THIS BURNING HOUSE

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Okay, I'll be the first to admit it: I'm a hopeless optimist.

Actually, I'm a hopeful optimist.

If you know me even a little, you probably don't think so. After all, I do love a good tear-jerking tragedy. I love to wallow in the irrepressible misery of a deep, depressing novel. I love to languish in the unctuous melancholy of a melodrama. While my little sister read Pride and Prejudice and Little Women for the thirteenth time, I was devouring An American Tragedy with the gluttony of the teenager I was. My books were dotted with tear-stains, and I spent hours contemplating paragraphs while gazing at the gray skies outside my bay window.

I read whatever dark literature I could get my hands on. I oohed over O'Henry. I palpitated over Poe. I hungered after Hardy.

It didn't stop at books. In movies, my sister preferred Field of Dreams and The Sound of Music. Together, yes, we watched The Wizard of Oz and Mary Poppins and My Fair Lady, and even (dare I say it?) It's a Wonderful Life. And I do still have a soft spot for Amelie. But my favorites have been Dead Poets Society and Ponette, honest-to-goodness sad, serious movies, over which I bawled, handkerchief in hand.

My love of the tragic extends to my image as a suffering-artist. That is, I also write poetry. Poetry that speaks of the terrible depravity of human nature. Poetry that looks deep into the black hole of Death and sees nothing. Poetry like that of unrequited love, of a teenager on the verge of suicide, or the unknown painter bleeding from his heart.

I'm not the only one who sees my love of the negative and depressing. My husband says I am always looking at the negative side of things. And yes, I do shoot down perfectly legitimate plans to party on the weekend. I do tell him we can't possibly weed the whole garden ourselves. When he says, look at this great idea I have, I say "Well, that won't work. You haven't considered A and B and C and D. How are you ever going to do that?" Isn't that pessimism?

You might say so.

What he and others have missed is that I have something that refuses to let me stay sad and depressed, no matter what I might say. After all, like

Anne Frank, I believe people are good at heart. I inherently like everyone. I would probably even give Hitler the benefit of the doubt, though I'd never admit it.

No matter how much I wish to languish in poignant melancholy, something brings me back to a relentless, sickening smile that hurts my jaws. If you have been the recipient of one of those smiles, I apologize now.

Why, when I am most despondent, do I still stop to say hi? How can I look at others and say, cheer up, things will be better?

I have hope, no matter all the horrid things that happen in my life. I can sincerely say that I genuinely hate no one. Even now, I still know that tomorrow will be a better day. For the most part, I can turn my cares off and enjoy something else.

So no matter how hard I try to be negative, it fails for me. Of course, you don't want to be sitting next to me while I try.

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My father always told me to expect the worst, but prepare for the best. But I never have. I expected good, and I was not often disappointed.

I had my share of suffering in school (who didn't?). But I expected to get good grades, and I did. I expected to always have my family to rely on, and I do. I have expected to be unreasonably lucky in certain matters, and unlucky in others. Those, too, held true.

But there is one topic that keeps me on my toes: the environment. Oh, don't scoff and turn away.

The "state of the environment" is one of those issues that makes lovers or haters of people. You either believe in a worsening planet or an improving one. You believe that something can be done to "save the earth," or that it is all hopeless. You are willing to change your life drastically for that purpose or you are not. You are either an optimist or a pessimist.

And I am an optimist. Perhaps, in this case, a hopeless optimist. And I am a messenger of that optimism.

When I was in my thirties, I remember feeling like I'd just woken up and found out the house was on fire. Raging fire. Boy was I glad I woke up! Unfortunately, everyone else was still sleeping, and I was trying hard to shake them awake. "Wake up, wake up, there's a fire!" I yelled. At the same time, I tried to douse the fire with a few bucketfuls of my own.

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Here is the house: it's a world full of the green and lush and beautiful things we love for no reason other than that they are beautiful.

Take flowers. On some level, you know that flowers are necessary for the bees to make honey and for insects to live and for providing us with plant food and fruits. But in an instant glance, a flower is only a flower. A thing of beauty. A joy.

But it is not forever, despite Keats' optimism. It, too, will fade and disappear, but leave behind a sweet fruit. And the fruit will be eaten or fall and feed insects and birds. And the seed that remains will sprout and bring forth more new flowers.

So the house is made of flowers and fruits and seeds and leaves and trees and insects and animals. But it is also made of water.

Water that the ants suck in little droplets. Water that is life-giving and clean and fresh like dew. Water that rains from clouds and seeps into fruits to be sweetened. Water that runs in creeks to rivers to lakes to the sea.

So the house is also made of water and juice and rain and rivers and oceans and clouds. And these run on land.

The land that grows the trees, that houses the insects and animals, that stores the rain. Land that is earth, soil, and clay and mud. The land that once was the moon and planets.

So the floor and the walls of the house are made of land and soil and mud and planets.

The roof of the house is the sky. The sky that is air and wind and the atmosphere and vacuums of nothingness, too.

These all make the house: plants and animals, water, land, and sky.

And then comes the fire. This is not the fire of the sky--the sun, light, the distant stars. This is a fire of our own making. This is a fire we lit to keep warm, and then left on too long and too large and too full of things that we do not need. A fire that we light inside our houses to black out the sky, and to block the wind, and to dry up the rain. Billy Joel was wrong, we did start the fire. But he might also be right--when we are gone, will it burn on and on?

Is it the pessimist in me that says this?

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This fire is now burning down our house, nearly to ashes. But how did we build it?

First, we tore away from the land to bring stones and make a place for our fire. We cut down trees and robbed the wildlife of homes to bring fuel for our fire. We lit the fire using the heat of the sun, yes, but also oil we wrested from the land, and the ashes flew up into the sky. We dumped the rest of the ashes into the water and made it unclean.

And then we taught others to build more and bigger and better fires, and how to keep them strong and burning in different colors, and how to cook on them and how to keep them overnight, and how to spread them across the house.

And so they did. Soon there were fires in every room of the house, from ceiling to basement. There were small fires and big fires, and fires within fires. There were even fires outside the house.

And we taught more and more people how to create them and take care of them.

But never how to put them out.

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How do you put out a fire?

A fire needs 3 things to grow and start a chemical chain reaction: oxygen, fuel, and heat.

Where does the oxygen come from? It is the oxygen in the air we breathe. It could also be an oxidizer, which yields oxygen. And as the fire grows, it becomes harder and harder to breathe.

Where does the fuel come from? The wood of the trees, the oil of the land, the stuff of our lives. And as the fire grows, the fuel that remains is less and less.

Where does the heat come from? Oh that has many sources. One is from the sun, which is a nearly inexhaustible source of energy. But the other is our own effort, our own rubbing away at the fuel to make a spark. We always have a spark of imagination and effort.

Given that a fire needs these to grow, how do you put it out? You take away one or all.

How do we take away oxygen? A fire that is out of control will eat up all

the oxygen it can get. The only way to stop it is to separate it from the oxygen. It is the stop, drop, and roll method--smothering of the fire by blocking all air from it. But this is not easy!

How do we remove fuel? Stop feeding the fire with fuel! But unfortunately, all the fuel you've already put in is still burning.

How do we remove heat? You can cool the fire with water, but beware cool winds, which can just increase the oxygen available to the fire.

What does this tell you? It's better to start a small fire you can control, if at all, and to watch it carefully, and put it out when it's no longer needed.

What does all this have to do with our house? Only that if we had been more careful, we wouldn't have a situation that is now out of hand.

Does saying that make me a pessimist?

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So what if it burns? Who cares?

A lot of people say, let the house burn. We'll still have some sort of land. We'll eventually put it out. We can go somewhere else, too. Some even say, hey, I smell smoke, but I don't see flames, maybe it's not really burning.

But they forget that more people die of smoke inhalation than of being burned. Hot smoke can suffocate you, has toxic gases in it that can poison you, and it can burn the insides of your lungs. These are terrible ways to die.

Okay, but let's say you survive the fire. When the house is gone, what is left?

The plants and animals will have died, burned or suffocated.

The water will be dried up, heated up and evaporated, or contaminated by the poisons of the fire.

The air will be thinned, depleted of oxygen by fire.

And the land? Yes, it will be there, but it will be depleted of fertile topsoil, not to mention the micro-organisms that fertilize and aerate the soil. It might not hold any remaining water, and may break up into mush.

And that will be all that remains of the house. Is that a house you'd like to live in?

I certainly don't. And so, we have to put out the fire. Even if we didn't start it. And even if it's not really our fault.

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In the old days, dousing a fire with water or covering it was all that people could do. Modern techniques involve flame-retardant foam to separate the flame from the oxygen, and chemicals that stop or alter the chemical reaction. Fuels are removed from nearby areas to prevent spread, and flame-retardants are sprayed. Gels are used to store water that helps cool and put out the fire as well.

In any case, there's always a danger to life, which is really the question: how does one LIVE in a burning house? You cannot. And so, you must evacuate to somewhere safer until the house is safe. Then, slowly, you move back in and start to rebuild.

In this burning house we call our planet, where can we go to escape? The pessimist says, "Nowhere."

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The optimist has a different idea altogether. Why must you escape? Why not be brave? Why not fight the fire of our own making? Why not bring to bear all the modern technologies and all the traditional technologies and the millions of people we have to start cooling the fire, and to save ourselves some oxygen, and to eventually put out the fire? Why not stop making MORE fires, which we are still doing, despite all the burning! Why not try to make our existing fires smoke-free, so that they are safer? Why not burn them slower, and less often, and put them out when we don't need them? Why not end the fires altogether?

The pessimist says "It can't be done. And even if it could, who would want to?"

The optimist says, "Bring it on."

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At my first Halloween, I wanted to be Wonder Woman. My parents bought me a Wonder Woman mask, but I had no outfit (another girl did). I walked from house to house, escorted by my babysitter, facing terrifyingly-dressed strangers who inexplicably handed out candy.

Wonder Woman is based on the Greek Diana, an Amazon who presided over forests and the moon. Like all superheroes, she supported truth and justice, but she was also able to communicate with animals. As one of the first comic book female superheroes, she was quite an environmentalist. And I had

a superhero to admire.

Being a protector of forests and animals is part of the life of certain people, like firefighters and rangers and Wonder Woman, but what does it have to do with ordinary life? How is my life affecting those of others?

A lesson I learned early was that of eating meat. Though I didn't learn its full implications until later, eating meat, it turns out, is an icky thing.

When I was three, I went over to meet a young friend of mine. Her family was not vegetarian. I watched while the little girl munched her way through a hot dog. When I asked, my mother let me have one. (Later she told me, what could she say?) I loved it. That was my first experience with meat.

Afterwards, our neighbors had two kids my age, a brother and sister, who would sneak me thin pieces of bologna. I must have eaten several.

For a few weeks, I would beg my parents for hot dogs at the grocery store. They said no, we're vegetarians, we don't eat that stuff. They avoided the issue, until they could no longer. One day, they sat me down and explained: hot dogs were made from pigs. Living pigs were killed to make hot dogs to eat. If you eat a hot dog, you're eating a pig.

I was sufficiently disgusted. I stopped asking for it, and I stopped sneaking meat immediately.

Even my childhood brain could understand that eating another animal was not something I wanted to do. After all, animals are living, breathing, feeling creatures. Would you eat your pet? Would you eat your neighbor's pet? Some do.

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The deeper implications of meat are larger, I learned later. Hot dogs, for example, don't just come from pigs. They may contain various unsavory parts of a cow or pig. For every pound of hotdogs grown on a piece of land, you can grow 121 pounds of potatoes. For that pound of hotdogs, you use a hundred times more water than for growing wheat.

Eating vegetarian has health implications too. But it's an environmentally friendly choice.

And an ethical one? Sure. Isn't your dog happy to see you? Sad when you go? Do you doubt that a pig or cow has similar feelings?

The house was burning, and we have been creating bonfires to throw in animals to cook and eat. At the same time, others starved.

The pessimist seems vindicated, for the moment.

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What of the plants? We can save all the animals, but what about them? Don't they deserve to live, too?

I'm reminded of a story. A boy traps a deer to eat. The deer says, "Please don't eat me, I have a family and children to take care of." So the boy lets go of the deer and goes to the river and catches a fish. The fish says, "Please don't eat me. I have little minnows and reeds to take care of." So the boy puts the fish back and traps a bird. The bird says, "Please don't eat me, I have some little eggs to sit on," and the boy lets the bird go. He grabs some insects, but they say, "Please don't eat us, we have families and hives and hills who need us," and so he lets them go, too. He tries to dig out some roots, but they say, "Please don't eat us, we have to grow and spread seeds to help the land grow," and so he stops. Finally, he picks some berries, and they are happy to be eaten, because he spits out the seeds and they grow into new berry bushes. He picks some fruits and plants the seeds to make more beautiful fruit trees.

Is that the ideal meal? To eat without destroying plants, and to eat what you find in the wild rather than cultivating the earth, and growing things to kill them? Could we possibly live like that?

Traditional hunter-gatherers did indeed gather berries for survival. They supplemented their berries with nuts for protein, and added fish and game that they hunted. Animals harvested sustainably, but harvested nonetheless. But the berries and nuts, just growing and waiting to be plucked. A mutually beneficial situation, since eating the fruit and spitting out the seed helps the plant as well as the animal.

Some cultures, including those of the Jain and Hindu religions, did not believe in eating whole plants, because the entire plant is killed for food. They did not eat tubers like potatoes, or bulbs like onions and garlic, or even carrots.

Plants also suck up a lot of water, and most of our daily water use is for cultivation of various plants, whether it's a lush green lawn or vegetables and fruits and grains for food.

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How could we have saved the water from the fire? A first step might have been to contaminate it less, and this would have come from sound business practices that produce less waste and perform less processing, which requires water for cleaning and for making nearly any product.

In our daily lives, we could have consciously chosen to use less water, whether in our bathrooms or in our yards. We could have recycled the water we used for multiple purposes: water from the sink could be piped to the toilet, and the cold water that ran in the shower at first could be used on plants.

We could also have been careful of using things as little-processed as possible. For example, rinsing hands with a little water would have been preferable to using a new paper towel because making the paper towel itself required water.

I can think of a million things I could have, should have done.

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The land also required protection. We should have kept away the contaminants, as with water. Why dump garbage in the land? Why didn't we recycle or reuse everything we could, and compost the rest? Nothing should have gone to waste.

Keeping the land from harm meant that we should have used less oil. Less oil means less transportation, whether by road or air. Less oil means less shipping of goods across the country or around the world, and less use of things that require power, from lights to laptops.

And finally, the land we did use should have been treated well. Pesticides kill insects, but they can also hurt the soil, birds, fish, and us. Planting the same crops again and again can ruin land, as can flooding and removing trees.

There were no excuses for what we did.

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In reality, the plants, animals, water, land, and sky of our dream house are inseparable. Plants grow with water from the soil and reach up to the sun and sky, and insects and animals eat them and fertilize them, and drink water and make homes in them or on the land, and the sky brings rain. Land is made up also of plants and animals and water. And water covers land and plants and animals, and goes up to the sky as clouds. Plants and animals are made up of water and land and air.

And this is how it was. Even in my lifetime, there has been some of that. But now everything has changed.

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It all started at the dawn of the "Reagan administration," though some

might claim it was going on all along, ever since the building of cities. Things just kept going from bad to worse. And from worse to even worse. We all naively kept hoping for better, and protested and walked in the streets, but mumbled that the next president would change things, or that individuals really could make a difference. We went about, casting our votes blindly, as seven presidents took power and carried out their work in ever more stealthy ways.

And then everything was different, seemingly in a flash. No one anticipated it, not even the scientists were so far-sighted. They and the doctors had been working on improvements to human health and quality of life for a number of years, building slowly upon previous discoveries from even the turn of the previous millennium. But as people aged, the private money came in, and no one could stop it.

I was over 60 when it happened. As a scientist living in California, I was one of the lucky few who received Methuselixir, the very first longevity treatment. It was an RNA, DNA, hormone, enzyme, and stem cell mix that would simultaneously lengthen telomeres, improve bone and muscle density, work as an antioxidant, and regenerate my immune system and organs, among other things. It was twenty-five years in the making, and it was a feat of science.

Little did I know I wouldn't want to live another 200 years.

At 63, I was just too old for Youthanasia, which many young people were choosing (all that middle-age angst). In retrospect I should have volunteered for the Population Reduction Project, removing myself and future generations from the gene pool. Little did I know those were the lucky ones.

At first, things were better. With the hundreds of people who volunteered (or were volunteered by guardians) for those two schemes--the elderly, the technology-averse, the unborn children, the vegetative, the population of the Earth began to drop rapidly. From 15 billion, the population fell to six within two years, and as more and more received sterilization vaccines, the population plummeted enough for the scientists to start to worry, and all the efforts--Youthanasia, PRP, vaccination, and ad campaigns--were halted. Over another year, we stabilized at a comfortable 3 billion, with plenty of space and resources for everyone.

With very few children being born after sterilization, the population aged steadily. For fifty years, no one died for biological reasons, either (vehicle

accidents were still common). When the first "oldies" turned 150 and keeled over, it was sensational news. Of course, everyone knew they got the earliest generation of Methuselixir, but they had already been nearly 100 when they were treated, so it was a sad reminder of mortality in a world without it.

When they died, they died not of the pre-longevity reasons--heart failure, diabetes--but of somewhat new complications. That was terrifying to everyone. They died most often of new types of cancer--telomerase that had run unchecked and let cells divide just a bit too much. Hormones that grew new parts that would not have grown otherwise.

By then, I was over 100 years old myself, starting to feel middle-aged, and slightly in fear of those same problems coming to me within the next fifty years. But science marches onward, and a new batch of treatments dubbed Markandia was stretching the limits of the human lifespan. I passed 150 with no medical problems other than an occasional cold, but I also witnessed the transformation of society.

For starters, a longer lifespan alone can be dreary--why go on and on with the same backache you've had for 50 years, and poor vision, and lack of sensation, shaky hands, an unreliable hearing aid, and arthritis? But combine a long lifespan with the same kind of life you had at 50, and things look better. As time has marched on, people have been getting the treatments earlier and earlier, and now it is standard to offer longevity treatments just prior to the earliest onset of puberty (typically at age 5, as it had been growing earlier and earlier due to environmental pollutants). The treatments are adapted so that most kids just grew to adults and aged no further than the previous "early 30s" did when I was that age. But few have children anymore anyway.

Other things have changed in ways no one predicted. With longer lifespans, we all had time to think over our lives. We considered each decision carefully--there was no rush to finish anything, or worry over short-term consequences of our actions. We started thinking long-term. Maybe something you do today really could affect you a hundred years hence. And it might really truly affect your children, or your grandchildren.

We became slower. Whereas in my childhood fast food was something you picked up in 5 minutes, our typical meals were two hours long. We had three a day. Everyone slept at least eight hours a day, and alarm clocks became a thing of the past.

The rich were no longer rich. Money became unimportant when you had time to think. We cherished other things in our long lives: the

companionship of others, knowledge, creativity, and science. We experimented with whole careers, begun, learned in the 10,000 hours it takes to reach mastery, performed for another decade, and then just as easily abandoned. We developed new technologies, explored places never seen, then tired of even that. We revived entire species with genetic techniques, watched them become endangered, then brought them back from the brink of extinction with ever newer technologies.

As we tired, we wished for an Earth the way it was. After all, we could be less careful now. What could happen? So when I passed 250, the world became strikingly similar to the way it was when I was 40.

"Little did I know" is the key phrase that means (as shown in Stranger Than Fiction) that something bad is going to happen. I've said it before, and that's what's needed here. Little did I know what was coming.

Well, we set out to create an early 21st century utopia. Back came the cars, the electricity, the airplanes, the televisions, the phones. It became fashionable to use fossil fuels again. We mistakenly believed that surely in 300 years they had been replenished, or at least still remained underground.

We started using up resources again. Trees were felled, and we dug into the undisturbed earth once more. We started up the nuclear and coal plants. We lazed around and ate processed foods. Somehow life seemed to move faster. We loved it.

As we dug, we should have known. (Another of those phrases...) In the midst of coal, microplastics. Gases released chemicals. At the bottom of the ocean was oil, but also plastic bits, and so little life, as if nothing had grown here in centuries.

Right then we should have scared ourselves awake. In our complacency, we weren't taking the Markandia anymore. At birth was enough, and no new births had happened in many decades.

We found the chemicals had a shocking effect on our still-human bodies. Bodies that--unlike what we believed--were not immortal after all.

Radiation, if you do not know, damages DNA. Chemicals in plastics and in herbicides and insecticides and other poisons damage our cells, our blood, and even our eggs and sperm, affecting not just this generation but the next. Radicals in certain foods also make our cells age more quickly.

Soon our telomeres were short again. Our bodies aged. I saw my first new wrinkle at the ripe old age of 304, followed by more. I felt fatigue from

living so long, but also an unknown discomfort, a strange unsettled feeling that only let up on walks through the forest.

Ten years later, only a handful of us are left, trying to turn it around. Me, my husband, some ancient friends. We have, sadly, outlived my children, a heartbreaking tragedy worthy of my tears for ages hence. We've brought back the slow lives we knew a hundred and fifty years ago, and perhaps even millennia ago. We've come full circle, learning through experience what was staring us in the face once. And again, and again.

We'll keep fighting, just the sparse few of us will make something of what remains of Homo sapiens on this planet. The sparse vegetation, the sparse fauna, the sparse air, the sparse water. Only fire remains, a house burned to cinders.

We fight, perhaps too late, for this planet. After all, I'm a hopeless optimist.

ABOUT THE AUTHOR

Rani Jayakumar studied HIV transmission and transcription at the University of California, San Francisco, then drug resistance at Stanford University. She now applies her scientific knowledge to teaching and researching mindfulness for children, and writes fiction as well as environmental nonfiction. Her writing and mindfulness work can be found at okachiko.wordpress.com.