Welcome to the evolution: A personal inquiry into the nature of human consciousness

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The University of Montana

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WELCOME TO THE EVOLUTION

A Personal Inquiry into the Nature of Human Consciousness

By

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For all that we share with other living creatures, human beings have an undeniably unique form of consciousness. An awareness of our presence in a universe approaching the size of infinity compels us to tell stories about ourselves and others, compose symphonies and elegant equations, and has played a significant role in our evolutionary success.

As we move into the 21st century, however, we are beginning to understand the toll we are taking on the planet and ourselves. Our conscious brains allow us to see the damage that our technologies do to the Earth, and yet we continue to employ them. Why do creatures as creative as we are knowingly perpetuate self-destructive behaviors? Can we use our form of consciousness to move away from a culture that harms into one that heals?

What follows is a series of essays that have grown out of these questions. I grapple with them through first-person accounts of the evolution of my own consciousness and what it may reveal about our species' past and potential future. The progression of this research- and life-based thesis arose out of my conviction that we will figure out how to get where we need to go only by understanding how we got here. This work in progress begins, then, at the beginning of the universe and ends with an invitation to consciously evolve. I have chosen to write a personal narrative, rather than an academic tome, because I do not believe that intellectual arguments are a promising means of affecting behavior changes in the human animal. If I wish to ask members of my species to use their unique minds to change themselves, I must give them an emotional reason to do so. And art, more than reason, has that capacity.
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Origins: An Introduction

I spent a long afternoon walking along the southern shore of Lake Michigan with one of my oldest friends last winter. Thea and I talked about our memories and our dreams, and we talked about the subject with which I am most obsessed—the evolution of human consciousness. "It's interesting, Bex, that you are studying human beings so deeply, when all you wanted to do in high school was annihilate them," she said as we walked the slow curve around the cement pond we used to ice skate on. She reminded me that years ago I often said, "I love mass destruction of humankind!" and was confused as to why I now spent so much time trying to figure out how the species I once abhorred could maintain its place on Earth for as long as possible. "What happened, Bex?" she asked. What changed?"

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Thea was right. I used to shout "I love mass destruction of humankind!" from the soft orange couch in Jesse P.'s refinished basement during slumber parties and any other time my friends and I spoke about our concern for nature's losses. The shocked laughter that statement evoked encouraged me to repeat it more than a few times, but my friends' reaction was not the only motivation for my outbursts. I believed in that statement with all of me.

By seventh grade, I had learned that humans were responsible for the destruction of Amazonian Rainforests and indigenous cultures, polluted water and air, and the easy cracking of bird shells brought on by DDT and other pesticides. I kept the book 50 Simple Things Kids Can Do to Save the Earth by my bed, and learned that recycling was good and leaving lights on was bad. One spring night during the year that I was twelve,
my dad took me to the Field Museum of Natural History in Chicago to hear Paul Ehrlich, author of *The Population Bomb*, speak about the pace at which species were going extinct across the planet thanks to humans. I spent most of the evening daydreaming about the boy I was "going with" and inventing stories about the odd mix of intellectuals at the event, but I left the museum keenly aware that humans' reproductive success was making a huge mess out of the planet and ourselves. That lecture charged me with a passionate resolve to save the Earth, and with the belief that the only way to do so was to get rid of the species responsible for its ailment. *My own.*

While other kids my age were learning to feel bad about their widening hips and cracking voices, I learned to be ashamed of my bipedalism, of my hairlessness. I learned to be ashamed of being human.

By high school, there was no question in my mind that there was something deeply wrong with my species, and Operation Desert Storm during my freshman year and the drive-by shooting of a kid in my woodworking class the next fall confirmed it. In physics class one day during my junior year of high school, Mr. Dannels threw a problem out to us. "If there were a giant meteorite heading directly towards Earth, would it be in our best interest to try and divert it on its course, or blow it into pieces?" He was just trying to get us to think about the physics of projectiles, but I took his question seriously. "Why would we want to stop it?" I asked. "I think it would be in our best interest to let it crash into Earth." Nobody responded to my words. The silence in the classroom made me feel awkward, but I did not regret what I'd said. I'd meant it. Mr. Dannels had proposed a natural solution for the problematic presence of humans, and I didn't understand why anybody would want to deter it.
Three years after that earlybird physics class, my sister drove me out to Arizona for my first year of college. By that time, I was so hopeless about the future of life on Earth that I wanted nothing more than to enjoy my time on it as much as possible. I figured that pursuing a degree that would prepare me to work outside as an educator or ecologist would be the best way to do that. And so I chose Prescott College, a small "liberal arts school for the environment" in the high desert of Central Arizona. I had been seduced by their black-and-white viewbook filled with descriptions of month-long courses in the Grand Canyon and pictures of people wearing t-shirts saying "The Southwest is Our Classroom" and "Education is a Journey, Not a Destination." I wanted to live those phrases. Though I had done well in a traditional academic atmosphere, I didn't think I could handle four more years of sitting on plastic chairs sticky with decades of gum, or of being lectured at about things that were of little consequence to me. Instead, I wanted to take a huge bite of reality and chew it hard. I wanted to learn about the world by climbing the rocks it's made of, hiking through the sweet ponderosa pine forests that cover it, and paddling down the red rivers that shape it. My dad had always told me not to let school interfere with my education, but I wanted to go to a college that did interfere with my education. And so I went to Prescott College, spent four years sitting in circles on the same ground where dinosaurs once walked, exploring canyons carved by patient water, and falling hopelessly in love with life.

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"Why is protecting biodiversity important?" was one of the primary questions that threaded through all of my college classes.

"Because everything is more connected than we can fathom."

"Because if we don't, we will die."
"Because all living things have an integrity of their own."

While others rattled off easy answers to this question, I sat silent. I did, however, respond to their responses every time.

"Yes, everything is more complicated than we can fathom. And yes, the seemingly small things we do may have big and bad consequences, but it's anthropocentric to preserve biodiversity for our own sake. I think we should all die. That would take care of all the planet's problems. If only we could figure out a way to extirpate ourselves from Earth without hurting other species. But even if we did continue to kill off thousands of species a day, we would die long before life, itself, was destroyed. It's arrogant to think that we are powerful enough to erase all of life forever."

My comments sometimes provoked good and gritty conversations and dropped heavy at others. But no matter what classroom dynamic grew out of my remarks, my brain whizzed with confusion every time I tried to articulate why I cared if this already trashed planet lost itself of biodiversity in the near or nearer future. I believed that life in general, after all its been through, would rebound and continue to evolve magnificently once humans were gone. And so any argument I could come up with for fostering wildness ultimately felt anthropocentric or arrogant to me.

Despite my inability to find a motivation for preserving biodiversity that satisfied me, I never questioned that the work I must do with my life would be in honor of it. I dove into my studies of natural systems, discovered that I had more questions than answers about the world, and graduated with both a degree in Environmental Studies and a wealth of uncertainty about the basis for my convictions.
The summer after I graduated from college, I spent a customary week with my extended family in the Northwoods of Wisconsin. Sitting on the back deck of the cabin with a gin-and-tonic in one hand, four cards in the other, and a cribbage board spread between us one afternoon, my siblings and I started talking ecology. In the pauses between plays, we ended up discussing the very question I thought I'd be able to avoid for at least a week, "What is the point of conservation?" Seth and Searah pushed me to explain my care for intact ecosystems and argued nearly verbatim the stance I had taken in all of my classes. Unbeknownst to them, they were throwing my words right back at me, and I didn't like it.

"Yes, humans are the scourge of the Earth," I told them. "Yes, it might be better to continue on our current trajectory and do ourselves in as quickly as possible—after all, why draw out the pain? Yes, anything I can say to defend conservation ultimately may be anthropocentric, but..." My words hung as an ellipsis that I spent the next three years trying to fill in, and this is what I eventually came to:

I care because I do. It's as simple as that. Maybe my genes have the microscopic and selfish desire to replicate themselves and so push me to fight for a sustainable future. Maybe my intelligence is a product of this wild world in which I evolved, and some part of my brain is aware of that connection. Maybe I have slept in a box canyon in Arizona and fallen asleep trying to distinguish Cassiopeia from the Great Bear one time too many. Maybe I've had sand ground into my sleeping bag and sandstone into my soul. Maybe the thought of losing those things is too much to bear, despite my limited tenure here on Earth.
The truth is, I know too much about the billions of years that passed before life emerged in our corner of the universe, before humans appeared on this planet. It took too long for our species to evolve for us to just sit back and watch as we squelch the evolutionary potential of ourselves and other living beings in just a few generations. We are probably the only species on Earth with a level of consciousness capable of comprehending the global effects it has, and that awareness alone gives us the responsibility to do no further harm to ourselves or the other lives with whom we share this planet home. That awareness gives us the responsibility to clean up the messes we and others of our kind have made here.

For a long while, I thought that my now philosophically-supported interest in preserving biodiversity would eventually translate into a career as a field scientist. Rather than leading me more deeply into rugged country, however, my love of wildness has directed me to look head-on at the one species I long ago learned to resent—Homo sapiens sapiens, the twice-knowing humans.

From the trailer resting on a hill in Montana's high country that I lived in during my first three years after college, I spent countless evenings drinking red wine at the kitchen table and scribbling hard questions in the blank Steno notebooks I'd found in my father's office: "Why does the culture I am a part of continue its practices that dry up rivers; eat holes in the ozone; prevent fish from swimming home; and poison and depress us even though we know the harm those things inflict? How can we be smart enough to see the damage that we do to the planet and ourselves, and yet be so resistant to change the way we live? Is there something about how my species got here, about how we acquired these complex brains that allow us to do amazing and inventive things, that also
blinds us to the negative outcomes of the things that we do? Can we use what we know about the evolution of our unique minds to affect change in the way that we view the planet and our place in it? Can we use our consciousness to evolve?"

These questions led me to a Master's program in Environmental Studies at the University of Montana where I have been given free reign to grapple with them on paper and in conversation. After years of insisting that human beings deserve as little of my attention as possible, I am coming to terms with the fact that I am one of them and love so many others. For the first time since seventh grade, I feel more gratitude than shame for being a creature lucky enough to be aware of her own existence. The essays that follow played an important part in that transformation. In writing them, I came to the understanding that while defending wildness so that humans can have medicine or big playgrounds may be anthropocentric, maintaining that we do not belong on Earth is just plain stupid. We are amazing creatures, beautiful and brilliant and short-sighted as hell. But we deserve to be here. We got here by the same crazy and unplanned process as everything else in the universe. And yet, possibly for the first time in history, there is a creature capable of planning its own future. That creature is us, and if we want to have a future at all, we must plan not only to change our destructive tendencies, but to change the minds and hearts that drive them. In order to transform ourselves and our culture fundamentally enough to support human and other-than-human life over the long-haul, I believe we must begin by understanding the forces that have shaped us, both as individuals and as a species. Knowing where we came from will only make us more equipped to get us where we want to go.
These essays begin, then, at the beginning of the universe and end with an welcome to the world I believe we humans have all the creativity and compassion to make real. The pages between are filled with stories about my personal experiences as an animal endowed with a self-reflective consciousness, some things my own life may reveal about my species' evolutionary past, and ideas about all we must do to become a people that works in favor of life, rather than against it. While informed by extensive research in evolutionary biology, anthropology, psychology, cosmology, and philosophy, these essays are all deeply personal, first-person explorations of the questions that brought me to graduate school. They are by no means "scholarly" and are not meant to be.

As with all of my writings, these have been sculpted by my experiences, one of the most impacting of which was my father's death nine years ago. His bold and bawdy self appears in several of these essays, and I realize now that this work is as much an homage to him and the discussions we began having when I was twelve years old as it is an inquiry into the nature and potential of human consciousness.

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"What happened, Bex?" Thea asked me by the skating pond a few months ago, "What changed?" I told her that I had used my conscious mind to change my ideas about the world and my place in it. I said that I am trying to evolve into a more compassionate being. I told her that if I can do it, I know others of my kind can, too. These essays are my invitation to do so.
Holding Infinity

Walking down the driveway to get my mail earlier this afternoon, I kept my eyes glued to the slippery slope. The ice on the gravel was melting, making a few branching streams out of my driveway. Plucking up a striated thumbnail-sized stone, I realized that the whole world is in my driveway, embodied in the small rocks that comprise it and in the still smaller stones that make up the cement mixture the landlord poured over it last fall. And it's embodied in the melting snow that consists of water that has been recycled for the past four billion years. *Four billion years.*

My dad used to say that a billion was, what? Something like, "Think of it this way, Bex. One thousand seconds are less than an hour. One million seconds are eleven and a half days. But one billion. If you were to count to a billion, one number per second, it would take you thirty-two years." Eleven days from now, I don't expect to be much changed; in thirty-two years, I hope to be eccentric and grey.

I didn't remember the specifics of that analogy until just now when I took the time to scribble down some calculations on my kitchen chalkboard:

\[
60 \text{ seconds/minute} \times 60 \text{ minutes/hour} = 3600 \text{ seconds/hour} \times 24 \text{ hours/day} = 86400 \text{ seconds/day}...
\]

Those equations glare at me from across the room, and until a more pressing topic arises, I am going to leave them up. I need to. For I ache to hold in my head, no, in my gut, an understanding of just how big a billion is. Four point seven of which make up the history of this Earth in years, twelve to twenty of which the history of the universe is made. Because maybe then I will be able to grasp both the resounding insignificance and profound exquisiteness of my relatively brief life.
The stone I picked up this afternoon is one of many I've smuggled into my home, for I am a collector. I don't mean to be. I don't mean to pocket artifacts from the land and display them on my wall, my bedside table, and in my notebook, but I do. Settling into my new apartment last fall, I was embarrassed by all the treasures I have gleaned from ventures into unknown territory. The bones, alone, filled up two plastic tubs for the move to Missoula. I have the skulls of a moose, a deer, and a bird; a starfish skeleton; a cow pelvis; two tibia and three femurs of ungulates I can't identify; three large mystery vertebrae; one elk sacrum; two elk mandibles; and two deer antlers. Each time I put one in my hands or in my backpack, a part of me cringes. Maybe I should leave them be, let them return as calcium, phosphate, and carbon to the soil. But I pick them up anyway; they are simply striking. True beauty, bones reveal the smooth curves of structural integrity. They remind me of the contours of my insides, of the land from which they came.

I collect other things, too. On the low table next to my bed is a violet in a tiny vase, a piece of pumice as light as a foam ball, the three perfect slices of a twice-cleaved stone, and a quarter-thin triangle of smooth sediment eight layers thick. Shells and stones from the Pacific, Great Lakes, high and low desert, and mountaintops line up on my windowsills and tumble together in a crooked coil pot on my kitchen table.

I picked up each of these items because I was struck by its glaring beauty or rarity. I held each one in my first two fingers and rubbed it clockwise with my thumb as I studied its cross-section in search of striations and then turned it over from front to back hoping to find fossilized life. If it had to optimal combination of decorative beauty and stunning reminders of time, I pocketed it.
My collection reveals that I am particularly struck by long-weathered pink shells. Those on my windowsills have been tumbled through so much briny water and so many sandy coasts that I cannot determine their earlier inhabitants, but I love the mysteries they hold. I also treasure the mint-sized charcoal, rose, and jade-colored stones from Lake Superior with the forms of extinct creatures impressed on them. But the kind of stone against which I am most powerless are those tiny layered ones that reveal tens of thousands of years in a space no thicker than my thumb.

I examine my treasures for their stories the way I walk the canyons near my home to learn theirs. I long to be a part of the slow collision of tectonic plates and relentless scouring of rock walls. I go to the mylonite's jagged shiny surface for the active past it reveals just as I run my fingertips along the scars on my body to remember the forces that have shaped me. I go to wild bones, rocks, shells, canyons, and my own skin for a gut understanding of all that has come before me in hopes of grasping how I got to this place in time. I gather these things as reminders of the topography I have known, as reminders of both the land and the knowing of it. And I gather them to remind me of a past I will never know. They are incomprehensible vastness held in my fingers, on my windowsill.
Wild from the Inside Out

I have been taking a lot of night hikes lately. I often head out during the fuzzy hour, that time of evening before the black of night when everything loses its color and clarity of edges. Branches of ponderosa pine arching over the trail, rigid canyon walls, and my friend beside me all seep into the air until I can hardly tell where they end and the night begins. The blurry lines between the trees and sky may just be one of light's tricks, but for me, they are more. They are a reminder that the boundaries we see between Earth and sky, liquid and solid, my skin and yours are just a matter of perception, of a dramatic difference in density. Although the fluid inside each of my skin cells is bound by a membrane, there is a constant and dynamic interplay between my flesh and the air around it. Without intention on my part, electrons fly off of me to dance in a charged attraction with the dry night's. This is an electricity I know is there, but only feel after shuffling my stockinged feed on a carpet before touching a doorknob or someone else's skin.

This firing of electrons crackles the air around me the same way it did to my body every time I looked at Adam Johnson's dark eyes in my first years after college. Every day at work, I braced myself against the inevitable fire that rose from my thighs to my face at the sight of him chopping vegetables across the deli table from me. My body tugged with an insistency as real as gravity to touch the skin concealed by the butcher's apron hanging off his boy bones, to feel the muscles beneath his skin. No matter how much I willed my body to understand that he was just a young, dumb boy, the wild firing of synapses that is my nervous system responded in its own way, heedless of my mind's desire.
I was equally controlled by the knowledge of my body last week when, driving down Chicago's Lake Shore Drive in rush hour traffic, a semi pulled in front of me out of nowhere. Before I was consciously aware that the hulking vehicle had almost crushed my passenger and me, my foot was on the brake pedal. In that moment, I felt calm. Only after there was an appreciable distance between the truck and my car did I shudder from the river of adrenaline that has saved my life more than once.

Solid gives way to gas, electrons heat us up with constellations of uninvited sparks, and life-saving chemicals bypass our ponderous consciousnesses when there is no time for thought. We are wild from the inside out. No matter how bound by our minds, skin, or cell membranes we may feel, we are all made out of a universe of atoms working together to carry out millions of processes, most of which we are unaware from moment to moment. My heart is beating about sixty-five times a minute and I probably couldn't will it to stop if I tried. My lungs rise and fall, my diaphragm expands, and the hydrochloric acid and gentle squeezing motion of my stomach turns my breakfast of eggs and potatoes into forms the rest of my body can use. An intricate network of nerves sends messages to my brain, though I am aware of very few: Should I scratch that itch on my nose? Oh, now my armpit itches. Gosh, now that I'm thinking about it, it seems like every part of me tickles—my shoulder, my left breast, my upper arm, my forehead, and now my nose again!

As I scratch my itches, I notice the how the veins beneath the thin skin of my hand spread like the fingers of a delta towards my wrist. This network of blood vessels is filled with a fluid as wet and salty as the ocean into which a delta spills. Their blue glow reminds me that I am more ocean than Earth, more wet than dry. Just as my smooth skin
tricks me into thinking I am separate from the air around me, these channels of blood
disguise the truth that I am three-quarters water. My veins barely hint that the ten
thousand trillion human cells and one hundred thousand trillion bacterial cells my body is
made of are really miniature ocean ecosystems that hold inside of them the history of the
universe.

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Stretched out in the dry sauna heat last night, we waited for the moment our pores
loosened up and that primordial story spilled out. You said you could see yours open
and, like a spring, ooze water. Hot rocks heated up the cedar space and pushed the
molecules in the membranes of our cells far enough apart for fiercely bonded hydrogen
and oxygen atoms to stream down our sides, our legs, the space between our breasts.
Soon we were drenched from neck to foot, slick with each of our skin cells' primeval sea.

We talked about how crazy it is that over four billion years ago those hydrogen
and oxygen atoms first united on this planet in a liquid combination powerful enough to
cultivate life. About how together they covered the Earth in a scalding sea that
nonetheless welcomed carbon, nitrogen, phosphorus, and all the other ingredients
necessary to build the first proteins, cell membranes, and graceful winding ladders of
nucleic acids that carry the secrets of one generation to another.

You reminded me that we are alive thanks to the distortions those secrets have
gone through in the past four billion years, and yet there is nothing remarkably different
between us and the first blueprint for building a life. Like the DNA molecules in the cells
our sweat came from, we are just massive permutations of elements that a symphony of
star births created about fourteen billion years ago.
We imagined what it must have been like during the one hundred million years before those stars were born, when the universe was a dark and undifferentiated place filled only with hydrogen, helium, and traces of lithium and beryllium. The same laws of attraction that held us strong to the wooden benches last night brought hydrogen and helium together in a spectacular burst of light all those millions of years ago. Those searing fires were so powerful that they fused atoms together to make enough new elements that galaxies, planets, and we could eventually form.

Dehydrated and delirious with heat, I sang a Joni Mitchell song while you showered yourself cool. "We are stardust, we are billion-year-old carbon." She may be at least twelve billion years off, but other than that, Joni's right. We are stardust, we are fourteen billion year old carbon. And we are wild with it.

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Too hot to take the sauna anymore, I stepped outside in my brown and green-striped towel. The stark night sky that I have seen a thousand times before caught me hard in its gaze. Orion was in the same place it always is in January, the Pleiades tricked my eyes with their usual fuzziness, and I was as slayed by their familiar beauty as I am by the people I love the most. What makes something as consistent as the night sky so consistently striking?

Every bit of carbon in my blood, in my bones, and in my brain came from some of those early stars. Perhaps all the elements in me are drawn to the fires that gave them life. Perhaps I am.

As my sweat turned to vapor in the backyard, I had the same thought I've had every time I've looked at the stars since I first learned that distance can be measured by the amount of time it takes for the light of one thing to reach another. I almost never
speak that thought aloud because it reminds me of the "deep" conversations I used to have with my stoner boyfriend in college—"Ohmygod, I'm really looking at some of those stars as they were millions of years ago. For all we know, they're not even there anymore. Who knows WHAT the sky really looks like. Dude." But high or not, it is crazy to think that the map of the sky we see is not the one that is there now, but a historical record of the universe and its unfolding. If only we could look deeply enough into the space we're suspended in, we could see the instant of our origin.

Scientists with access to big telescopes can see the background radiation from the moment in which a vast almost-nothingness became the very big something we inhabit, but the darkness of that instant will never reach the Earth. No matter how far I stand from the lights of the city, I will never be able to see the quarks, neutrinos, and other impossibly small subatomic particles that spilled out of a single point about fourteen billion years ago. I don't have the capacity to grasp the force that pulled protons and neutrons together despite the pace at which the universe pushed into emptiness to create space itself all those years ago. All I will ever see from the vantage point of a backyard is a time-warped display of fires caught in the act of creating the kinds of atoms that made us possible.

Every atom in our bones, in our universe, is one of ninety-one naturally occurring combinations of a positively charged nucleus and one or more electrons flying around it billions of times every millionth of a second. You never can say exactly where an electron is at any moment in time, nor predict where it will be in the future, but the patterned clouds of energy it makes around a nucleus shows us it is there. An electron may give form to this basic unit, but an atom is more space than matter—if a hydrogen
atom were four miles wide, its nucleus would be the size of a tennis ball. Between the
electron defining its outer boundary and the inner nucleus there is a nothing as empty as
interstellar space.

"If every molecule, every body, and every thing on this planet is just a collection
of protons, neutrons, and empty spaces bound by the probable presence of negatively
charged particles, then what is the difference between my sweat, the Milky Way, and the
organism contemplating them?"

"When you look at it that way," you said as I stepped into the night, "the
definition of life literally slips through your fingers."

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What is life? It is the result of the chance event that a cloud of stellar dust formed a
planet at just the right distance from the sun to make the seas we came from and that live
on in us. Four and a half billion years ago, Earth was just a messy mixture of silicone,
iron, magnesium, and a few other elements bound together by oxygen. During its first
few million years, frequent asteroid poundings, the power of gravity, lightening storms,
and the decay of radioactive elements heated the planet-to-be into a frenzy. By about a
billion years after its origin, Earth was so hot that its iron melted and sank to the core of
the planet. As it slid to the center, the scorching element melted nearly everything in its
path, helping to create the multi-layered structure of the modern Earth. The hot and
viscous world hidden beneath the thin layer of crust we live on gave our planet volcanoes
and plate tectonics. Along with water, the Earth's molten core made it a place dynamic
enough to engender and sustain a thing as crazy and complex as life.

In a universe the size of something approaching infinity, I shouldn't be surprised
that this multi-layered planet coalesced where it did, in just the right spot for the misty
skies to condense into ocean once things cooled off. Statistics say it shouldn't amaze me that one of our galaxy's one hundred million stars had a wet, hot, and active planet with all the necessary ingredients to stir up life by four billion years ago. But I can't escape the knowledge that if Earth had formed just a little closer to the sun, it never would have become cool enough to make water. Much further, and it would have been locked up in a perpetual winter, as devoid of biodiversity as the other planets that travel around our sun.

Probable or not, there is magic embedded in Earth's perfect position to house the liquid compound that every breathing thing depends upon.

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*What is life? It is the flash of the firefly in the night. It is the breath of a buffalo in the winter time; it is the little shadow which runs across the grass and loses itself in the sunset.*

--The dying words of Crowfoot, a Blackfoot hunter

What is the line between the animate and the lifeless, between a firefly and its flash, a buffalo and her breath? What separates a creature from her shadow? What is life? It is in the flutter of a firefly's wings and in its reaction to a child's attempts at catching it in a glass jar. It is in the sureness of the end of an existence, and in an internal chemical and electrical system complex enough to create the glow of phosphorescence. It is about an organization of living cells that together give shape and movement to a being, and it is the necessary act of energy intake, growth, and metabolism in which an organism spends its days engaged. Life is two fireflies flirting in the darkness in hopes of passing their genes on to another generation of shimmering insects. It is a firefly in the night fertilizing hundred of eggs with its deepest memories and silent instructions for building a new glowing beetle. Life's secret is contained in that microscopic packet of
information first compiled four billion years ago. Without it there would be no firefly, there would have been no me or you in the sauna last night.

"Isn't it weird," I said somewhere between the first mention of our pores and your insistence that the definition of life is as hazy as an electron's path, "that a strand of DNA may draw a line between the living and the non-living, between a firefly and a fire, but a double-helix made out of carbons, sugars, and base pairs is not, by itself, alive?"

"It depends on your definition of life," you said. You teased me for being such a reductionist, but I maintained that without a context for the stories it holds, DNA means very little. It needs a membrane to contain it and fluid to float in. It needs a bound environment that takes in and processes energy, that grows and eventually reproduces. Only when it has a liquid home, separate from the environment around it, can DNA make life.

The earliest genetic code probably found that context it needed in tiny suds foaming on the shores of our ancestral seas. Not long after fatty membranes came together in mutual aversion to water, DNA took up residence within them. The sheer variety of beings that have lived on Earth are testimony to the genius of that early partnership. Our bodies today are filled with close relatives of those creatures—bacteria that thrived in the hot, oxygen-depleted world and presided over Earth for two billion years. Unlike sexual organisms, they reproduce simply by making carbon copies of themselves and have little opportunity to change without an outside push to do so. Sometimes, however, bits of DNA are translated incorrectly from one generation to the next. The genetic language misspoken usually produces an offspring too deformed to pass its warped story on to another generation, but altered codes occasionally result in a
new bacterium quite capable of navigating its way through the environment and making more of its kind. Bacteria also transform themselves by swapping bits of DNA in an act more akin to kissing than making love.

During life's first two billion years, these translation errors and one-celled kisses filled the acrid ocean with a range of tiny beings of all shapes and abilities. Some of those hereditary changes eventually led to a bluegreen, or cyano, bacteria with the ability to split water molecules into hydrogen and oxygen, using the hydrogen it needed for energy and discarding the oxygen into the air. In no time, congregations of these photosynthesizing creatures covered the planet in a slippery film, and we see their descendents today between our shower tiles, floating on ponds, and almost anywhere else warm, wet, and unscrubbed. Little did they know, their unique ability to make free oxygen was also a cruel one; the molecule with which they filled the sky was as poisonous to most of their relatives as the early methane, cyanide, hydrochloric and sulfuric acid-filled world in which they thrived would have been to us.

After hundreds of millions of years of their microscopic exhalations, the cyanobacteria had filled the sky with so much oxygen that other bacteria began dying in droves. Many species vanished forever. Others survived only by finding refuge in the deepest recesses of the ocean, sulfuric hot springs, and other oxygen-free areas. The bluegreen bacteria, however, flourished by turning their waste product into something usable. In the brilliant act of respiration, they used the free oxygen they made through photosynthesis for energy and eventually brought atmospheric oxygen to the levels we breathe today.
What is life? It is the relationship between a storytelling molecule and the membrane that contains it. It is an endless transformation of those stories to help the next generation survive in an ever-shifting landscape.

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As saltwater stained the contours of our hips last night, the little bodies inside our cells navigated their fluid habitats as their ancestors have for the last two-and-a-half billion years. Lysosomes, golgi complexes, endoplasmic reticula, and mitochondria carried out their different intracellular jobs while you and I pondered the cosmos. And they were as unaware of our words as we were of the conversations they were having with one another and their ecosystem's nucleus.

The cells that comprise you, me, and every multicellular organism are complex in a way that the bacteria living alongside them are not. Unlike bacteria's free floating DNA, ours is protected by a membrane-bound nucleus. The rest of our cellular bodies, or organelles, live in a cytoplasmic sea outside of the cell's command center and work together to carry out instructions from the nucleus. These things make each of our cells more intricate than those of the earliest life forms. However, looking more closely, it appears that our cells are merely finely-tuned cooperative efforts between several of our most common ancestors. Mitochondria is one of those squiggly organelles rolling with the tides inside our cell membranes, and it hints at how specialized cells could have evolved out of such long-term simplicity.

Each mitochondrion has its own strand of DNA that is different from the rest of the cell's and replicates independently of it. This discovery led microbiologist Lynn Margulis to propose in the early 1970s that complex life evolved out of symbiotic relationships between early life forms. Like mitochondria, the little bodies responsible
for photosynthesis in plants, called chloroplasts, also have their own bundle of genetic material and are strikingly similar to bluegreen bacteria. Margulis suggested that life became more complex when one bacterium ate, attacked, or simply embraced another. Although many of those combinations failed, both parties sometimes benefited from their experiment in cooperative living. Some unions allowed host cells to turn oxygen into usable energy or to photosynthesize, while others gave bacteria the ability to control their motion. In some cases, winding hair-like bacterial cells, the predecessors of today's cilia and flagella, attached themselves to larger bodies and helped them swim with a rhythm and grace all their own. These mobile creatures were finally able to actively seek out food, evade predators, and commingle with others in ways they couldn't when they depended on the ocean's undulations to move them.

By about one billion years ago, some of these newly complex cells had all the necessary components for sex. We can all appreciate this new kind of genetic exchange for many reasons, but most importantly for the unique offspring that come of mixing half of one being's inherited stories with half of another's. The range of combinations sexual reproduction made possible set life on an explosive path full of developments and diversification, one small branch of which eventually resulted in humans.

What is life? It is a series of inventions that fail at least as much as they succeed. It is one mitochondrion finding a safe home in the body of another cell. It is a string of creative acts as dependent upon cooperation as they are on rivalry.

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I walked home along the creek between our houses last night, still hot from our sweat and crazy conversations. I wanted to stop in that spot where the trail bleeds into the river to
look at the *Equisetum*. But when I got there, I found that looking wasn't enough. After hours discussing things I can hardly envision, I wanted the assurance of the illusion of matter. So I picked one. *Equisetum* grow as straight, hollow shoots out of the wet ground. Like the collapsible plastic cups I used to take to grade-school slumber parties, they are segmented and fun to snap apart at their joints. I felt a bit guilty playing with one like that, but there was something intoxicating about attending closely, if violently, to a plant whose ancestors were among the first to transform the rocky landscape into the green world we take for granted today.

Along with *Equisetum*, the continents were softened by giant tree-ferns and other broad green plants by 450 million years ago. Once land plants made a home more inviting than the vast rocky plains had been, descendents of the first globular animals successfully ventured out onto solid ground. Their occupation of land may have been driven by innate curiosity, but the never-ending fluctuations of sea levels gave some individuals no other option. Those animals living near the shore and that were able to endure the aridity of land became amphibians, creatures equally at home on *terra firma* and at sea, but dependent on the water for laying their eggs. Over time, some of them evolved into land-based reptiles who cut their ties to the external ocean by laying hard-shelled eggs with membrane-bound waters still inside. By 250 million years ago, some reptiles had grown into dinosaurs while others eventually radiated into birds and mammals.

Delicious prey for hungry velociraptors, mammals had no choice but to remain nocturnal and as inconspicuous as possible during the long reign of the dinosaurs. If a humungous meteorite had not collided with the Earth sixty-five million years ago, these
warm-blooded creatures might all still be timid creatures of the night no larger than a mouse. But the massive extraterrestrial rock shot into the sky a layer of smoke and dust so thick that the sun's rays could no longer warm the cold-blooded giants. After 200 million years of living large in the tropics, dinosaurs became nothing more than a pile of bones.

Though I mourn that I will never be able to run my fingers along a dinosaur's cool skin, I would not be here to have that ache if their rapid extinction had not allowed mammals to emerge from their hiding spots. Endowed with hair and the internal fire of warm blood, our ancestors dealt with the new climate just fine. With no dinosaurs to pluck them up, mammals grew with a new freedom to take up space with their bodies and across the landscape.

By about thirty million years ago, mammals had spread to every continent, and some had become the earliest primates. These creatures were not much larger than a chipmunk, lived in the forests of Asia and Africa, had interactive cultures, and eyes on the front of their faces. These prosimians eventually gave way to a range of families, one of which eventually became the one that includes chimpanzees, bonobos (otherwise known as pygmy chimpanzees), gorillas, and orangutans. And then, just six million years ago, our earliest humanoid ancestors took a small but dramatic step away from our closest relatives, the chimpanzee and bonobo.

Ninety-eight percent of the stories in each of our cells are the same as those in any chimp's or bonobo's. That small adjustment in the structure of our common ancestor's DNA allowed some apes to begin a mostly upright, two-legged lifestyle about four million years ago. The nucleotides that carry the specific information for building our
predecessors instructed early humans to give birth to babies whose brains weren't completely developed and were thus dependent upon their mothers for the first four years of their lives. The heightened vulnerability of hominid children and the help a mother needs to raise them may have played a role in encouraging long-term relationships between males and females, as well as in fostering close relationships between relatives. At that point in our animal's history, however, we probably lived with as little awareness of our own thoughts as any other ape.

In the last million years, a disputed yet significant number of hominid species lived in Africa, but one after another mysteriously disappeared. One branch of upright primates, however, adapted well to the contours of Asia, Australia, and Europe. These hominids, known as *Homo erectus* and later, *Homo sapiens*, used fire, tools, wore clothes, built shelters, and by about forty thousand years ago, something significant had changed within them. They had become *Homo sapiens sapiens*, the twice-knowing humans. They had become animals who not only used what they knew about the world to survive in it, but expressed what they knew through the abstractions of art, elaborate burials, music, and a syntax-based language.

They had become creatures we would recognize as ourselves.

In just forty thousand years, those primates have spread throughout the globe almost as successfully as bacteria; developed spoken and written languages; domesticated plants and animals; built civilizations; enslaved others of their kind; allowed the male animals to assume dominance; fought massive organized wars; invented cars, electricity, suburban lifestyles, and television; landed on the moon; communicated globally and instantly on the internet; tinkered with the genetic blueprints of other species and their
own; and have made a bomb with the capacity to destroy life by breaking the nuclear bonds that made their story possible.

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When I showed you all that last night's sauna conversation inspired me to write, you scolded me for laying out our story in such a linear fashion, as though the evolution of life was a single thread with you and me on one end and the origin of the universe on the other. You're right. I did. To do evolution justice, I should nestle the stories within one another, the way that atoms are contained in the molecules in the cells that comprise my tissues that make my organs that function together to make the system that is me. To really tell this story right, I would do it with flames and heat and a true sense of the vacuum that exists on the other side of time and that fills the space between each atom's nucleus and electrons. I would stack word upon word the way that canyon walls stack the story of one landscape, one era, right on top of one another. If I were to tell it right, I would bring heavy rains, hot lava, crashing continents, and a true sense of how long it took to make life from dust. If I could speak in several layers at once, I would show the mountains that never stopped growing or eroding, the oceans that rose and sank, the rivers that cut canyons, the ice that bore down on the planet several times, and the bacteria, protists, fungi, plants, and animals that dealt with those never ending fluctuations by dying or changing. I would make it evident that life changes Earth as much as Earth changes life.

I told you that I know of no other way to tell our story, confined as I am by the linear nature of pages and sentences. But no matter how I tell it, our curvy bodies know the story of the universe. The 13.8 billion year-long saga whispers through our elusive electrons that we are as welcome here as any other thing the cosmos holds. It tells us that
we belong to this planet as much as the oceans, the molten core, the trees and fungi and bacteria and wolves do. It says that we are a network of relationships that began with the first cascade of energy and resulted in a being that can appreciate this version of the truth. No matter how bound we are to a chair, office, or room that rarely touches moving air, we are wild. Wild from our DNA out. Wild from our wet cells with little organelles swimming inside of them, for all they know living in the same salty seas that the earliest of their kind did. We are wild from our hearts that we can't will to stop, from the adrenaline that floods us, and from the heat a lover's gaze draws from out thighs to our lips. Our bodies are inextricably bound to the ancient past, and that relationship will never end. When we die, the processes that make us unique individuals will die along with them, but our bodies will not. We may be cremated or buried in a mahogany box, but eventually the same carbon, nitrogen, phosphorus, and potassium of which we are made will go back to the soil or the sea to make new life. Until then, we live as charged beings with the history of the universe growing inside of us.
Coming into Consciousness

"Dad! Come quick!" I stood at the side of my parents' bed, holding back tears and trying to control my quivering lip. "My marker fell down the toilet!" I was truly more upset about the loss of my brand-new, from-the-Easter-Bunny, bright-orange smelly marker than I was by any understanding that I had just damaged the plumbing of our only bathroom.

While my parents slept in that morning, I colored at my little table next to the bookshelf spanning the length of our dining room. I had spent those early morning hours tracing the naked figures of a man and a woman on crinkly, transparent paper with a rainbow set of felt pens that smelled as good as a roll of Life Savers. Even as a five-year-old, I was in awe of the naked human body and the story of what happens when two of them become one. From bedtime tales, I knew about how a penis fits into a vagina, all the millions of sperm that enter a woman's body in one act of intercourse, and the death that almost all of them face on their way to the egg. I knew that the small, blonde person I was had something to do with those tiny sperm and my mother's eggs, but I wasn't quite sure how they had become me.

Pondering these things with my legs hanging over the lip of the toilet that morning, I dropped my marker into the bowl. I guess that propping myself up, wiping, holding my pen, and trying to figure out my connection to sperm and egg was too much for my two hands. Hoping to hide the evidence of my clumsiness, I flushed the marker down the toilet. My dad spent the weekend tearing up the bathroom floor while I ran errands with my mother, unable to get sex out of my brain.
Shoved between heavy paper grocery bags on the burgundy vinyl seat of my parents' fake-wood-paneled station wagon that afternoon, I asked my mother, "Mom, if I weren't me, would I be somebody else?" Young enough still to think that my parents lived lives devoid of mystery, I was surprised when she softly exhaled, "I don't know. I don't know."

"But, if a different sperm had found your egg," I asked, "would I look different, but have the same personality? Would my personality be in the body of somebody else very far away? Or, would I just not be anybody?"

Again she sighed, "I don't know, honey. What do you think?"

I tried to imagine what it would be like to have my personality in somebody else's body in another part of the world. Imagining what it would be like to not exist at all was harder still. All I could think of was the deep black of the TV before 5:00 a.m., before people began to inhabit that world.

The questions my mom couldn't answer haunted me for a while, but Barbie and games of "house" soon took precedence over puzzles with no solutions. And then, a few years later, watching a cartoon of a dog watching a cartoon, I had a flashing insight of infinity, though I did not have the words for it then. What if the dog in the cartoon was watching a cartoon about a dog watching a cartoon about a dog...? When did it stop? It stopped no sooner than contemplating my ability to mull over my own existence did. It stopped no sooner than forever. Suddenly, I was a girl with the ability to consider not only her own life, but her own life in a world filled with infinite possibilities. Suddenly, I felt small:

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Evolutionary biologists say that ontogeny recapitulates phylogeny, that our nine-month adventure from zygote to birth echoes the four-billion-year journey we've taken from the early soup of life into the Holocene. As individuals, we begin as two cells becoming one deep inside our mother's universe. Incubated by her womb, we, as cells, divide and divide, replicating ourselves the way our earliest ancestors did in a sea as wet and salty as our mother's. As the microscopic ball we are begins to differentiate during the first few weeks in our amniotic home, we strikingly resemble an embryonic fish with our seahorse-shaped bodies and gill slits. By the end of our first month we have three-chambered reptilian hearts, and small bony tails that remind us we are animals. We look distinctly human by the end of the third month, but in the fifth are temporarily covered from head to toe with fine mammalian hair. We spend our last three months in our mothers' saline sea as aquatic creatures, developing the bodies with which we ultimately enter the world to begin our passage as humans. If our forming bodies provide a time-lapsed glimpse of all we have been on the way to becoming human, what can our terrestrial lives' journeys tell us about how our species' minds evolved once we were human in form?

Our entry as humans onto dry land is not easy. Our mothers moan and scream and tear as they push our round heads through their small birth canals. If it weren't for the splash of natural painkillers released by their bodies during birth, mothers might never choose to go through such an experience twice. Despite the pain our emergence causes our mothers, we come into the light as small and helpless creatures, capable only of the reflexes necessary to keep us alive. If someone rests our wobbly bodies on our mothers' bellies during our first slippery moments on land, instinct tells us to slither up to
her breast and begin suckling in an act honed over the last 200 million years. This mammalian moment is vital to us, as it makes our mothers' posterior pituitary gland release hormones that help make us human. As we fill our little bellies with her antibody-rich milk, oxytocin washes her brain with warm and pleasant feelings, congratulating and encouraging her to hold us close. We need that embrace. Nurses in preemie wards tending to babies isolated in incubators noticed long ago that without regular and frequent human touch, premature infants don't grow. In hospitals today, holding and massaging neonates is as important a part of their care regime as supplemental oxygen is.

What is true for preemies is true for all babies. For the first several months of our lives, our healthy growth depends on someone carrying us, holding our heads, and tending to our cries and laughter with an attentiveness I can hardly imagine mustering. We are exhausting little beings and lifelong distractions. We fill our mothers' arms and laps with weight that increases daily, slow her down, and make it hard for her to do her work. Other primate infants do not require so much of their mothers. Baby bonobos and chimpanzees are born with the ability to grip their mother's fur so she is free to use all of her limbs for climbing, food gathering and preparation, grooming, and anything else that arises. We, too, are born with fierce grips, but our smooth mothers have little for our small hands to grab hold of.

As soon as our furry cousins are weaned, they are able to forage for their own food. We, however, depend on our parents to feed us for at least the first decade of our lives. This was particularly true for most of human history, when feeding ourselves was more than a matter of peeling a slice of processed cheese away from its plastic wrapper
and plopping it between two slices of equally processed bread. Until the advent of agriculture just ten thousand years ago, sating our hunger required a deep knowledge of the nuts, seeds, fruits, tubers, and greens our home environments provided, and a level of manual dexterity refined enough to crack, pick, uproot, and prepare those goods. While fast-developing chimps and bonobos are quite capable of getting their own food when they are still small, human children take years to master those complicated skills.

How on Earth did a creature born as soft and squishy and needy as I ever make it as a wild animal? How did archaic human mothers tend to their infants without the help of Pampers, snugglies, baby monitors, or strollers successfully enough that those things could one day be invented? How could evolution possibly favor a floppy, smooth-skinned baby whose disproportionately large head caused complications or death in twenty-five percent of births before the advent of modern medicine? It seems like any species whose offspring demand that much energy and put their mothers in such a risky position would never survive more than a generation or two before dying out, as so many evolutionary experiments do. Indeed, no species does make it in the long-run if it has as many obvious shortcomings as we, unless there are some hard-core payoffs for taking the risk to birth such a beautiful burden.

"Can I hold him?"

I was in Iowa for the first time, missing a few days of kindergarten so my mom could help out with her sister's new baby. Aunt Ruba set my cousin Nick on my lap and made sure his head was supported by the pillow she'd tucked beneath my still arm. I smiled for the photo my mom took of me on the soft chair, my legs sticking straight out
from the yellow dress she'd made and barely reaching the end of the seat. Thrilled to be holding my brand new cousin and terrified I might break him, I slowly turned my face away from the camera to look at his small body. He was calm. And he was so soft. I brushed my face against the top of his head to get as close to his downiness as possible.

"Be careful of his soft spot," my mom reminded me. Oh yah, I remembered. Babies always have that dent in the middle of their heads that I am supposed to watch out for. I jerked my head up immediately, scared to be so close to the softness of his brain.

I have held a lot of babies since that visit, and I've run my hands over every one of their small skulls, obsessed with and terrified of their tenderness. The close proximity of their brains to my fingers has always made me uncomfortable, and my stomach turns to think of the damage an adult's strength could do to them. The flexibility of newborns' skulls seems like yet another human trait that should have put our ancestors on the quick road to extinction, but that sensitive center is part of what makes all the vulnerabilities inherent in us worthwhile.

At birth, our skulls have six soft fontanels where the bones haven't fused because our brains are not fully developed. When our ancestors began walking upright, their pelvises narrowed and only those babies who could squeeze their way out of small vaginas survived. Time favored underdeveloped infants whose brains were encased by a pliable skull that could make way for their growth. Because we come into the world as incomplete beings, experiences build our brains as surely as genes do. A dynamic interplay between traits inherited from our parents and the sights, sounds, and relationships we devour as we grow create the neural connections our brains need to make us the cognitive creatures we are. Influences from the nature of our genes and the
nurture of our homes cannot be separated from one another because our cellular
storylines instruct the world to shape us.

The continents-wide scattering of bones from several short-lived hominid species
suggests that upright primates who have babies with big heads and long childhoods are
indeed an evolutionary gamble. However, the advantages our closest ancestors reaped
from their offspring's prolonged development outweighed their detriments enough to
bring themselves out of Africa and into every corner of the planet. We are born to adapt,
and this has made all the dangers posed by our slow and soft growth worthwhile.

Today, just 1.7 million years after *Homo erectus* females began giving birth to
their underdeveloped babies in southern Africa, members of our species live in ocean-
deep submarines, in outer space, and everywhere in between. We have adapted to our
environment by shaping the contours of it to meet our needs, and those contours have, in
turn, shaped us. As a result, most of us develop in a world more human than anything
else—more street than game trail, more strip mall than berry bush, more lawn than forest,
more closed than open. These things make it easy to forget that we are just one more
amalgamation of nerves, protein, flesh, and DNA that time has thrown together, that we
are a mere six-million-year moment away from the ancestor we share with chimpanzees
and bonobos. We forget that we are animals, wild beings that have refined their shelter-
building and food-gathering techniques so deftly that over six-billion of us are now
spread across the planet. The distinctiveness of our inventions disguises the fact that we
are only one of many species that uses tools and vocal communication, makes their
homes with an attention to the aesthetic, and has a range of thoughts and emotions.
We are animals, born and bred in a wilderness of our own making, and yet I cannot deny that there is a deep rift between the kind of creature we are and the rest of our biological kingdom.

Perhaps human's distinction from the rest of the living world has little to do with our ability to think, feel, and create, and everything to do with our ability to ponder those thoughts, feelings, and inventions as I began to do some twenty years ago. We are metaconscious, cursed and blessed by the sense of self our forebears developed long ago. The ability to conceive of ourselves as organisms who know that we know is a burdensome boon from those Australopithecines who got onto their two feet and roamed the African plains. Our self-reflective consciousness is an endowment from narrow-hipped bipeds who gave birth to unfinished apes, and built intimate networks of friends and family to help them attend closely enough to their babies so that they could one day have grandchildren with brains for the world to form. Our intelligence is a gift from those hominids who had long-term love affairs, formed complex cooperative communities, and eventually made the kind of neural connections that allowed them to put the abstract concept of "me" into words and creative works. Our unique minds are an inheritance from early Homo sapiens, Homo erectus, Homo habilis, Australopithecus afarensis, and the genus Pan. They are a legacy of the earliest life forms that inhabited this planet, the carbon that permeates the universe, and the water, wind, and dynamic topography that shape ourselves and our home.

Although our adaptations have kept us growing for hundreds of thousands of years, Homo sapiens' success is taking its toll. The instruments and lifestyles we have developed to keep us insulated from the vagaries of the landscape are now driving the
planet's sixth mass extinction episode. We are dying of lung cancer, breast cancer, hunger, obesity, war, and depression. We are cutting down forests and mining in deserts and as long as we damage the places that life needs to evolve, we damage ourselves. Not since the earliest anaerobic bacteria poisoned the atmosphere with their oxygen-laden byproduct has a single species been responsible for the rapid extinction of so many others. And as far as I know, no species has ever recognized the danger it poses to itself and its home and still continued to terrorize it. Until now. Metacognition gone awry, this is what makes us unique.

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"A reading from the book of Genesis." I took a deep breath infused with fear and continued. "Adam and Eve rebel against God and are cast out of the garden." Aside from a cough here and a sneeze there, my carefully enunciated twelve-year old voice was the only sound reverberating through the packed stone church. I was the choirgirl chosen to read the first reading in that year's Lessons and Carols for Advent. It was a huge honor, and I wore red satin and white lace to make my mom proud.

The story I read that night is similar to the one most people know—Adam and Eve lounge happily in the Garden of Eden, naked and blissful, until an evil serpent whispers to Eve that she should eat an apple off the tree in the middle of the garden. "But God said we shouldn't," Eve counters, "He says we will die if we do."

The snake laughs at her. "You will not die, for God knows that when you eat of it your eyes will be opened and you will be like God, knowing good and evil." And so, despite her hesitation, Eve gives in to her temptation, eats the forbidden fruit, and suddenly sees that she and Adam are stark naked. Ashamed of their bodies, Adam and Eve stitch loincloths out of leaves and hide from God as he approaches the garden. Their
omniscient Father quickly discovers their naughty deed and throws them out of Eden for good.

Until Eve ruined perfection for the First Couple, they lived in bliss and abundance, ignorant of their nudity. But upon taking the first bite of the fruit from the Tree of Life, the two became as self-conscious as teenagers in a swimming pool. All for a bite, they saw their smooth, bare skin contrasted against a garden teeming with tangled plants and fur-covered beings. Adam and Eve's perception of themselves was suddenly pierced by an awareness that they were man and woman in an other than human world, and they did not fit in.

I like to think that the apple which gave Eve the ability to harbor the abstract concepts of good and evil was crisp and tart, and made the insides of her cheeks water and her tongue ache for more. For her partaking of this ripe fruit was not humanity's original sin, but its coming into consciousness. It is only right that Eve should have savored the fruit that gave her the beautiful and burdensome ability to recognize herself in a world of possibilities.

Perhaps the authors of her myth knew that the dawn of our species' self-awareness some forty thousand years ago marked an entry into a world of recognizable beauty we could both celebrate and decimate. Perhaps they understood that an alertness to our naked vulnerability was responsible for our ejection from Eden, for with self-awareness arose also an unrestrained creativity, the colossal effects of which are destroying the Garden today. But the scribes told a different story than the one I believe. Our dissociation from the intricacies of Eden is neither a punishment nor gift from God, but a result of the unique form of consciousness our fourteen-billion-year-old evolutionary
story gave us. And our dissociation from Eden is a catastrophe our consciousness gives us the responsibility to repair.

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The sun never rises before 5:00 a.m. during the Illinois school year, so my high-school morning activities always began in the dark. Daily, I slunk through my parents' bedroom, down the shifting stairs, and changed into my running clothes on the daybed in the den. One morning, while pulling off my sleep-softened t-shirt, I caught my reflection in the window. I had been staring ahead towards the dark nothingness of predawn, but saw instead a woman's body. Her round breasts shocked me; the smooth contours of her waist and hips threw me off guard. Trapped between a fierce admiration of her beauty and the frightening insight that that woman was me, I stared only for a moment before hurrying into my high-compression sports' bra.

I am not entirely sure why it took two years with fully developed breasts to actually see that I had them, nor why the realization that I did was so disconcerting. Some of my discomfort surely had to do with the knowledge that I would never look like the women in magazines or on TV, but that this body now put me in a position to try. It was more than that, though. That morning, I saw the passage of time held in soft young curves. I saw a body that was a part of a moving universe over which I had little say. And I sensed that my ability to control either my body or the universe would only decrease as I moved through them. But I would try.

That flash of insight into the inevitability of change was one of the many that had punctuated my life since the weekend I dropped my marker into the toilet and first asked, "Who am I?" Each time I caught a glimpse of something larger than I could comprehend, I felt both more uncomfortable in my skin and increasingly buzzed by the understanding
that I was a chance event in a world of endless possibilities. That level of awareness brought me fiery moments of creativity and intense discussions about the meanings of life. It also made me feel wildly out-of-control in an out-of-control world. And so I learned to manage what I could. My weight, for one, by eating twelve-hundred calories a day and running five miles on even the meanest days. I recorded every bite of food I ingested, graphed the miles I ran against my weight, and scheduled my days by fifteen minute intervals in the pages of my Chandler's Assignment Notebook. If I could not slow the flow of time or constrict the bigness of space, I could at least be in charge of how I steered my body through them.

Our ancestors must have been equally overwhelmed when they began to recognize a reflection in a still pool as their own. At what point in our evolutionary journey did we first ponder the predicament of our presence in a big and bold universe, did little *Homo sapiens* first ask their mothers, "Mom, if I weren't me, would I be somebody else?" When did we rise out of the existential slumber we had been in for the first few million years of our history, see the sky, and long to understand it? When did we first go to sleep with the understanding that we were nearly defenseless beings in a world incomprehensibly vast? Did that knowledge fill us with a pang of deep loneliness, of fear? Did it give us a sense of the exquisite beings we are? As internal dialogue does not fossilize, we will never know the true answers to those questions. Nonetheless, I am willing to bet that our ancestors felt a full spectrum of emotions as they began to recognize themselves as creatures with the ability to think about their place in the world. Anthropologists believe that awareness urged them to draw, paint, bury their dead, carve
beads, and make musical instruments, and we date their coming into consciousness by the appearance of those works.

Some forty-thousand years after the first signs of our species' coming into consciousness, we are beginning to understand the toll that we are taking on the planet and on ourselves. We are learning that as inconsequential as we may feel, our daily lives impact things as huge and abstract as ocean depths and the atmosphere. Although we may not be mentally equipped to truly grasp the enormity of the planetary problems our lifestyles create, we do know that we will not be able to go on living the way we do for long. Raw nature just can't keep up with our speedy consumption of its offerings. If we continue taking as much as we do at the pace we do, we all soon will find ourselves hungry and sick in an empty world. This we know.

It is time to use the same creative minds that compel us both to sweep red ochre over cave walls and build nuclear reactors to make some important decisions. We must decide how much our place on Earth means to us, and if an expanding universe is something we want to continue being a part of. We must decide if the joys that being here bring are powerful enough to take weight off the knowledge that we are just one young primate species in a huge assembly of life. And we must make our decision soon. If we determine that we do love it here, that we care about all the lives with whom we share common stellar ancestors, then we must also be brave enough to take responsibility for the problems our species has created. We must learn to sit with fears of our smallness and our potential failures as we roll up our sleeves and work to ensure that four billion years of life on Earth have not been in vain. And we can do it. For as much as the threats we pose to ourselves and to the planet may lie in our accelerated consciousness, there too,
lies our hope. For our humanity is as defined by our ability to dance, sing, create art, imagine, invent, and love, as it is to fight and fear. Although our bodies' deepest memories will not allow us to escape the dark parts of our past, the soft heads and hearts with which we are born give us the opportunity to decide who we will become.

Who will we become?
Small in Time and Space

Thirty of our aunts, uncles, and cousins are talking to the beat of Jimmy Buffet in the two-story cabin above us, while my brother, sister, and I barely murmur against the dark silence of the stellar landscape. We are lying on a rickety dock over one of the tens of thousands of little lakes that spill out of Northern Wisconsin, into Minnesota, and explode into vast waterways as they penetrate Canada. We know this water well. It is a quiet reminder of our past twenty summers and of the ice sheet that heaved over this continent until just ten thousand years ago. We pass around a pink metal pipe filled with loose, crummy Midwestern pot and stare into the punctuated sky, mistake satellites for shooting stars and searchlights for the Northern Lights. And we giggle.

My mom's husband, Frankie D, walks down the mossy wooden steps and hands us the binoculars for a glimpse of Jupiter and three of its moons. When we offer him some of our smoke, he declines, but points out the Northern Cross, identifies the frog species serenading us, and heads back up to the cabin.

Shortly after his departure, Seth, Searah, and I return to the cabin where everybody is eating Chex mix, playing Trivial Pursuit, and drinking frozen margaritas packaged in a gallon-sized pail. It takes a minute for my eyes to adjust to the light illuminating the shag brown carpet, the beige couches, and plastic-covered needlepointed clown faces that decorate the fake wooden walls. A couple of my aunts are discussing the particulars of seven-layer Jell-O in one corner of the room while Uncle Pat declares in another that gay marriages are a threat to democracy and that people of color marginalize themselves because "they are always creating new names just to get attention. Negro."
African American. And now it's People of Color…" Unsure of where to go in the maze of conversations and activities, I stand frozen against the sliding screen door.

"But John, how do you explain the diversity of life forms on this planet?" From my vantage point, I overhear Frankie D arguing with Uncle John, my mom's brother who owns a cell-phone tower company and wears the same aviator-style glasses his father wore in the fifties. When I hear John say, "God can do amazing things," I laugh.

"Did I just hear you say that you don't believe in evolution?" He snorts as he condescends to laugh at me. "That's right. It's a theory. There is no proof of its existence."

The only boy in a family of eight children, John had privileges growing up that his sisters did not. One was a bedroom of his own, another was the opportunity to go to any college he wanted, even if it was private and out of state. He chose MIT and was trained, as my grandpa had been, as an engineer. Shortly after college, he got an MBA from Harvard and has been making a lot of money ever since. Although he never strayed far from the religious path his parent set him on, he was "born again" sometime in the '80s.

"What?" I say, not sure I heard him right. I am shocked that someone educated at two of the best schools in the country could question this basic scientific tenet. I pull up a wooden chair, sit down, and assault him with questions. "How do you explain the layers of rock that reveal fossils of increased complexity as you rise from past to present? How do you justify human embryos' shocking likeness to amphibians, and the similarities between a baby chimpanzee and a human infant?"
John smirks, "Because God wanted it that way." He is excited that he has incited me, and smug in his knowledge that he is right and I am wrong.

"Why is our bone structure so similar to a horse's, a dog's, a sea lion's? Why did God give us appendices, wisdom teeth, baby toes, and other parts that serve no purpose?"

"God can do what He wants. He is creative."

Frankie D, a botanist by passion and as obsessed with evolution as I, elaborates on the empirical evidence science has for that process. His voice is high, impatient, and hard to hear over John's ego. My own voice gets louder and acquires a tone reminiscent of middle-school arguments. None of us lets the other finish a sentence.

My four aunts who were sitting at the end of the long, glossy dining room table have left their game and migrated into the living room. They are sitting on the couch, watching us and whispering. The women of this family share not only coarse, dark hair and a pronounced "Bunce Butt," but a discomfort with conflict and a bitterness toward their brother. While they spend delicious moments ranting about his self-promoting funeral speeches and the shocking discovery that he has decent friends, my mother and her sisters rarely exchange anything but surface pleasantries with John. They love seeing him challenged. But they have already learned that it doesn't work.

As I roll my eyes and take a breath, Frankie D lays into him. "John, how do you explain bacterial resistance to antibiotics and Darwin's finches?"

"Well, I do believe in evolution within a species."

"Is it just a coincidence that we share 98% of our DNA with chimpanzees? And what about Lucy and all of the other extinct hominids? Are you saying we're not related?"
"When I was at MIT in the '70s, scientists said they would find the missing link in the next decade. Well, they didn't find it. They STILL haven't found it. And do you know why? Because there IS no missing link, there is no link! We are NOT related to the apes!" John is grinning, shaking his head at Frankie D and me as though he feels sorry for our ignorance.

With a knot in my stomach, I chime back in, "But, *Australopithecus afarensis*...and the landscape we evolved in is not conducive to fossilization...but...*Homo habilis*...and...and...arghhhh!"

We go back and forth for over an hour, our eyes and voices getting bigger with every exchange. Finally, I have exhausted all the evidence I have in support of evolution but my uncle's refrain has not changed, "God wanted it that way. There is no missing link. God is creative." Stoned and tired, I give up on the Born Again. How can I argue with God? No fossilized bones that link us to a wild and arboreal past will convince John of his connection to chimpanzees and ancient carbon chains.

I spent the rest of that summer replaying our argument in my head. I remembered so many facts that I had forgotten in the moment, that I wished I had said to further my case. Frankie D sent John a book about the Creation/Evolution debate and I outlined my points for next year's controversial conversation. I kicked myself several times for failing to show John just how wrong he was.

Sitting in an old Missoula coffee shop a couple years later, however, I have a different kind of regret. I regret that I reacted so aggressively, excited to prove to my Ivy League uncle and all the spectators how much I knew. I regret that I did not take the time
to find out why the idea of evolution is so unpalatable to John. I wish that I had asked him why that theory is incompatible with his God, that I had said, "If God is the name we give to the irreducible mysteries that permeate the universe, is not every unzipping strand of DNA, God? Isn't the intimate communication between the enzyme helicase and a nucleotide chain laden with more mystery than a superhero God who created this planet for the people who invented Him?" The other day, someone left a colored newsprint booklet at my door asking, "Aren't you lonely without Jesus?" To John, I wish I had said, "Aren't you lonely without the knowledge of the savannah in your muscles, without the memory of the primordial sea in each of your cells?" I wish that I had forsaken my ego long enough to find out why John is so uncomfortable with being a part of a dynamic Earth caught in the sun's gravitational field at just the right distance and angle to sustain the evolution of life. I wish I had asked him why he needs a God so predictable in form.

Darwin held off publishing his theory of evolution by natural selection for almost twenty years after formulating it because he was afraid that his contemporaries were not ready to handle its implications. A hundred and fifty years later, many of us are still not willing to believe that we are products of the same processes that govern the rest of the wild universe. To some extent, I understand. After all, if we are simply the result of an improv act about the crazy things that happen when you throw plate tectonics, cell membranes, sex, and mutated genes in the same room together for four billion years, then what good are we? If some genetic mix-ups here and geologic turmoil there were all it took for us to come into being, do our lives mean anything more than a plant's or the
bugs' that prey on them? Our lives may indeed not have any explicit meaning, but we naked apes alone have the brain power to wish they did.

At times, I'd like to believe that I am not just a haphazard product of a process with no plans, but an individual placed on Earth by a loving, bearded man from high above. Life would make more sense to me if I thought I was in somebody else's blueprint, but I would not trade the edgy and exciting mythology I live by for that security. Because the idea that I owe my existence to a cosmic explosion of matter that occurred almost fourteen billion years ago in a universe that curves in a way even my hips cannot help me imagine makes me feel far more extraordinary than Uncle John's God ever could. And yet, like John, I need that story to make sense of myself.

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Science had already seduced me by the time I set foot in the Episcopal church I was to spend the next twelve years of Sundays singing in. As a little kid, I spent most of my time playing house, reading books on the heating vent in the dining room, and doing experiments. One of my favorites was digging up worms, putting them in Dixie cups on the edge of my sandbox, and waiting in the bushes to see how long it took for a bird to pluck them up. Other times, I grabbed the magnifying glass from on top of the big dictionary in the living room, angled it just right to bring the sun's rays to a fine point, and with a stopwatch measured the amount of time it took to burn a hole through different materials. I learned that thin, dry leaves seared more quickly than wet ones, and both beat sticks by a long shot. But the best science experiment of all was the study of the relationship between corn starch and water. The white solid that resulted from their combination slid wet through my fingers when I picked it up. I discovered that two things together become something far more interesting than either one of them alone.
In sixth grade, an old hippy with a dark, frizzy ponytail and big glasses taught my science classes. He was so cool. Mr. Izbicky let us sit at tables with our friends and taught us the word *hypothesis*. I practiced it over and over like it was a Dr. Seuss tongue twister: HI-POTH-O-SIS. It was hard to move my tongue quickly enough from between my teeth for the *th* to strike the back of them in time for the *s*. It was a hard word to say, but it felt like home to me the way *existentialism* would five years later. Finally, I had a name for all the ideas I had about the world before putting a magnifying glass or wooden spoon to them. At last, I had a process to guide my curiosity.

One of the things about which I was most curious at eleven was what happens when we die. While Dick Seaman, District 65's permanent substitute teacher, showed us the Nova special, *The Miracle of Life*, in the back of Mr. Izbicky's classroom, my old friend Jesse P. and I had intentional conversations about things like life after death.

"Let's have a deep conversation," Jesse P. proposed.

"Okay. What do you think happens when we die? Do you believe in Heaven?" I asked her.

"No. I believe that we are recreated as other people and other things," she said. "We keep coming back in different forms until we learn the lessons we need to. Like maybe you and I were sisters in a past life and that's why we're so close."

"I dunno, Jes. I think it's just over when it's over."

The new philosophical territory of our friendship met a hunger I didn't know I had. It also showed me the limitations of the scientific method I was just beginning to understand. How do we test hypotheses about the meaning of our existence? How do we control all the variables in our lives?
We cling to stories that can contain them.

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I was five the first time I sat in one of the old wooden pews at St. Luke's Church. It is a truly grand, cathedralesque building that even non-churchgoers visit on Easter and Christmas to feel the organ music, breathe in frankincense and myrrh, and get the chills from participating in a ceremony hundreds of years old. Stone walls support a high ceiling stretched with wooden beams, and an elaborate crucifix hangs over the mosaic floor between the choir stalls. My family and I were there to hear my father sing his first Evensong with the Choir of Men and Boys. Playing with a Band-Aid that had been on my knee all day, I passed the hour looking up at the ceiling, in awe of its seeming boundlessness and in search of a glimpse of God. I didn't understand why all the adults around me pressed their foreheads towards the floor on crossed hands while they prayed. Wasn't God's home above? Wiser than they, I looked up to confess my sins. The God I thought I might see through the ceiling timbers was an enormous woman in a blue dress and an elaborate bouffant—the kind that requires curlers the size of soup cans. She sat in a throne floating on a fluffy cloud and had a big lap. She could hear my every thought. I was embarrassed when I learned a few years later that God was really a man, but found it hard to believe. By the time I was contemplating the ethereal aloud at Nichols Middle School, I understood that the scholarly Christians I grew up around didn't even believe that He was a form at all, but an essence. But by then it was too late. Somewhere between finding out that God was not a woman in a blue dress after all and my eighth grade confirmation class, I stopped believing in God.

Squashed between David Guistolise and Josh Winterburn on one of the pink-flowered Victorian couches in the church's parlor, I held a small red prayer book open in
my hands. We were getting ready for the ceremony that would confirm us as members of
the Episcopal Church by reading the Apostle's Creed aloud. "I believe in God, the
Father, the Almighty, Creator of Heaven and Earth. I believe in things seen and
unseen..."

"Wait. What if I don't believe that God is a man?" I asked. "What if I don't think
that 'He' created Heaven and Earth? What if I don't believe in Heaven?"

"Well, then, you might want to think twice about getting confirmed," said the
priest leading our prepubescent group. And so I did. From then on, my connection to the
church was limited to choir practice and singing at Sunday services.

Living in a Godless world was not a problem for me. Although my contemplative
conversations with Jesse P. were sometimes unsettling in their obscurity, the immediacy
of my concerns with school, friends, and boys made my need for a larger story about my
place in the world unnecessary. It wasn't until I read John Gardner's *Grendel* in English
class during my junior year of high school that I began to think seriously about the nature
of reality and my place in it.

Under a head of wild white hair, Dr. Mitchell introduced us to existentialism, a
word I massaged with my mouth over and over again. "We create our own realities!"
Jesse P. and I sang as we pushed our way through Evanston Township High School's
sterile halls to lunch. "We make our own meaning in life! We are existentialists!" That
idea liberated us. After fifteen years of inferring from our schools and the television that
the meaning of life was to grow up, stuff ourselves into pant suits, and chug through a
boring nine to five, we were freed by the understanding that those expectations were just
a part of the fairy tale society told. *Grendel* gave us permission to create our own stories.
In my final essay for the unit, I described how the Shaper, the best minstrel in the kingdom, sculpted the lives of Hrothgar's people by telling them his own version of the past. I compared his influences to the "realities" that history textbooks and TV shows imposed upon us, and decided then that no Shaper but me would direct my dreams. I proclaimed my new philosophy on life to anyone who would listen, and scribbled my favorite Robert Frost and Henry David Thoreau quotes all over my paper-bag textbook covers:

Two roads diverged in a wood and I— I took the one less traveled by, and that has made all the difference.

And,

If a man does not keep pace with his companions, perhaps it is because he hears a different drummer. Let him step to the music he hears, however measured or far away.

My girlfriends and I did step, giggle, and gossip to the beat of our own acoustic folk harmonies far from the rest of our classmates. While other teenagers were getting drunk and experimenting with one another's bodies, we made deep dish pizza from scratch and exchanged wholesome backrubs. We knew we were different, and we reveled in it. We were smart, strong, and confident, and we created our own realities because the script that had been written for people our age didn't fit. We were fifteen, sixteen, and seventeen, and the world we crafted in our minds was wide open to the possibility of us.

∞

"Ah, Becca, you will be great someday! Seth is a creative genius, Searah is brilliant, but you... You will be GREAT." My father boomed this from the hard-bottomed chair where he sat nightly sorting through the mail, ordering books and anything else we wanted from
catalogues, and eating his “running stew” out of a cheap silver pot. We spoke over the murmur of Colombo reruns about whatever most captivated my father at the moment—it could have been Chaos Theory, the agrarian revolution, or worm holes. I may have been sharing my newfound fascination with existentialism, and my conviction that life is best when we engage in it fully because only the present is real. *Carpe diem!* I could have said. We may have been talking about any one or all of those things, but in truth, I have no idea what inspired my father to pronounce to sixteen-year-old me that I was destined to be “great.” His words have haunted me ever since.

Six years after my dad’s prediction and just after I graduated from college, I was hit by a car. I had moved to Montana only weeks before, and thought it quaint to ride my bicycle up the winding country highway I lived on, past horse pastures and fields erupting with sunflowers and lupine. One Saturday night, I left work later than I had planned, and found myself pedaling up the shoulderless road in the dark. I was thrown off my bike when a station wagon going seventy miles an hour rammed into me from the rear. The drunk driver got out of his vehicle long enough to make sure that I was alive, and then left me alone in the ditch to tend to the broken bones and blood spilling out of my leg. It took some creative maneuvering, but I eventually flagged down a couple in a Porsche. The woman draped a car blanket across my shoulders and rubbed my back while I waited for the ambulance, holding my bones in the palm of my hand.

Before the doctors began their repair work on my open fracture that night, I called my mom from the emergency room. I hadn’t cried yet, but when I heard the love in her familiar voice, mine caught the way it used to when I called her from grade school about a forgotten lunch. She was on the first plane out of Chicago. When I woke up from
surgery the next morning, my mom was holding my hand. "You are meant to be here, Bex," she said. "You are alive for a reason."

That bike wreck wasn't the first time my body directly experienced the fine line between life and death. Shortly after my dad died in my first year of college, I took a serious rock climbing fall. My beginner's obsession with the sport had fooled me into thinking that I was ready to lead climb a route I had never tried before. It felt awkward from the beginning, but pride kept me going. Twenty feet up the face of textured basalt, I froze. With just the tips of my toes and flexed calf muscles to hold me up, my legs started to tremble and, as rock climbers say, "do the Elvis." Seconds later, I fell. The protection I had placed in the crack pulled out as I flew down to the rocky terrace below. I landed on the small of my back and my helmet-less head. After shaking with seizure, I went out cold for several minutes. My stillness, along with the pool of blood that my scalp's thin skin left on the warm desert rock, convinced my partners that I was dead. One of them was about to give me rescue breaths when I heaved a sigh and began thrashing and swearing in style typical of head-injury patients. I eventually calmed down long enough for them to move me to a safer spot in the gully. When I came to, I was surprised to see a fleet of paramedics and emergency medical technicians rigging up a system for lowering me to level ground. "Really," I said, "I'm fine. I can walk down." They laughed at me and continued with their rescue. While others built quadruple-safe anchors above us, a blonde-haired man in wire rim glasses secured a cervical collar around my neck and prepared a wooden backboard for the carry down. "Am I brain damaged or paralyzed?" I asked him.
"We don't know yet," he said.

For the first time in my life, I was forced to consider the fact that I might not be able to move or think the same again, and I was terrified.

The Valium the paramedics gave me calmed my fears and later, emergency room brain scans and x-rays revealed that I would continue to be a mobile, mentally capable individual. Today, a raised two-inch scar on my scalp and a numb patch of skin on my lower back are the only external reminders of that blow I took eight years ago. Likewise, long trenches of tough skin, bumpy bone calluses, and a missing baby toe on my left foot are the only visual markers of the night I was hit by a drunk man in Bozeman, Montana.

Though my back and leg were slow to heal, I can now run, jump, dance, ski, and climb as well as ever. I like my scars, and am thankful for the luck those physical imperfections speak of, for their tenacious insistence that life is precious. Each time I run a hand up my textured calf or along the skin on my scalp once pinched tight by twelve staples, I hear the words my mom first spoke to me, "You are meant to be here, Bex. You are alive for a reason." I doubt that anything more mysterious than chance and a hearty constitution is responsible for my survival, but my flirtation with life's end so close to its beginning drives me to find its meaning, to do something with these numbered days I am twice blessed to be living. To make my dad's declaration come true.

I never thought to ask my father what he really meant when he said I'd be GREAT someday, but I imagine that he saw something in me that glowed and shimmered, a hot passion. He saw a strength that I was just beginning to taste, and predicted that it would someday compel me to do great things. Change the world. Save it. Make it a better place for all living and non-living things. I heard "great," and I also heard famous. I heard
Rachel Carson and Paul Ehrlich and Jane Goodall and Joseph Campbell. I heard a prophesy that has yet to come true.

If my father saw greatness in me, if he got a glimpse of a bold spirit with the umph to bring her passions to light, why don't I? Why do I feel so far from great? His sudden death eight years ago left me without a chance to find out if I am at least on the right path there, if I am making the best of everything that burns inside. If he were still alive, he could draw me a diagram delineating the amount of time it should take to become great. He could plot some points for me reach along the way, and show me the coordinates of success. If I could sit near him in the black leather recliner in his den for just a couple more hours, he could help me give shape to the reality I create for myself by addressing the questions, "Who am I? What does my life mean? What is it I am here to do?" These questions are not much different than those I began grappling with when I was five years old in the back seat of my mom's car, but my crashes and falls have compounded the emotional intensity behind them. No longer are they simply sparks for "deep" slumber party conversations with Jesse P., but urgent conundrums my body knows it may have little time to resolve.

As alone as I feel in my quest to understand my purpose in the world, my search is not unique. It is one of the biggest and most basic burdens of being human. Even before our closest ancestors began painting subterranean walls with abstractions of the natural world, Neanderthals buried their dead with a care implicative of an attention to the afterlife. Many anthropologists believe that these larger and brawnier evolutionary cousins of ours disappeared from their home on the European continent about forty thousand years ago because the small but smart Cro-Magnons, our great-great
grandparents, outcompeted the Neanderthals with their more complex mental abilities. Although Neanderthal relics suggest that they were not bright enough to develop sophisticated weaponry or sufficiently creative to produce instruments and art, the body of a Neanderthal buried under a pile of flowers in the Shanidar valley of Iraq suggests that some individuals, at least, had both the mental capacity to contemplate what happens after death and compassion for the deceased's journey. It appears that attending to where we came from and where we're going is a fundamental consequence of even the most rudimentary forms of self-awareness.

The same introspective abilities that compelled our closest hominid relatives to bury a loved one with care drive all of us to address the great unanswerables in one form or another. As soon as we are aware that we are individuals living in a big and bold universe, we ask, consciously or unconsciously—Why? Why me, why here, why now? Why did "I" get this body, this family, this era? Why wasn't "I" born a slave or a mountaineer? Who am "I" anyway? What does my life mean? Kids start asking these questions not long after they are able to recognize themselves in the mirror, and many learn early on that they are not appropriate questions to ask in polite company, if at all. They are awkward and unwieldy. No methodology can empirically validate or refute the hypotheses we might come up with in response to those questions, and that makes us uncomfortable. So we do as humans have always done. We create stories.

Every culture in the world has its own creation myth, a unique explanation for how the Earth, skies, animals, and people got here. We are all born into a tradition that tells us we are here thanks to God the Father Almighty or the turtle with the turtle on its back, or the Big Bang. The sheer number of explanations humans have given for our role
in the open space around us suggests that none of them is universally correct. And yet so
many of us hold tight to the view of the world our parents, churches, or secular cultures
gave to us. We feel threatened when it is challenged. We sit across the table from one
another during our family reunions and get incensed about our difference in beliefs. We
each feel smug in our sureness that our version of reality is correct, and wince to share a
last name with somebody so ignorant. Our conscious selves yearn to stand on a firm
platform of existential understanding, and a difference in faith reminds us of what we all
know on some level—that our biggest questions may have no answers and even the
promise of the scientific method can't give us one. It reminds us that there are just too
many variables and unknowns, that the universe's original story is told by a mathematics
we haven't learned yet.

Ever the clever engineer, Uncle John and others of his faith system control the
multi-dimensional variables of the universe by taking them out of the equation. Although
he grew up in the same Catholic household as his seven sisters, John is the only Bunce
child that holds fast to the idea that God created Heaven and Earth for Man six-thousand
years ago, and that everything the Bible says is true. I think I understand why. It's much
easier that way. A belief in John's omnipotent God takes away the edgy fears that grow
out of too many quicksand-like questions, and provides a comprehensive guidebook for
living. It elevates him above the beasts, and extricates him from the realities of ecology.
A separation from the life around him relieves John of any responsibility to our ailing
planet. His God is right because He allows John to live a comfortable life while making
sense of it. We all believe in whatever we need to feel safe in the universe, and John calls
it a God who points him down well-marked highways paved long ago.
My own creation story is directionless. It is based on the faith that 13.8 billion years ago something caused everything to explode into being. I believe in an inexplicably begun, mysteriously ordered, dynamic universe. Everything that is only is because of eons of trial and error, failures and successes. Nothing is permanent. It scares me to see life this way—as uncertain, chaotic, and ever-changing. And yet I love that the deeper scientists probe into the inner workings of our cells and of the cosmos, the more we understand how small we are in time and space. My mythology says that although we are giants in our minds, we may have no purpose at all besides that which we create for ourselves. And so I construct meaning through the decree that I must be great, make something of the improbability that I am here to knowingly pay witness to this brief moment in time.

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The night my dad burdened me with his prediction of greatness, he was wearing a tight blue t-shirt with the words of the comparative mythologist Joseph Campbell imprinted on them in yellow:

*If you follow your bliss you put yourself on a kind of track that has been there all the while, waiting for you, and the life that you ought to be living is the one you are living.*

My dad repeated those words to me as I hopped a train to North Carolina for my first backpacking trip in high school, and again when I went to college. The last letter I received from him during my first year of college still hangs on my refrigerator door:

*Dear Bex—Searah has reported on your triumphs and tribulations on your hegira to your MECCA, i.e., Prescott...Till next missive, follow your BLISS!*  
*Love, Albert Schweitzer*
Paying heed to Campbell's command, my dad taught me, would lead to greatness. I guess I thought that following my bliss would get me closer to it by the time I was twenty-seven, but greatness seems no nearer to the horizon than it did when I was sixteen. Back then, I thought that bliss would only lead to more bliss and that one golden brick of opportunity after another would be laid down for me if I took each step toward happiness with little attention to the outcome. And for the most part, I suppose it has. I've followed my gut and lived with deep laughter. But lately, I cry a lot. I can't seem to find where my joys and the world's needs overlap. I feel lost. A failure. Did I take a wrong turn somewhere along the way, did I miss the entryway to Great?

The answer may well be yes. But it could also be that I've spent all these years looking for a threshold that doesn't exist.

Along with leaving me without a definition for greatness, my dad forgot to tell me that the choice to follow one's bliss is the choice to take a challenging route through life. "Follow your bliss," Joseph Campbell told his students when they asked how they could live the lives of the archetypal hero found in mythologies the world over. He told them that they will become heroes when they follow their bliss with a devotion to something bigger than themselves, and warns that such journeys are not always smooth. Campbell reminded them that a hero confronts dragons and witches and her own inner darkness as often as she approaches joy. The hero does not take the path that has been carved by her religion or culture, he told them, and she uses something less obvious than street signs to direct her. She is the traveler in Frost's poem, she is the teenager who decides to go to a college without grades or a large endowment because she knows her heart soars when she can see the history of time laid in the mountains before her. She is the woman who earns
undergraduate and advanced degrees in an interdisciplinary field with few jobs and less funding because it’s the truest thing she knows. She is the woman who dares to spend her time typing ruminations on big questions despite her fear that her words are not what the world needs right now. She is the traveler in the forest without a compass or a map, but who knows that Polaris points north and that the morning always comes. She is the woman who opens herself up to her tears and her pains and her wonder that a bunch of tiny fireworks exploding in her body allow her to feel what it is like to know she is alive.

Stories from around the world teach us that her way is not easy, but it is heroic. They remind us that we can all take the highways of preset belief systems at seventy miles an hour, shift into cruise control, and have an easy ride to our predetermined destination point. But when we do that, we miss the wild orchids, the bloody elk carcass a grizzly left behind, the joys and frustrations that come with trying to figure out how we got here by ourselves. When we live the lives our cultures design for us, we miss the opportunity to decide if we want to tiptoe across a log or forge straight through a stream, to discover that the tricky unmarked path also has the best views. We miss the chance to discover that simply by choosing our own way, we are great.
My Father's Return

My brandy snifter full of red wine just shattered on the cement floor of our basement, and the burgundy liquid is mingling with sawdust to make a soft pink pulp. My friend Thea says I have too much energy to hold onto any one thing for long, and tonight she is right. My attention is ragged and it is all I can do to concentrate on the joint my high school boyfriend has scrounged up. It's coming my way, being passed slowly through the ten other sets of lips at our gathering between the washing machine and the table saw. I just hope there's enough for me by the time it gets here. Above us, the ceiling groans with the weight of aunts and uncles from Wisconsin, Tennessee, and South Carolina. It shifts beneath the heavy sadness of musicians, mathematicians, amateur actors, and graduate students. My generation's absence from the mourning party upstairs goes unnoticed, for the adults are as focused on the relief a glass of wine provides as we are on our ritual of distraction. This is the most happening party my mom has ever had.

Two hours ago, my mother accidentally brushed my breast with her hand as she reached into her pocket for a handkerchief at church. At nineteen, you'd think I'd be mature enough to not even notice her touch. But tonight, I notice everything, and nothing feels right. Tonight, I felt a crazy smile take over my face as I stood in the first row of pews with two hundred people behind me, sure it was wrong to beam at my own father's funeral. And tonight, as Father Handwerk filled the wooden urn my brother made with the heap of wispy carbon my dad has become, my mom's hand grazed over my breast, and I lost it. Lost it like I want to when I am in an elevator with a crowd of strangers and everybody is totally silent, acting as if our bodies are not touching, as though our lives do not intersect, not even now. I lost like I want to when I think about how funny and
embarrassing it would be if I laughed out loud amidst all of those silent people, and the
thought of it is so silly that I wish I had the guts to erupt, but a lifelong attention to social
norms helps me stifle my giggle until the door opens and delivers me to my floor. This
evening, however, I let it all out in St. Luke's. I managed to keep my mouth closed, but
my body shuddered, tears poured down my face, and my breath pushed heavily out of my
nose. My older sister saw the touch, too, and shook with me to the beat of my giggle.
With every stifled exhale of hers, I tried even harder to conceal my hilarity. In an attempt
to comfort what he thought were two crying nieces, our least favorite uncle rubbed our
backs from the pew behind us. Which only made us bend over further with our all-
possessing laughter. As if he could quiet the confusion inside of us.

Opening a space between my right thumb and forefinger to receive the joint at
last, I am certain I have gone cra

My dad was in the hospital recovering from a minor stroke when he died the first time.
The partially paralyzed larynx left by his stroke a week before may have caused him to
choke on his own saliva or the Diet Coke he was drinking, but nobody is sure why he
wasn't breathing when the nurse returned to him ten minutes after her last visit that night.

An organized rush followed her discovery of my all-but-alive father. First, the
nurse pushed the red button, the one that tells men and women in white coats carrying
silver suitcases heavy with defibrillators to "Hurry!" One brisk professional stuck two
pads to my father's expansive chest while another shouted, "Clear!" and sent an electric
shock into his heart. His body lurched from the voltage. With that, his heart started
beating again, and the doctors began the process of feeding his brain with oxygen by
sliding a tube down his throat that rhythmically whispered, "breathe." My dad's crucial
life systems in order, the next step was getting him up to the intensive care unit. A team
of strong young interns sweated as they transferred his heavy form onto the gurney they
had prepared for his journey upstairs. Running, they pushed him down to Hallway C,
took the elevator up to the third floor, and delivered him to the empty room waiting for
his arrival. With careful efficiency, they hooked him up to a ventilator and connected
electrodes to his mostly hairless chest so they could monitor the cadence of his heart.
They connected him to a machine, pushed air through his body and blood through his
veins and called him alive. But I knew none of this at the time.

Rock climbing a long route just outside of Las Vegas that Thanksgiving evening,
I knew only that my dad was recovering from a minor stroke in the hospital, that he
should be close to normal by the time I returned in two weeks for Christmas. But when I
used the payphone at the I Hop the next morning to wish my family a day-late Happy
Thanksgiving, "Becca, Dad's in a coma," was all I got in response. I dug out a pencil and
paper, wrote down the hospital's phone number, and rode through the Vegas strip in my
boyfriend's yellow Subaru on the lap of a friend. Within an hour, I was on a plane to
Chicago with nothing but shorts, a tank top, and a backpack full of climbing gear to buoy
me home.

My brother and sister were waiting for me when I stepped out of the plane and
into sudden autumn. Absorbed with the feat of recently accomplishing my first multi-
pitch rock climb and without a context for the gravity of my dad's condition, I was hurt
by their lack of interest in the adventure I had just aborted. But disappointment fused quickly into guilt, and then sadness, as we walked through Midway Airport's dingy halls, across the parking lot to my brother's new Honda, and drove out Cicero Avenue towards Evanston Hospital. My family had called my house the night before with the bad news and was told by my roommate only that I was on a rock-climbing trip "in Red Rocks." They soon discovered that there is a Red Rocks in Colorado, Utah, Idaho, and Nevada. As they called the agencies at Red Rocks all over the West, I was in midst of a seven-hour rappel just outside of Las Vegas. Nobody in the world besides my climbing partners knew where I was. By the time I called late that morning, my family was scared, frantic, and pissed.

Seth and Searah filled me in on the details of the previous twenty-four hours on the way to the hospital. My mom and they had visited our father on Thanksgiving afternoon, and when they left him at five o'clock, he was doing well. Just as they were sitting down to dinner at the house of good friends, the phone rang. After that, I know only pieces—loud tears, a quick evacuation of the dinner table, and a pilgrimage to the hospital. I was beginning my first rappel while the rest of my family was headed across town to meet my unconscious father. The rest of the night was pure hell for them—our vibrant father and husband was deep in a coma, I was in a mystery location somewhere out West, and they had to spend Thanksgiving night waiting in vain for Larry to wake up. I wonder now who I was then that I thought they would care about my fingertips, scraped bloody by Cretaceous sandstone.

Who was I that climbing a thousand feet off the ground seemed more important than the helplessness of my father? Why did I drive eight hours away from my Arizona
home without telling anyone how to contact me while my dad was recovering from a stroke? I know only this: I was a college freshman who had not seen her father since the day she headed West. I was a nineteen-year-old girl who didn’t call him after he’d had his stroke because she was too afraid to hear the raspy voice with which he’d been left, who sent him a handmade “get well soon” card instead. I was a young woman too overwhelmed by the possibility of her dad’s death to grasp the magnitude of all that had happened the night she shared a Thanksgiving dinner of an apple and trail mix on a rock ledge in the desert darkness.

For all my obsession with my recent climb, the warm rock dropped away as soon as I entered my dad’s hospital room. The glow my adventure had infused me with leached out at the sight of computerized machines plugged into what was supposed to be my father. Though I recognized the figure before me, I knew that it was not my father at all, but a solid ghost of his form. His chest rose and fell as perfectly formulated air pushed through him, and the heart monitor beside his bed showed patterns of regular, rhythmic certainty, but it was not Larry. His glasses were gone, along with the tight white undershirt that always held a handkerchief snug between his breasts. His skin was pale yellow and without a hint of its usual ruddiness, and his face, usually contorted with laughter or a new idea, was soft with a sleep deeper than any I had ever seen him take. I approached him with a fascinated disbelief that this was the man I had grown up adoring, that my real dad wasn’t sitting a couple miles away in his den, sorting through the mail and drinking a martini.

Pretending that I was not devastated by the reality of his condition, I sat down in one of the stiff grey chairs between the machines and him. I reached around and through
the tubes fueling his veins to hold his calloused, once strong hand. I tried to talk to him the way I normally would, but it was awkward without his usual boisterous response. I wanted to believe that he could hear me rave about my first semester in college, about my climbing trip. About how proud of me he would be. I hoped he could hear me when I said in a voice that didn't sound like my own, "I love you so much, Dad. I am so sorry I never called you after your stroke. I thought you'd get better. I thought you were alright. I thought I'd see you in two weeks for Christmas and nothing would be different." I hoped he could hear me, but his silent ignorance spoke a truth greater than the monitors beside him could.

I was not prepared for what came next. As I took a breath to tell him again how much I loved him, his balding head rolled towards me. At the same time, he opened his eyes so wide I could see all the whites around them and then he heaved his body as if he were trying to get comfortable. Was it a response? Had he heard me after all? The vacant look on his face suggested otherwise, but perhaps beneath the cloud of unconsciousness he was right there with me. Maybe, but his wide empty eyes were too much for me to handle, so I left. I couldn't take it—my own father, staring at me through death.

The EKGs and EEGs and MRIs later showed that most of his oxygen-starved brain had died on Thanksgiving night. The only working part of left was his brainstem, the most primitive part of it, the part we all share with the earliest reptiles. The doctors assured us that he was not responding to us when he look our way, for the part that makes us conscious beings, that is responsible for our personalities, for our individuality, was gone. Any movements he made were just primordial body twitches. So much of his
brain was gone that he wasn't really there at all, but the only way my dad could have died at that point was if he had a heart attack or stroke. Neither was likely as long as he was hooked up to life-regulating machines. Eternal life could have been his if we had been so inclined.

In the three or four days preceding the doctor's conclusion that my dad would never wake up, we held on tenaciously to the belief that he'd had a simple episode, that this coma was just a necessary means to recovery. Between my siblings, mother, and me, we spent twenty-four hours a day in the hospital, taking turns with him in his room, each of us hoping that he would snap out of it when it was our turn. We tried to convince ourselves that he wasn't going to become a vegetable or die because, as my sister said, "Bad things don't happen to us." But she was wrong. Bad things do happen to us, the number increasing the longer our lives last.

When the doctors and brain scans finally shot our hopes of Larry getting better, we started spending less time at the hospital. Rather than waiting for his awakening, I ached for the heart attack that the doctors suggested could end his life and free him from the sterility of the world in which he was stuck. The rest of my family agreed. Tortured by our own constant desire to have our father and husband die and the knowledge that he was really already gone, we fed our confusion with nights of extra-large stuffed pizzas, Greek fries, red wine, and maniacal laughter. Friends from church packed our freezer with tuna casseroles and enchiladas, but all we wanted was to be lavish, to compensate our loss with excessive food, drink, and break dancing on the kitchen floor. I have not laughed as hard since.
By the time we met with the hospital social worker about "the next step," we were all ready to say goodbye to the Intensive Care Unit, to the heart monitor that teased us with its affirming signals, to Larry's empty eyes staring towards us. We decided that we would take him off life support three days later, on Monday, to give friends and family a chance to say goodbye to him while he was still "alive."

"So that's it? You all agree?" the social worker asked when my dad's mother, brother, and our immediate family told her that it was time to let him go. She couldn't believe it. "This kind of thing usually takes weeks to decide. Whole families break up over it. Are you sure you don't need more time to think about it?" She told us that there were people in this hospital who had been comatose for seven years, whose families visited them daily hoping that this would be the day they woke up, despite all the evidence that that day would never come.

I was as shocked by the social worker's surprise at our decision as she was by the seeming ease with which we came to it. To the rest of my family and me, it was the only option. For ten days we awoke every morning with the knowledge that our never-to-be-conscious-again father, husband, brother, and son was lying on fresh sheets in the ICU. And on each of those days, we walked down the halls of Evanston Hospital hoping that it would be his last. We all knew his death would be devastating, that we would never know who we could have become if he had lived. We all knew that our lives would change forever in three days, but we also knew that they already had. And we knew that we could not begin healing from those changes until we stopped spending our days engaged in one-way conversations with our beloved and brain-dead Larry.
"We've made our decision," my mother reassured the social worker who facilitated our conversation from the head of the giant conference table. "We don't need any more time." *Why is this woman so surprised?* I wondered from my spot at the other end of the cold table. *How could anybody even entertain the thought of keeping their unconscious loved ones mechanically alive for years on end? What is the point?*

I supposed that the same love that compelled us to ask the doctors to pull the breathing tubes, the feeding tubes, the artificial veins of life out of my father urged others to keep those devices fueling the bodies of those they love despite any emotional or monetary cost. But it still didn't make sense to me. By the time a family meets with a hospital clinician to discuss end-of-life care for a person in a vegetative state, an individual has already been lost. At that point, letting him cross the threshold into death may physically confirm his absence, but he is no more gone as a pile of black ashes in a wooden urn than as a vessel of flesh whose life processes are dependent upon regulated machines. Love may lie beneath the desire to keep him "alive" ad infinitum, but is there anything more than a memory to hold when we visit a terminally unconscious person? Does our love have any more freedom of expression when his flesh is available for touch than when it is not?

Indeed, love and a capacity for deep hope may compel us to keep a vegetative beloved alive through mechanical means, but a discomfort with death may be just as strong a force in the decision to do so. I was born into a culture emotionally clumsy with death and committed to life's perpetuation no matter what its color or quality. My culture has transformed that discomfort into technologies that can indefinitely elongate even the emptiest lives, and the hard choice not to employ life-preserving instruments makes some
of us feel one step away from murderer. But what can life possibly mean to somebody who will never again have the ability to appreciate it? For the sake of whom do we do we maintain a life of no inner richness at all? Perhaps we forget to ask these questions about our dying because we fail to ask them about our living, too.

While my father lay in Evanston Hospital with his death on hold, the country around him throbbed with stressed-out commuters; pulsed with gusts of carbon monoxide; was washed on its shores with PCBs, mercury, and other contaminants; and echoed with the clink of glasses as millions of Americans swallowed their daily dose of anti-depressants. Medical technicians fed my father a perfect combination of ingredients to stay alive, while the culture that created the medical system sustaining him continued to poison the wild riches of the continent and take the quality of everyone's life along with them.

We spend so much energy and money perpetuating individual lives through medical means while at the same time polluting the veins of the planetary life support system we all depend upon. Why don't we give the living the same kind of intensive care we offer our dying?

Our culture's deep desire to elongate lives even as our own lifestyles shorten them may reveal some of the dangers of our adaptive brains. Although we all are born with inescapable traits carried in our genetic memories, our brains continue to grow throughout our entire lives. My dad used to say, "You're only as good as your experiences, Bex," and he was right. But he would have spoken an equal truth if he had simply said, "You are your experiences, Bex," for we construct our understanding of the world through our interactions with it. We create our sense of normality out of the
environments in which we are enmeshed as our brains develop. Growing up, I thought it was normal to have a father who spent all of his time at home in white boxer shorts and an undershirt, and in high school I was shocked to learn that not everybody read for at least ten minutes before bed. I grew up surrounded by artist-thinker-musicians, many of whom were gay, Jewish, or divorced, and my interactions with kids at school showed me early on that not everybody was exposed to those same influences. Seeing my family from the perspective of my peers gave me the opportunity both to appreciate and question things that I had earlier taken for granted.

Against the backdrop of millions of other individuals, it is easy enough for most of us to name our family's effects on the assumptions we make about the world. Some of us choose to challenge those ways of being when we realize they don't work for us. It is not as easy, however, for us to stare pointedly at cultural norms and question them. While our families are just one of the many components that contribute to making us who we are, our culture is everywhere. We are a part of it when we wake up in the morning, read the paper, walk to the coffee shop, go to school, play at recess, eat dinner with our families, and lie in bed with thoughts spinning around our heads. Our culture is inescapable, and it influences every experience that builds our adaptive brains.

My brain was built in a culture in which it is normal to get cancer, take psychiatric drugs, and eat food shiny with pesticides. In my culture, it is normal to be stressed out and unfulfilled, and it is normal to place more importance on making lots of money than figuring out what makes us tick. It is normal in the United States to place more value on living long than on living well. While there is a persistent and growing number of people openly questioning these and other norms that diminish the quality of
our lives, our society at large has yet to ask, "Should we accept these things as normal? Do we really want to live this way?" And it has yet to look at a person in my father's comatose condition and ask, "Is this how we want to die?"

Our practice of employing technologies that support life only once we've approached its end may be a shortcoming of our adaptive brains. Until we pull ourselves away from the customs that created us, our malleable minds may not be able to see the dangers posed by the discrepancy between the care we give our living and our dying. Our ancient emotions will always make us feel the pain a loved one's blank face shrouded by clean polyfill pillows brings, and as long as we have the ability to prevent that person from dying, it is normal to choose to do so. It is much harder for us to identify the unreachable tug of pain brought on by the slow death of something as abstract as a species or a planet. And as long as we do not name the ache our home's dis-ease brings us, it is normal to ignore the needs of the living.

The afternoon we sat with the social worker, the only thought that hurt more than the idea of letting my father's life systems unravel forever was the possibility of stymieing that process any longer. Three days would be all the more I could take of his inert body. His doctor told us that when the time came to unplug my dad from the machines, his dying might take only an hour or two, but up to two days. They would inject him with a steady stream of morphine to accelerate the dying process, but if he was able to breathe on his own, his death could be slow and painful to watch. "Please die quickly," I urged him. "Please die."

On Monday afternoon, our mom called us from the hospital crying, "It's time." When my siblings and I arrived ten minutes later, he was already on his way out. Aside
from the morphine drip, my dad was free at last of all the needles and tubes that had shackled him for the past ten days. My brother and mom sat on either side of him and held his hands. From the illusion comfort of the doorway, my sister and I watched our father's unconscious body flop around on the hospital bed in its primeval way for the last time. He gasped for his last bits of air as his face turned from yellow to white and then faded into a soft blue. We watched until we couldn't handle it anymore, and then stepped out. A few minutes later, my mom found my sister and me in the nurse's station. "It's over," she said.

It was over. It was all over. Waiting for his death, the empty hope that he would somehow snap out of his coma. His life. Our father's and our biggest hero's life was over, and our relief temporarily concealed the gaping hole his absence left behind. We followed our mom back into his room in time to watch Seth rest his hands on our dad's open, aimless eyes, and gently close them. The monitor which had shown a steady pattern for days was as flat and hard as the linoleum hallway floor. I didn't cry. Instead, the old folk song, "I'll fly away, Oh Glory, I'll fly away, when I die Halleluiah by and by, I'll fly away!" ran through my head, and I was comforted by the knowledge that my dad was free at last from the body that had given him so many years of pain.

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In some ways, I suppose, I am lucky to have witnessed my father in the space between life and death, to carry in me the knowledge that he is truly dead. Like taking a train across the continent in place of flying, watching my father move from this world to the next gave me a visceral understanding of the complex topography of life, of his life. But he shouldn't have died that way, caught in the sterile grip of a society that abhors death
even while it poisons the planetary life support system we all depend upon. And he shouldn't have lived that way, either. As dubious as I am about the possibility of souls existing without bodies, it was clear to me that my father was trapped between worlds during his ten days in the ICU. It was as if all his cells and tissues and muscles wanted to do was retire, return to the Earth in the form of the elementary particles out of which they were made. But the machines that had replaced my father wouldn't let them.

I imagine an alternative death for him. In my version, my dad is sitting in his iris bed at home, recovering from his stroke and taking in the subtle rays of November's low sun. He is happy there, with his hands in the dirt and his face to the sky. His prized opera voice is shot from the stroke, but at least he can plant bulbs with his hands. It is here, in his own work of art, that he has his fatal moment of suffocation. Collapses silently into the Mississippi loam he has nurtured for decades. Moves into death without the interference of electricity and IV drips.

Adapted from a lifetime of photographs and memories, my sister made a lithograph of my dad in his garden with his muscular arms raised high, embracing it all. A faint halo hangs above his head. It is in this way that I hold the memory of my father, the Patron Saint of Irises. It is in this way that he lives.
Hunger

The autopsy report said my dad died of obesity, that he died from being too fat. But the doctors were wrong; his big stomach didn't kill him. Yes, the fatty remnants of buttered cinnamon rolls, chunks of dill havarti, and gin martinis got stuck in the part of his brain that told him to breathe. Impermeable lipid membranes from four-egg omelets, flank steaks wrapped in bacon, and heady beer squirmed their way into his lifelines and refused to budge, but they were just symptoms of a deeper problem.

"At least he lived a good life," we consoled ourselves shortly after he died nine years ago. And, to a degree, I believed it. The food and drink that ultimately took his life brought my dad fifty-nine years of great pleasure, and I am grateful for that. But his excessive indulgence also reveals a hunger deeper than any four-course meal ever could satisfy.

My dad grew up in a suburban Milwaukee household that never fully recovered from the scarcity of the 1930s. As an adult, he was obsessed with mail-order purchases, packing the pantry with Campbell's Soup four layers deep, and maintaining a toilet paper supply large enough to take care of the entire neighborhood for weeks at a time. The way my father shopped and filled his plate spoke of the indelible mark that his parents' fear of never having enough left on him. But the lingering effects of the Depression, alone, do not explain his desire for all things rich any more than an enthusiastic appetite does.

As a kid, all I knew about my dad's childhood was his friendship with his "uncle" Josh. Although this mythical hero was a figment of my dad's adult imagination, he spoke of their adventures as truth. It was years before I thought to question them. In my dad's stories, Josh always arrived by personal helicopter. On each of his sporadic visits, Uncle
Josh whisked my young father away to Africa to complete a gallant mission. My dad showed me the wild boar they killed, along with other characters from their adventures, in the glass cases at the Field Museum of Natural History in Chicago. And once, sitting on my dad’s shoulders with my hands cupped around his smooth, balding head, I saw a black and white photograph of Josh Ackley, "Uncle Josh." With only the hint of a smile on his deeply lined face, Josh held up the carcass of a tiger he had killed with his bare hands. I couldn’t believe it, my own great-uncle, a hero, framed before me in the museum.

It took receiving a letter from Uncle Josh when I was seven, written in my father’s all-caps scribble, for me to realize that all those years of bedtime adventure tales had been nothing more than a fantasy. My dad had deceived me for the sake of a good story, and I was crushed.

Now, however, with the vantage point of twenty years, I understand that the stories had little to do with me. My dad was an only child for the first nine years of his life, and during that time, his father did not let him play with other kids. Terrified that my dad would catch polio, my grandpa confined him to their home in a reverse quarantine. A doctor to nuns during the day, my grandfather was a drunk with a fondness for chasing my grandma around the dining room table with a broken beer bottle by night. And once, my small, soft father walked into the kitchen in time to see his father press a gun against his mother’s face.

In making Josh real to me, he became the best friend and unconditionally loving father my dad never had. My dad needed those stories to give color and adventure to a childhood otherwise characterized by loneliness and the cruelty of his father. The day
Uncle Josh died for me, I lost a piece of my innocence. I can only imagine what his disappearance took from my father.

The food and drink responsible for my father's stroke fed the same hunger that Uncle Josh did. If only those tales had been enough to address his pain, my dad might be alive today. But bedtime stories that I no longer believed in had nothing on the soothing powers of mail order goods, beef stews, and cold gin.

The autopsy report was wrong. My father did not die of obesity. Hunger killed him.

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It's Saturday, the beginning of a new month, and I just flipped my 2003 calendar open to November's picture of a colorful dollar bill. The word consume is superimposed on top of it, and is followed by several synonyms: DESTROY, SQUANDER, USE UP, ENGROSS, PERISH. The fine print in the space made by the otherwise empty rectangle of the first week's Tuesday, Wednesday, Thursday, and Friday contains a statistic that I have heard many times before: the United States represents less than five percent of the world's population but uses forty percent of the Earth's resources.

The fine print also reminds me that two years ago, in response to the collapse of the Twin Towers, the president of the United States urged us to put away our fears and be patriotic, to take on the Taliban with our wallets and hit the streets, the malls, and the plazas with abandon. "Divided we fall," he said, "but united we stand." America could remain strong, he suggested, by coming together in a nationwide shopping effort. "United we stand," George W. said, but he did not mean, "Go to your local falafel shops to show solidarity with Americans of Middle Eastern descent." No, President Bush urged us to commune by shopping at the mall. He begged us to buy, because he knew that the
only way to give value to the green and white paper that we use as currency is to keep it moving from hand to hand. And the hands that our president wanted us to move our money towards were not those of brown people, but of businesses dependent upon the labor of brown hands in conditions most of us cannot stomach to imagine. Many Americans were thrilled to have a moral reason to go to Wall-mart, The Gap, Old Navy, and other stores that offer good-looking stuff for cheap because people halfway around the world are paid almost nothing to make it.

Around the same time that patriots were fearlessly taking to the malls, American flag stickers appeared in the windows of cars everywhere. Those I noticed most were stuck to mini-vans, SUVs, and other giant gas guzzlers. Like Pavlov's dogs conditioned to salivate at the sound of a bell, I could no longer separate the intended meaning of the Stars and Stripes from those vehicles. The American flag, which had always emanated the ideals of freedom, justice, and happiness for all people, took on a whole new meaning with its rampant display on the streets. Yes, the flag still proclaimed a message of freedom, but it was much different than the one I had been taught in Mrs. Danni's first grade class. As of September 11, 2001, the Star-Spangled Banner stood for a new kind of liberty in my eyes — the liberty to drive a vehicle that gets eight miles to the gallon.

I had an opportunity to travel in one of those patriotic monstrosities during our annual week-long family reunion with my mom's side of the family last summer. My nuclear family and our significant others borrowed an uncle's Acura mini-van so we could all fit into one vehicle for a day-trip to Lake Superior's Apostle Islands. In exchange, we lent him my sister's girlfriend's car. While we seven variously pierced, tattooed, and eccentric folk waited for the ferry in an American-flagged mini-van, my
uncle arrived at the country club for a round of eighteen holes in a dented Corolla, emblazoned with a sticker from my sister's shop. The thought of him pulling his clubs out of the rusty trunk while trying to obscure the bumper sticker's words, Support Your Local Feminist Sex Shop, made traveling in his beige vehicle almost worthwhile.

"Neil wanted to golf so badly that he actually drove Dane's car to the country club!" laughed my aunts that evening over gin-and-tonics on the pontoon boat. They were amazed at his dedication to the game. We laughed, too, savoring the vision of our square uncle parking Dane's car next to the Audis and BMWs in the club's lot. But nobody laughed at the image of my family traveling in a vehicle better suited for soccer moms than bohemians. If anybody thought that the flag's representation of our ideals was as inaccurate as the sex shop sticker was of Uncle Neil's, nobody mentioned it. For the majority of my extended family lives in a world where acknowledging the right to use a vibrator is more shameful than the suggestion that Americans have a right to use more than our fair share of the Earth's resources.

The week I spend with my relatives in the Northwoods of Wisconsin every summer is the most intimate exposure to mainstream American culture I get all year. Every August, I look forward to hiking through the red pine forests, drinking coffee on the porch, going on boat rides, and seeing how much my cousins have changed in the past year. And every summer, I look forward to the glimpse of the workings of society that my extended family provides.

What I see is this: aunts and uncles pulling up to their cabins in a new mini-van or SUV every few years, and cousins who emerge from them as if the vehicles were magazine ads. I overhear my uncles arguing about which new car is a more respectable
purchase — a Lexus or an Audi? I eavesdrop on conversations about whose million-dollar house has a better view of the ocean, and listen to another aunt's determination "to get marble countertops even if they are more expensive than Formica!" I see an apple pie slice of America before me — people coming back for seconds and thirds before checking to see if everybody else has had firsts.

We Deysachs are the weirdoes of the bunch — my sister is a dyke who sells dildos for a living, my brother builds furniture dressed in a camouflage utility-kilt, my mom and her husband call their home "The Loach House" in honor of their favorite bottom-feeding fish, and I live out of my backpack for weeks at a time. None of us buys art to match our furniture. Nobody knows quite what to make of my family, but my cousins fall in love with us every year. They jump all over my brother and pester him with requests for tastes of his cooking. The younger kids beg attention from my sister, "Mrs. Pink Hair," and the older ones flock to her for advice on their emerging sex lives. My cousins think that I am a rugged mountain woman, and the bonfires I start without newspaper prove it to them. And as far as I can tell, their respect has less to do with our status as the oldest cousins than it does with an awe that we have found success despite our cellulite, tattoos, zits, and lack of prestigious careers. I like to think that for a week each summer, we quietly nurture a belief in each of them that there are many ways to be in the world, and not all of them entail acquiring flashy goods.

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Last year, I left the Northwoods wondering what lies beneath my relatives' consistent upgrades, behind their ever bigger houses and shinier cars. I thought they could help me
understand why the country I live in takes a disproportionate toll on the planet we share with over six billion other humans and at least thirty million other species.

An evolutionary psychologist might offer that my aunts' and uncles' purchasing habits reflect a deep-seated urge developed over millions of years of sexual reproduction — the drive to mate. She might remind me that every creature alive today is a descendent of individuals who not only led successful lives, but were able to attract mates and have babies that survived. Peacocks do it with their fancy tails and bower-birds with elaborate courting chambers, but all sexual creatures put their best traits forward to seduce a suitable co-parent. Our ancestors wooed their potential lovers with intelligence, a sense of humor, good looks, and wealth, and we do the same today. Although people are not usually conscious of what compels them to show off their knowledge or prized possessions, four-million years of hominid evolution have wired us to display traits that reveal our ability to have and take care of healthy babies so that we can mix our genes with those of a genetically well-endowed lover. However, just as the peacock's tail does not shrivel up as soon as he gets laid, an ingrained desire to show the world our worth may never stop, not even once we are married with children and have a house in the safety of suburbia.

I don't doubt that the sexual hunger described by evolutionary psychologists underlies some of our consumptive human behaviors. But does biology alone explain my relatives' drive to acquire possessions any more completely than a hearty appetite justified my father's death? Is a burning sex drive the only reason many Americans were happy to stand united in the mall checkout lines after 9/11? Can it account for America's insistence that we, alone, have a right to forty percent of the planet's resources? No, the
pace at which my country levels, digs, pollutes, depletes, dams, and eradicates the natural riches of all creatures' homes, including our own, must be tied to something more voracious than an unconscious lust for good genes. But what is it?

As thick stands of second-growth pine gave way to farmland on the drive back to Chicago from the Northwoods last summer, I chewed on these questions. Neil, the uncle whose mini-van we borrowed, spends his days flying all over the country selling computers to corporations. I have never taken the time to find out if his job fuels a deep part of him, but I suspect that the work of a white collar salesman is not much more fulfilling than Willy Lowman's. Like most of us, Neil grew up on a mental diet of commercials and social messages that promise joy along with a big house, new car, manicured yard, children with perfect teeth, and a career that supports them all. Neil has these things and more, but his sour attitude hints that happiness still eludes him.

What do we do when we find that the media's promise hasn't been fulfilled? What happens when we have all that we need and some part of us still aches for more? Our culture of abundance has easy solutions: Go shopping. Fill the void inside with more stuff. Eat. And so we do. We clog our arteries and our homes with unnecessary junk. We rarely dare to ask, "What am I truly hungry for? Where is my bliss?"

Impatient with the amount of time it takes to grapple with these questions and terrified of what I might find out about myself, I often satisfy my own nameless emptiness with the immediacy of consumption. I cannot afford whimsical trips to the car dealership, but I do look for satisfaction by going downtown, getting a sexy new shirt and a couple CD's. These purchases never solve the problem, but they do take away its edge, distract me from whatever is really missing. On those hollow days, I understand that my
father's own emotional hunger must have been bottomless to warrant a level of gluttony so deadly. And on those days, my aunts, uncles, and the kind of freedom my country fights for begin to make sense.

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If we could travel to the Africa, Europe, Australia, or Eurasia of forty-thousand years ago, we would meet our earliest human selves. The people there might invite us to join them at their hearth with words we could not understand, but the language of their bodies would make sense to us. We might admire the intricate beadwork on their clothing by running our hands over their textured patterns, and these early humans would understand by the look in our eyes that we were complimenting them. While they would not be able to fathom the world that we live in, we might find ourselves at an equal loss when it came time to gather greens for supper, make ourselves a bed for the night, or start a fire without a lighter. We would discover that the contents of their knowledge were vastly different from ours, but that millions of years of hominid evolution made them every bit as smart as we are.

We are only fifteen-hundred generations removed from those great-grandparents of ours, and are who we are today because of the way they lived their lives. For 99.9 percent of our history as upright walkers, our bodies and brains evolved in the open air, deriving all nourishment, entertainment, and ecstasies directly from the environment and people around us. While our early relatives certainly had their own existential woes, the most successful of them lived their days with an attentiveness to the natural world and the individuals in it. They had to.
Four million years after Lucy took her first upright step, we are born as wild animals primed to learn the intricacies of plant foods and weather patterns. We come into the world with our eyes wide open, ready to become human through intimacy with the wild world and others of our kind. Instead, we inhabit a concrete planet in which it is possible to live without ever feeling the outside air or texture of someone's breath on our skin. So much of what has shaped us is now gone to technologies and lifestyles that distance us from the natural world and one another. We must sense that loss on some level.

If the extent of our detachment from one another, the land, and our own passions is reflected in the amount we consume, then America may not be the greediest, but the hungriest nation of all. Perhaps all we really want are long evenings with friends, laughter, and roasted mammoth juices dripping down our chins. Instead, we are stunned to find ourselves alone in square buildings without a view doing things that we don't care about. And so, just as my father obscured his sad childhood with mayonnaise sandwiches and mail-order books, we quiet the shocked shouts of our ancient selves with big cars, communion at the mall, and a declaration of our right to consume.

When we become bold enough to ask what it will truly take to reach depths of our yearnings, our species may escape the fate of my father. Until then, hunger is killing us.
Numb

A man appeared three feet before me one morning as I stacked plate-sized cookies by the open door of the bakery where I worked the summer after my dad died. He was masturbating, standing in the darkness and looking through the metal shelves of the cooling rack at me with no trace of arousal on his face. I paused before retreating into the back room, as surprised by the reflection of myself I saw in his passionless display as I was by his slick penis.

Perhaps the exhibitionist was truly turned on by a flour-splashed girl and warm chocolate chip cookies, and found the dark calm of early morning a safe time to enjoy that sight to its fullest. For all I know, he was living out one of his favorite fantasies, but if he was anything like most flashers, his stroking had little to do with pleasure and everything to do with a complex and pained inner life. Like many exhibitionists, he may have felt so invisible, so empty and blank, that he relied on the shocked expression of a young woman to confirm his presence in the world. Instead, I gave him a look of knowing. It consoled me to see someone else reveal nothing when he should be overwhelmed with sensation.

The fog of bland emotion I inhabited the summer I was nineteen was as common as death itself. I spent two months at home, dividing my time between helping my family move out of the house I grew up in and working at the bakery. The bakery work was simple, methodical, and gave me something to concentrate on besides what to do with the twenty-six years of life our house contained, which of my father's books and records I should keep, and why I was always so tired. It didn't occur to me how numb I was until I told the morning kneading crew about the flasher a few days after it happened.
"Somebody was masturbating in front of you?"

"Why didn't you tell anyone?"

"Why didn't you call the cops?"

I had no good answer for them. Perhaps I should have, but in the wake of my father's death, nothing seemed to leave a mark on my emotions. Not even a 5:00 a.m. flasher.

That afternoon, I lay on my parent's king-sized bed, not sleepy, but more tired than ever before. If my dad had been in his den, as he used to be every day, he would have sung up the stairs to me, opera-style, "You better not be on my side of the bed! Don't warm up the bed, Bex!" But he wasn't there, never would be again, so I sprawled out on his side in a gentle act of defiance, hoping that his lingering heat could energize me. I thought about going to the beach, reading my book, or lifting weights at the gym, but couldn't make myself move.

Later, in the kitchen, I told my mom and my sister that I didn't understand why I was exhausted all the time. "Maybe you're depressed," my sister said in a way that really meant, "You're depressed, Stupid."

"I am not. It's just that I work so early. I'm probably just not getting enough sleep." I was so afraid of touching the horizon of my sadness. I was sure that if I approached its edge I would tumble in and never find my way out. And so I coped the best I could, ignoring the significance of my loss and getting what feeling possible out of the cold water of Lake Michigan and the burn of lifting weights.

A few months later, my brother visited me in Arizona where I was starting my second year of college. Over beers and fries at the local brewery he told me, "Larry's death was the greatest thing that has ever happened to me." Knowing full well that our
dad was the best friend my brother ever had, I asked him what he meant. "Well, my biggest fear was always that Larry would die, and now it's happened. There is nothing else to be afraid of." I nodded in disagreement. You're full of shit, I thought to myself. You can't deal with your feelings so you're making up excuses. I remembered the bakery flasher then and realized that he had been one step ahead of my brother and me—at least he had a plan for retrieving feeling while we still hid our naked emotions beneath a thick layer of denial.

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"Isn't this beautiful? This piece of land is one of my favorite spots in the world." Our guide Steve Chambers, a division forester for the Canadian timber company Macmillan Bleeder, swept his arm across the landscape like a director does before his actors at the end of a performance. Steve introduced us to his cast of burnt cedar stumps, blackened slash piles, and deeply furrowed skidder tracks though a curtain of soft rain.

Ten months before, the air around us would have been thick and tangy with the sweetness of old-growth cedars. We would have walked on a spongy forest floor though air that glowed green with three-hundred vertical feet of life. Ten months ago, each of us could have stood in a misty ray of light aimed at a twisting finger of lycopodium growing out of the rotting flesh of fallen trees. But that day, I picked my way over and around stumps wide enough to stretch the length of my body across. I stumbled over piles of branches that had been doused from above with lit clumps of petroleum jelly. I heard the silence of a forest with no life in it at all aside from the thistle that had already invaded the wreckage. It took days to get the scent of gasoline and smoke out of my clothes. I wondered how long it would take to disappear from the soil beneath us.
I was one of thirty college students on a tour of selected timber plots on Vancouver Island, and I initially dismissed Steve's comment as a simple jab at the idealistic twenty-year-olds who had been sneering all day at him and his company's role in the logging of ancient rainforests. Later, though, I considered the possibility that he was serious, that the sight of muddy roads spilling into the shaved hillside was lovely to him. Where we saw nothing but the charred remains of red cedar and Douglas fir, perhaps he saw his expertise as a forester or the paycheck the clearcut provided. But for all the site may have represented to Steve Chambers, I doubted that he had a photograph of it hanging in his living room. Could anybody be cold enough to see beauty in such blatant ruin?

While he may have been exaggerating his impression of the scene, Steve revealed his acquired immunity to the sight of a ravished landscape that day. His words sounded like heartlessness at the time, but I recognize them now as something less cold. If he allowed himself to feel a jerk of emotion every time he gave a tour of silviculture sites to undergrads, Steve probably would die of agony long before retirement. To stay sane and healthy, his only options were to quit his job or blind himself to the ugly sides of his work. Steve did the latter. He had to.

How deeply is an inclination to block ourselves from disturbing emotions woven into the fabric of our brains? Judging from my own numbness after my father's death and the daily acts of illusion in which we all participate, telling stories that make us feel good seems to be as integral a part of being human as walking upright is. *I am not depressed, I'm overworked. Dad's death was the best thing that's ever happened to us. Isn't this clearcut lovely?* These little lies make life tolerable for us in times when looking at the
truth may not, and it probably did the same for our ancestors. Perhaps those early humans who faced the rigors of life with a healthy dose of denial were more successful at attracting mates, reproducing, and living long lives than their more realist counterparts, and passed the ability to minimize pain with perceptual filters on to us.

We will never know the full extent to which our predecessors relied on emotional tools to avoid guilt and anxiety to help them make it through long journeys, but it has been repeatedly demonstrated that those of us today who color reality rosy live longer and more happily than those who tend to see things as they truly are. In his book, States of Denial: Knowing about Atrocities and Suffering, Stanley Cohen illustrates the health benefits derived from being slightly out of touch with reality by citing a series of studies done on a group of women with breast cancer. Three months after their diagnoses, these women were divided into three groups depending on their reactions to their test results. The first group was comprised of women who accepted their illness and were quite optimistic about getting better. The second group either acknowledged their cancer with a cold, hard, and stoic resolve or felt totally overwhelmed and hopeless. In the third group, each woman refused to admit that there was anything wrong with them and showed no emotional distress. In a follow up five years later, the optimistic accepters and the calm deniers were more likely to be alive and well than those who faced reality head-on. Fifteen years later, forty-five percent of the women in the first and third groups were living cancer-free, while only seventeen percent of the realists were still alive.

An ability to bend reality just enough to escape anxiety kept many of those women alive, and their inclination to do so may well be an ancient and elemental part of being human. Likewise, a viscous numbness helped me navigate my way through my
father's death, finding beauty in a clearcut allowed our tour guide to make it through his
days, and these things served us well. But despite the relative success of the women who
faced their diagnoses with a rejection of reality, the individuals who died from refusing
treatment for an illness they did not believe they had remind us that there are some harsh
truths that even the boldest illusions cannot overpower.

Towards the end of our timber plot tout, I asked Steve a question. "What effect
does broadcast burning a clearcut have on wildlife?"

"I don't know," he said through tight, mustached lips, "but we should give up on
the idea of protecting all species in all places. We should have areas that support this
species, me." My chest squeezed at his response. I realized then that turning a blind eye
to the unbearable may be essential to who we are, but humans' capacity for denial
becomes dangerous when we insist that it is in our best interest to unravel the connections
that sustain life.

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In the fall of 2003, House and Senate Republicans reached an agreement on a new energy
bill. While it would not have allowed drilling in the Arctic National Wildlife Refuge, it
would have provided more than eighteen billion dollars in tax incentives to encourage
domestic development of oil, natural gas, coal, and nuclear power. It would have also
included tax subsidies for the construction of a twenty billion dollar pipeline from Alaska
to Chicago. Nothing in the seventeen-hundred page document would have required
electricity producers to increase their use of renewable fuels or otherwise encouraged
sustainable energy use.
The bill was effectively filibustered on the floor a few weeks later, and I am glad. But that does not erase the fact that the men and women who collaborated to write the bill think it is a good idea to dig into large tracts of this continent's remaining open spaces to acquire fuel that, in the end, will pollute our air, waterways, and bodies. It matters that they think twenty billion dollars is better spent on a pipeline that will inevitably spill raw petroleum over the landscape than on non-polluting and renewable energy sources. Our leaders' choice to ignore all that we know about carbon emissions' effect on global warming, air pollution on our lungs, and nuclear energy on our cells reveals something about the power of our economic system and the depth of denial it is entrenched in.

According to our way of accounting for wealth, the United States is the richest nation in the world. More money is passed from hand to hand in this country than anywhere else—it's that simple. Every time I get a haircut or a cup of coffee, our country is a bit wealthier. And each time we pay an energy company to build a pipeline, a crew to clean up an oil spill, or a doctor to treat a patient with lung cancer, we are richer still. When I was studying on Vancouver Island, we compared the profits associated with clearcutting to those of more sustainable practices. Straddling felled spruce trees, we scribbled equations on Write-in-the-Rain paper and discovered that a forest is worth more stacked in the back of a freight train than when it stands engaged in the dynamic processes it's known for centuries. Our calculations showed us that a timber company would have to be crazy to practice sustainable logging when it could make more money in less time by clearing a whole block of trees at once. We learned that each clearcut brings us wealth, but I have never felt as poor as I did the day I stood within the wasteland of blackened branches and stumps that MacMillan Bloedel had left behind.
Sharp blades and fire had put an end to the ancient conversation between witch's beard lichen, marbled murrelets, mycorrhizal fungi, hemlock seedlings, and giant cedars in a matter of days. I still don't understand how that silence supports my species.

Steve Chambers was right when he said that we need areas that support *Homo sapiens*, and for as long as the money from a paycheck may last, an abrupt bald spot in an ancient forest or the development of a new pipeline can do that for some members of our species. But the income those projects provide is small in comparison to the damage they inflict. Timber barons may be able to retire comfortably at the end of their working lives, but it will take hundreds of years for a cut forest to regain the complexities of an old-growth ecosystem. Oil executives can make out big with the development of a transcontinental pipeline, but once the oil flowing through it is gone, it's gone for good. Our country has become extraordinarily wealthy from these destructive developments because we do not subtract their ecological or social costs when we count our riches. And as long as our economic system ignores the valuable necessity of healthy living systems, it makes sense to create bills with provisions for projects that are harmful to us and the land.

It may make sense for this year's year-end-total, but what will we do when there aren't enough trees left to take in all of the carbon dioxide we exhale? What will we do when we have extracted all the petroleum possible and taken even more lives along with it? What will we do when we wake up to discover that the last barrel of oil has no value because we finally understand that nothing means anything in a world that can't breathe? I don't know. I am certain only that even the strongest shot of denial will not be enough to save us then.
The obvious way to avoid such a depressing future is to begin to account for things like natural rigor and clean air and laughter in our measure of wealth, and to focus on using less harmful technologies until those changes can be institutionalized. The drafting of the new energy bill was a perfect opportunity to begin such a transition, but its authors would have chosen instead to increase the impact of our energy needs. Lobbyists' financial contributions may be a powerful motivator in a bill's drafting, but are they the only force that urges us to continue taking from the system all of our lives depend upon, and give back only garbage and poison?

If we gazed into the world deeply enough, we would see that it is gasping for breath. Perhaps we can't handle the knowledge that it is we who are pulling the plug.

∞

Eight years have passed since my father's death, and I am finally breaking open. The brick wall I built around my emotions in the months after he died was not selective about the feelings it prevented me from experiencing. There have been moments, usually brought on by a book, song, or movie, during which I have felt the grip of sadness or chill of intense joy in the past several years, but for the most part, I have been living in a dull cloud of okay. Lately, though, I have been feeling the pain of that wall's erosion. A colony of butterflies has moved into my belly and keeps on multiplying, and I wake up mornings with the same anxiety that followed me to bed. It is not my dad that I think about on my jogs, which are just an excuse for my breathlessness, but the world and my place in it. I do what I can to quiet the voices in my head that whisper that this species, this planet, is doomed and I am not doing enough to prevent it, but my breath doesn't slow.
Sometimes, though, I catch a spark from my green eyes in the mirror. In those moments, I see a passion more powerful than all of my shortcomings. In those moments, I feel the new cracks in my heart welcome beauty as openly as they usher in pain, and I am reminded of how vibrant I can feel. And in those moments, I feel strong enough to look at the suffering of everything I love without feeling broken myself.

If I am able to withstand exposing myself to this awesome and sick world, is there hope that the rest of us can open up to it as well?

After sharing that question with a mentor one recent afternoon, he sent me a note. "I am grateful for your spark," he wrote. "Think of the millions of them out there in the darkness." They were hard to imagine at the time, but yesterday I sat with fifteen of them.

I had signed up for a "Survival Tools for the Activist" retreat a few weeks before and had no idea what to expect when I showed up at the local meditation center early yesterday morning. I knew only that I could use any tools for calming myself I could get. Low yellow light filled the open room in which I joined a group of men and women sitting in a circle around a vase filled with lilies. It felt good to be in that warm quiet space. Kurt, the retreat's facilitator, began our day by reading a section from Mary Oliver's poem *Wild Geese*:

*You do not have to be good.*

*You do not have to walk on your knees through the desert for a hundred miles repenting.*

*You only have to let the soft animal of your body love what it loves...*

My mom had sent me a framed version of the same poem a couple months before. She's been worried about me and my exposed edges and couldn't have given me a better birthday gift. I hung it on a nail above my kitchen counter to look at every time I do the
dishes, grind coffee, chop garlic, or fry an egg. For the past eight weeks, I've read those words every day and worked to believe them, but the sense that I am failing my people, my planet, and myself by not doing enough to change our culture of denial would not let me. But yesterday, sitting in a room full of others whose yearning to live in a world with pure water and vibrating life causes them daily despair, those words began to ring true.

We spent the majority of our eight hours together in silence, meditating in different ways, but quiet conversation kept a steady beat throughout the day. Towards the end of the afternoon we were asked to share our "edge," that place inside ourselves that makes working to make the world a better place so hard. Responsibility. Guilt. Despair. Using different words, we all expressed the same thing—our stoic acceptance of the harm our culture inflicts on the planet and people we love most makes each of us feel responsible for that destruction. "I am not doing enough to change our culture," I said when it was my turn. "I am not enough." Everybody nodded. They understood. After I spoke, a man sitting near me asked, "Does anybody have any ideas for dealing with all this guilt?"

"Acknowledge it," a woman with long blonde hair and a face textured with years of laughter suggested. "Acknowledge it, and then move on. There's a lot of darkness in the universe, but there is a lot of light, too. Just let the light be greater than the dark. After all, what is the point of working for something you love if the process makes you miserable?"

At first, I brushed away her comment as an easy out, a cheesy feel-good answer. But as I thought about it, it began to make sense. Why would anybody choose to trade the security of their daily life to look at the daunting insecurities that a realistic view of
the world engenders? And yet how will we ever create a world that works if we don't
turn the fairy tale we all tacitly live by into one that speaks the truth? "Let the light be
greater than the darkness," the blonde woman said, and after my initial reaction, I
understood that that is how we can make the truth tolerable. I imagined that roomful of
people choking on laughter and all the heart walls those rhythms could crack. It struck
me then that joy is as powerful an entry to emotion as pain, and the bare sight of all we
humans have done to the Earth and one another would be too much to bear without it.
Only by letting the soft animals of our bodies love what they love will we have the
strength to look both the living and the dying in the eye and ache for them. And only
then, with rough hands and raw hearts, can we heal them.
On Beauty

Gin is my father; it is my nightly kiss to his lips. Its taste and smell, mingling with those of Spanish olives and cocktail onions, have imprinted themselves on my chapped lips, on my soul. The taste of it on my tongue strikes a chord deep within me, the way that the smell of woodsmoke or Grandma’s perfume does for some. My father’s evening beverage—a martini glass filled nearly to the top with an assortment of pickled vegetables, a few jiggers of gin, and a splash of vermouth—he referred to, with a self-congratulatory chuckle, as a “vegetini.” His cocktail is now mine. I omit the onions, add olive juice, and in a husky voice, call it a “dirty martini,” but the flavor is essentially the same. I drink it because nothing else tastes so good going down, especially on a summer porch-night. I drink it for an excuse to eat garlic-stuffed olives, and because its flavor is as familiar to me as Kool-Aid was when I was little. Mostly, though, I drink a dirty martini because it is as close as I will ever get to kissing my dad goodnight again.

With garlic and gin-stained breath, my father taught me about wild beauty. Tired and small, I often leaned against his huge hard belly on my mom’s side of their bed and traveled around the world to the cadence of his rich bass. His stories were usually about his Uncle Josh.

My dad colored my four-foot-high world with tales of their journeys—the time a honey monkey saved his life, the time he killed a wild boar with a stick, and about the tail of a whale he and Uncle Josh were forced to eat when they were stranded on a wild coast. On my seventh Valentine’s Day, I received a letter from my great uncle. In it, he included photos of his animal companions—zebras, giraffes, ibex. I dreamed fervently of one day meeting him, of traveling in his helicopter over the ocean and landing in hot and
mysterious Africa. Naturally, I treasured that letter and re-examined it obsessively. I remember noticing, as the paper grew thin and sticky from my fondling, that the pictures glued to the letter felt different than those in my mom’s photo album—thinner and more crinkly, like the pages of a magazine. When I asked my dad about it, he explained that African cameras and photo development techniques were different from ours. His answer satisfied me for a while, but when I realized that Josh’s handwriting was just like my father’s, I had a bold epiphany and confronted him, crushed. He chuckled, of course, as only men who closely resemble Santa Claus can, and took indignant me into his powerful arms. I was angry with his seven-year game of make-believe. I had loved my uncle. I had loved the idea of someday joining him on his adventures, of being in the middle of a vast nowhere with honey monkeys as my traveling companions. I had tasted the idea of a beauty utterly unlike anything my geometric suburban world could contain. It was the true loss of a hero, the first fissure in my little heart.

Why did my dad do that? Why did he let me believe that his solid gut was really the undigested remains of a whale’s tail and that I was related to a man who had killed a tiger with his bare hands? In addition to satisfying his own need for positive childhood memories, was it the cruel manipulation of a child’s mind, gin-infused humor, or simply the unintended result of my readiness to believe thick tales? I remember a conversation with him years ago over chocolate malts in which he explained that he had created Uncle Josh just for me because he wanted me to fall in love with adventure and wild places. It seemed then a meager justification for manipulating my little brain and heart, yet an ache for wild beauty does command me. For that I am piercingly blessed.
Indeed, it was the quest for grace and wild beauty that drove me West. The first home I made west of Lake Michigan was in central Arizona, tucked between low hills and covered in ponderosa pine and sagebrush. I fell in love for the first time there. I fell in love with the sweet smell of the burning dry air; with the smooth red bark of the manzanita that always seemed to be turned inside out; and with the igneous evidence of the Earth’s toiling and churning visible out my front window, under my feet, and below my fingertips.

I studied at a tiny experiential college in the Central Highlands, and my field-based classes took me through diverse ecosystems, down variegated canyons, and into the painful place of loving something that is sick. Into the painful place of being a member of the species that has the unique gift of consciousness and the blatant inability to use that gift to guide its actions with respect to the planet we all share.

During my college years, I walked inside of the five-hundred-foot-high concrete wall that is Glen Canyon Dam, grimacing north at the red rock lake which exists at the expense of a canyon as striking as The Grand. I sat at a coffee shop perched on the edge of Jerome, Arizona, and focused my eyes on the layers of rock that define the Mogollon Rim, trying to block out the glowing pools of mining tailings that punctuate the valley below. I ate Indian food in a strip mall surrounded by prickly pear cactus and watched movies at the three-story theater that had squeezed out an independent downtown joint. I watched the topography I fiercely had grown to love become leveled, watered, and consumed by sterile stuccoed cubes. I learned that what is beautiful in the land is not often echoed by the edifices of my people. My desert years brought me to the understanding that we, as Americans, have betrayed beauty.
What is beauty, anyway? My 1941 Webster’s describes it as “that quality or aggregate of qualities in a thing which gives pleasure to the senses or pleasurably exalts the mind or spirit.” Given that pleasure is a word equally slick, I am having a hard time creating a formula for beauty. And it scares me to talk about it in any other way. I am scared to talk about beauty because I am afraid to be cheesy, I am afraid that I will be to words what disposable cameras are to landscapes. I am afraid that I will betray beauty. And yet how can I not talk about it? My nighttime journeys to the African bush gave me my earliest rush of an exalted spirit. They revealed the power of wild beauty that now commands me. I have to talk about it.

Anthropologists insist that the ability of our ancestors to express themselves through art marked a profound step forward in the development of our intellect. So profound, in fact, that our own species is distinguished from all of our extinct upright relatives by that ability. Over two-hundred caverns filled with paintings, sculptures, and engravings created during the last Ice Age have been discovered in Italy, France, Switzerland, and Spain. Some of the oldest known works of art line the walls of a cave in the valley of the Ardeche River in France, dating back to thirty-two thousand years ago, about 170 thousand years after anatomically modern humans first walked the African savannah. Those who have been privileged to visit our species' earliest art gallery have reported that the pieces in it are accurate depictions of the creatures with whom we shared the Pleistocene landscape. Witnesses of this art say that it is spectacular and beautiful, comprised of clean sweeping lines and fine detail.

What prompted our predecessors to portray the world around them on cave walls? The highly developed brains that gave us the ability to design bi-facial hand axes, create
language, and form complex communities also gave us a shocking recognition of ourselves as a part of a vast and mysterious universe. Art, then, became a way to make sense out of the complex world that our intelligence forced us to see. We re-created hunts on the walls of our dwelling spaces, and painted ritualistic pictures of our totem animals and spiritual leaders. We brought the beauty of the natural world into our homes in hope of understanding it.

Not only did we decorate our walls with images from the wild world, we created our early sacred buildings to resemble it. By doing so, art historian Vincent Scully suggests, we hoped to draw upon the powers of the environment. Teotihuacán, a ceremonial site of pre-Columbian America in central Mexico, provides a perfect example of this environmental architecture. Scully describes the Temple of the Moon, behind which rises the mountain called Our Lady of the Stone. "That mountain, running with springs, is basically pyramidal and shaped and notched in the center. And the temple imitates the mountain’s shape, intensifies it, clarifies it, geometricizes it, and therefore makes it more potent, as if to draw water down from the mountain to the fields below.” The architects of that temple must have been struck by the aesthetic vigor of the natural world, and sought to honor it in their building. Their work, along that of our Ice Age ancestors, suggests that our humanness is as embedded in a veneration of wild beauty as it is in the ability to use tools. Can the attentiveness to beauty which makes us human, keep us human?

If cave art and environmental architecture were the expression of the exalted minds and spirits of our predecessors, what, exactly, lifts the human mind or spirit now? While what inspires mine may not move another’s, most would agree on the beauty
inherent in an ancient forest, a raw mountain range, or architecture that echoes the integrity of both. The ache I feel for these things is exactly what makes me glad to be alive, grateful for my conscious mind. And the ache I feel for these things is made more profound by the knowledge that they are being destroyed by the communities we design. Somewhere along the line, our humanness has become defined more by our ability to create imposing structures with speed than it has by our ability to celebrate the beauty of life, which has taken four billion slow years to evolve.

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The Gallatin Valley of southwest Montana is a long and wide basin with vistas that scream “Big Sky country!” and enough flat land to have sustained early settlers with huge acreages of cattle ranches and farms. As in much of the West, these generations-old family businesses are being sold without thought to developers. Over the course of the three short years I lived in Bozeman, I watched two sprawling mall complexes rise out of once expansive fields, and more new housing developments than I could count infest the open valley with which I had fallen deeply in love. It is difficult for me to believe that anybody finds beauty in these cul-de-sac ridden, cookie-cutter communities exploding across the landscape. Beauty, however, is not the question for architects of strip malls and housing developments. It is not a priority for the corporate developers of the country’s last open spaces. Speed and financial efficiency are the investors’ primary concerns. They can move on, while those of us who live in places of wild beauty are forced to gaze through acres of chain stores and identical houses to find it. We shop at those shiny stores and live in matching houses because our profit-driven culture leaves us few other options. What has this infrastructural abandonment of beauty done to the minds and hearts of the people who are a part of that culture—to all of us?
A brief glance at the events of this spinning world gives some clues. Take away that which exalts the mind or spirit, and in return we are a bunch of flat souls who have become numb to tragedies that would otherwise break our hearts. Take away a cultural responsibility to beauty, and we have no reason not to rip down entire forests. We have no cause to hesitate at destroying landscapes or societies sitting on the oil we need to fuel the vehicles that, in our commercial dreams, will bring us to a place of wild beauty. Take away a commitment to beauty, and we soon will find that even our biggest SUVs can’t get us there.

Put beauty back into the human-altered landscape, and we may become a world of raw and sensitive people bowled over by the mysteries of the universe, of the Earth. We may find that those mysteries thrill us with all of their elegance, and fill us with gratitude for the chance to experience them. And we might find that they pain us, remind us of how small we really are. Our hearts might ache as we behold the intricacies of the natural world, knowing that we can never fully contain their beauty, knowing that it is ultimately fleeting. Put beauty back into the contours of our hearts, and we may find that pain is as essential to our experience of life as exaltation, for with being in beauty, as with being in love, we risk getting hurt. Put beauty back into the stories we live by, and we may find that the very pain it causes is what urges us to maintain it.

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Shortly after September 11th, 2001, I spoke to my brother from a payphone in Cooke City, Montana. I was working on a trail crew in Yellowstone National Park when the planes crashed, and days passed before we were able to get into town for a paper and the news. When we finally did, I felt as challenged to grasp the horror of what had happened
to all those people in New York as I do seeing tragic news about anybody far away. That
dissociation felt bad enough. But seeing President Bush drawl out the words,
“terrorism,” “evil,” and “infinite justice,” on the TV screen above the shellacked bar
made my teeth itch. I felt confused and powerless against the landslide of nationalism
and violence that was suffocating our nation and drowning our sorrow.

I talked to my brother that night about the anger that permeates this world; the
ease with which massive weapons are deployed by our leaders; the degree of arrogance
which governs our species and our country; and my desire, yet complete inability, to
change any of that. And he spoke to me of beauty. Of his life goal to fill the world with
beautiful things, with clean lines and the texture of wood.

My brother is a furniture maker. Sculpture is his training, wood is his passion. I
spent two months in Chicago last summer where my sister, my mother, and he live. I
often hung out at the apartment he shares with my sister, escaping the wet heat, drinking
dirty martinis, playing cards, and being beckoned into his basement studio. “C’mere,
quick!” I ran the first time he said this, certain that he’d left a limb in the table saw. But
it was quiet down there, still. He gestured me over to the far end of his studio. Leaning
against the wall were several two-by-eights, ragged looking and boring. “Aren’t these
beautiful?” he asked. I laughed for a second and almost teased him about stealing me
away from my game to see them. But I caught myself. He was serious. I had never seen
him look at something that way, get excited enough about the physical beauty of anything
to grab me from twenty feet away, needless to say a whole flight of stairs. Those
unfinished boards were of curly maple, and the shaggy parts were exactly what made the
sanded, finished wood look iridescently in motion. He then showed me all of the boards
leaning against the cement wall. Oak. Cherry. Walnut. He showed me his veneers, his inheritance from our father. Zebra. Birdseye. Paduk. He talked about quarter-sawn boards versus plane-cut. I tried to listen. But it was hard because I was in awe of his excitement, his grade-school “show-and-tell” energy. And it was hard because this little voice in my head kept asking “And what endangered cloud forest did these boards come from, and how did they get here?” What made it even noisier in my head was the third voice admonishing the second, “Can’t you see he is glowing, can’t you see how vibrant this wood, this moment is?”

The same father who taught me about wild beauty impressed upon my brother the aesthetic inherent in the process of creation, in the texture of the grain of woods, and in the joy of sharing these things with others. The irony of my brother’s beauty mission being dependent on the felling of ancient trees does not elude me. But shining through my confusion is hope. I like to imagine him in his camouflage utility kilt and stained t-shirt, glowing pale as he runs his fingers down the smooth surface of a sanded board of curly maple. I like to imagine that the same urgent joy with which he beckoned me to his studio is infused into each cut of wood, each joint, and each final caress he gives a piece before delivering it to his client. I like to imagine him saturating the concrete maze of Chicago with the qualities that make his work beautiful. So that aching beauty may, for a moment, be less fleeting.

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Driving along the contours of the Lamar River just before dawn, I follow Orion. It’s bold and beautiful, and I can’t draw my eyes away. Jupiter hangs below it, the Earth falls from them both. Elk, only visible because of their bright white butts, bound away from
my truck. I feel bad for being this naked little *Homo sapiens* in a big heavy vehicle on a stretch of pavement disrupting their ancestral travel routes. And yet I feel grateful to my father for teaching me to think about what it means to be a human on this wild Earth, for showing me through his stories how good it feels to be in the middle of a vast nowhere with elk my traveling companions.

Greg Brown grumbles out of my radio as I park next to the river and wait for sunrise. I can't see the sun yet, but its light is making black paper cut-outs out of the mountains. River and snow and fog mingle. Awareness heightened in the predawn darkness, my stomach clenches as I mistake boulders for grizzly bears, which I both yearn and dread to see. Well fed by now, they are sprawled out in their dens, gestating and snoring. I envy them, but not enough to regret waking up at four this morning to a moonless sky, to Pleiades, Cassiopeia, the Great Bear, Orion. No, I don't regret witnessing this 7:30 sunrise and thinly spread cirrus clouds growing rosier by the second. I want to catch the moment the clouds turn from pink to white, when morning becomes day and the mysteries of this landscape are revealed. For maybe in that instant, as fine as the boundary between my breath and the winter air, I will seethe from the pain of being in beauty. I will be human.
Shores of My Sanity

I am standing on the edge of Lake Michigan, paying homage to the shores of my sanity. The water is heron-grey today. I grew up a mile from here in a barn-red house surrounded by two-hundred-year-old elms trees and enough flower gardens to hold my heart. It's hot out. Wet. A heat unlike anything I have known out West. Still breathing heavily from my run, I curse the Chicago summer, the cotton tank top stuck to my salty skin, the nylon shorts gripping my thighs, but give thanks that no lifeguards are here to keep watch. I am my only guard.

Eyes resting on the horizon, I pull my strappy purple shirt over my head and run into the frigid expanse of glacial memory until its density forces me to dive beneath the surface. When I come up for air, I glide into a symmetrical freestyle the way I learned in high school—stroke, two, three, breathe, stroke... A few cycles of rhythmic motion and I am treading water next to the tall orange buoy at the edge of the designated swimming area. I squint at the line between lake and sky and am reminded by its soft arch that the Earth really is round. It's hard to believe that that line is just two-and-a-half miles away. I try to imagine Michigan on the other side with beaches, green parks, and the sunburnt elite on sailboats. But all I can see is this thin sheet of blue tumbling over the curved edge of the horizon.

This lake sustained me the first eighteen years of my life. My mom brought my siblings, neighborhood kids, and me here nearly every summer day throughout my childhood. She let us bury her feet in sand so hot it made our flip-flops warp and fed us peanut butter-and-jelly sandwiches with warm, sandy Diet Coke. I learned to swim
underwater long before I could read, pulling myself through the murky green world to my mom's yellow swimming skirt. I loved being surrounded by water.

As soon as I was old enough to cross the three busy streets between my house and the lake, I biked here daily. I had to. On humid summer afternoons, I straddled my rusty red ten-speed while I waited at the corner of Chicago Avenue and Elmwood Street for the light to turn green. The light at that intersection between the supermarket and the Toyota dealership was always red, but I didn't mind. For from that point, I could first see the thin blue line of Lake Michigan meeting the perfect grid of my hometown's tar black, tree-lined streets. I couldn't wait to feel the smooth water envelop me, but knew that this moment of anticipation would make my immersion that much sweeter. Before I became burdened by the "I" that questions all my instinctual urges, I never stopped to ponder my need to grab the hot sand between my toes, to get deeply browned and exhausted, and to rest my eyes on the single line breaking water from sky. I just did.

Though I didn't know what compelled me to come to this lake daily from the time of bowl-cuts and cut-offs to the days of homemade sundresses and braids, I now understand that it was the wildest place I could get to on my own. This was the only place I could go to see a distance greater than a couple blocks, could rest my eyes on something bigger than a world created by and for human beings. Although this beach is confined by a steel breakwall to the south, concrete boulders to the north, and multi-million-dollar homes to the west, when you look directly east, you can see nothing but water and sky. Nothing but the illusion of forever.

During high school, I rode my bike here before school to eat breakfast and dip in water that rarely rises above sixty degrees. I intentionally kept my bathing suit on
beneath my school clothes, hoping that my peeking purple strap would show all of my classmates how adventurous I was. Hoping to remind myself that there was a world much bigger than the one in which I spent most of my days.

My parents found my exploits cute and confounding, and teased that I must not be one of theirs. "Where did you come from?" they'd ask. My short, stocky body, loud laugh, and undeniable Bunce Butt confirm that I am, indeed, my parents' genetic offspring, but I can trace my need for frigid water and wild adventure to nothing in my childhood beyond Uncle Josh stories, our week each summer in the Northwoods, and twilights spent chasing fireflies in the front yard. Perhaps my need for open-ended viewsheds and tangles of living, breathing things has nothing to do with being a Deysach, after all, but everything to do with the genetic memories of Cro-Magnons, the genus *Pan*, synapsids, amphibians, bony fishes, tubular worms, bacteria, mitochondria, and bundles of DNA I carry bundled up inside of me. A need to participate in the evolutionary drama must live on in all of our bloodstreams in some quiet way, but perhaps the new memories our adaptive brains build during our lifetimes overshadow the more ancient ones swimming inside of us. Perhaps my new memories just aren't loud enough to silence the old ones.

I grew up knowing the thrill that comes from living among eight-million black, white, brown, queer, dangerous, Latino, mohawked, creative, eccentric, Thai, liberal, Somalian, homeless, brilliant, dynamic people. I grew up building memories of *aloo gobi* and *pad Thai* on my tongue, of Spanish and Haitian Creole and Hindi in my ears. I grew up in a place that offers plays and lectures and live blues and newly released movies every night of the week. From the small, white mountain town in which I now live, my
senses ache for those varied textures of city life, for the grit and grime that bump up against Doric columns and world-class symphonies. For the rest of my family, those sensual influences are exactly what makes living in Chicago so right, are what make it home. I, however, spent most of my childhood craving something much older than those things could provide, something only this cold water and big sky could assuage.

Treading water at the edge of the swimming area today, I realize that I have done this hundreds of times, thousands perhaps. The motion is as familiar to my muscles as singing is to my throat. For all my quadriceps, anterior hip muscles, and biceps know, I am eight years old, ecstatic with the freedom to roam that my parents have given me. To the nerve paths that connect my movements to my brain, I am twelve years old, reveling in the liberation from gravity this water provides. For all my hands know as they push towards one another, I am fifteen, fixing my eyes away from Chicago's skyline and onto the illusion of boundless water. But although my body is fluently speaking a language it has known for years, my brain is not. I am twenty-seven, home to visit my family in the town I spent so much of my childhood aching to leave. I am twenty-seven, using the buoyancy of this water to take weight off the question I carried with me from Montana—could I live here again?

I imagine myself jogging under the maple and elm branches that usher cars through every street in this town. I think about how nice it would be to bike to work past homes people have been making for the past one-hundred-fifty years, homes that speak of a time when architects cared about infusing each building with aesthetic details. It would be nice to live in a place where I wouldn't have to watch the landscape I love be replaced by monotonous developments.
Could I live here again? I ask myself as I do a series of backwards flips the way I loved to in middle school. It really is lovely—the neighborhoods, gardens, city parks, this lake. If I lived here, I could have dinner with my family every week, every day if I wanted. I could be a part of their lives and they, of mine, in a way that is impossible now. If I moved back, I could live in a world full of human diversity and eat food from a different country every night. I wouldn't need a car and could find a job that promises financial security. Maybe I could make a home here.

Heading back to shore in a slow breath stroke, I ask myself again, But seriously, could I live here? I hope with all of me that the answer will be yes, that I will say, I belong here. I could find the wildness I need in Lake Michigan, in the city's pulse. I could have Sunday dinners with my family and find peace in the beauty of the built environment, even if almost all signs of a history larger than civilized humans' have been obliterated.

But I am not surprised by the answer I feel deep inside. No, Bex. The perfect squares that define this place would squeeze you too tight to breathe. No, Bex, a part of you would die here.

I am not surprised by my answer, but I am disappointed. For if a need to be surrounded by old and wild places is held in my cell's silent memories, a yearning to breathe the same air my family does runs through the mysterious part of me some call the heart. If I stay in Montana, that heart will always cry for a closeness that Christmas visits and weekly phone calls will never achieve. But if I return, could this body that has grown accustomed to the sticky smell of ripe cottonwoods in the spring and the taste of huckleberries in the fall find all that it needs in the city's right angles?
Until those angles are softened, until there are more wild spaces filling the gaps between the refined, more soil than cement, and more opportunities to revel in the untamed landscapes that are a part of our shared history, I am afraid my answer is no.

Someday, though, my answer may change. Because someday, we will all give in to our inborn need to be surrounded by explosions of non-human life. Someday, we will admit that our communities, no matter how well-planned or pretty, are built in opposition to the original ecosystems in which they have taken up residence. Someday, we will pay attention to the murmurings of our wild bodies as they beg us to allow the prairie or woodland or boreal forest to creep back into our daily lives. We will someday let the power of the animate landscape take over our senses. And when we do, we will decide that we love this city, this country, this planet, and ourselves too much to erase the histories we all share.

When that time comes, the neighborhoods of my childhood, of everybody's childhood, will be sewn together with the chaotic meanderings of uncultivated life that belong here. In the spring, these city blocks will sing green to the tune of young stalks of big bluestem, black-eyed Susan, and budding red oak. Kids will play tag and ghost-in-the-graveyard unhindered by fence lines or newly sprayed lawns, and they will be distracted from their games by all the birds and butterflies that make their homes in the tall native grasses between each house on the block. The children of these urban neighborhoods will not grow up aching for something they cannot name, for a true relationship with something as old as their bloodstreams will begin the moment they arrive.
When we give into our deepest hungers by building communities that fulfill them, perhaps then I will return to the north side of Chicago, sate my needs for both my family and a sense of this planet's past. But for now, I will do as I have always done. I will towel ten-thousand-year-old drops of Lake Michigan off my sunburnt skin, rest my eyes on the line breaking water from sky, and give thanks to the ice sheet that made these waters. That kept me sane.
Welcome

Welcome to the evolution, to the movement of our culture of denial into one where we are bold enough to ask, *What kind of world do we want to live in?* Welcome to the evolution. Where we use our unique form of consciousness to decide what we need to do to keep this dynamic network of interactions alive, to keep it safe enough that our children and their children's children can have lives they have reason to celebrate. Welcome to the evolution. Where we use our powers of mind more than our powers of might, where we are intelligent enough to say *no* to inventions and practices that give us money or a sense of accomplishment in the short-term, but have disastrous effects in the long-run. Welcome to the evolution, where we are confident enough in our own strengths that we do not need to exert them on other people or the land to believe in them.

Welcome to the evolution. Where the stories we tell to explain our place in the universe speak of wonder and chaos and dynamism. Welcome to the chills that come from knowing that we are here for now, that despite the brevity of our existence, we are truly powerful collections of energy. Welcome to the boldness of asking ourselves what our bliss is and following it to the end, ready to encounter any obstacle we face. Welcome to the evolution, where we are not burdened by religious dogma that tell us we were born wrong, that we must spend our lives making up for the sin of one sassy woman. Welcome to spiritual traditions and personal mythologies that make us feel unique without belittling any other beings on this planet or in the universe. Welcome to the evolution. Where we accept that although we are small in time and space, we are truly immortal. Where we know that the stories we are live on in others and in the land long after we're gone.
Welcome to the evolution. Where our fear of death does not make us fear life. Where our love for others and the acceptance of life's inevitable end frees us to live deeply. Welcome to the transformation of our tenacious desire for eternal life into a commitment to making the most of our brief tenure here on Earth.

Welcome to the evolution. To the elimination of stories that drive us to consume, destroy, ignore, fight, and hate. Welcome to the laying down of protective shields that not only hold dangers at bay, but keep us from the soft touch of the wind, of a gentle moment with a friend. Welcome to a world where every individual does a job with integrity that is not dependent upon the exploitation of people or the planet. Where we know where our clothes and food come from, and we care about who labored to get them here. Welcome to a new American Dream which no longer looks like a soft green lawn, big house, SUV, and 1.6 children, but a neighborhood sewn together by fields of diverse plants and peoples, children running outside, and a pile of bicycles stacked against the side of an off-the-grid house. Welcome to a neighborhood where homes don't glow blue from television sets at night, but reverberate with the laughter of families and friends.

Welcome to the evolution. Where we ask ourselves what drives our excessive speed, consumption, and exertion of control. Where we get an inkling of an answer and take the scary path necessary to address the hungers that cause those things. Welcome to a United States of America that no longer believes that it, alone, should have weapons of mass destruction, that does not insist that it has a right to almost half the planet's resources, and that uses its incredible economic and technological advantages to employ systems that sustain.
Welcome to the evolution. To the movement of our culture from its divorce from feelings, from one another, and from the planet we all depend upon into a people who listens with our ears and hearts to the true centers of our beings and of the land.

Welcome to a world where we are not afraid of stillness, we are not afraid to pause, because we are not afraid of all that may arise when we do. Welcome to the evolution. Where we are taught from the beginning how to sit with our difficult emotions and work through them, rather than ignoring or numbing them with busy-ness or booze. Welcome to thinking critically enough that we know when we are being manipulated. To being brave enough to say, *No. It is more important to have health care and good schools and a job that supports my family than it is to build yet another weapon that could destroy all of life at the push of a button.*

Welcome to the evolution. Where industrial schools metamorphose into learning adventures and teachers teach children how to think and ask hard questions of adults and of themselves. Welcome to schools where children learn with their bodies and their minds, where they scrape their knees climbing trees and get their cuffs wet in the stream, where art and drama and music get as much attention as math and science. Welcome to the evolution. Where feminists, environmentalists, and social activists do not have titles, because working for a society based on the notion of interdependence is the status quo.

Welcome to the evolution, where every farm is a permaculture operation, every home and office are fueled by renewable energy sources, where communities are connected by high-speed rails and highways are given back to the weeds. Welcome to using our bodies again, thanks to all the cities that are made for bikers, walkers, wheelchairs, and skaters. Welcome to the evolution, where the infrastructure of our
society is modeled after other life systems. Where our economy is a circular, closed system, where the true costs of the goods we buy factor into their prices, where waste becomes fuel for a fire or filler for a home, where top-down leadership becomes decision-making driven by the people whom the decisions affect. Welcome to the polls where officials are elected by their merits and their ideals, not by corporate campaign contributions or by our fears. Welcome to a world where no nation has weapons because our sense of self has expanded to include our whole human family.

Welcome to the evolution. Where we are one species, one blood, one group of individuals with a shared history 13.8 billion years deep. Welcome to the evolution. Where we are all so slain by our story that we evolve to keep it alive.
Sources

The following sources both influenced my thinking and provided the facts I needed to tell the stories held within these pages.

**Wild from the Inside Out**
If it weren't for the conversation I had in the sauna with Brianna Randall one night earlier this winter, I'm not sure I could have told this story at all. After days of researching, I was at a complete loss when it came time to write the universe's story in a personal voice within the constraints of a single chapter. But after our talk that night, I was inspired to begin by pretending to write a letter to Bri; she is the "you" to whom the chapter is addressed. In addition to Brianna, the following sources were critical to the evolution of this essay:

- Strickberger, Monroe W. *Evolution*. Jones and Bartlett, Boston. 1996.

**Coming into Consciousness**
The mind-buzzing process of thinking about the evolution of humans' self-reflective consciousness is one of my favorite things in which to engage. I am grateful to the following sources for providing me with the substance I need to think and write accurately about this unique phenomenon:


Strickberger, Monroe W. *Evolution*. Jones and Bartlett, Boston. 1996.


**Small in Time and Space**

This chapter clearly is a long-gestated response to my uncle. Though he most likely will never see it, I am thankful for the insight into a creationist's mind he provided. I am also grateful to my teachers Mr. Izbicky and Dr. Bruce Mitchell for teaching me things that resounded, and to Jesse P. who is always up for "deep conversations." Finally, I thank
Joseph Campbell, my parents, and the following sources for helping me grapple with my purpose here on Earth:


<http://www.jcf.org/bliss.php>


**My Father's Return**
This chapter was almost entirely memory-based. I did, however, use information from the National Institute of Mental Health's (NIMH) website to get an estimate of the number of Americans on anti-depressants. While I could not find that specific number, as of 19 May 2004, the NIMH reported that in any given one-year period, 9.5 percent of the population, or about 18.8 million American adults, suffer from a depressive illness. The general *millions* is simply an estimate of the number of those depressed Americans on anti-depressants.

**Hunger**
I am too often aware that my body's memories are out of synch with the constructed environment I live in. While my own life is reference point enough for the hungers that
discordance makes me feel, the following works helped me flesh out both the lives of our ancestors and my ideas about how their habits may be reflected in our actions today:


**NUMB**

This chapter is particularly important to me, as I believe that our human penchant for denial is one of the largest factors contributing to the perpetuation of lifestyles that are destructive to ourselves and to the land. In the spring of 1998, I was a student with the School for Field Studies on Vancouver Island, BC. It was a time of big learning and magnificent beauty in the face of great ecological devastation. I have been processing the experience ever since, and writing this chapter helped me come to understand some of the psychological tendencies that allow us to engage in destructive practices. Those three months in Canada, in addition to the following sources and my own experiences with numbness, were vital to the crafting of this essay:


On Beauty
This was the first essay I wrote as a graduate student. Through writing it, I realized that I am unable to think about who we are now without thinking about the lives my species lived as wild animals. The questions I asked in this chapter worked their way into my subconscious and spawned the idea for the collection of essays this thesis has become. The dictionary from which this chapter's definition of beauty came was my father's when he was a kid. It was a:


The other books that were both particularly helpful and directly quoted in the discussion of the history of art were:

