove. A black stovepipe reached up through the roof. Large round stones wrapped around the bottom of the stove on the gravel floor. A fire burned inside. The child chirped with happiness as if someone had just handed her a piece of chocolate cake.

My mother arranged four chairs around the open front of the stove, close enough that the mother, when she sat down, could put her feet on a warm stone. I set the child down in a chair beside her mother. Life was coming back into the child's face. The deep cold of hypothermia had been slowly replaced by the growing warmth of the Norwegian wool, by the heater in the car, by the bright morning sunshine, and now, by the promise of warmth and safety in a place which finally—after who knew what horrors in a child's life—made sense.

My mother sat down and said, gesturing with her hand toward herself, "Sofia."

The mother said, speaking carefully, "Sofia." Then she gestured to herself and said, "Loreen."

My mother said, speaking carefully, "Loreen."

Loreen nodded, then she introduced her daughter, "Lamar."

My mother said, "Hello, Lamar."

Lamar said with a faint smile, "Allo, Sofia. Shukran." Thank you.

Now my mother introduced me, "Anna", who wished with all her heart that she could speak Arabic and truly get to know these two new friends.

Half an hour later, the others began to arrive. Our quiet sanctuary became a bustling reception hall where people sat around the three barrel stoves, sought a toilet, or sat at a table where bowls of steaming soup and cups of hot tea were now being distributed. One man stared up into the gray-green branches of an olive tree, perhaps remembering his own trees back home.

My mother, no longer needed by her hypothermia patient, asked me to stay with Lamar and Loreen, then she went out to the car to fetch her medicine bag, and returned to her duties as a doctor.

The three of us stood up from our chairs, giving our places to people who were shivering and blue. We walked—Lamar was able to walk now, though slowly—to a table where we sat and inhaled the steam from large bowls of thick potato soup. I had picked up my spoon and was stirring the soup when I heard Lamar say, "Bon appétit!" I looked at her, seated across the table beside her mother, her eyes bright with the joy of this moment.

"Bon appétit," I said back, feeling myself to be in the presence of people whom I already, in a quiet but powerful way, was beginning to love.

Magnus joined us. He held up a plastic travel bag in each hand. Loreen and Lamar immediately recognized the luggage which they had brought on the boat. Hypothermia dulls the mind: they had completely forgotten about their bags.

Magnus set the bags on the ground, then sat on the bench beside me, wrapped one arm around my shoulders and gave me a burly hug. Loreen and Lamar opened their bags: everything inside was soaked with sea water. Loreen lifted out a cell phone and tried to turn it on: it was dead.

I made a sudden decision, a decision which, two weeks ago, I never would have made: to give my phone to a stranger with whom I was barely acquainted. I knew—all the volunteers who worked with refugees knew—that the cell phones were vital to the refugees. They called home . . . whatever was left of home in some war zone. They called to family in Europe. They called to people who knew a safe route further north. The phone was as precious to them as what little money they still had.

I looked around, spotted a dark-skinned person serving a basket of bread and asked him if he could translate from English to Arabic. He responded in English, "What would you like to say?"

I pointed at Loreen as she set her dead phone beside her bowl of soup. "Please tell her that I will give her my telephone. It is out in the car."

He delivered my message in Arabic. Loreen looked at me with surprise, and gratitude.

I continued, "When we are done with our soup, I will go out to get my phone. She can call home, if she wants. She can let them know that she and Lamar are safe on Lesvos."

Again the young man translated. Loreen's smile and vehement "Shukran, Anna" confirmed that I had been right: she wanted to let someone know that she and Lamar were safe.

Already I was thinking ahead. Loreen could use the phone now in the camp. Then my mother and I would take the phone with us to a shop in Molyvos, the town near our hotel, where we would buy a Greek sim card to replace the Norwegian card. And . . . we would set up an account when we returned home so that I could pay into it online from Norway. That way they would have a phone which would always work.

I would have to delete all my junk. Yes, it was like flushing away the old life. Good bye to all that high school nonsense.

My mother and I would make sure that my phone—Loreen's phone—could easily call my mother's phone. That way, if they needed us, just push a single icon and my mother would answer. Even at three in the morning. Family is family.

After we had finished our soup and warm bread and hot tea, and a salad with greens and tomatoes so fresh that they must have been growing in someone's garden until yesterday afternoon, I went out to the car and fetched my phone. Even before I walked back through the arch into the camp, I spent about five minutes deleting, deleting, deleting stuff that belonged to some childish little girl. Did I have even one single friend in that school? Or was it all just empty grins in the endless Selfies?

Back at the table, I sat beside Loreen and showed her how to use the phone. She understood immediately. "Aleppo," she said, already tapping in the country code and number.

I never in my life saw anyone so grateful to reach her connection. After the first flurry of Arabic, Loreen and Lamar stood up from the bench and walked to the relative quiet twenty meters away at the back edge of the camp. Beyond them was a little playground with a slide for small children, and the rocky slope of a hill. Loreen handed the phone to Lamar, who spoke to . . . perhaps her grandmother, too old to leave the war zone?

When they returned to the table, Loreen looked at me with deep gratitude, and peace, in her eyes. "Shukran, shukran", she said as she handed me the phone. I tried to explain that I would come back to the Lighthouse Camp tomorrow with the phone for her. Then she could keep it.

She held her hands over her heart and bowed to me.

After our meal, Birgit took us to a tent where Loreen and Lamar could sleep on two of the twenty beds, with sheets, wool blankets, and a pillow. There was a box beneath each bed for their belongings. They could hang their wet clothing on one of

several lines overhead. (My mother and I had brought, in plastic bags, the wet clothes they had been wearing.)

Two electric heaters, one at each end of the tent, kept the tent fairly warm. The men slept in their own tent at the other end of the camp.

My mother joined us long enough to give our new friends a hug. With the help of another refugee who could speak some English, my mother and I reassured Loreen and Lamar that we would return to Lighthouse tomorrow, with the telephone and a Greek sim card.

They told us, "Shukran, shukran." They understood. They trusted us.

And then—my mother's duties were done, another nurse had arrived on her shift—we walked out the path to our little blue car, where we found Magnus leaning against his little yellow car, looking—as we all felt—utterly exhausted.

"Good work, Drops," he said.

"Good work, Drop," I said back.

"Sofia, did you manage to eat anything?"

"I never had a moment to even think about a bowl of soup."

Magnus gestured with his thumb up the road. "What do you say we visit our favorite café in Skala Sikamineas and get you an omelet? And three cups of the best coffee in the world."

My mother laughed with gratitude. "Thank you, Magnus. You are ever the gentleman."

Chapter Seven

So much more I could say, but we need to get to that auditorium—the largest auditorium at the University of Oslo—where on a Saturday afternoon in May of 2019, a few weeks after my acceptance to law school, and a couple of weeks before my graduation from high school, Aili Biriita spoke to a full house.

And to the world, because her four-part lecture was filmed. During the summer, the film would be edited, and given subtitles in a multitude of languages, so that in September it could be sent electronically to classrooms around the world. To churches around the world. To indigenous peoples around the world. And to anyone else who might be interested.

During the spring of 2019, I helped Aili as her research assistant. And on the day of the lecture, I helped by putting pictures and graphics up on a giant screen.

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"The most important event in your life today," said Aili Biriita, standing at the edge of the stage (not behind a podium) in her bright blue-and-red Sami dress, holding the microphone in one hand while she swept her arm toward the audience of nearly a thousand people, ". . . is the melting of the Arctic ice cap."

Her voice not only reached every person in the auditorium; it grabbed them by the shoulders and shook them.

"The most important event in your life today . . . *today* . . . is not your exam at the end of the semester, although that is very important. The most important event in your life today is not your hot date on Saturday night, although that too is very important." She paused. "The most important event in your life today is the melting of the huge curving sheet of ice which caps planet Earth. That ice has capped the top of the planet for roughly three million years. Scientists debate that figure, but we can safely say that the ice has capped our planet for a long, long time. And it has been doing an extremely important job."

She walked along the edge of the stage, staring with her stern eyes at her audience. For most of the people, certainly for most of the students, I think it was the first time they had ever heard a Sami speak.

"For three million years, that thin, fragile cap of ice, only a few meters thick, has reflected the light from the sun every summer, keeping the water beneath it very cold. That cap of ice floats on the Arctic Ocean, expanding in surface area during the long dark Arctic winter, and shrinking during the sunny days and sunny nights of the Arctic summer. For eons of time, that ice has reflected roughly ninety percent of the sunlight from our neighboring star. For eons of time, that ice has protected the water beneath it from overheating. But now," she paused, "that ice is melting."

Seated at a table in the dim light at one end of the stage, I clicked a button on Aili's laptop. The audience could now see, on the large screen behind her, an extraordinary photograph taken from a satellite of the top of planet Earth at night. Against the absolutely black background of space, we could see the dark gray ice cap ringed by a giant circle of northern lights. The vertical flames of green and pink rose above the planet like the ring of blue flames on a gas stove. I could hear a murmur from the audience: our planet was strikingly beautiful.



The ring of green northern lights stood above northern Canada; it cut across the middle of Greenland; it stood above northern Europe. We could see, on the nighttime half of the planet below the ring, the lights of the major European cities, and thus we could verify (some of the people in the audience were pointing) that yes, the northern lights stood right over Norway. The ring stood above northern Russia . . . and on the far side of the planet, where we could not see, it stood over Alaska.

That was our planet, a dark ball in black space with a gorgeous crown of green and pink flames. A dark ball on which people lived in their tiny cities.

Inside the ring of shimmering green, the ice cap itself touched northern Canada, wrapped over the top of Greenland, and touched part of northern Russia.

"Keep in mind," said Aili, "that the ice cap is as thin as the shell of an egg. As *fragile* as the shell of an egg. As the ocean on which it floats becomes warmer and warmer, the ocean melts the ice from *underneath*, so that the ice, only a few meters thick, becomes thinner and thinner."

She paused.

"Why," she asked, "is the Arctic Ocean becoming warmer and warmer?"

Someone in the audience called out, "Because of climate change."

"But what has caused this climate change?"

"Burning coal and oil."

"Yes. Thank you. Since the beginning of the Industrial Revolution in 1750—and thus for roughly two hundred years and seventy years—a growing population of human beings has been burning increasing amounts of first coal and then both coal and oil, sending smoke up millions of chimneys into the sky. This smoke contained carbon dioxide, which formed a blanket around the planet, a blanket that became thicker and thicker. It was, and is, a special sort of blanket, because it allowed the sun's light to pass through it, so that the light shone on the Earth . . . but when that light changed into heat, the blanket trapped most of the heat. The heat could no longer escape out into space. So the planet slowly became warmer and warmer. The air became warmer. The land became warmer. And especially, the oceans became warmer."

She paused. Aili was a master of the long pause.

"Because, you see, water can hold a great amount of heat. Put a pot of water on the stove and heat it. That water will absorb the stove's heat for twenty minutes before it finally begins to boil. So much heat . . . that you would never stick your hand into that hot, hot water.

"In the same way, the oceans have absorbed more than 90% of the heat which has been trapped by that thick blanket of carbon dioxide. We burn coal and oil . . . and we thus heat the oceans. As the Arctic Ocean becomes warmer and warmer, it melts the underside of the sheet of ice which floats on top of that ocean. The warming water also melts the ice along the edges of the ice cap. Satellites have been measuring the Arctic ice cap since 1979—for forty years now—and the evidence has shown that the Arctic ice cap has shrunk by roughly fifty percent during that very short time in the history of planet Earth."

I clicked on a new picture, an illustration of the Arctic ice cap during the summer of 2018, surrounded by large stretches of open water. A red line indicated the summer boundaries of the ice cap back in 1979, when the ice had touched the northern coast of Russia, had reached much further south into northern Canada, and had wrapped a long arm around the eastern side of Greenland.

"*Half* of that summer ice is already gone, and the rest is melting at a rate which now accelerates every year. Because every year, as you well know, is hotter and hotter, both summer and winter, setting new temperature records around the planet.

"Unlike the ice, which reflects roughly 90 percent of the sunlight, the growing area of open water around the shrinking ice *absorbs* roughly 90 percent of the sunlight which shines upon it. Light energy becomes thermal energy, heating the water, so that the Arctic Ocean becomes warmer and warmer . . . at an accelerating rate. Of course, the warming water heats the ice from below at an accelerating rate. The ice becomes thinner and thinner, more and more fragile. The ice cap also shrinks around the edges. An Arctic storm, which beats on the surface of the ice cap with its winds, and batters the edge of the ice cap with its waves, can crack that fragile sheet of ice. And when the ice cracks, warm water seeps up *into* the ice, warming it from inside. All of this is happening today, and it is happening faster and faster."

Aili walked along the edge of the stage, holding her microphone down at the end of her arm. Her Sami boots, with their turned-up toes, sounded like the footsteps of Doom.

"But something more is happening," she said.

I clicked to the next illustration, which showed the many ocean currents that flow through the Arctic at the top of the planet. The currents were shown as red at the surface (such as the Gulf Stream, which becomes the North Atlantic Drift), and as blue at the various depths to which the currents sink.

"Did you know that so many currents flowed through the Arctic? The picture looks like a map of the Metro in Paris, circling around the Arch de Triumph and then branching out along the Bois de Boulogne." This was a Sami speaking, a Sami very aware of the world beyond the tundra. "Those currents are great rivers of sea water flowing through the Arctic region, picking up the extra heat from the warming Arctic Ocean. We do not know how much heat they pick up—so much research needs to be done—but clearly by passing through waters which are increasingly warm, the currents will pick up some amount of this unnatural heat. And they will carry this heat with them as they flow around the entire planet."

I clicked to the next illustration, a global map which showed the multitude of currents, red and blue, which flowed between the continents around the world.

Aili told her audience, "What happens in Las Vegas may stay in Las Vegas, but what happens in the Arctic will reach out and touch the entire planet."

She walked back along the edge of the stage, holding her microphone down so that her audience could hear her steps. Like the ticking of a clock.

"But something more is happening. The warming Arctic Ocean warms the winds which blow over it. The warming winds blow over the land at the top of the planet—the land of northern Scandinavia, of northern Russia, of Alaska, of northern Canada, of Iceland, of Greenland—*warming* that land. And now a new set of dominoes begins to fall. Because just beneath the surface of that land is a sheet of ice and frozen ground, the permafrost—permanently frozen ground—which is a remnant of the last ice age."

I clicked to a photograph of a person standing beside a sheet of ice almost ten meters thick, capped by a carpet of tundra.

"As the warming winds warm the land, the permafrost thaws at an increasing rate. The land becomes soft and spongy. And gasses begin to seep up, both carbon dioxide and methane. These gasses come from the decay of ancient organic material, primarily plants which had lived at the top of the world before the most recent ice age. Microbes such as bacteria fed on the plants, releasing carbon dioxide and methane . . . until the ice age froze the land and trapped the gases. Now, as the permafrost thaws, those gasses seep up into the atmosphere, at an increasing rate.

"Most of the gas is carbon dioxide. Only 2.3% is methane. But methane forms a much thicker blanket around planet Earth, trapping far more heat."

She paused, then she said with a warning voice that reached into the heart of every listener in the auditorium, "Methane is the Monster."

Again she paused. Now she repeated, her voice a ghostly whisper into the microphone, "Methane is the Monster."

The auditorium was absolutely silent.

"How much methane is now trapped by the permafrost, waiting to be released? We do not know. How thick might the methane blanket become? We do not know.

"How quickly might the methane be released? It all depends on how quickly the Arctic ice cap melts, which, as we know, is happening at an accelerating rate.

"How long before the Arctic ice cap melts completely? We do not know.

"How warm will the Arctic Ocean become? We do not know.

"How much carbon dioxide and methane will be released? We do not know.

"How much will these additional gasses warm our Earth? We do not know.

"How long will these additional gasses remain in our atmosphere? We do not know.

"But we *do* know that the warming of the Arctic atmosphere weakens the jet streams, a process which greatly affects the weather in the northern hemisphere of our planet. The melting of the Arctic ice cap, which warms the ocean, which warms the winds, which warms the upper atmosphere, which weakens the jet streams . . . can bring floods, or droughts, deep cold or severe heat, to regions as far south as northern Africa. We have already seen pictures of snow in Jerusalem."

I clicked to a photograph of children making a snowman . . . in a city with a golden dome in the background.

"Read your Bible, and count the passages from Genesis to Revelations in which snow is mentioned in the land of donkeys and olive trees."

Aili paused.

"And of course, the final question: For how many centuries will all of this continue?" She almost shouted, "For how many *centuries*?"

She said, very slowly, "Once more the answer is: We do not know."

I clicked: the screen went dark.

Aili stood for a long moment at the edge of the stage, scanning the audience from the front corners to the back corners, and now down through the middle.

Three cameras were filming her presentation; on separate laptop screens, I could see their three images, which later would be edited into the unprecedented film that would go out to the world, subtitled in a multitude of languages. One camera followed Aili in her red and blue Sami dress, sometimes showing her entire figure on

the stage, sometimes moving in for a close-up. The second camera covered the audience, sometimes with a wide-angle shot, sometimes moving in for a close-up of particular people.

Now, as Aili scanned the audience, one camera moved in for a close-up of her stern face, her staring eyes.

The second camera moved from face to face in the large audience, showing university students, high school students, grade school students, teachers, parents, administrators, church ministers, politicians, bankers, business executives, farmers, fishermen, shopkeepers, and retired grandmothers and grandfathers—native born and immigrants—as they stared back at her with solemn faces.

Mixed among these people, who were primarily from Oslo and the surrounding towns, were at least a hundred Sami people, adults and children, wearing shirts and dresses—their Sami *gakti*—with colors characteristic of the Arctic regions where they had come from. The Sami were scattered evenly throughout the audience. They were here, they were real, and they were listening.

The third camera—actually a direct link—showed with excellent clarity the pictures which appeared on the screen.

Finally Aili said, "Let's take a look at another set of dominoes."

I clicked to a photograph taken in the sea beneath the Arctic ice cap, of a pale green layer of algae growing on the bottom side of the ice.

"During the past ten years, scientists from several countries have been studying the role of sea ice algae in the Arctic food chain. Special forms of algae have adapted to the cold water of the Arctic. They are able to live—to *flourish*—on the bottom surface of the thin ice at the outer edge of the ice cap. The faint sunlight shining through the ice is enough to power photosynthesis within the one-celled algae. The algae blooms in the spring, when the sun returns to the Arctic, and thus the algae becomes a vital source of food for zooplankton—small animals such as copepods and krill—which in turn become food for fish such as the Arctic cod. Seals eat the cod, and polar bears eat the seals."

I clicked to an illustration of the Arctic food chain.

"But what happens as the Arctic ice cap melts? The algae gradually lose their habitat. The krill lose their grazing grounds. The cod lose the krill, the seals lose the cod, and the polar bears lose the seals. An entire food chain, in one of the major oceans on planet Earth, collapses."

She paused.

"Keep in mind that as the Arctic Ocean is warming, it is also changing in chemistry. The melting ice which caps Greenland is pouring vast amounts of fresh water into the surrounding ocean, reducing the salinity . . . the percentage of salt in a portion of sea water. And just as the oceans have long been absorbing the heat trapped by the carbon dioxide and methane blankets, the oceans have also been absorbing vast amounts of carbon dioxide from the burning of coal and oil. Carbon dioxide combines with water in the oceans to form carbonic acid: $CO_2 + H_2O$ form H_2CO_3."

I clicked to a graphic with that equation.

"Thus, the oceans are becoming warmer, less salty, and more acidic. If the blood flowing through your veins were to change in chemistry and temperature . . . as much as the water flowing through the oceans has changed . . . you would become extremely sick. And eventually, you would be dead."

Aili walked along the edge of the stage, holding the microphone down so that her audience could hear, as she stepped firmly in her boots, the footsteps of Death.

She faced her audience.

"Do you understand now why I began by saying that the most important event in your lives today is the melting of the Arctic ice cap? The top of our world is *dying*. While we fight our endless wars, and go shopping in the malls, and fly off to another vacation in Thailand."

With a click, the screen went dark.

She asked, with a voice that called out to every listener, "How long before the Arctic ice cap is gone? We do not know.

"How warm will the Arctic Ocean become? We do not know.

"How long before the permafrost reaches a *tipping point* . . . when it becomes rotten ice and slush, and releases vast amounts of carbon dioxide and methane? We do not know.

"How warm will the world become, with these new blankets wrapped around it? We do not know.

"The warmer the oceans, the more powerful the hurricanes. How much more powerful will the monster hurricanes become? We do not know.

"Warmer atmospheres can hold more moisture, which results in greater rainfall and thus greater floods. What sort of monster floods will devastate our cities and farmland in the future? We do not know.

"Warmer atmospheres can also produce severe heat waves and drought. Drought can lead to the collapse of agriculture. The loss of food can lead to starving, desperate refugees, refugees who will move in massive migrations across continents in search of food, of water, and a safe place to live. How many droughts, and how many refugees? We do not know.

"And how long, I ask again, will these unprecedented catastrophes continue to batter our world? For how many barbaric *centuries* will people struggle to survive?"

She paused.

Then she said slowly, "We . . . do . . . not . . . know."

Now she relaxed, and she said with a calm, almost casual academic voice, "We'll take a ten-minute break now, and then I'll be back with one more set of Arctic dominoes."

The spotlight on her went dark. Aili as a dim figure crossed the stage toward the left wing. As she passed me, she gave me a thumbs-up and her confident smile.

Then she vanished into an offstage changing room.

Chapter Eight

A spotlight followed Aili Biriita as she walked to the front edge of the dark stage, wearing a black jacket over a black shirt, black trousers, black boots, black gloves, and a black military cap with a black visor. The audience, which had filled the auditorium with lively conversation during the break, became quickly silent.

Aili scanned the audience for a long moment, this figure in black, then she said, "I would like to examine another set of Arctic dominoes, one which may well begin near the edge of the ice cap, but which will, in the end, come crashing down on the roof of the home where you live. We are going to look at a set of unanswered questions . . . unanswered because they have not yet been asked. Many of these questions begin with three simple words, 'What happens if . . .'"

She again scanned the audience, staring for a moment at various particular people, so that they felt—the entire audience felt—that she was studying *them*.

"Now we all know that a multitude of oil companies, from at least a half-dozen countries, are making plans to drill for oil in the Arctic. The melting of the ice cap opens increasingly large areas of ice-free water where ships can explore for oil. Ultimately, once the bothersome ice cap is gone, the entire Arctic Ocean will be open for exploration. Huge supplies of oil beneath the bottom of the sea are waiting to be tapped. Fortunes are waiting to be made."

She paused. She was entering the dangerous waters of political controversy: to drill or not to drill? The topic had long been debated among Norwegian political parties.

"How do oil companies search for oil beneath the bottom of the sea? By blasting 'sonic cannons' towed behind ships."

I clicked onto the screen an illustration of Seismic Airgun Testing, which showed a ship on the surface towing an array of sonic cannons. The illustration also showed marine life in the sea below: dolphins, whales, turtles, and schools of fish. Dotted lines showed the paths of sonic cannon blasts traveling down to deposits of oil beneath the ocean bottom, then bouncing back up again to audio monitors towed behind the ship.

"A shock wave of sound, made by releasing highly pressurized air, travels from the surface down to the bottom and penetrates the bottom, then it bounces back up again to the surface, where the shock wave is read by instruments which produce a sonogram of the bottom, indicating where oil might be found."

She paused. "A very nice system, fine-tuned by highly skilled engineers. But there is one problem: the shock waves shatter—utterly shatter—the marine life in the sea. Imagine someone exploding sticks of dynamite in your living room every ten seconds, for hours and days and weeks at a time. Whales and dolphins, which rely on their underwater voices to communicate, become disoriented. Groups of whales which have beached themselves show bleeding in their inner ears, and extensive damage to their internal organs, where the shock waves have ripped through the soft tissues.

"Fish navigate with the help of sensors along the sides of their bodies. These sensors are devastated by the blast of sonic cannons.

"Research has shown that tiny creatures with fragile calcium shells—krill and pteropods—are shattered by the shock waves. Thus a major part of the marine food chain is destroyed.

"What about the delicate eggs, and the tiny, delicate hatchlings which continue the miracle of life in the seas? Shattered by shock waves.

"Unfortunately, research on the effects of sonic cannons on marine life is limited . . . because the oil companies never bothered to do the research. They are busy keeping their shareholders happy."

People in the audience now perhaps began to understand why Aili was dressed in black.

"Consider the following possibility. If ships are exploring for oil near the edge of the Arctic ice cap—or even while *within* the ice cap, if they cut their way through the ice—then the shock waves which bounce back from the bottom will impact the bottom of the ice cap, battering it, cracking it, potentially shattering it. Once the ice is cracked, the warming water of the Arctic Ocean will seep up into the cracks, melting the ice from within. Thus the process of melting accelerates even more. The polar bears will soon be walking on mush. The layer of algae covering the bottom of the ice will be destroyed, and thus the foundation of the Arctic food chain will be destroyed."

She paused.

"Maybe it would be instructive if the oil companies agreed to demonstrate their sonic cannons during a one-hour television program on a Sunday evening. Television companies could lower their microphones over the side of an oil exploration vessel, so that the blasts every ten seconds could be heard in your very own living room. We could all drink beer and eat potato chips while the plaster ceiling cracks and crumbles."

I clicked the screen dark.

Aili walked along the edge of the stage; the figure in black held down her microphone while she stepped firmly in her black boots . . . so that the audience heard the footsteps of approaching Doom.

Stopping at the far right edge of the stage, she studied the people in the front row, studied the people in the back row.

"Extracting oil from the Arctic will require a sequence of industrial stages. First, the oil companies must explore for oil with their sonic canons. Then they build the enormous platforms. They drill for the elusive oil. They pump the oil up to the surface and load it into enormous transport vessels. And then they transport the oil to distant refineries.

"The oil companies will all, theoretically, work within their national 'zones', neatly drawn on a map of the Arctic. Norway has a zone, Russia has a zone, the United States has a zone, and so on.

"The oil companies will of course reassure us that they will not spill any oil. Companies which have drilled for oil in the North Sea will point out their excellent records: very few accidents, no serious spills. These companies are the pride of their home nations. And of course, they provide *jobs*, one of the main arguments behind the oil bonanza in the Arctic."

Once again Aili scanned her audience, looking from face to face.

"But . . . what are the questions which we are *not* asking?

"For example, Do you think that all those oil vessels—from Norway, a founding member of NATO; from Russia and from the United States, two adversaries for well over half a century; from Canada, also a founding member of NATO; from Denmark, a founding member of NATO; and from potentially a half-dozen other countries, including perhaps China—yes, do you think that all of those oil vessels are going to be sailing alone around the Arctic Ocean, with no protection?

"Every single country with oil vessels in the Arctic is also going to have military vessels in the Arctic, 'protecting their national interests'."

Aili paused, letting her audience think about something which perhaps they had not thought about before.

"A century of evidence, going back to World War One, shows us that oil vessels are closely guarded by military vessels. Take a look at the Persian Gulf as a classic example. The seaway between Arab oil wells and the refineries in Texas is closely guarded by a fleet of naval ships—aircraft carriers if necessary—as well as by

submarines hidden beneath the surface. Those military vessels carry missiles which can reach targets halfway around the planet.

"So we are ready to ask a second question: Do we really want powerful military fleets from a multitude of countries—both surface ships and submarines—prowling the Arctic Ocean at the top of our planet? Keep in mind that these ships will carry both 'conventional' as well as nuclear weapons.

"As we all know, the Americans are spending record amounts of money to 'upgrade' their weapons systems, including nuclear weapons. Russia is modernizing its submarine fleet at two northern bases, near Arkhangelsk and near Murmansk, ports which are not so distant from northern Norway. The Boys are getting ready for the oil bonanza. Military ships from around the world will be crowding into the Arctic Ocean until . . . they reach critical mass."

I could see, looking at the faces in the audience, that they were more than solemn. They were worried. They were scared.

"Imagine," said the figure in black, "that an American aircraft carrier is patrolling the American zone in the Arctic, and that a Russian aircraft carrier is patrolling the Russian zone in the Arctic . . . which the Russians now claim reaches all the way to the North Pole. What sort of missiles are under the wings of the planes on the flight decks of those carriers? We will not know, because of course . . . that is a military secret.

"What sort of missiles will the submarines carry? If we do a little research in **Jane's Defense Weekly**, we will learn that contemporary submarines carry long-range missiles, with or without nuclear warheads, capable of reaching Saint Petersburg and Moscow, or New York and Washington, within a matter of minutes.

"They can also reach the NATO airfield in Bodø, Norway. Russia and America have already bickered over that particular airfield.

"Keep in mind that many of these military vessels will be sailing close to Norway's northern coastline. Hammerfest will have a front seat view of oil ships and naval ships going back and forth, day and night. Oil and nukes, oil and nukes.

"If you visit the Peace Research Institute of Oslo, PRIO, at Hausmanns gate 3, you can find in the library a monthly journal called **Jane's Intelligence Review**. This journal keeps track of weapons developments in countries around the world. On the cover of the September 2017 issue, you will see a striking illustration of two submarines in the gray-green waters beneath the Arctic ice cap. The title of the enclosed article is, 'Pole Positioning: Ice melt risks Arctic military competition'.

Already in September of 2017—the month of the election in Norway, in which voters re-elected a government which plans to drill for oil in the Arctic—**Jane's** was warning us about the next war in a long series of wars caused by oil. Which may also be World War Three. Which may also be the final war on planet Earth."

Aili stared out at the audience, lowered her microphone, then *stomped* her black boot. The entire audience jumped in their seats.

"A quick reminder. The Arctic ice cap has covered the top of our planet for three million years. Because this thin, curving sheet of ice reflects 90% of the sun's radiation, it has kept the Arctic Ocean consistently cold, and thus has stabilized temperatures on planet Earth. Now as the ice cap melts, the ocean is increasingly exposed to sunlight, and thus it becomes warmer and warmer. The warming ocean melts the sheet of ice from below, at an accelerating rate.

"Sonic canons may batter the ice. A growing number of ice breakers—Russian, Canadian, Norwegian, American—will cut the ice cap into pieces. Submarines which surface from beneath the ice cap will further weaken the ice.

"Sheets of ice will break off and drift. What happens to oil rigs pumping oil when a sheet of ice—with a surface area of over a hundred square kilometers—is blown by a strong wind toward a cluster of oil rigs? The huge sheet of ice sweeps through the rigs, crushing them, and oil now leaks from a dozen broken wells.

"What if this disaster occurs in January, during the darkness of the polar night? At forty degrees below freezing?

"What happens if an oil spill in one zone pollutes the waters of another zone? Do the Russians want American vessels helping to clean up an oil spill along the Russian coast, when the American vessels are suspected—as they will be—of spying on Russian submarine ports?

"If America becomes involved in a military conflict with Russia—keep in mind the idiot who is now the President in Washington—and then calls upon Norway, as a member of NATO, to support American warships against Russian warships, what will be Norway's response?"

The figure in black now not only stared from face to face in the audience, but began to point at individual people, as if asking them, 'What do you think? What do *you* think?'

"As the ice cap melts—or is battered into pieces which quickly melt—the Arctic Ocean becomes warmer and warmer, because it absorbs sunlight shining on the top of the planet. What sort of storms will become increasingly common in the Arctic?

Hurricanes are born at sea, powered by the heat from the oceans. The light energy from the sun becomes thermal energy when the sunlight penetrates the oceans. Some of that thermal energy rises in droplets of evaporation from the surface of the oceans. The droplets rise up into the atmosphere, where the thermal energy becomes the *kinetic* energy of the winds in a hurricane. Thus, the warmer the ocean, the more powerful the storm.

"Imagine now an unprecedented storm in the Arctic, during the Arctic winter night, blowing oil vessels and military vessels out of their zones. Giant sheets of ice crush hundreds of oil rigs. Tankers filled with oil crash on the long Russian coast; they burst open and release immense amounts of oil. Tankers crash on the rocky Norwegian coast, spilling oil into the archipelagos and fjords. Rescue efforts and clean-up efforts are utterly impossible until the storm slowly dies.

"And what is the Norwegian Parliament going to do about all that? Take a vote?"

She pointed at the young people in the audience.

"You young people, is this the sort of world you want?"

She pointed at the older people in the audience.

"You grandparents, is this the sort of world you want to pass on to your grandchildren?"

Questions. Questions.

"Now consider a step further.

"What happens if, as the result of a frozen switch, a dead radio, an impulsive, blundering politician . . . one nuclear missile is launched by mistake. Even a small one. It could even be, perhaps, a warning shot . . . which, during the darkness of the Arctic night, suddenly explodes with a fiery mushroom cloud over Siberia."

I clicked onto the screen a massive orange fireball rising into the sky.

From the audience, I could hear cries of protest.

"The entire world immediately goes on nuclear alert. Aircraft carriers in the Persian Gulf, destroyers in the Mediterranean Sea, submarines off the coast of China, are on full alert. NATO's missile systems throughout Europe are on full alert. What is happening in the nuclear silos in Russia? In Montana? What is happening in Israel? What is happening in Pakistan and India? In North Korea?"

The figure in black walked quietly, quietly, along the edge of the stage.

"Let me give you some figures from the International Campaign to Abolish Nuclear Weapons, which was awarded the Nobel Peace Prize here in Oslo in December of 2017."

I clicked a chart of figures onto the screen.

"In 2017, planet Earth, the only planet on which life is known to exist, was also the home of 14,900 nuclear weapons. These are insanely dangerous weapons which threaten the future existence of life itself. The United States today has 6,800 nuclear weapons in scattered locations around the world. Russia has 7,000 nuclear weapons. 1,800 of the combined American and Russian nuclear weapons are now on high-alert status. They can be launched within minutes.

"Seven other countries also possess nuclear weapons in a state of readiness: Great Britain (215 warheads), France (300), China (270), India (110-120), Pakistan (120-130), Israel (80), and North Korea (less than 10).

"Thus we have a total of 14,900 nuclear weapons which are maintained by a variety of governments in various states of readiness. These weapons are as much a part of your daily life as your morning cup of coffee."

Aili swept her black arm toward the audience.

"The Arctic—that dark, cold, mysterious place about which we know so little—may well become the final battleground on planet Earth. Our greed for the profits from oil—despite the great challenges of global warming—may well trigger our final suicidal madness."

She asked, with outrage in her voice, "Is that what you want?"

She asked, from deep in her heart, "Young people of the world, is that what you want?"

During a long silence, she let them answer, deep in their hearts.

Then she said, "These are the questions that we need to ask . . . before we go seeking for more petrodollars in the Arctic."

The spotlight on her turned off, leaving darkness on the stage.

Chapter Nine

Aili Biriita walked across the lit stage to the front edge, wearing a flowing gown of the same light green as birch leaves in May, when the leaves first open. She swept her arm in a rippling green sleeve toward the audience and told them, "Bring the sun and bring the wind into the classrooms of the world, and we shall have peace."

Holding both arms out, she walked gracefully along the edge of the stage with her face lifted, as if to the sun. She spun around once, twice, three times, so that her sleeves and skirt fluttered.

Then she again swept her arm toward the audience as she addressed them. "I speak now especially to the young people in the audience, who soon will inherit the great challenges of the twenty-first century. And among those young people, I speak *especially* to the young women, for you shall be called upon to do a great job, an unprecedented job, a job which only you, I believe, are able to do."

She paused. The young women, myself included, were waiting.

"You see, we can't go on with the old ways any longer. The twentieth century was the cruelest, the bloodiest, the most barbaric century in all of human history. We killed each other by the millions, again and again, in war after war after war. We raced to build the next generation of weapons, and the next, and the next . . . and we sold all of those weapons, and we *used* all of those weapons, as if such a thing were perfectly normal.

"Now as the twenty-first century looks more and more like the twentieth, we stare at pictures of children dying in the rubble of Syria, we stare a pictures of children dead from poison gas . . . and we keep right on fighting our hideous wars. As if all this butchery were perfectly normal."

She paused.

"But these wars are *not normal*.

"Show me one woman who has brought life into the world . . . who hopes that her son will die as a soldier.

"Show me one woman who has brought life into the world . . . who hopes that her daughter will die as planes drop bombs on her home.

"Show me one woman who has brought life into the world . . . who hopes that her child will die as a refugee crossing the sea in a little boat on a winter's night.

"Show me one woman who has brought life into the world . . . who does not treasure the gift, the *gift*, which she holds in her arms.

"Anyone who does not treasure this gift, anyone who would *kill* this gift . . . no, this is not normal."

She paused, then she added with growing anger, "With the same ignorance and arrogance and belligerence with which we kill each other, we burn the coal and we burn the oil and thus we threaten to kill not only ourselves . . . but all of *life* upon this planet."

She glared at the audience, then jolted them in their seats when she shouted, "Life!"

Silence, while they considered . . . being alive.

"The sun, which sends its light and its warmth across the cold, dark, empty reaches of space to this tiny ball of dust, so that life might live here . . . No, the sun does not wish to see that life destroyed."

She swept her green arm toward the audience with the irrefutable argument, "The sun has brought life to us, for all the years that we have walked upon this Earth. Then let us bring the *sun* into the classrooms of the world, so that our children might harness its power . . . and live in peace."

As she walked along the edge of the stage, she blew gently over the top of microphone. She took a breath and blew with more power. She took a breath and blew with even more power. Then she addressed the audience with the irrefutable argument, "The wind has filled our lungs and filled our sails for all the years that we have walked and sailed upon this Earth. Then let us bring the *wind* into the classrooms of the world, so that our children might harness its power . . . and live in peace."

Aili walked to the center of the stage, reached her arm toward the screen and asked, "Would you like to talk about *jobs*?"

I clicked onto the screen a photograph of a woman standing on top of a wind turbine, wearing an orange work suit with reflective tape on the arms, legs and chest, a harness strapped over her shoulders and around her waist and legs—the harness was connected by a cable to the deck of the nacelle—brown work boots, a white helmet, and goggles. Behind her were a hundred wind turbines standing in rows in the sea, white against the blue of the water. The woman had a confident smile. The caption at the bottom read, "Best office in the world."

The audience murmured with amusement, with approval.

"There is a difference," said Aili Biriita, a Sami woman dressed in springtime green, "between a revolution and a renaissance. A revolution can of course be a

political uprising, which in most cases becomes violent. A revolution can also be some great change in technology, such as the shift from fossil fuels to clean energy. Scientists and engineers work together to create new machines which are powered by completely new sources of energy. A single wind turbine can power a thousand homes. A wind farm such as the one in the picture, standing twenty kilometers out to sea, can power a small city. Solar farms in Africa can bring electricity to thousands of villages, transforming life for people who now have lights at night, clean stoves in their kitchens, machines that operate in small factories, and laptops for the kids in school.

"This is a revolution: a new and much better way of living. As clean energy replaces coal and oil during the course of the next thirty years, the pollution which produces global warming will be steadily reduced. Jobs will be created, hundreds of thousands and eventually millions of jobs, as people around the world go to work harnessing the sun and the wind. The currents in the sea. And the heat in the Earth.

"Schools around the world will be challenged by the need to educate a growing number of clean energy engineers, clean energy entrepreneurs, clean energy economists, and even clean energy lawyers.

"Economies will develop, as old shipyards such as Belfast, Ireland, where the *Titanic* was built, put people back to work building offshore wind turbines. Yes, economies will develop in Africa, where the sun will power everything from telephones to transcontinental railroads. Economies will develop in Asia, where solar-powered pumps will modernize irrigation. Economies will develop along coastlines around the world, where the sun and the wind will power desalinization plants, providing fresh water for kitchen faucets and for hydroponic tomatoes."

I now clicked through a series of pictures—while Aili commented on each one—of modern wind turbines standing high above brightly colored patches of tulips and daffodils in the Netherlands, with an old-fashioned Dutch windmill standing low in the foreground. Of wind turbines scattered among rice paddies in Vietnam, where farmers still plowed the soggy earth with water buffaloes. Of a cross made of solar panels on the roof of an early Gothic church in Germany. Of a plane powered by the solar panels along its wings . . . as it flew across the Pacific Ocean on its journey around the world.

"Yes, this is a revolution, and a very good one. This is a revolution which gives us hope. I encourage you young people to consider a career which will enable you, when you are eighty years old, to look back and say, 'Yes, I helped to build a new and much better world.'"

I heard murmurs from the audience: here was good news, after so much day-to-day bad news in their lives.

"But," said Aili Biriita, walking along the edge of the stage as she directly confronted her audience, face to face, "we can take our revolution up to a higher level. We can turn it into a renaissance. As a revolution is a new way of doing things—a new way of driving a car, a new way of powering a city, a new way of growing crops—a renaissance is a new way of *thinking*.

"Consider the difference between powering with oil and powering with the sun and the wind. In the first case, a company from one country may tap the oil of another country, with the aid of secret agents, suitcases filled with money, and even military force, if necessary. Weapons are traded for oil. Democratic governments are overthrown and replaced by reliable dictators. Profits flow into the oil company headquarters, while the Arab country, the Persian country, the African country, the Pacific country, the Central and South American country, sinks further and further into poverty, political unrest, and even civil war. That has been the story, repeated again and again, of the twentieth century. Iraq and Iran are two prominent examples."

I clicked onto the screen the fiery smoke of bombs above the buildings of Baghdad . . . and then angry mobs in the streets of Tehran.

"But what happens if, instead of fighting over oil, we *share* the sun and the wind. Of course we share them, because the sun and the wind belong to everyone. And we share them because their energy is so bountiful: their limitless energy is able, if properly harnessed, to power every village and town and city on planet Earth.

"By sharing—and here is the key—we *learn* to share . . . as a fundamental principle of life in the twenty-first century. Yes, companies can still earn a profit, workers will certainly be paid a good salary, but that will not be our primary reason for being in business.

"Our primary goal during the twenty-first century will be to share the blessings of the sun and the wind . . . so that finally, *finally*, we can live in peace."

She paused.

"But how, you ask, do we make the transition from our present world of crisis after crisis . . . to this utopia, this dream, of prosperity and peace?"

"By doing something that humanity has never done before. By enabling young people around the world to become the first global generation in human history.

"And how do we do that?

"By weaving our schools together. With the help of the sun and the wind."

She paused, this teacher who took us step by step.

"Planetary problems require planetary solutions. So we are not going to call upon the politicians, who have bungled and blundered for decades. We are not going to call upon the military, who have waved their war clubs for centuries. Instead, we are going to call upon those bright, motivated young people who have an instinctive sense for what is right and what is wrong. We are going to team them up with each other, and with the sun and the wind.

"The young people of the world are about to inherit the enormous planetary mess which their predecessors have created, so they certainly have the right to try to clean up that mess in a way which makes sense to *them*.

"Thus we launch this renaissance—the Renaissance of the 21st century—by weaving our schools together, creating a global online classroom, with a global online library in a multitude of languages. Students in California who experience drought and wildfires . . . will communicate directly with students in Spain, in southern France, in Sweden, in Siberia, and in Indonesia, who also experience droughts and wildfires . . . so that they can learn from each other. And develop solutions which are innovative, mutually beneficial, and bold.

"We are going to enable every student around the world to be a part of this great enterprise. Students faced with coastal flooding in Bangladesh can work with students faced with coastal flooding in a dozen other regions around the world, so that *together* they can develop solutions. They share knowledge, they share technology, they share encouragement, and they share hope.

"Thus, *as they grow up together*, as they work with each other, as they share new ideas and new technologies, these vibrant young people become *the first global generation in human history*. They realize that what really counts is not the number of nukes in your arsenal and in my arsenal, but the efficiency of the international grid which brings electricity to every child in this world.

"By developing that grid, they will develop global prosperity, and growing democracy . . . and peace.

"This is the goal of the Renaissance of the 21st century: to learn to share, and to learn to build together, so that ultimately, we learn to live in peace.

"A new way of thinking. A new way of being. On a small round ball of dust, blessed with sunshine from a nearby star, where life—the miracle of *life*—is able to flourish."

Aili swept her arm toward the audience. "Young women of the world, you were born to understand that life is precious, and fragile, and sacred."

Half of the audience was listening with special attention.

"Men have muscles, which are good for today,

But women bring new life into the world,

Which is good for a thousand tomorrows."

She paused.

"Women of the world, women of all ages and all cultures,

Bring your special vision into the global classroom,

And teach us what we have refused to learn for centuries."

Aili Biriita walked along the front of the stage while we considered this bold new aspect of the Renaissance.

"And then, and *then*, we can go a step further."

She pointed now at this person in the audience, and that person, and at *that* person, and then she swept her arm with its fluttering green sleeve at the entire audience as she asked them, "What are the hidden talents within our minds, within our hearts, waiting to blossom? Waiting to flourish? How long has humanity waited—through century after century of poverty and war—to become what we *could* become, if we only had the chance?

"How many heart surgeons died as children in the rubble of Syria? How many economists—how many visionaries—died as children during the bombing of Iraq? How many filmmakers died as children in the ashes of Yemen? How many teachers died as children in the droughts of Ethiopia, in the floods of the Philippines, in the madness of Kurdistan, in the massacres of the Yemini people? How much talent have we squandered from 1914 until today?"

Now she asked, almost pleading, "Do you see how much we have lost? Do you see how close we are to losing even more? Do you see that we now stand at a point in human history where we can either drill for oil in the Arctic while we hold a nuclear knife at each other's throats . . . or we can make a decision, that *yes,* we have the ability to turn away from this madness. That *yes,* we have the intelligence and the talents and the compassion to build a far better world. That *yes,* we as human creatures are here with a far greater purpose than to plunder and poison and kill each other."

Now I clicked onto the screen a series of photographs of children in a war zone: children covered with dust and blood, children who lay on filthy hospital beds with

faces swollen from a chlorine attack, children who were wrapped in white shrouds, held in the arms of women who shrieked toward heaven.

Children who stared at the camera with eyes that asked Why?

Then I clicked and the screen became dark.

After a long, long silence, Aili Biriita told her audience with a firm voice, "Clean energy will be the economic engine which powers your Renaissance in the 21st century. You will not need weapons sales. You will not need the profits of war. You will not need to grab someone else's land. You will not need filthy coal, filthy oil. You will have the most efficient economic engine in human history, powered by endlessly abundant fuels.

"Harness the power of a star to your international grid, and you can transform today's shabby wreckage into a flourishing global civilization."

She swept her arm toward the audience, inviting them to join this unprecedented adventure.

"Let us reach deep inside of who we are . . . so that we can find the *best* of who we are. Let us find the seeds long dormant—seeds of a pioneering spirit, seeds of compassion, seeds of an ever-awakening love—then let us plant those seeds in the rich soil of the 21st century."

With a look of disgust, she swept her arm as if clearing away the *worst* that was in us. "Those who would divide us, those who would teach us to hate each other, to fear each other, to seek advantage over each other, and ultimately, to take up arms against each other . . . they shall be regarded as fools.

"As they wither and die, their poison shall wither and die with them."

Aili Biriita Gaup told us one more time, "Bring the sun and the wind into the classrooms of the world, and we shall have peace."

The lights on the stage slowly dimmed as the figure in green walked toward the left wing and disappeared into darkness.

Chapter Ten

Aili Biriita walked proudly across the lit stage to the front edge, wearing once again her Sami *gakti*, a deep blue dress with broad bands of red at the cuffs and hem. She wore a red cap, and a red scarf over her shoulders with a silver brooch. From the belt at her waist hung a pouch made of reindeer hide. Over her dark leggings she wore bright red wrappings from her ankles to her calves. And—everyone in the audience noticed—she wore her reindeer-hide boots with their turned-up toes.

"Bures," she said to the audience with a smile. "In Sami, 'Bures' means 'Hello'."

She paused, then she told them, "When a Sami greets you with 'Bures', you respond by saying, very simply, 'Bures bures'. So I will say again to you—she swept her blue arm with a red cuff to her audience, 'Bures!'"

Several voices, some shy, some hearty, called back, "Bures bures!"

She laughed, then she called back, "Buorre! Good!"

Aili Biriita now stood at the center of the stage, looking with appreciation at her audience.

"No teacher could ask for better students than you have been today. I am deeply grateful." She held her hands over her heart and bowed to them.

"You will perhaps be glad to know . . . that this long lecture is almost done. We are in the home stretch.

"I would like to leave you with a vision of what we *could* do, if we would only do it."

She paused. Her listeners were not restless. They were with her. They were ready.

"Nearly a thousand years ago, when people lived in small wooden houses with a roof of thatch, a small group of visionaries decided that they would build something new, something that would stand tall and beautiful and even magnificent above every other building in the land. This new edifice would be built of stone, so that it could endure through future centuries.

"It would have walls so tall that they must be supported with flying buttresses. It would have windows high on the walls, windows filled with pictures made from pieces of colored glass. These windows were not designed so that people could look out at their shabby world. These were windows through which the sun itself would

shine, brightening the pictures, and casting their colors on the pilgrims who sat in the pews of this great church.

"This edifice, called a cathedral, would reach with towers, and with a spire, toward the lower edge of heaven. The towers would contain bells that would send their beckoning call across the land, inviting the people who worked the soil and lived in their huts . . . to come as pilgrims to this great house.

"Here in this house, it was hoped, people would grow into something beyond their daily selves. Their hearts would awaken, their minds would search, their spirits would be nurtured."

She paused.

"Those who first designed the cathedrals; those who drove the first stakes into the land, outlining a great cross; those who cut and laid the first stones . . . they knew that they would *not* see in their lifetimes the spire which would cap their edifice. One generation laid the groundwork and started the walls. The next generation built the towering walls with large, empty window frames. The next generation built the nave and the aisles, the gallery and the triforium, the clerestory, the flying buttresses, and the ribbed vaulting. The next generation built the pinnacles and the gargoyles, the towers and the spire. They filled the windows with colored glass. And they installed the bells."

She looked at her audience, face by face.

"In the same way, over the course of several generations, we must build the cathedrals of the 21st century. Not, perhaps, in the shape of a cross. We shall build cathedrals with innovative architecture, reflecting the cultures of the world, the biospheres of the world, and the dreams and the visions of the world.

"We shall build these cathedrals with a belief in ourselves, and with a reverence and a respect for the *life* on this planet. We shall begin a work which we ourselves will not see finished. We shall build a gift, for those who will come after us.

"And every child who walks upon this Earth, every child who lifts her face to the warming light of the sun, every child who flies his kite in the laughing breath of the wind, every child who swims in the playful waves of the sea . . . Yes, every child shall be welcome in *every* cathedral in every country on this planet. For the cathedrals shall be built to honor the children of this world. To honor all *life* in this world.

"Yes, let us build the cathedrals of the 21st century, sanctuaries where our hearts can awaken, our minds can search, and our spirits can be nurtured.

"Let the great pipe organs in those cathedrals rumble and thunder with joy, with celebration. Let them speak with the music of gratitude. Let them shimmer with the music of mystery. Let them climb to crescendos of encouragement. Let them bless us with the balm of hope. Let them weave in our hearts the lasting tapestries of peace."

Aili paused to let her audience savor this vision.

Then she made her final request.

"Good people, when you leave this meeting hall today, close behind you the door to the old, and open the door, a dozen doors, to the new.

"And neighbor shall reach out to neighbor.

"And nation shall reach out to nation.

"So that together we can lift our faces to the benevolent sun, and to the boisterous wind, and to the bountiful seas.

"So that together we can work to heal the wounded Arctic, and cap again the planet with the great curving sheet of ice which has kept our world comfortably cool . . . since the very beginning of our long human journey."

She paused.

"Yes, let us honor the Creator . . . by honoring the creation."

With her hands over her heart, she bowed.

"Ollu giitu. Thank you very much."

Then she walked with dignity across the stage . . . until she disappeared, passing the torch to those who would listen.

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