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De Gustibus non Disputandum Est

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DE GUSTIBUS NON DISPUTANDUM EST

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF FINE ARTS

UNIVERSITY OF SOUTHERN MAINE

STONECOAST MFA IN CREATIVE WRITING

BY


William Henry Ferguson Jr.

2015

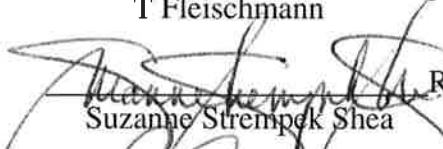
THE UNIVERSITY OF SOUTHERN MAINE
STONECOAST MFA IN CREATIVE WRITING

JUNE 1, 2015

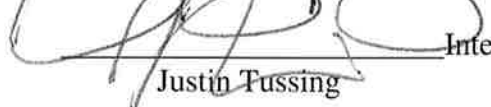
We hereby recommend that the thesis of **William Henry Ferguson Jr.** entitled **DE GUSTABUBUS NON DISPUTANDUM EST** be accepted as partial fulfillment of the requirements for the Degree of Master of Fine Arts.



T Fleischmann Advisor

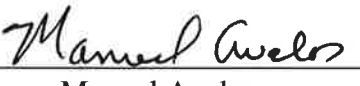


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Abstract

De Gustibus Non Disputandum Est is a collection of various-length essays, some with a scientific paper flavor, others with a meandering, philosophical voice. They all strive to describe a world, natural and emotional that, in the eyes of this author, needs attention. The essays hope to express ways of ameliorating our out-of-control spiral towards the destruction of beauty and kindness.

The work is author-centered. Some of the essays are a way of honoring friends who capture the spirit of the thesis' title, which translates to "Of taste there is no disputing." More than a few are scathing remarks meant to criticize how generally uncaring our species appears to be. They are written with the intent to elicit self-reflection and they often conjure the author's disdain for humanity.

De Gustibus Non Disputandum Est is also filled with love. It hopes to promote peace and harmony by describing not only what we do wrong, but by what we do right.

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Preface

De gustibus non disputandum est. It's a powerful and remarkable Latin phrase meaning "Of taste, there is no disputing." Powerful, because of its simple and equalizing message; remarkable, because so few people seem to realize its wisdom.

But why use it as a title? I've spoken the phrase scores of times hoping to ameliorate a workshop dispute, or to appear intellectual while conversing with women at a bar. (It only ever elicits a quizzical look.) I chose this title because I'd like the world to see it spelled out in black and white. Seeing it also makes me optimistic the world will come to understand the phrase's deepest sentiment—the democratic one of individuality. Using it as a thesis title is a way of getting at least one person—you dear reader—to place it squarely in your mind. I want you to judge the book by its cover.

There's another theme central to the essays that follow: if we're careful to understand that fact and fiction are separate things, we can live together as peaceful cohabitants on this small and beautiful planet, each enjoying lives filled with a sense of harmony and fearless of being unique.

Over the course of human history, much suffering has been inflicted by a person or a group or a culture on others who don't have the same tastes. Maybe it's a doctrine or maybe it's just a dislike of someone's domicile that alienates the one against the other. But keeping the phrase in mind would execrate a lot of violence and eradicate a lot of anxiety.

These are lofty goals. Reaching for them is why we become artists.

*

The art of expressing one's self, of expressing one's tastes, in my case using the written word (though the concept is paralleled in any artistic medium), requires two basic and interconnected factors: a desire that drives one to express, and a way—a medium—to do the expressing. These two factors inform each other in a persistent tug-of-war, the desire pulling to find the right word, the word choice tugging at the desire's meaning. To go a bit further with the analogy, the rope in the tug-of-war would be the thing needing expression, whether it's a concept, an idea, an emotion, or something concrete like a sculpture. That thing—the expression—is shared equally by the desire and the means of articulation, though yielding to either depending upon the artist's state-of-mind.

So much of what gets expressed, and how, depends upon the artist's state-of-mind! It just may be that it is *in actuality* the artist's state-of-mind that comes to be expressed.

The mind is a place of infinite re-arranging. The artist becomes an artist to take advantage of this infinity. Most strive to communicate even the tiniest bit of it, hoping it initiates a dialogue. Subsumed within this idea and implied by it is the need for the artist to have an audience—there must be a receiver to transmit the communication to. (Of course that's *if* the artist is interested in communication with another human. Maybe it only matters to the artist that they're expressing their infinity to the rain. *De gustibus non disputandum est*, right?)

I often do that with my title, using it synonymously with some other phrase like, "to each their own." That's the real thread between fact or fiction or taste; facts are objective, tastes are subjective. It's a cool thing about art, maybe even the coolest: it triggers in each of us something that is unique; parallel maybe, but never exact. Art's

reception can only be synonymous to each receiver. I can never feel about anything exactly the way you do.

But artists are egoists, and we know that what we feel about any subject is the best, therefore it's also the best for everyone else. So we work on honing our methods, to convince everyone that our feelings are potentially beneficial to humanity. (And nature too, of which we are—not so obviously to some—a part.)

When architects are inspired and design a space, they need to have mastered the vocabulary to transform their imagination to the blueprint, thus delivering it to be built, to be born into the world for others to see and experience as the architect envisioned it.

So, too, for me and writing. I came to Stonecoast with the specific goal of learning to write to my fullest potential, to learn how to craft words, and thus come to feel as if the thing I wanted to say got said the way I wanted. I already had the desire; the words on these pages are my journey in learning to transform and transmit it, so the desire is borne into the world for others to see as I've envisioned it.

Maybe, you'll even be swayed.

*

But getting the desire to the page the way I want is sometimes a struggle. One isn't always satisfied with his work. There are often holes, the architect knowing this all-too-well when the roof leaks, like the glass tube ceiling in Frank Lloyd Wright's 1936 Johnson Wax building. The otherwise seemingly-glorious structure doesn't quite hold-up to the ravages of nature. This is also true even when the structure is a manuscript and the ravages of nature are the individuals of a workshop, informing the writer that "this would have worked better in first-person." (And to stop using Latin.)

Over time, artists come to accumulate a toolbox that helps in building any structure more soundly on the first try. So you might think that the artist gets better with time, and that a sampling of his work, connected in the order it was created, communicates more smartly at every page-turn.

I want to assure you that this isn't the case here, nor should it ever be the ultimate goal. Why? Because it can't be reached! (Though it's in the artist's character to never cease trying.) Another noteworthy Latin phrase, *errare humanum est*—to err is human—hints as to why each succeeding page won't bring you closer to perfection. There is no such thing. Perfection is a construct of our mind's infinite tinkering with its own thought. It's yet another artist's tug-of-war, this constant striving and never-quite-achieving, and it too illuminates the mind as a place of infinite re-arranging. It highlights our malleable nature; we can never step twice into the same piece of river, to paraphrase Heraclitus. (It's too bad the Roman Empire was such a violent place; its citizens coined some astute phrases, and invented concrete, to boot.)

*

Needless to say, I'm different at every page-turn. Connecting the essays (are they essays?) making up this work, including one and discarding another, seemed a lesson in futility; I saw no over-riding principle connecting them. Except the obvious one that every keystroke had been tapped by me; which says nothing about *why* I tapped them. (Remember the infinite monkey theorem? It's been mathematically proven that chimpanzees—because they're capable of the physical process, I suppose—could write a Shakespearean work given an infinite amount of time to do it. Those mathematicians...)

But there *has* been an overriding principle in the way I've lived my life. The process of discerning fact from fiction has been my *raison d'être*. Even back in my youth, I longed to bring to my reasoning six-year-old mind what my gut instinct told me: that Santa Claus was a myth. But do these essays, when accumulated and read cohesively, really illuminate how important this concept—separating fact from fiction—means to me?

*

Like everyone (including the artist who wants to be beneficial), my life is a sum accumulation of experiences. My mind strives to understand those experiences in a larger context, my emotions bear down on my mind's understandings, and poof—I have a desire to express—what I've heard Jimmy Page of the rock band Led Zeppelin call "a spark."

A spark? I think it's apropos to use an electrical phenomenon to describe that almost instantaneous chemical exchange happening between synapses. It ultimately is electrical; the electrons of calcium pulsing this way and that, forging connections that manifest themselves as thought. "*Je pense donc je suis*," Descartes reminds us—I think, therefore I am. Being is, in-and-of itself, full of desire; we desire food and protection and touch and love and the need to express our uniqueness. Desires have as many interpretations as there are minds doing the desiring.

*

My intent is not to reduce disputes down to a conundrum over the concepts fact and fiction. But if I did have to state my intent, it just might be that I hope to get you to ask what is meant by the word "fact." Look at the title of this work, *De gustibus non*

disputandum est, and twirl it around a few times in your mind. See it there? Insert the word "fact" for the word "taste" and say it thus, "Of fact, there is no disputing."

The essays I've written, this work I've done, underscores my desire for the world to see that we must stop disputing facts as much as we must stop disputing each other's tastes. And not only disputing facts, but disputing that there is such a thing as a fact. When I read the news or study humanities at any level, it appears to me that it's universally anathema to say something with finality. It's physically painful for me to come to this conclusion. We are all joined by fact, just as we are all joined by having individual tastes.

Let's see if I can clarify this. Pretend we're sitting at a bar with some attractive women I'm trying to impress with my Latin. I'd imagine it's fairly easy to see how we're all joined in having individual tastes by looking around the bar and checking out what everyone's drinking. That one hates beers brewed with fruit overtones, and that one drinks only the best scotch. She likes the margaritas they mix here, but the other one doesn't like anything with hard alcohol in it, so she drinks a zinfandel. Point taken?

Now I'll ask you, "How are we joined by fact?" The artist in me would jump in before you could and I'd answer myself with, "That's easy." Then louder: "Ahhmmm. Everyone at the bar? Please pick up a scrunched-up napkin and hold it out in front of you. On the count of three, I want you all to drop it onto the bar. One, two, three." If everyone, including the inebriated, has managed to pick up, hold, and drop a scrunched-up napkin as choreographed, all the napkins will fall. Gravity.

Everyone and everything in this universe is affected by that fact. Nothing can escape the influence of gravity. We're all joined by our common need to deal with it. This

concept—the common need to deal with facts like gravity—includes all the varied, vast, and fascinating things that science looks to investigate, be it gravity, or the effects of additional carbon in the atmosphere. Science, and its unending search for truth, has nothing to do with taste. Anyone's. It has to do with what is equalizing. And it does it by asking questions.

*

What a word is why. Why do I like chocolate ice cream? Being the thinking-too-much person I'm sometimes accused of, I could postulate a long chain of events that might lead you to understand factually "why." Our tongues have receptors to differentiate sweet from sour—what could be beneficial or harmful to eat. We could call that nature. And I was introduced at an early age to chocolate ice cream by my overweight mom. We could call that nurture. There are plenty more events, but essentially I would be connecting the equalizing dots: the things that could happen to anyone because we're all part of nature and we've all been nurtured.

Is this a good use of time? Probably not for general conversation. But for a reader who cares to follow along the writer's journey, this is just the reason the artist must learn the art of expressing oneself. Because, if the expression is done correctly—the dots are all connected—the desire needn't always be the important part; well-articulated expression has in it the function of connection too. If the artist does the work in such a way as to communicate something important—thus making a connection—then the communicant's synapses will strive to see synonyms in the artist's sparks. The expression, in essence, becomes art.

For example, I shouldn't try to convince you to like chocolate ice cream (I'm content to let you choose your own flavor), but you might just find it interesting enough, or funny enough, or enlightening enough to enjoy finding out why I do. And that's been my goal: to learn to make my journey's telling a good one. I want you to ask me "why."

And that will happen if I connect with you.

*

"Why," in the words of Neil deGrasse Tyson in his remake of Carl Sagan's *Cosmos*, "is the word of little children and geniuses alike." What a superb connection to make. I'd think we all have an impulse to agree. Sadly, though, it implies that, unless you're a genius, one loses the wonder, the hope, and the curiosity as we grow older to continue to care about asking the question. That's too bad, for we live such short lives and the universe has so much to offer.

There's another sad thing associated with growing out of the "why" period of our youth: it enforces our egocentrism. When we no longer ask the question, we bind ourselves to the opposite of *de gustibus non disputandum est*—a kind of "of taste, there is ALWAYS disputing." When questioning is stymied, we become closed-off to the rest of the universe, locked into a myopic view of what's right and what's wrong, plunging toward death on a raft of subjectivity instead of objectivity. We come to only care about ourselves. By asking the question "why" we step out of our own mind and strive to understand something of which we're all a part. We come to care about ourselves and others equally.

It's this "stepping outside of myself" that causes in me a desire to express. I haven't lost sight of the bigger picture. I've been trying to expand my horizons of the

bigger picture, to push the envelope of my individual perception. I want to make a difference. I see how wrong it is to exploit the individual, to exploit whole sectors of society, and to exploit nature itself. I also see that many individuals use fiction to justify these exploitations.

There are countless examples of it across the history of the human species—especially after we invented civilization (what an oxymoron there, eh?). Witness slavery, the crimes of The Inquisition, Nazism, Apartheid; big oil and big pharma; discrimination at every turn; and the use of animals to "better the quality of humanity." These are only some of the injustices causing me anguish. And each one is based on fictions disguised as facts, be they interpretations over the meaning of life or manifestations of greed.

How can I bring at least one other to join in my cause against such inequity?

*

Thus, my thesis is like an advertisement; I'm reaching out to recruit. There are no explicit words asking for you to join, though I've been told some of the essays sound too "preachy." People don't like to be told they're doing the wrong things. It's ironic, but this seems to me to be a misuse of individuality—the sentiment I'd mentioned that's subsumed in *de gustibus non disputandum est*—even if it's an unintentional misuse. People get upset if I suggest that using a snowblower is bad, in just the same way as if I'd suggested that their choice of ice cream flavor is bad. They don't see how a logical argument can be made for either suggestion, and they don't see how one suggestion (snowblower bad) and not the other, impacts everyone instead of just them. Using a snow blower has implications that affect the world beyond the act; desiring chocolate ice cream has no implication outside of the self.

Notice I said "*desiring* chocolate ice cream has no implication outside of the self." As a measure of reciprocity, if someone were to point out to me any inequities in my way of *acquiring* my chocolate ice cream—exploitation of a coca-grower by the company who produces my brand, for example—I'd want to know it. That way the facts inform my interactions and I can try to ameliorate an injustice.

I'd like to think that the writing that follows illuminates these concepts. Some of it does so with a focused verve, some obliquely. I'd also like to think that, whether it's focused or not, it's effective.

The artist hones a craft to become effective.

*

There is this little thing I call "The Ferguson Low Self-Esteem Syndrome," and it has me constantly questioning my own effectiveness. I'm sure *that* particular psychological peccadillo will be easily discerned by the reader, manifested over lots of pages. It's written into the essays that have the focused verve; I've tried to sprinkle them judiciously.

The act of writing any given essay, whatever the context of its subject matter, was never designed for a specific outcome, unlike Michelangelo's constant search for the sculpture hidden within the stone. But as this thesis is meant to be a cohesive whole, built out of disparate essays, its form started showing itself once a little game was taught to me by someone I admire.

"Put the title of each essay on a scrap of paper," T suggested via an email one day, "and play around with their order by shuffling around the scraps." I did just that. I started with an over-arching theme, my chronological lifespan, using the effective age that an

essay implied. This was easy for some essays like *The Rope*, where I'd written explicitly about being a ten-year-old, but far more difficult for many, like *Lucky Turtles*, which doesn't acknowledge any particular time in my life. But the scrap game got me seeing that there's a point in my life where I connect very strongly with creatures other than humans. Similar conceptual packets started springing-up throughout, and I tried to combine them, placing the essays in close proximity. Thus the order you see ultimately here.

*

It's always such a thrill to stand back and look at a culmination of work. Have you ever sided a house with shakes, the shingle cladding you'd find on a typical Cape? I once worked on building a massive house addition. One of the exterior walls was nearly three stories tall and twice the length of the existing structure, with barely a window punctuating its vast elevation. Each shake shingle was smaller than a page of this book, nailed side-by-side and overlapping the one below it to leave a four-inch course. It seemed such a daunting task, looking from the uncovered wall to the small piece of cedar in my hand! It took nearly two weeks of dedicated toil to get the wall finished: pick up a shingle, plane it to abut its neighbor correctly, nail it, and repeat. Thousands of repeats. But what an incredible feeling of accomplishment after the last one was placed! There's a similar feeling whenever a process is started, continued, and completed. This thesis is an analogue to the siding.

In a work of this nature, non-fiction yet not necessarily memoir, it's easy to get sidetracked—at least for me, that thinking-too-much person. Tangents are my specialty

and loquacious tendencies amplify the whole lot. So I undertook an exercise during my time at Stonecoast.

I'd decided to attend a faculty presentation which required reading a little gem by Robert Finch called *A Cape Cod Notebook*. In its prologue Finch described its genesis, a compilation of some of the readings he'd done on a local NPR program. The three-minute timeslot, minus any coughing in the elocution, generally put his word-count at around 600. Reading Finch's essays—a concrete, succinct writing style to be emulated for sure—set me in motion to producing my own 600-word essays. Many of them are here. Could I capture the essence of my desire? Could I articulate it? I hope I have, though it's been a good exercise nonetheless, because I want to communicate; I want to start a conversation.

*

Though how many times have I departed from a conversation, only to wish I'd said something different or added another point? Writing—versus talking—lessens the odds that a communication is born into the world un-whole. The author can go back and rewrite; it's this temporal pause that makes writing such a wonderful artistic medium. Unlike the jazz musician blowing a solo impromptu, never again to capture the phrase that just left the horn, the writer can rephrase. My backspace key has worn to a nub and I've deleted a sizeable amount of notation. (Do that with a trumpet.)

It's also the writer's bane. Try as I might, I hardly ever put anything down that I won't decide later to change. That could be a ramification of The Ferguson Low-Esteem Syndrome, or Heraclitus' river, or the malleability of the mind. Quite likely, a combination of these and more.

*

It's also the difference between fact and fiction.

We are all changing—that's what makes each individual different from fact. Our lives are dynamic. Tastes change. The infinity of the human mind is breathtaking; we're able to rewrite anything that isn't fact. (And to shed more light on fact: when facts do get rewritten or fictionalized to suit some agency's whim or justify its cause, nature—plants, animals, air, water, people—potentially gets shattered.)

Fact is breathtaking, too. The law of gravity—that King of the Universe—is not a construct that some can dispute while others accept. It has directed accumulations of energy to form matter that becomes galaxies of stars that create the elements which coalesce into all the nooks and crannies of what we humans call "our lives."

When those things are disputed, when any particular paradigm forces its viewpoint onto another, while we continue to divide ourselves into us and them using self-proclaimed ideas of right and wrong, violence occurs and suffering entails. Our world is awash in these offensive practices. I want to be included with the others who are striving to end the suffering.

There is a sentiment that is millennia old, and remembering it today is a good place to start towards that end: *De gustibus non disputandum est.*

Fact or Fiction?

It's one of my favorite questions to ask: "How big is the universe?"

Unless I'm dealing with a thinker, the immediate comment is usually something like "I have no fucking idea." Well, minus the expletive, though it's usually implied. I hope that the responder is then ready to enter into a long philosophical conversation, where they've got the intellectual tools to bounce coherent scientific ideas off me. I can thus size them up.

The fact of the matter, though, is that they're not going to be able to bounce any ideas off of me that I haven't already considered in my life-long search for answers to this question. Then there's a damned good possibility that one of us walks away from the conversation pissed-off, though in any social intercourse it's important that both parties gain some sense that they've contributed—but I know I'm right, which means I'm going to monopolize the contribution. I won't be the one who walks away pissed-off.

After that initial response of "I have no idea," I'll assure the person that they do have an idea, it's just that they don't ponder the question often enough to have it readily available. At this stage, the responder will inevitably invoke the stock answer, the answer that gets me up on my high horse: "The universe is infinite."

"Oh I disagree," I'll retort, at least giving them the sense that I've listened to their side, even if only for four words. This is where I'll hog the conversation I implied we'd enter, and turn it into a diatribe, me teaching the neophyte how to expand their horizons. You see, the Universe, though unfathomably vast, is ultimately finite. It would take at least a couple of physics classes to reach that conclusion, though I'd try to summarize enough of it to help them save their money by not having to go back to school.

That part is straight forward—the universe is finite. It's immense and full of almost countless seen, unseen, imagined and unimagined phenomena. But finite.

And then the not-so-straight-forward part, though it's absolutely the most inspiring part—the mind itself is infinite. Our mind, human's wonderful cerebrum. We can put together infinite strings of thoughts that help us contemplate all those imagined and unimagined phenomena. We ask questions and look for answers. Humans want to know why. It's deep in our DNA.

The problem with this infinite and questioning mind is that when it shines its light upon itself, it doesn't take into consideration its own infinity. So, many times we end up answering questions through lines of reasoning that use our capacity for conjuring infinite possibilities and connections. Which means we make things up. Oftentimes those made-up things are beautiful and useful, like so many theological guidelines; but oftentimes they're horrible and destructive, like Auschwitz. This is why science is so wonderful: it doesn't make things up. Sure, it hypothesizes, but it does so in order to discern a direction of inquiry. The end results are, by nature of the tenets of science themselves, applicable and approachable by every individual, regardless of his or her own infinite thinking patterns. Thus, science gets to facts like that gravity holds me bound to the Earth just like it does Mick Jagger or the Moon.

My question, therefore, isn't really about coming to the conclusion that the universe is finite, though thinking about any aspect of the universe and our place in it—the facts—is fascinating. No, it's really about bringing to light our capacity for infinite thoughts—the fiction—and how wrong they sometimes are.

Manifestos and Polemics (concerning time)

I'll ask some people, after I've been talking to them for a while and I find that they're of a certain philosophical predisposition (or at least capable of having an interesting conversation), about the size of the universe. I feel it's one of the most important of questions, one that has a pivotal idea connected with its answer, and it's that idea that has led Homo sapiens down a path whose terminus is the ultimate destruction of our beautiful Earth. It's a question that I've been pondering since I was about six years old. Really. And it started innocuously enough: by wondering how Santa Claus got to everyone's house all in one night.

I grew up within a society that embraces the myth of Santa Claus, a myth that probably has in its history a kernel of truth; maybe a long-ago Scandinavian philanthropist who actually existed. The need to perpetuate the myth (my brother tells me how fun it is) promotes in the youngest members of the society the teachings of myths as *facts*, not that anyone after a certain age will believe in Santa Claus I hope. But as any animal's young does, human children are learning the ways of their society through being subsumed in it, like learning the language, the customs, the foods, the gesticulations, and all of the other social contracts that come along with the society. Un-learning any of them leaves a residue, an aftertaste.

I imagine it was disappointing to my mother when I told her at such an early age that I didn't believe in Santa Claus, because it probably robbed her of a few years of the fun my brother talks about, at least around Christmas, when my family was a little more open to having it. By the age of six I was already on the road to being a science guy: I started wondering about Santa's night flying habits, so I looked up facts in our

Encyclopedia Britannica about the Earth that seemed appropriate to a six year-old's questioning of Santa-logic, like how big the planet is, how many people live on it, how fast planes fly and what powers them, and what time zones are. I put two and two together so-to-speak, and realized that Santa was nothing but a whole bunch of hooley. When I told my mom, she luckily took it in stride, which vindicated my reaching for facts over fantasy. She paused for a moment, and asked me what I wanted her to give me for Christmas. I wanted a telescope. I wanted to see the other planets that went around the Sun like the Earth does, see other stars shining their light like our Sun does, and see better the craters and mare on the Moon, the places where my heroes, the astronauts, were trying to get to.

I started serious gazing with that telescope. Oh what a universe there is to see! And what delight to reach out and capture the facts of things while basking in their beauty. Astronomy is quite a nexus of the sciences and of facts, carrying with it all sorts of physics and chemistry, and now, as scientists are seeing the folly of anthropomorphism, biology too. There's a vast amount of information to learn from just the light itself, like temperatures, chemical makeup, intervening debris, and even the speed of the object emitting or reflecting it. The human body, as a sensory instrument, takes in nearly 85 percent of its world visually, and astronomy as a science, more appropriately a pseudo-science during its earliest stages, started that simple way, by using our own senses. One would look into the night sky (the daylight one, too) with the naked eye, until just relatively recently, when lenses were first used to study the stars and planets, and watch nature's motions. The feeling I got—and still get—of being in concert with nature is almost indescribable when looking out at any object and coupling the

vision of it with the knowledge humans now have at their command. This is what my life has been; having an experience, and then trying to understand the experience empirically. I would take my puny telescope into the backyard and find Jupiter in the night sky, a whole learning experience itself. The human eye, on a clear and dark night, can see close to six thousand "stars" (stars, planets, nebulae, etc.), and you've got to find what you want to look at within that glittering, moving cosmos. Using my atlas and planisphere, I'd finally locate the giant planet, look at it, ponder it, ask questions, and find answers. How far away is it? My atlas tells me it's 4 astronomical units, or A.U. What's an A.U.? The average distance from the Earth to the Sun, and it's a distance measurement used to describe nearby objects. It takes thirty-three minutes for the light from Jupiter to reach the Earth after it's reflected from the gaseous planet. Think of it! How wonderful that my eye, looking into the lens that has focused this very small segment of the electromagnetic spectrum (light is only a sliver of the full spectrum of electromagnetic energy), is seeing a Jupiter and its Galilean satellites as it was more than a half-hour ago! So many more questions to ask, so many more answers to find.

At first there's a hesitation when I ask someone about the size of the Universe; such a profound question has caught them off-guard. It's certainly not like asking "What do you think of this weather?" or "Are you as depressed as I am that manatees are dying so suddenly and in such large numbers?" The former would be an innocuous rhetorical query; the latter would be a point-blank search for the respondent's humanity, their understanding of the far-reaching present and future implications of the question, and even their grasp of current events. Asked about the universe, their dumbfounded look is more than likely because they've never pondered this question of its size before, a

likelihood that I find disheartening, though not surprising. Disheartening because I've given them the benefit of the doubt that they're capable of having an interesting and knowledgeable conversation and they're proving me wrong (which is only the most superficial level; there are many deeper ones that are strewn about this essay), and not surprising because they're reacting just like the 99.9 percent of the others who've been asked the question, me quickly realizing they haven't any idea, and they're proving me right. I'm always looking for the other 0.1 percent.

I am skeptical, and my diverse experiences and interlocutions with myriads of people keeps me that way. The hordes of humans act with a herd mentality and go through their lives "sticking with the flock." They do this because they're scared to have their own ideas, scared to be seen as individuals, scared to break from the myths that tie them to the rest of society. Individuals who run contrary to any societies' views are generally perceived to be problematic, or in today's world of labeling with disorders from the DSM-V, given some form of negative diagnosis of what led them to their individuality—OCD or something similar. These very human reactions have played out over the course of history, rarely being addressed in a democratic fashion or dealt with in a mild-mannered way (though the electro-shock therapy or drug regimens sometimes used by the democracies are not necessarily mild-mannered), most times ending with burnings at the stake, or with institutions like the Inquisition, or threats of assassination, or any other injustice humans inflict on others. There's also the tried and true method of bringing members who've gone astray from societies' myths back into the fold: promise them that if they don't, they'll suffer an eternity in a fiery hell after they die. Then, not only are they afraid of the dying, which we all are, but of what comes after it.

These forms of punishment for being an individual keep people scared. So scared they don't seek the truth, and, absolutely most importantly, keep them scared to admit that there are facts that are immutable. We are taught, at least here in the West, that there are only two guarantees in life: taxes and death. We are taught, even if not with words but through inference, that you cannot say anything with utter certainty. Thus, most are scared that, by admitting something as certain, they'll get sentenced to a conceived notion of an eternal fiery hell by a conceived notion of gods mad at them for not bowing to their omniscience. In other words, scared to admit and rely on fact over myth.

But maybe, if they're that 0.1 percent that I'm always on the lookout for, they're not scared at all or they're only scared that they might stumble onto the wrong answer while looking for the right one. These are the ones I want to meet—the fearless, just because it's fascinating to me that a person can be so, and the others, because they're asking questions and wanting answers. They only need the slightest nudge out of their low self-esteem syndrome to see that there's nothing to be scared about. There are indeed facts that are immutable and knowable by absolutely everyone with even a modest intellect, and searching those facts out, or even being wrong about their interpretation, is not going to damn them, or anyone else, for that matter, to an eternal fiery hell.

You might say this is the definition of faith, this idea of not being scared. But it isn't. The word "faith" comes from the Latin word *fidere*, to trust, and usually has as its first dictionary entry as "An unquestioning belief that does not require proof or evidence." Faith is an anthropocentric construct, and its very etymology is steeped in a long-ago conception and is perpetuated in passé traditions, a mythical expression of answers to questions that didn't have the benefit of the tools of science to answer. Faith is

a word that conjures a "higher power" outside of the individual as a way of answering the questions "Why?" or "How?" Faith forces the disagreeing person to be scared of the fiery eternal hell in order to convert them to the traditions of thinking about the "higher power," whatever the paradigm or theology may be of the enforcers. Science, on the other hand, forces the individual to believe in him or herself.

The need in past human history to use this "higher power" as an answer to the questions "Why?" and "How?" is immediately understandable. Humans, as our large brains developed over the course of evolutionary time, reached a point in consciousness where we formulated the question in the first place. To be human is to ask questions. Picture this scene from our prehistoric past: Mr. Cro-Magnon is sitting at the mouth of his cave, after eating a woolly mammoth steak nicely prepared by the missus. It's dusk on a nice summer eve. He's pondering the Moon rising in the east, wondering how in-the-hell the damn thing works. It's huge and obviously far away, he can see that—it never gets any smaller no matter how long he travels towards it, which he's done on other pretty evenings—yet it moves throughout the evening sky, and it's sometimes seen in the daylight sky, as well. But he can't see any mechanism that holds it up there or that makes it move, which goes against the logic of his tangible world; no tree like the ones a fruit hangs from and sways with, no bison with a crow sitting upon it eating bugs off of its hide and bobbing up and down with the motion of the bison's haunches, no stream like the one carrying a leaf floating down its burbling current, no human like those holding a spear while running during the hunt. So what does Mr. Cro-Magnon do to answer the question of how it's held up there to move through the sky? Newton's theory of gravity is still a long way off, so he can't use its insight, but even 50,000 years before Sir Isaac's

theory, Mr. Cro-Magnon is still a being who can ask a question, and is a being that needs an answer. Thus, Mr. Cro-Magnon makes something up. The Moon must be carried across the panorama by some colossal and invisible being! Voilà! And there we have it, the first philosopher. Remember now that the word philosophy is from the Greek word φιλοσοφία, which means "lover of knowledge," and that the natural philosopher, as we Homo sapiens of present-day perceive of those past thinkers, didn't really start working out experiments with an eye towards empirical understanding until much later in time (say around 1600, the beginnings of science), and that most answers to philosophical questions were only those gained by thought experiments. The questions were *thought* and the answers were *thought*.

But we now live in a time when science has at its disposal, not only the sophisticated thought that humans have always had (Homo sapiens means wise man), but powerful tools developed to probe the theories that those thoughts conceive. In the modern era, most certainly after the likes of Nicholas Copernicus, Galileo Galilei, Isaac Newton, or any number of the multitudes of thinkers who make up the Scientific Revolution (or any of the Egyptian, Greek, Roman, Persian, Chinese, or other societies' thinkers), science, whose practitioners stand on the shoulders of those before them, has developed tools that lead to discoveries that lead to new theories that lead to science. Microscopes and telescopes of incredible diversity and power (even the cheap, flimsy ones like I had), especially today when coupled with the computer's abilities of information storage and number crunching, have allowed Homo sapiens to go beyond the meter-sized world of the trees and bison of Mr. Cro-Magnon to examine in great detail and with great finesse the broad range of experiences the universe offers to the senses.

We no longer need to conceptualize an answer to a question by mere thought. We can prove or disprove the validity of both the answer and the question.

Science is a vast network, accessible to each and every human; a network wanting everyone to contribute and wanting anyone to prove it wrong. Read that sentence again; it wants *everyone* to contribute and wants *anyone* to prove it wrong. Science is an open door to all, wishing that everyone enter and be part of it. Science is the ultimate equalizer. There is no need to fear asking questions in science. It is not dependent on a "higher power" out of everyone's grasp to understand, a myth where the only thing knowable about the higher power is known by the higher power itself. Science accepts that an individual has opinions, unlike myth-based paradigms. But science requires that the opinions held by an individual be an *idea*, something that can be proven to each of us, something that every part of the universe is subject to; it requires that all individuals expose their ideas to be reflected upon and tested by all, and if the ideas can't be supported by absolutely everyone and everything, it is really just an opinion, and it must be thrown to the collective wayside. Opinions, at least for the collective, are not beneficial. Science is not an opinion; science is a world of universal ideas affecting each of us equally, an accumulation of facts that govern every last bit of the universe.

An example might do some good here. Gravity is one of the fundamental and overarching experiences in the universe. Gravity interacts with everything, everywhere, but I'll stick with our local neighborhood. I drop a small rock from my hand here in Portland and it falls toward the center of the Earth (stopped of course by the intervening ground). Vladimir Putin does the same in Moscow with the same result. The flying seagull in Freeport drops a clam from its beak and it falls toward the center of the Earth,

and a Sperm whale in the Indian Ocean drops a squid tentacle from its mouth and it sinks towards the center of the Earth. A building in Bangladesh collapses and falls toward the center of the Earth, and an ocean-liner in the northern Atlantic hits an iceberg, its buoyancy compromised, and sinks towards the center of the Earth. The rain drop in Seoul falls and the snowflake in Siberia falls and the pinecone in California falls. The Niagara River falls over a cliff edge and the cliff edge falls as it's dislodged by the raging water. The lava spewed from Kilauea falls into the Pacific Ocean and the oceans themselves are falling towards the center of the Earth. And the Moon's own gravitational influences pull the Earth's oceans towards its center causing the tides here on Earth, just like it pulled at Neil Armstrong and Buzz Aldrin maneuvering their Lunar Excursion Module towards Mare Tranquilitatus. The center of the moon falls towards the center of the Earth, though its tangential velocity keeps it from reaching it and thus staying in orbit; which is why it is still moving across the sky the same way for you and me as it did for Mr. Cro-Magnon when he saw it, pondered it, and invented his myth.

Mr. Cro-Magnon's thought experiment led him and the others he might have coerced into accepting his opinion (Mr. Cro-Magnon wasn't the only one asking the questions and needing answers) into a new realm, one capable of offering a level of mental peace where any one question that has been asked has been answered—to the best of the abilities available at the time. And since that question was answered using a certain anthropocentric logic, as there wasn't another logical method to access, other questions would be answered similarly, across all of the time humans have been on this planet, all the way up until the logic of the scientific method. Whole paradigms are built upon that old logic process, and most of today's world is still well within the grasp of those

paradigms built on the old logic. The inertia of theologies is tough to break free of because people are scared; just the clout of the momentum is scary.

Well now. "How big is the universe?" There are almost as many *opinions* as there are the people of the 99.9 percent to express them. I say almost, because there are those of us, the 0.1 percent, who are in agreement on an idea, whether right or wrong; but, and I say this with no ill-will or malicious intent' only one is right and provable. Think Mr. Cro-Magnon and his thought experiment legacy, which is one of the wrong ones. Most people, when given enough time to recover from their dumbfounded stare to answer, after admitting they don't know, would try to describe the size of the universe as infinite, a concept that I'd bet they have virtually no idea about. I think that in order to, you'd at least have to have studied calculus to get your feet wet in the concept, or done serious contemplation on the fact that no two snowflakes are alike. These respondents would be reaching for opinions they vaguely associate with a "higher power" or "Buddhist principles" or some such thing, opinions based on thought experiments, not on scientific or universal ideas. Certainly not on ideas that the individual formulated on their own by wondering about them and seeking answers. They are scared, this 99.9 percent, and they think they're playing it safe, sticking with the flock, so that they won't spend their infinite afterlife in an eternal fiery hell.

Here's the leap, and it's one side of the fulcrum of the idea alluded to at the outset. The universe is vast: incredibly, hugely, immensely, nearly unfathomably vast. But ... it's finite. And go ahead. Prove me wrong. Science wants that and I want that.

It would be a waste of energy to try though, in the same way as it would be a waste of energy to try and "discover" anti-gravity. You'd be wasting valuable energy that

could be put to so much better use, like finding answers to help our beautiful planet out of its many current crises, instead of harming it by staying status quo and following the flock. And harming the planet is a consequence of many opinion-based paradigms or theologies; and I dare to go further and say that our poor beautiful Earth is being dealt its death knell as a direct ramification of theological thought experiments and the paradigms they've spawned. Mr. Cro-Magnon's colossal and invisible moon-carrying being, a myth that perpetuated and grew and morphed as it was passed on through nearly countless generations into the first and second millennia's monotheistic religions (and, of course, the polytheistic ones, too, but their collective weight tends more towards benevolence with only hints of greed compared to the monotheistic ones) put Homo sapiens so out of touch with its own place in nature, in the universe, that we've been viewing the Earth as a resource to exploit, not a diverse world we're only a miniscule part of, and you and I and all of our kind can't stop the myth's momentum.

Now you might have a question that could very well be, "Well, if one side of the seesaw is that the universe is finite and there are all these great ubiquitous experiences like gravity that can help me explain it, what's the other side?" That's an outstanding retort. I was hoping you'd ask. But, honestly, I've already been probing around the answer. It's something absolutely wonderful about Homo sapiens' cerebrums, something some of us take to the most remarkable artistic places and some of us use to conceptualize the most terrifyingly atrocious acts: the infinity of thinking. The universe is vast but finite, *but the thinking mind itself is infinite*. The finite universe and the infinite imagination. There is no end to what humans can invent in their thoughts. Questions and answers are a symbiotic positive feedback loop with no upward bounds, to use a calculus

term. Humans can make up whatever they want. All of history is this, some fact and some fiction, from Caligula to Hitler to Anita Bryant (she pitted the myth of God against homosexuality back in the '70s) to Pythagoras to bin Laden to Mr. Cro-Magnon. Opinions are the fabrications of a mind with infinite possibility of desire, and some lead to powerful tools, like Pythagoras's theorem: but they can also lead to disaster when they come up against, and are used in place of *science*. And of all the disasters, whatever form they may be in, from the killing of a Harvey Milk (as a consequence of an Anita Bryant) to the genocide of a race (as a consequence of a Hitler), it's the collection of myth propagations that lead humans to exploiting and destroying our lovely Earth and its wondrous inhabitants (nature, in other words) that most concerns me.

The universe is finite and the mind is infinite. This phrase is at once simple and profound, and it has at its fulcrum the weightiest of balancing points, the concept of time. Time is intricately intertwined with all of the ideas in the preceding rant. Timeframes outside of everyday experience are something that humans have almost no concept of, like numbers that exist out of the everyday experience, say for instance a number like infinity—a number with no upward bounds. Oh, we're very good at getting to work on time, or knowing our vacation schedules, or calculating when to take the cake out of the oven. Most of us can use a clock or a calendar reasonably well because our day-to-day routines are run by them. Since the middle of the nineteenth century, when the first synchronized clocks set the timetables for train schedules, we've become increasingly more slavish to the clock, which is most people's concept of time. But humans are creatures bound to nature in more of a seasonal rhythm, the Earth's orbit around the Sun, a fact we've lost sight of, and modern ideas of time, which have become increasingly

specific, have led us astray of that rhythm and contribute greatly to our collective anxieties.

So what kind of time do we humans know? There are great books on the history of time, like the one I'm presently reading by Adam Hart-Davis, called *The Book of Time: The Secrets of Time, How It Works, and How We Measure It* (Firefly Books Ltd., 2011), and they are a fascinating adventure into such subjects as why the Babylonians subdivided the day into 24 hours and an hour into 60 minutes (and note the direct connection with astronomical positioning in these terms), or what Greek water clocks were and what Stonehenge was used for, or the often bumpy road of developing calendars like the Julian or Gregorian, or the need for precise time reckoning in GPS. *Galileo's Pendulum: From the Rhythm of Time to the Making of Matter* by Roger G. Newton (Harvard College Press, 2004), and *Einstein's Clocks, Poincare's Maps: Empires of Time* by Peter Galison (W.W. Norton & Company Ltd., 2003) are other recent books giving similar, mostly historical information, with the different authors expounding their own prejudices on what's important in their subject matter, say for example, talking about jet-lag as a consequence of transporting an individual with their circadian rhythms across time zones and the havoc that ensues from it. From the millennia's old problem of when it's the correct time to plant a seed, to NASA's current one of when and how long to fire a rocket to decelerate Curiosity Rover for its descent to the Martian surface, humans have understood the need to calculate time, which is fundamental to human's interactions with the modern world around us, and one another.

Six-year-old I started the quest to better understand time (though I wasn't thinking so specifically back then) by comparing the myth that Santa flew to everyone's house all

in one night against the thirty-three minute trip it took light to bounce from the uppermost clouds of Jupiter to the eyepiece of my telescope. One was obviously in error; there was no way the two could exist under the same rules. The adults all around me, the K-Mart where my family shopped, the Christmas carols we heard, the TV specials we watched, all told me that there was a fat, jolly old soul who could do this remarkable feat. But my inquisitive mind understood that it took us thirty-three minutes to go round-trip to K-Mart, just one destination. If that trip happened after supper when it was dark, I could go to K-Mart with my mom, travelling at 40 miles per hour, and come home to my telescope and look at the light that left Jupiter at the same time we'd gone to the store, travelling at 186,000 miles per *second*! I was experiencing a world where I traveled at a certain velocity that, when factored over a given time period, got me a certain distance. This is intuitive, tacit knowledge; humans *contemplate* time in our large cerebrums, like calculating when to leave the house to get to K-Mart before it closes. In the cerebellum, humans, like all other creatures that have sensory organs and a central nervous system, *respond* to it with an action appropriate to the situation, like moving as fast as possible to remove ourselves from a threat. It was the moment of realization that my conception of time was different from my response to it that had me asking the question "is there any plausibility to Santa going through all of these actions in this finite time?"

I hope to live a decent quality of life until I'm about 90 (despite my obvious pessimism over humanity's capabilities, I'm an optimist), which is a damn good human *lifetime*. Generally, humans have this chunk of time—the lifetime—under mental control, and we use it as a measuring stick for many other timeframes; for example, everyone knows the phrase that a dog's year is really more like seven. This makes perfect sense; we

translate events outside of our experience zone into events within them, like converting seconds to days—we don't say "86,400 seconds ago," we say "a day ago." Events that are experienced over any of the timeframes within any particular lifetime, like months, years, and decades, are easily conceivable, and can be used with some degree of certainty of understanding. But as soon as time-chunks outside of a lifetime, like centuries, millennia, and eons (or the smaller units like milli-, micro-, or nano-seconds), are used in expressing concepts, humans quickly lose touch with understanding. History outside of the living generation's experience becomes fogged. For example, there is no longer any human alive that lived during WWI (save for maybe those few who were born near its end, and who have no direct recollection of the world as it was then), and all experience of it can only be passed on through whatever media is available, through writings or some early films. Collectively we "know" of past history, or time passage, only as it involves our being alive. Stepping back further in time, like when the Portland Company first started fabricating the newly invented locomotive in 1846, where, except for sepia-tinted photographs and written language, penned by hand and sounding vaguely different to our contemporary ear, we have no way to "verify" the validity of any past action when using present experience—putting ourselves in the picture, so-to-speak. Because vision is our best sense for understanding the world around us, when we go back in time before photos, then further still, when paintings are all there is of visual representation (perspective wasn't invented until the end of the 14th century), most "understanding" of the world is lost. Only faithful re-enactments can give contemporaneous audiences a taste for what the past was like to those who lived it. This feeling can be captured by our modern-day senses by visiting living museums like Old Sturbridge Village or Plymouth

Plantation (both New World-era re-enactments are in Massachusetts). Our experience of *understanding* time changes through all of these different scenarios.

Presently we live in an era where September 11th, 2001, as important an imprint on our collective time reckoning as that was, is now fading somewhat; December 7th, 1941, "A day that will live in infamy" so said then U.S. President Theodore Roosevelt, is now very faded; the days when the largest sailing vessels left Portland Harbor to circumnavigate the oceans can only be viewed in the somewhat rare photo, and is only now faintly detected; and the signing of the Declaration of Independence, which can only be pictured in a painting that everyone realizes is an accumulation of visions of a painter's eye put to canvas with an intent to record the event for posterity, is now totally lost to history. All of this is to say that, in general, unless teased apart with factual tools (like the visual ones mentioned), past time quickly gets out of our collective focus; it can only be painted in the mind's eye, generally using words fabricated by a writer who was viewing their present through the lens of the paradigm they were subsumed in. Unless someone is studying history in context, 99.9 percent of people are not walking around understanding the time of the Pilgrims, nor of the Middle Ages, nor of the Roman Empire, nor of the Chinese Dynasties, nor of the invention of wheat domestication, nor of the world of Mr. Cro-Magnon; they don't understand the modes of thought, the transmission of ideas, the desires behind the acquisition of the ideas, or the cultures and paradigms the acquisition was subsumed in. And all of those listed things, from the Pilgrims to Mr. Cro-Magnon, have only just happened! That is, relatively speaking.

Time is a concept perceived in the present as a passage, and projected into the future based on the accumulations of the passage. As we get older, we have more

experienced history with which to gauge the passage; this of course causes the sensation that time goes by faster as we get older. These are the feelings and perceptions of an animal with sensory organs and a brain large enough to try to decipher the inputs, along with responding to them. Mr. Cro-Magnon had gained this level of thinking, this temporal association, remembering the past movements of the Moon through the sky, and appreciating that it will do so into the future.

These perceptions of time kept (and for the 99.9 percent still keeps) Homo sapiens thinking only in terms of a lifetime, or the recorded generations of the society into which they are born, all through human evolution, and for large sectors of the population, right into the present. Most people in fact, only *ever* think of the present, as it's all they "really" have—perception is purely in the present as action potentials in our nervous system cause us to interpret physical sensations and influence thoughts. This poses a problem to the 0.1 percent, and one of them, Charles Lyell, a Scottish geologist, wrote a ground-breaking book titled *Principles of Geology: An attempt to explain the former changes of the Earth's surface by reference to causes now in operation* (1831-33), debunking the idea that the Earth was about 6,000 years old (as calculated using the Old Testament). That of course scares the other 99.9 percent because it flies in the face of myth-based paradigms. A case in point is to look at what happened to good old Galileo when he corroborated Copernicus's heliocentric theory of the solar system: he spent the last nine years of his life under house arrest, condemned by Pope Urban VIII and the Inquisition, after he was forced to renounce Copernicus or be tortured on the rack and ex-communicated. Even the most valued of thinkers in the ascent of man (a term I use specifically to allude to Dr. Jacob Bronowski's (1973) BBC documentary series *The Ascent of Man*) have bent under

the pressures of society's myth enforcers. Pope John Paul II, in 1992, 359 years later, apologized to a long dead Galileo—big deal.

We collectively understand that the apology happened in 1992, quite recently, though I'm sure most people are unaware of its significance, or of the history surrounding it. We collectively understand that our grandparents went through The Great Depression, leaving ripple effects in our present families' quirks and mannerisms, like making sure to eat every bit of food on our plates. Some people even get to understand the time passage of multiple generations, living in the same farmhouse their great-great grandfather built. But we no longer collectively understand what it means to live before electricity, or petroleum-based machinery, and it's a very pleasant anachronism when here in Portland the Maine Narrow Gauge Railroad occasionally runs its steam locomotive, jolting the listener with its chug-chugging into realizing this is something from the past.

But collectively we don't understand that it was only an instant ago, less than 160 years, when the Earth wasn't being ravaged by the effects of human's petroleum exploitation. This is our beautiful planet's undoing, though it's not the subject of this essay. That number of years is out of our understanding, out of our collective perception of time-chunks. So we collectively gloss-over this out of focus time frame: it really has nothing to do with me needing to pay my electric bill next month, right? So now ask anyone if they can grasp the concept that the Roman Empire built impressive engineering works 2,000 years ago, or that the last ice age retreat from what we now call Maine was 14,000 years ago, or that Mr. Cro-Magnon was sitting at the mouth of his cave 50,000 years ago, and you must realize, that unless they are the 0.1 percent looking for answers to more profound questions than how to pay the electric bill, they *can't grasp it*. And it's

not that they're not intellectually capable, because I believe firmly that everyone is—it's that they are myopic and stick within myth-based paradigms, which we're taught to do right from our Santa Claus years. Why isn't everyone asking why the manatees are dying?

The general view, certainly to the layperson, is of time being the fourth dimension. "I'll meet you at Bard Coffee at 1pm." In order to fix any event, that is, capture its placement, its coordinates must be given, and in space we use the x, y, and z axes to do this, and add time to give a "when" to the "where." By using this framework, we inadvertently associate time with something tangible, and give it properties similar to the other three axes of dimension; specifically we give time concreteness. Because an object can move along the three physical axes in any direction (positive x, y, and z, or negative x, y, and z) we think we should be able to do the same for time, as if it's a physical axis like the other three. When we do this we've invented the myth that time is a line that has a positive and a negative direction. The next logical misstep is to think that the line can be navigated like the other three physical lines, leading to time-travel. This is the infinity of the imagination at work, similar in concept to thinking there is such a thing as anti-gravity: it leads to great fiction, but has no bearing on fact.

Albert Einstein's is the mind we currently associate with any profound concepts of time, and his theories (not opinions—he made his ideas universally known, so as to be scrutinized, and they've held up to all assaults—keep them coming, says science) are what has brought together modern physics. All of modern physics and cosmology is centered on the Special and General Theories of Relativity and the famous $E=mc^2$, which, in a nutshell, says that energy and matter are equivalent because of the speed of light. Reading Einstein's works on relativity is sometimes mind-wrenching, but they're a

beautiful dovetailing of my concept that the Universe is finite, but the mind is infinite. Einstein used his philosophical reasoning, just like Mr. Cro-Magnon did, in order to formulate the questions that led him to his answers—the theories—but he used the tools available to anyone to make that philosophical conundrum become real: he knew of and used Isaac Newton's work on the visible spectrum, A.A. Michelson and E.W. Morley's work on the speed of light, James Maxwell's work on the electromagnetic theory of light, and Heinrich Hertz's work on wave theory—these are but a few. Einstein was the brilliant thinker who pieced it all together, and that brilliance illuminates all manner of facts as we know them today. Our current concepts of space-time utilize his ideas—in fact *need* them—like the size and age of the universe, and some of those attitudes show themselves in writings that are mind bending thought experiments. Any perusal through such papers about quantum mechanics, string theory, multi-dimensional universes, astronomy, and anything that deals with light, and you'll see Einstein everywhere, much like you see Newton all over NASA. Dealing with situations in three-dimensional space that move as slow as the speeds of a spacecraft on its way to Mars, and of course anything much less than that, say a traffic collision, Newtonian physics does just fine. Once we start dealing with events whose placements in three-dimensional space are going any appreciable percentage of the speed of light though, we need Relativity Theory to correctly factor the behavior of time.

It's this collision of time with the tangible that causes troubled reasoning, though titillating fiction. Elongated space ships, worm holes, twin paradoxes, and time travel make great reading, and can be the precipitate of a pleasant evening of philosophical banter with friends around a fire after a woolly mammoth steak and beers, but are

products of human imagination. Though I've studied many of the appropriate subjects, I am not a theoretical physicist, nor a mathematician, nor a mind capable of the complex thought processes on par with any of the fabulous minds that I've mentioned in this essay. But I'm just going to go ahead and say this: the infinite mind is going to say anything is possible, but the finite universe is not capable of having everything happen. Time travel, conundrums of aging as astronauts approach the speed of light, elongation of matter, and all these fun things, are all fictions. There are those out there with multiple Ph.D.'s after their names who'll say otherwise.

It is a consequence of our infinite thinking, coupled with our innate fear of saying something is definite, that leads us to believe there could be time travel. Einstein's theories are necessary for us to do the mathematics correctly when putting a "when" to a "where" as the "where" is approaching the speed of light. But "when" is most certainly not a *thing*: "when" is a fabrication of Homo sapiens' thinking that helps us paint the picture of the "where" and nothing more. Because humans have consciousness, we try to make the consciousness tangible with dimensional imaging that needs the fourth dimension to properly place it in a "when." We can, and do, construct objects that have matter within the x, y, and z dimensions, giving them their "tangible-ness." Realize though, that we are just re-arranging structures that are already part of the finite Universe. We are not fabricating tangible things from nothing, just putting them together from other tangible things. This is called chemistry.

Human minds have invented time as a useful tool with which to image the x, y, and z coordinate system. Time is only a concept, a necessary one yes, because we need to place the tangible into consciousness's time passage, and we've built the clock, an

apparatus to measure it, like we've built the yardstick to measure an object's x, y, and z placement in space. We then use that clock to forecast the future (or put it in history) of an object's "when-ness." Meeting me where? At Bard Coffee. When? At 1pm. Put Curiosity Rover where? On Mars. When? At a time when its trajectory is calculated to put it in the same place as Mars after it's launched. That successfully happened on 6 August 2012, after a journey that started with a launch on 26 November 2011.

There is no such thing—read *thing*—as time, but we invented the idea of it because of its usefulness, like figuring when to leave to make it to K-Mart before closing, or putting Curiosity Rover on Mars, both of which utilize the same reasoning. We need the concept of time for location purposes, though it is not a physical location but a conceptual one. Like Mr. Cro-Magnon, when humans invent something, we treat it as if it is an engineered, fabricated object, which is understandable, because along with the brain capable of complex thinking, we've also got opposable thumbs capable of making. And humans reverse engineer, leading us to think all things are engineered. For more than a thousand years, Ptolemy's view of the heavens spinning around the Earth, each point, a moon or planet, having epicycles within epicycles (needed to approximate the *actual* positions), was a try at engineering the universe. And we philosophize like René Descartes, who said "I think, therefore I am." Humans are anthropocentric egotists. Remember, the Universe is finite, the thinking mind is infinite. With the concept of time we did not invent a malleable, tangible object, but purely a thought. Time is only a thought or the process of thought. Time is the speed at which the passage of knowledge of being occurs. Time is the speed of information, and information transmits at the speed of light, therefore I say time is the speed of light.

So I've said it; there's no such thing as time, but make sure you stress the word *thing*. Because there certainly is, and has to be, the concept of it. That concept allows us to express the tangible finite universe's passage. But there is not time in the same sense that there is my book *The Book of Time: The Secrets of Time, How It Works, and How We Measure It*. Time is the perception of passage, not the actuality of the passage—that is its x, y, z coordinate system. All of the conundrums caused by time are a ramification of forcing time to be concrete. These conundrums don't concern us while trying to pay the electric bill, because our relative perception of the passage of all the objects in our senses are done at speeds so far below the speed of light as to not influence them. But as x, y, and z coordinate system objects approach that speed, as light itself does, the relativity of the perception of how they are influenced by what we call time needs to be factored in, and this is what Einstein did for us.

Obviously, none of that speed of light stuff has anything to do with how you and I live our lives, unless you're building a neutron collider in your living room. But our inability to comprehend time as it affects our interactions with nature are causing lots of massive problems, and as any of my essays attest, the largest one is petroleum exploitation. Humans, like all other life, are on the constant lookout for available energy. Back in 1859, we tapped a motherload of energy, and it has propelled our species in every way our infinite minds asks it to, from developing new fertilizers to grow megacrops to feed our exponentially growing populations, to powering immense systems like seagoing vessels and railroads and labyrinthine grids of automotive roadways, to heating our homes and offices and hotels and places of worship and restaurants and schools. Petroleum exploitation has brought us out of nature, more than any single invention, and

boy are we taking advantage, to the detriment of almost all other aspects of the natural intricacies of the planet. 1859 was just yesterday. Tomorrow looks bleak.

I don't want to talk about these things anymore. There is no point. I have no agenda, though you say I do, because having an agenda implies that there is an outcome that can be somehow changed if the agenda is followed. There is nothing that can be done, and I've not intended to suggest that there is. All I can do is understand that humans are endowed with this fabulous ability to think infinitely, which we use so un-wisely, so myopically, so carelessly, and so inconsiderately. It saddens me when I think of the destruction and suffering humans inflict.

People are afraid of facts; they don't want to hear about science. It leaves them no way out. You're stuck with gravity, and you're stuck with death. Life is very difficult to live this way, in a factual world. Most people don't want to hear about these arguments, because they point out their self-centered desires to sequester as much energy as possible, and it gives them no wiggle room in their moral and ethical self-characterizations. I'm only smart enough to understand this. I'm not smart enough to change it.

The Bench (a semi-fiction)

Hop, hop, hop. I stop and sniff the ground. All sorts of nice morsels around these days. The weather's been awesome. Bound, hop, hop, bound, bound. ACORN! Wow, nice one too. I pick it up and twirl it around in my hands, wicked fast man. It's fun. Twirl, nibble, twirl. I put it in my mouth to hold, 'cause I'm gonna go put it somewhere. One of my personal favorites is on the other side of the sandbox, on the corner with the grass that never gets cut. Hop, hop, hop, bound, and I'm there; but on second thought, I decide to take my acorn with me. I'm headed further down the hill. Bound, bound, hop, bound, hop, bound, bound, boouuunnndddd. Whew. That stretch can be bad. I've seen a few unlucky bastards get run-over there. I usually don't come this way for that reason. Bound. I stop and spin my acorn around, chirp a few times, and then root around under the leaves. Nothing. I think I'll go over towards the walkway. Bound, bound, hop, scamper, bound, bound, hop.

I want to spin my acorn again, so I sit up on my haunches, lookin' real cute I might add. I twitch my tail five or six times at that female over yonder, and look out ahead of me.

Sonnovabitch. That bench. What the hell? It's got my name on it. Engraved on a plaque in block letters, WILLIAM HENRY FERGUSON JR. So that's it huh? A bench? All of my life I'd wanted to be somebody, make a contribution and be remembered. And that's all there is to show for it? A fuckin' bench? It doesn't even say who donated it.

Yup, I'm a squirrel right now, but I used to be a human. That's why I can read.

I react to the bench with lots of high-pitched squeals while I run around in circles. This actually gets the female's attention, but I guess I seem threatening, 'cause she runs up a tree. I stop and sit up again, quiet now, and gaze at the bench and contemplate.

There were a few times, back then as a human, where it seemed I was on society's path to "being somebody." I'd served my country, paid some taxes, helped some people, even saved a guy's life once using the Heimlich maneuver. We were eating lunch together when he laughed at something and started choking. I stood behind him, bear-hugged him, gave a sharp squeeze, and out of his throat popped a chunk of turkey on rye. Just as advertised.

A "whoof, whoof, WHOOF!" breaks my reverie. It's a goddam dachshund, being all uppity. Good thing he's on a lease, or else I'd have to really bolt to get away. But the dog and human continue on their walk, the master telling Mr. Uppity what a good boy he is, I guess for outwitting a squirrel. I return to eye my bench again.

The thing of it is, I'd never settled into a groove and kept with something long enough to get good at it. I was mostly a dreamer. I'd dreamed of writing a symphony, dreamed of being an aerobatic pilot, dreamed of discovering a cure for diabetes. But all of those things required a concerted effort to accomplish, and when I didn't immediately know how to do a reverse wing-over, I'd just get frustrated with myself and give up.

And then, before I knew it, life went by. Fast, like when I spin my acorn. I decide to run around in circles again to blow off some steam, squealing and chirping at the top of my lungs, "I wanted more, more, more, MORE."

Whoops. That wasn't such a good idea. The dachshund heard me, and has somehow yanked the leash out of his human's hand. "Whoof, yip, whoof, yip,

sssnnaarlllll” he’s yelling at me as his little legs get his velocity going faster than you’d think, and the only escape route I have is to go back the way I came, back up the hill.

Bound, bound, bound, bound, bound, boouuunnndd. Screeeaaach. Whack.

Violin

Mr. Gouhlas knew of my plight. I wanted to play a musical instrument badly, the guitar or the drums or even the pretty clarinet, but my family couldn't afford the four dollars a week that it cost to rent one. Being the truly interested teacher that he was, Mr. Gouhlas discovered an alternative: the violin. One morning I showed up to my fifth-grade class to find an hourglass-shaped black case sitting on my desk. It reminded me of the package the gangsters of the movies held under their arms and would discard after they pulled out a machine gun to shoot bullet holes in 1930s era automobiles.

"It doesn't cost anything to rent," Mr. Gouhlas told me. "And I've arranged lessons for you on Friday mornings with Mr. R_____."

I gently fingered the three clasps, lifting them into their snug detents, and opened the case. Out wafted the warm aroma of aged wood and rosin that I had to pause over; this instrument, cradled in a red crushed velvet nest, had a sophistication that my unsophisticated family bloodline couldn't comprehend. I was smitten immediately.

Taking it home, I carried it proudly on the bus, down my street, and upstairs to my bedroom. If you've ever seen the 1998 movie *The Red Violin*, cast my chubby ten-year-old body into the scene where the little German boy can't be separated from his fiddle, and you'll get the picture. I gingerly picked it up for the first time and experimented. I plucked the strings, turned the pegs, nudged the bridge, and caressed the chin-rest. I put it down and picked up the bow. Mr. Gouhlas had told me that the name of

the part where the bow hairs attach to the moving end is called a frog, and that by turning the screw I could tighten the hairs. I carefully inspected each piece of this wondrous and lovely instrument and even managed to produce a decent tone while scratching the bow over the strings. I couldn't contain the anticipation I had for Friday morning, a long four days from now.

"Keep it under your chin all the time, for chissakes," Mr. R_____ hissed at me. Even though I'd only been in the lesson for ten minutes, my arm was aching from holding the violin in position. Eventually that arm would start to sag, and the agitated Mr. R_____ would forcefully push the instrument up and into my neck while cursing at me. "And keep your bow arm up too, even when you're not playing. Stop weeping, it doesn't hurt that bad."

I wrestled desperately with my emotions as the year went on. I adored my violin and I was learning quickly how to make music with it. My parents didn't have to pay anything for my privilege, and I didn't want to let Mr. Gouhlas down. But Mr. R_____ 's interactions with me continued to be violent, despite the progress I made. His rage was in direct proportion to my skill. To top it all off, I was afraid to tell anyone.

Before the year was over, I returned my prize to a disappointed Mr. Gouhlas and told him I didn't want to play it anymore. One afternoon a knock came on our classroom's door and Mr. R_____ asked to see me in the hallway.

I stood trembling against the hallway wall, a meek boy, Mr. R_____ 's finger jabbing my shoulder to emphasize the words he spit into my face: "I'll find you next year and make you play so much your fingers are going to fall off." Lucky for me, he never did.

The cruelty of the man never diminished my affection for the violin, an instrument to which I hope one day to return.

Surreptitious Sounds

I have extra time this morning, so I take a stroll around Bowdoin's campus. There's a well-manicured central quad with crisscrossing paths, abundant old trees to lounge under while reading Plato, surrounded by styles of architecture ranging from the modern, like the mostly glass, cantilevered library, to early American, like the white, clapboarded structure housing admissions. One building suggests a cathedral, and it catches my attention because its huge double-doors stand open and inviting. I head towards it for closer inspection. Made from large blocks of stone, dark and imposing, the massive structure squats solidly on the earth but is pierced with a tracery of windows and strung with trusses of exposed wood. The place invokes an air of Chartres or Notre Dame. Topping it off is the rafter-rumbling harmony of organ music swirling through the red, iron-clad entrance. I climb the imposing steps and go in.

The contrast of coming in from the bright and already hot summer morning startles me. The air inside is cool. As my eyes adjust to the darkness, the panorama opens to muted hues of gold, white, and blue. The ceiling soars, reverberating the throaty deep octaves that are emanating from the three-story pipes at the back of the sanctuary.

I look around. The nave feels large enough to seat the entire student body, though this is an intentional illusion. Every wooden feature, the pews, the trusses, the tracery, the railings, is carved and gilded. The architect has done a grand job of eliciting exaltation. I'm both humbled and awed.

I have the whole delicious space to myself. It's as if this moment in eternity is mine without a world to be bothered by.

This isn't quite true, though: someone is making the music that thunders through the air. I walk up towards the transept. Out of the shadows I see the organ's console, and it too is intricately carved. There's a large lighted lyre with sheet-music spread out, five manuals, a maze of a hundred stops, and a three-octave pedal board, all being operated by a middle-aged woman with a look of intense concentration, her shoe-less feet operating the pedals. I stop near her and hold my breath, waiting for a break in the action.

"Good morning," I plead apologetically when she finishes with a flourish of arpeggios. "I'm so sorry to disturb you. And I didn't want to scare you!"

"Oh, good morning. You scared me a little, but it's quite alright."

"My name's Bill. I couldn't help myself; you see, I adore keyboards."

"I'm Martha. The college lets me practice here in exchange for an occasional concert. It's a love-love relationship."

"You're so lucky. Having this incredible instrument to play." I gesture with my whole body, arms open wide, emphasizing that the sounds I'm hearing are the symbiosis of organ and the space together.

"Would you like to try it?"

"I've never played one, but it would positively make my day."

I take off my shoes, sit next to her, and place a trembling finger on middle C, testing. Martha pulls a stop marked "trumpet." With my left hand I form a c minor chord, getting a better feel. I close my eyes and picture the only appropriate piece in my limited repertoire, a short *Fugue in C* by Bach. Because I've only played it on piano I falter at

first but try again, more confident. Martha knows what I'm playing, and adds bass with the pedals.

I play slowly, savoring the huge sounds that emanate only from such a source. I unleash them and they soar. Too quickly I'm finished—I don't want to further interrupt Martha from her practice. I stand, intensely satisfied, thinking how gracious of Martha to allow me into her sanctuary and experience the majestic power of this instrument, sounds that lift the soul.

Float

"Fuck," I nearly cried while hopping up and down in violent frustration, "I broke it!"

"What," George asked calmly. Though he was standing right next to me when it happened, he was holding a piece of the carburetor's valve in place, so he couldn't see down into the bowl's darkness. That was where my fingers had been.

"The float. I broke the fuckin' float. Shit. Fuck-fuck-FUCK!" I made one final gesture of swiping the air. My tantrum was finished.

"Shit, Bill, don't worry about it. If that's all that happens today, we can count ourselves lucky."

It was true: this engine, though it was small—one cylinder—it had some mass and lots of exposed gears and heavy flywheels, and could easily rip off a digit or two. Or catch fire. OSHA wasn't around when this contraption was cobbled together.

"But we were so close to getting it running," I whined. When I'd shown up this morning I just knew the ol' girl was going to wake from her half-century slumber. I'd been making it a point to be optimistic for George's sake; he'd been working on the

Friend engine for a couple of months now, completing a project that his deceased dad had started long ago. I didn't want to let my own friend down. And here I'd gone and broken the float. His float.

"You know, you reminded me of your dad just then," George pointed out. George had never met my dad. But over the years of our friendship we'd spent lots of time gabbing, and George had a pretty damn good picture of the person I was and the background in which I grew up. He continued, "Like the time he was in the boat with all those kids, and he bumped into the dock so hard the windshield came off!"

My mind replayed the moment of reference. I don't remember the incident itself, only a moving picture of it taken by my grandmother while she was standing on the dock. I was one of the kids in the boat, so I always liked watching the movie—to me it was funny as hell. But my dad had been having a bad day. He wasn't what you'd call a sailor-type anyway, and I'm sure he'd rejected the notion of taking the six kids for a little ride in Grandpa's small outboard-motor boat. As he approaches the dock, you can see the look of intense concentration on his face, even in the faded ticking of the 8mm film. Then, in a moment of flustered confusion, he gave some forward throttle instead of reverse, and KURPLUNK, the starboard bow crunched into the dock and the windshield popped from its frame. The movie's silent, but you can see the expletive pop out of Dad's mouth just as plainly as the windshield is popping out and sinking into the water. My dad still had the wherewithal to grab the dock and shut off the motor; the kids, the boat, even the windshield all turned out to be fine. But my dad experienced the whole thing as a traumatic event, pointed and poignant. He never went near a boat again.

"That's a good connection to make there George. Isn't it interesting that I jump right to anxious frustration, where you're all calm about it?"

"Why should you get frustrated? Life's too short. I'll get another float. No big deal."

"Now that's the way I'd *like* to be." I emphasized the "like," because a calm response is what I'm trying to learn. Trying.

"Plus," George reminded me, "it's definitely time for a beer."

The Rope

There wasn't anything I ever liked about gym. Well, not in middle school anyway. High school had fun stuff, like square dancing and archery. No, middle school gym seemed all about, well... *gym*. I was always afraid of going to the class. First, I had to enter into the boy's locker room, which had a sickening smell of body odor mixed with mildew from the showers, then strip my chubby body down naked to change into my gym shorts and shirt, which made me very self-conscious, and on top of it all was the bully who shot paper clips at me using a homemade slingshot. After that, down the tiled corridor and into a vast, echo-ey, wood-floored space with bleachers, some extended some retracted, thick blue mats hanging on walls and covering parts of the floor, and screaming voices shouting at balls shot at hoops that seemed impossibly high. My sneakers would squeak as I'd spin around to take it all in, hoping with all of my might that I wouldn't be expected to do anything dangerous, here in a place that seemed far more dangerous than any road my parents might tell me not to go near.

The wall on the back of the gym had clerestory windows high up between the steel rafters. They let in lots of light, but that didn't make it any sunnier for me, because it

lit an area filled with torturous-looking equipment, ones that athletes in the Olympics spun around, jumped on, balanced on, vaulted from, and sometimes, fell from. I always envisioned I'd do just that—fall. Fall and break my little ten-year-old neck. Other kids seemed to have a blast jumping around on the trampoline, going higher and higher with each bounce. I was petrified of the thing.

Today, though, we weren't going to that part of the gym; we were going behind it. In front of the clerestory windows were hung five ropes, each about six feet apart, hanging from the rafters way up there in the stratosphere, and dangling down to within three feet of the floor. All were identical, as thick as an arm, braided, with a big knot at the bottom end. All were shiny and smooth from lots of sweaty little hands, and they looked kind of grimy, smelled of hemp, and made a creaking noise when you bent them, like the ropes on the USS Constitution.

"Five lines, people," yelled Coach, which was how you were supposed to address this particular teacher. I think the idea was that we were being formed into men, and men had coaches and wrestled. With a heart beating as fast as a hummingbird's, I would do what I always did in gym: go to the back of the line and try to hide behind someone. If only I could be invisible, I'd think. Coach then explained what he wanted us to do, which wasn't really required here, since it was obvious climbing the rope was going to be the drill.

"Get to the top, bang on the ceiling, yell your name, and come back down. Nat, demonstrate."

Nat was always demonstrating. Gym was his *favorite* class. He grabs the rope, pulls himself up enough that his whole body comes in contact with it, and wraps his legs

around it. Then like a Slinky in reverse, Nat pulls himself up with his arms, holds himself, folds his legs up to his belly and wraps them around the rope, having gained two feet. He does this repeatedly, and swiftly, and by the time he's halfway up, the rest of the class is cheering him on, initiated by Coach. I have vertigo just watching, and when he gets to the top he yells "NATHAN," slams the ceiling at least three times, and slides down the rope wicked fast.

"That's how I want you to do it people," Coach says, and blows his whistle, scrambling the horde.

Another thing I was always doing in gym was a time calculation. There are nine kids in front of me, and it takes about three minutes per kid, but Timmy goes faster. Over in that line is Steve and Jason, and a boy I don't know, but he's slow. I do the calculations to determine how much longer I have to live, and maybe come up with some strategy for making it look like I did the activity, but not actually doing it. That strategy seems pointless here though, because Coach is standing at the bottom of each rope as a kid finishes, and he calls the next person in any of the five lines, which throws off my calculation.

Everyone seems so adept. It's second nature to each one of these other people, except for Matthew, whose name I now remember because Coach is giving him his undivided attention.

"That's it. Now hold yourself there, and grab the rope with your foot. No, no, NO! On the back of your leg! That's it Matt. Pull!"

Matt's face is red with exertion, and mine is red with vicarious embarrassment, as I think how awful it must feel to have everyone watching his struggle.

Four more in front of me, but things have come to a standstill as everyone is focusing their attention on Matt. The bully, right now without his weapon, is instead launching words at the struggling boy. "He can't do it. He's so FAT!" A few others, wanting to stay sided with the bully, start yelling similar things in solidarity with him. And then Matt slides down, imperceptibly at first then quickly gaining momentum, the ten feet he actually did manage to climb. He's crying, which Coach yells at him for, and is sent to the locker room.

Coach blows his whistle, slicing through the noises echoing from other classes doing their tumbling and trampolining, and we get back to the climbing. In an instant, everyone except me is all energy, wanting to pound the ceiling like Nat, forgetting all about what just happened. Me, though, my eyes are following Matt heading back to the locker room, empathizing with him, knowing my fate is going to be similar and the thought adds another layer to my anxiousness. I'll try not to cry, I tell myself, knowing full well I will anyway, almost doing so right now in sympathy with another weakling like me.

The line dwindles so fast. Three more, two more, and to my quick heartbeat is added a kind of breathless dread. One more. Timmy is up, and he's so ready to get to the rope he doesn't even wait for Coach to give him the OK. He grabs it, not really paying attention to Jason, who still has about five feet more to slide down, and gets a sneaker right square on top of his head, causing him and Jason to go tumbling to the floor. Both of them grab body-parts in pain, Timmy clutching his head, and Jason crying loud enough that he can be heard above all the other activity in the gym that he broke his ankle.

Coach clears a path over to the two, and dismisses Timmy's plight almost immediately. But, as we all circle around the Coach attending to Jason, it's easy to see that Jason's foot isn't pointing in the direction it should be.

"You go get the school nurse," Coach yells while pointing at me.

I'm more than happy to comply, and despite my concern for Jason, as I head down the halls towards the nurse's office, my relief at not having to do the rope turns into joy, and I run. I run so fast it will make Coach proud.

Losses

"What's he been doing all day?" my dad asked my mom. I could hear his loud, gruff voice vibrate through the floor joists as if I was up in the kitchen instead of down in the basement. He'd just come home from work and I'd been downstairs all day, relishing the beginning of summer vacation. Not that sophomore year of high school had been so difficult, but in my free time I was going to achieve two goals, both propelling my dreams of artistic expression and skyward travel. I'd blow through my trumpet for a little while, and then go to my hodge-podge workbench and glue-up pieces of the model airplane I was building. Glue dries, I practice. It was a nice rhythm. I was sure that by the end of the summer my playing would be good enough that I could audition for first trumpet in jazz ensemble, and at the pace I was on, I'd be flying the 1/6th scale sailplane at the high school field in a few weeks. Life was good for the dreamer in me, and I anticipated my parent's future pride—until I stopped to listen to the words filtering from above.

"He's been downstairs... (garble) sometimes I hear him... (garble)." My mom's side of the discussion didn't come through like my dad's booming side.

"Well, goddamn it. He's old enough now that he's got to start paying some rent around here," yelled my dad. I'm sure he wanted my sixteen-year-old ears to hear. He was on a mission to make me, his eldest son and namesake, aware of the ways of the world he perceived, not help me build my own. His lack of parenting skills weren't his fault, though I didn't comprehend the disparity until I was much older. My dad had been forced to quit school in the eighth grade: his mother had died of complications of alcoholism and his father abandoned the family shortly thereafter, never to be heard from again. It was expected of my dad to contribute to the care of the large brood of Ferguson siblings—all eight. He'd had a bitch of a childhood.

He did what was required, and when he was old enough (though still on only twenty-two) got married and had kids of his own. He didn't mellow; Dad was always a rough guy, rarely smiling—though he had some hearty laughs while watching the antics of Archie Bunker in the early '70's sitcom *All in the Family*. I can't think of a single person who didn't describe my dad with one single word: mean. Ironically, I never saw him treat anyone in a mean way; in fact, being considerate to others was one of his most important lessons, one I learned well. But his voice projected like Pavarotti's, and his demeanor was brusque. People were afraid of his *presence*.

"You mark my word, Patricia, he's going to get a job this summer," Dad proclaimed to my mom, to the house, to the world, and to me.

I know it wasn't intentional, but that simple phrase, "you mark my word," was the end of my childhood as surely as Dad's mom dying was the end of his. He got me a job I hated, working as the gofer on a house-framing crew, and I obligingly paid thirty dollars a week rent. Later, I finished the model, and in September I made first trumpet—both

though, as lonely accomplishments without guidance. I've never become the man I'd dreamed about before that summer, and I've always felt it's because Dad didn't know how to help me. He'd only ever known losses.

Uncle Psycho

It was a hot summer morning, continuing the same stifling weather that we'd been experiencing for weeks on end, and I was a miserable, sweaty sixteen-year old working on my uncle's house framing crew. I was always in pain; I had blisters piled on top of blisters, splinters embedded in several fingers, and rips and tears in the skin on both of my shoulders from carrying vast amounts of lumber and building materials. I ached at the end of the day, and dragged at the beginning of the next. And this work wasn't something I'd wanted to do, but something my dad forced me to do, as a way of learning to be an adult. I needed the job so I could pay rent to him. There was really only one good thing about that summer: I had an awesome tan. That's a sad silver lining for someone who didn't even have a girlfriend.

Being the youngest meant I was the gofer—gofer those 2x10's and gofer that lally column. My Uncle Mike's crew of five was a rag-tag lot, none of whom had even graduated from high school, and everyone treated me as his personal lackey. I was abused incessantly. I was called everything you could imagine: dick, fuck, pussy, asshole, maggot, slave. These guys could get creative. I suppose it took their mind off of the weather and the crappy way my uncle treated them—shit flows downhill. Uncle Mike had to have been the worst possible leader of men, and his management style included just one tactic: use anger to the extreme. He would berate everyone equally; I don't know how they stayed with him. I had no choice, but, certainly, they did?

On this morning, I was told to go down the road to finish nailing the strapping in the newly framed houses of a subdivision we'd been building all summer. It got me away from the harsh stings of the crew, and that was a good thing, but nailing strapping is tedious and awkward as hell. The air compressor and nailing guns were being used by the guys, so I had to work the old-fashioned way, with hammer in one hand and a fistful of six-penny nails in the other, craning overhead in a contorted, neck-straining reach. My framing hammer was a heavy sonuvabitch, a 28-ounce Estwing that I'd proudly purchased myself a week earlier. I went into the relatively cool basement of the first house and commence my agonizing ritual.

"Butch!" yells my uncle from the roughly graded back of the house not five minutes later. "Get the fuck out here!"

I run out to him, where he's standing holding an identical Estwing hammer at arm's length.

"Let me see that hammer," he says, and viciously grabs it from my hand.

"See this hammer?" he yells, shaking the one he'd yanked from me, "This is my fuckin' hammer!"

I'm speechless. There is no discernable difference between them: both are the same size, both have a milled face—better to smash your finger to pieces when you inevitably do—and both have the same metal-shank-and-blue-plastic handle. The two look almost brand new. My uncle continues his wacked-out logic, saying vehemently, "And see this hammer," spittle flying while he shakes the other hammer, "this is your fucking hammer!" He then emphasizes his psychotic episode by hurling what he says is my hammer deep into the marshes behind the subdivision.

As he storms away, I wave and whisper my newly formed private moniker for him, "From now on, you're my Uncle Psycho."

The Cut

The disparate group of men had been converging on the airport in San Antonio over the past twelve hours. It had been a long day for each of us, starting off, in my own case, in Boston at four in the morning. The bus that finally picked us up at the airport to bring us to Basic Military Training, our new home at Lackland Air Force Base, hadn't shown up until well after midnight. The long ride through the dark streets of Texas was made more ominous by silence, each man pondering the mistake he'd made.

In front of the barracks our training instructor, Sgt. Caesar, got on the bus to break the silence and indoctrinate us into the land of being-yelled-at. Decibels were his weapon.

"Off of the bus you maggots!" Frantic to do the right things, we instead did the wrong things, tripping over each other, causing the T.I.'s voice to get louder. "Stand at attention! Eyes front! Put your bags down! Pick your bags up! Together, you pieces-of-shit!" Having no clue what we were doing, each airman became more inept. "Up those stairs!"

At the top of the stairs was a huge room, divided in the middle by a half-wall, and further subdivided into four rows of thirteen beds.

"Flight!" the T.I. addressed us by our new collective name, "Out of those clothes and stand behind a bunk! I don't care how you do it, just do it!" After two minutes of pandemonium, a group of 52 guys, a nascent flight, stood naked behind 52 beds. I was trembling.

"This is my aisle," Sgt. Caesar extorted, strolling erect and confident up and down the center aisle, between rows of beds, "I never want to see anyone walking down my aisle! You will follow my word to the letter! Have you got that, you shits?"

"Yes sir!" came an uncoordinated, but heartfelt reply. Others were trembling too. For the next forty-five minutes we received explicit instructions on everything from sleeping to eating to pissing, and the ramifications of not following orders. We were belittled, harassed, harangued, and generally made to feel worthless.

"Now get to the showers you useless turds, and shave off those fucked-up sideburns and beards and mustaches. *And don't cut yourselves!*" He stormed out.

A collective sigh lightened the mood a bit, but it was damn near two in the morning and our whole world had just shifted like an earthquake's fault-line. Hardly a word was spoken while we showered.

When a sink finally freed up, I placed my shaving kit on the sparse metal shelf above it. I lathered my face with shaving cream, looking at myself in the steamed-up mirror. I'd never shaved before. Hell, the mustache I had was a wispy thing that was more funny-looking than facial hair. I had absolutely no knowledge of this task. I looked around, watching others for any clue, until it struck me: the TV commercial with football star Joe Namath. He's standing in front of a mirror similar to this, a towel around his waist similarly, his face lathered up the same as mine, and he's testing a new razor. He becomes my mentor as the commercial solidifies in my mind: I'll mimic Joe.

I tilt my head back and use my left index finger to hold my nose to the side like Joe does. With my quivering right hand I hold the razor. Cautiously, under my nostril, I touch blade to skin and... slice. Immediately blood emerges and flows down my face in a

sickening, dark stream that took nearly an hour to staunch—a fearful hour to contemplate how I wasn't here for a day yet and I'd already gone against orders.

One Particular Fear

Being a Ferguson has always been exhausting business. And not for the usual reasons, like travelling (which I only got to do with my mom's parents), or family get-togethers (again with my mom's parents), or the expectation of good grades with its associated forced studying (which I did just fine with all by myself). Kids in my neighborhood and those at school all had families that led those kinds of exhausting lives.

"Wanna play at the rock after supper?" I hopefully asked Hambone.

"I can't. We're goin' to the football game." Ham's dad was a football coach, which was why all of our neighborhood gaming events pivoted around the Hamiltons; the two boys were up to their eyeballs in sporting equipment and the knowledge necessary to use it all. I envied them.

Nope, the Fergusons didn't have sporting equipment to exhaust the four rambunctious boys into an easy nighttime slumber (or turn one of us into the next Boston Red Sox star Pudge Fisk like the Hamiltons). We didn't play catch or go to a game.

"How about this weekend?" I'd ask longingly of Mary Miklanovich, a gymnast at my high school that I had a crush on for her lovely body (and sharp wit too, just so you don't think that sex was the only thing on my mind, which as you'll see, it certainly wasn't).

"We're going to my grandmother's for her 80th birthday" she'd say with downcast eyes, for my benefit I'm sure, to help me contain my dejected spirit from splashing all over the floor. I envied Mary's family ties.

Nope, the Fergusons weren't going anywhere that weekend. We never went anywhere. The four-minute trip my Gramma's house was all I could ever hope for. Oftentimes I did it alone on my bicycle.

See, the Fergusons never really did much of *anything*. My parents would spend considerable time sitting around watching television. Sometimes we kids would join them after our baseball games at the Hamilton's. They were, in fact, good parents, and weren't intentionally trying to deprive us of anything. Plus, the television had the capability of transporting the Fergusons to a happy time and place, with both my mom and dad laughing their asses off at Archie Bunker and other assorted sitcom characters and their antics. This laughing would contrast sharply with the usually gruff and stern Billy Ferguson, and for those half-hour segments of time we felt a bit closer to him.

A story I heard later in my life solidified the concept that I wasn't just a Ferguson, but a *Billy* Ferguson. I was long gone away, and the only brother living at home with my parents was my youngest, Michael. Life was somewhat more relaxed at this point in my dad's history, and the three of them had taken a car ride to a summertime cookout at my Uncle Paul's house. Paul, one of my dad's six brothers, was married and had two teenage kids—a daughter, Susan, and a son, Jonathan—and they were outside preparing the yard for the event. My parents and brother pulled into Paul's driveway, and Susan announced the arrival excitedly.

"The Fergusons are here!"

"Jeezuz, Susan, which ones?" quipped Paul. (Uncle Paul had the same gruff approach to speech as my dad, from growing up in a rough neighborhood near Boston.)

"The *Billy* Fergusons!" Susan clarified.

Nope, none of these types of exhausting events transpired during my tenure in the family circle. The Ferguson household in my day was exhausting because of one plain and simple psychological reason: fear.

Fear ruled the Ferguson household. Over the years I've come to call my family by a nickname: the *Feergusons*. I pronounce it with a long roll on the 'feeaarr' part, emphasizing it with a Scottish accent, so it's something like a double-entendre. Doing this can take the sting out of the fear part of being a Ferguson, and is especially fun to do when I use it on someone with whom I'm drinking. This fear wasn't because we kids feared our dad, though we most certainly did. He was a strict disciplinarian, and tried (successfully in me) to imbue in his children a sense of respectfulness and consideration. No, the Ferguson fear was an all-encompassing weight that hovered over every aspect of my parent's lives, which of course was learned by their offspring, especially concentrated in their first-born, yours truly. And I took my one particular fear very seriously.

My dad was afraid of lots of things; flying, riding motorcycles, health problems (I don't think Dad ever watched a Woody Allen movie, but he sure would have connected with the hypochondriac), hospitals, and bridges. The day-to-day workings of a family are the innocent breeding grounds that transmit the damned things to the next generation, like driving twenty miles out of the way to avoid a bridge, or like the following incident involving father and son.

Dad tried, mostly unsuccessfully, to find bits of personal enjoyment in a life he didn't particularly like. About the time I was fifteen, he took up ham radio. There was a bit of excitement in his demeanor as he acquired the various licenses and pieces of radio equipment necessary to communicate with someone on the other side of world. One piece though, scared the hell out of him. The antenna. It required being attached to the side of the house, obviously up high. And he recruited my help.

"Just stand here and keep your feet on the bottom," Dad explained while pointing to the foot of the ladder. We'd just extended it, and banged the hell out of the side of the house while putting it up against it. I stood where he told me, put my hands on the sides and eyed up the length of thing, thinking to myself that it seemed kind of flimsy, sagging a bit towards the middle, and it looked seriously high, and at a steep angle no less. Dad was going to have to climb at least fifteen rungs on the bottom section, then another twelve on the extended part.

"Alright. Don't let the bottom slip out," he said nervously, putting his foot on the second rung and grabbing the bottom part of the antenna, which was basically an aluminum pole.

"Do you want me to do it?" I volunteered. Not that I even remotely wanted to, but I could tell he was battling something.

"I'll do it," he said in a firm voice and commenced. The first six or seven rungs went well enough because he was staying in control. But by the time he'd reached the middle of the ladder, near where it was most unsteady, his hesitations were becoming noticeable, and I could feel, down through the sides of the ladder and into my hands, a definite trembling.

"It sure is shaking a lot," he yelled down to me, in a voice showing signs of trembling, just like the ladder. He had slowed to a creep by this point, each foot having a hard time finding the next rung. Then, three-quarters of the way to the top he came to a complete stop. My poor dad had frozen.

"Don't fuckin' move" he croaked, and he let go of the antenna, which fell javelin-like and pierced the ground in front of me, just as if it had been thrown by an Olympic decathlete. It must have taken five agonizing minutes for him to inch his way back down, the ladder, all the while shaking. We took it down in silence, and he ended up paying someone to install the antenna.

Things like the ladder incident or driving around a bridge are how I too caught some of those fears, like catching a cold because someone near you sneezes. But as a youngster I focused them into one neat and tidy package, and buried the whole kit-n-caboodle within my one particular fear. Yup, later in life, when asked to climb a ladder, or go up on a roof, I'd occasionally feel the stirrings of anxiousness and remember my dad's own. I'm a pilot, but sometimes I have to cancel a flight because I can't muster the courage to push in the throttle (even though I may have just flown the day before). I've got some, alright, from the seemingly endless list of Ferguson fears. Fears from that list have had plenty of time to fester and express themselves, sometimes at the most inappropriate times. But growing up, I wasn't concerned with all of those others; I was concerned with the one that utterly ruled both my waking and sleeping hours, the one that could incapacitate me and leave me scared to death. My particular brand of fear was of fire.

Sometimes while sitting at the kitchen table, I'd swear I could smell the acrid, electrical scent of our furnace catching fire which, in my inventive and nervous little mind, would then burn down the house. We'd be eating in silence (a typical Ferguson etiquette), when all of a sudden I'd imagine the smell, which I'd then announce. My dad's nervous adult mind would then put him in hurried motion down to the basement to check on the heating system, making my nervous little mind even more nervous.

I'd wake up almost every night for years from nightmares that revolved around the same theme or one closely related. These nightmares played out further during sleep, always ending in my family's demise. Ironically, a large part of the blame for my particular Ferguson style of exhaustion came from the one activity that sometimes brought us joy: watching TV.

The documentary was a television genre my dad liked to watch even more than comedies or sports. Though blue-collar through and through, he was an intelligent individual who craved learning and satiated it by absorbing the information offered on PBS, or through shows like *Mutual of Omaha's Wild Kingdom*. Growing up had far more difficulties for my dad (explaining lots of his anxieties) than I ever had, all of which robbed him of an education after the eighth grade, when he was forced to leave school to get a job. So, later in his life, he took it upon himself to get educated through the only medium he felt comfortable with, the television. Me, I understood this learning thing from my earliest years, so I'd sneak down the stairs to watch what he was watching (bed-time for the Ferguson kids was 7 o'clock sharp on school nights- well before *Wild Kingdom* aired). I'd lie awake upstairs in bed, listen for the TV show's opening theme music, and as stealthily as I could, I'd peek around whatever stair I felt I could get down

to without Dad noticing and become engrossed in the images on the screen of stars and galaxies, or sea life on a coral reef (the *Undersea World of Jacques Cousteau* was another of his—and my—favorites) or whatever was being offered that particular evening.

All this was fascinating stuff for the eldest son of Billy Ferguson. I was hooked on science. I couldn't get enough (still can't), and I was always anticipating the next glorious image of a breaching whale on TV, something I wasn't going to get through an actual experience, because, of course, my dad was afraid of boats or the water or both, and something like a whale watching cruise could never have happened for us. But, unlike my dad, I had a good education, and loved to read and write, so my thirst for knowledge could be quenched through other venues, like books including the Fergusons' one possession associated with knowledge—a full set of *Encyclopedia Britannica*—which I pretty much commandeered for myself. Though, like Dad, I felt enticed to watch documentaries.

My dad, sensing a spy lurking in the dark, would sometimes allow me to join him. I suppose he thought that punishing me for wanting to learn stuff and sneaking around past my bedtime to do so might not be the right lesson to impress on his eldest son. This probably happened by the time I was six or seven, and was usually accompanied by a "Don't tell your mother." For those all-too-brief hours, we did something together that we mutually enjoyed.

One evening, a topic came up in a documentary that changed me into a true *Feerguson*.

The scene was a typical living room, like the one in which my dad and I were watching TV. In the room was the usual furniture, like a recliner similar to the one my

dad was lounging in, and a couch like the one I was lying on. No one was in the room, and a camera was aimed and focused in such a way as to be able to view the entire room. A narrator was describing in a dry, monotone voice the details of the events as they unfolded, in a very direct and scientific manner. I was transfixed.

A cigarette butt, exactly like the one my dad had just extinguished into his ashtray, had been intentionally placed between two of the cushions on the couch. The next part of the film was time-lapsed, because that cigarette butt smoldered for nearly three hours, until very faintly one could see a wisp of smoke arising from between the cushions. Then events started cascading; a brief flicker of flame, a larger puff of smoke, more flickering, more smoke, and then WHOOSH, the whole area encompassing the cushions utterly bursts into flames and thick plumes of toxic black smoke were billowing out of the couch and in mere seconds the whole room was ablaze, because for the three hours prior, that smoldering cigarette butt had been causing a release of volatile fumes preparing the living room to be engulfed.

"Dad?" I asked apprehensively. "Could that happen to us?" I already knew the answer was yes.

"It's nothin' you have to worry about" was his reply.

That TV scenario proved far more powerful than my imagined furnace malfunction, because I had actual film footage to replay over and over in my nervous mind. Now I wasn't only exhausted by nightmares, I was afraid of even falling asleep; and when I finally did, I'd wake up frantic, because I was certain one of my parents (both of whom were smokers) had inadvertently allowed a cigarette butt to fall between the cushions of our couch.

*

"Ready to go, Ferguson?" yelled my instructor. He was yelling because the noise around us was extreme. Then, louder still:

"Remember to stay to the right, and keep the stream in a fog pattern." I'd been practicing that advice incessantly for the past month, ever since I'd learned it from another instructor in Block II.

When I enlisted in the Air Force at the age of eighteen, I didn't sign up with a guaranteed job. The government could have forced me into just about any occupation; an Air Force base is rather like a small city, and it needs people to do all of the things associated with a city, along with the obvious ones necessary to fly airplanes. I could have been made to work in sanitation, or the dental clinic, or deliver fuels, or be a carpenter or a cook, or maybe the worst, been made to work in linen exchange, where personnel living in dorms exchange their used, grimy sheets for clean ones.

But I'd done well on my Armed Services Vocational Aptitude Battery, the test used by the military to assess the capabilities of its enlisted personnel. After all, I was a science guy. And I wasn't your run-of-the mill enlistee; if an Air Force recruiter hadn't caught me at a bad time (just graduated from high school, working on a construction crew framing houses, which I hated, and most importantly, having difficulties with my girlfriend—no, not Mary Miklanovich), I would never have even contemplated going into the military. At the end of basic training, those of us idiots who had signed up without a job waited fearfully for a certain piece of paper, our *Orders*, telling us what form of servitude our lives would take for the next four years. When my shaking hand took my Orders from my training instructor's very firm one I saw my name, that my next duty

station was to be at Chanute Air Force Base in Rantoul, IL, and down in the last section, in big block letters my future job title: Fire Protection Specialist.

I couldn't believe it. Never in my eighteen-year-old, furnace-exploding couch fire dreams, did I think the vagaries of my life would ask me to confront my one particular fear. From the moment I saw those words, Fire Protection Specialist, I was a psychological mess.

*

The fire department technical school at Chanute AFB was highly regarded and highly structured. But there was a sense of relief from the rigors of basic training; I could walk around freely again, and have unsupervised time to study or party with friends (which we most certainly did after our basic training confinement). But studying is what I mostly did. That and practice. I was constantly rehearsing the drill I was learning in my classes: feel the door with the back of my hand to determine if it's hot; enter cautiously, being prepared for flashback; spray water from my hose nozzle in a circular motion; crouch low to stay below the toxic fumes and fiercest heat; stay along the right hand wall, never-*ever* leaving it; and swoop into the room with my left leg to search for victims, being alert at all times, ultimately circumnavigating the room and arriving back at the door I entered. In reality, all of this would be done with a partner who is just behind, keeping his hand on my shoulder, helping to manipulate the thick, firm, and heavy water-laden hose. To protect ourselves, we wore heavy bunker clothes, gloves and boots, an even heavier self-contained breathing apparatus with full face mask, and a helmet with earflaps.

I practiced incessantly because I was scared beyond belief. I was scared because at the end of our training in structural fire-fighting, which happened in Block III (Air Force firemen learn about aerospace firefighting in Block IV), we faced the ultimate test: the Block House.

The Block House was a one story house-sized building made of cinder blocks, with six rooms laid out in a maze fashion, with window and door openings, used for practicing firefighting. Even from a distance you could see the triangular patterns of black soot over the doors and windows where large tongues of flame escaped. Up close you saw that the soot was thick and covered every interior surface. All during Blocks I, II, and III, while walking to classes, I'd gaze dreadfully at it, the anticipatory anxiety building in me to the point where I'd tremble uncontrollably, like my dad on the ladder.

I was to be the first in my class to go through the Block House. We arrived at the site, a gravelly area devoid of any living thing. We then laid out hoses from the pumper, the working line with a nozzle attached placed at the entrance to the house. Then the seven of us in my class, sweltering in our bunker clothes, stood at the pumper, looking on as several of the instructors got the Block House ready. Wooden pallets, old furniture, and odds and ends of construction materials were piled inside the house. Jet fuel was poured over the whole of the inside. A signal was given, and my classmates helped me don my breathing apparatus, a lucky thing, because my fumbling fingers could never have connected my facemask to the regulator. Suited up, I walked over to where my instructor/partner was, near the blackened entrance to the house. He motioned for me to pick up my nozzle while he got his SCBA on. As I'd been told in advance, at this point I signaled the pumper operator to pressurize my line, and as I watched, 100 psi water rifled

through the flaccid, coiled 2 inch hose, straightening and hardening it, and it became a living python whose mouth I held with all of my petrified might.

Because of the inherent danger in this whole operation, several of the other instructors were given specific tasks, all precisely choreographed, like one pouring the jet fuel while two others are on station with extinguishers trained. The other task was even scarier: the Lighter. Donned in the silvery gear of an aerospace fireman with a hood, this instructor used a small flame-throwing device to start the blaze. No voice commands were used, because everyone near the Block House during this training event had to be in full gear, which made voice communication difficult. The Lighter was given his cue, and for the culmination of this portion of my training, the Block House was lit.

The flames were given a few uninterrupted minutes to make sure every part of the house was fully involved. The plumes of smoke billowing into the air could be seen for miles, and the heat radiating from the burning fuel was fierce. At this point, everyone else but my instructor and I were gathered around the pumper, a good hundred feet away.

The roar of the flames was deafening.

Ready to go, Ferguson? Remember to stay to the right, and keep the stream in a fog pattern.

Slapping my back, my instructor yells one last time into my ear "Here we go, Ferguson." I can't hear him though; not because of the roar, not because my head is covered in gear, not because he's yelling through his mask. I can't hear him because, in the mind of the first-born son of Billy Ferguson, the Block House, monstrous in its flame belching, scorching hellishness has become my family home set ablaze, and I am face-to-face with my nightmare.

*

To my instructor it was probably just a nudge; to me it was a shove over a cliff and into the abyss. The heat is so intense that at first the water from my nozzle never even hits the ground, just vaporizes. The fog pattern, when set properly, makes a large cone of water about 4 feet wide 2 feet in front of us, and is essentially a shield wide enough for two people to hide behind while battling the beast.

"That's it, Ferg!" he screams as I spray in circular motions to knock down the flames swirling out of the door enough for us to enter.

"Now at the ceiling, AT THE CEILING!"

I do it and can immediately see why he's yelled this; the steam created by spraying the water into the intense heat at the ceiling rolls down and helps push back the flames at the lower levels; we enter fully into the house, and we crouch down, down below the distinct demarcation between life and death that floats where the toxic smoke and steam are hovering over the fresh air that's rushing in from below to feed the flames that are all around us. There is only a howling roar, a painful brightness where there's fire, and an empty blackness where there isn't.

We stay low, along the right wall. To say time stood still could never convey what was happening temporally; the intense power of the sights and sounds blocks any awareness that there is a world beyond the flames.

"Try to knock that back!" my instructor screams and points to a corner behind us, and again I see what this tactic is for, as spraying into the corner reflects the steam back upon itself, extinguishing the flames by robbing them of the oxygen-rich air that is pushed out of the way by the swirling steam. And then it hits me... all of the theory and

all of the study and all of the practice has fused in my mind into an understanding of what the fire wants, and then comes the self-actualization that I possess the knowledge to take that away. I start to think like the fire. There's a window. It's feeding the flames with clean air, so I aim my nozzle in such a way as to force the toxic bad air down and out the window, essentially blocking that clean air. And over in the middle of the room I see how the fuel is combusting from left to right so I angle my fog pattern to cool the right side down while at the same time blocking the window, and before I know it, I've extinguished enough flame that there's sunlight entering the room.

"That's the way Ferg, now keep going over to the right!" and in this instant, me and my instructor have become equals on a team, and together we continue, but without any further direction from him, slaying room after room, dulling the roar, quenching the heat, and extinguishing the fire until it's gone.

Out the back door of the Block House, I turn off my nozzle and put it down tenderly. I remove my facemask and take a lusciously deep breath of the coolest, sweetest air imaginable. I'm left alone for a moment, and then I get one hell of a hearty handshake from my instructor and new friend. I am utterly exhausted, yet elated to the point where I know I could spread out my arms and fly. I have the biggest, proudest smile on my face. Because it's gone. The fire is gone.

And with it, my one particular fear.

The Fireman

Petey was one-half African-American, and he was not bashful about using this trump card to solidify his hire in 1983 onto the Los Angeles City Fire Department,

knowing they used a quota system to address "equal opportunity." Petey'd wanted nothing more in his life than to be a part of that organization, and the LAFD certainly would've been idiotic and irresponsible in not hiring him. Along with his desire and passion—two important character traits Petey had in abundance—he was perfect for the job in absolutely all the fundamental ways and skillsets a fire department could ask of its members.

Every fireman learns the same set of basic skills, whether they're a volunteer in a department of a hillbilly town, or a highly paid technician on a multi-stationed city department, or a *Fire Protection Specialist* in the U.S. Air Force, the formal name for the job Petey and I both held when we'd met. The Air Force technical school at the now closed Chanute Air Force Base in Rantoul, Illinois, was highly regarded for the quality of its firefighter training curriculum, and Petey'd graduated as an honors student. He'd done so well that the school offered him orders to stay put and teach there. But Petey wanted to be practicing instead of teaching, knowing that he was going to spend two tours at the most in the Air Force, using his time as a stepping stone to ascend to his LAFD aspiration.

And he used the Air Force to his advantage. Less than 10 percent of AF personnel are awarded the Air Force Commendation Medal. It was a decoration we both were awarded for outstanding service, but unlike me, who didn't get mine until some years later, Petey'd received his within the first two years of being stationed at Columbus AFB, his first duty assignment. He progressed easily through the ranks, and took classes including fire science at the local community college. He didn't feel all this was enough for his progression though, so Petey'd hoped to go one step further: he wanted to round

out his short Air Force career by training to be a PJ, a Pararescue Jumper. He applied for, and was accepted into the elite group.

Petey left his motorcycle in capable hands in Columbus, and went to Lackland AFB for PJ indoctrination. An outsider like me can hear the stories, combining them with my own instances of grueling situations, but still only have a peripheral awareness of what it must have been like. It sounded like nine weeks of hell, but Petey was one of the most physically fit people I've ever known, and not one to give up. Half of the candidates washed-out, but Petey persevered.

After that it was off to Florida, where Petey's next hurdle was to complete Diver's School. The swimming wasn't the problem; it was one particular swimming exercise that did him in: two lengths of an Olympic-size pool, swum underwater. Petey could almost do it too, but one thigh would cramp up agonizingly in those last lung-pounding yards, the sad result of an earlier injury. When Petey was in high school, he worked at a warehouse to raise money for a cosmetic surgery to reduce the size of his nipples. One afternoon there, someone accidentally backed into him, crushing his right thigh between the truck and a loading dock.

Petey had almost exactly a year left in his enlistment after his PJ wash-out, and the circumstances allowed him to retain his job as a fire protection specialist. It also allowed him to choose an overseas assignment, which turned out to be a happy coincidence for me: he chose Kunsan AB.

Signature

Petey and I arrived in-country at almost the same time, and, as these things have a way of happening, we were put on the same shift. All Air Force fire departments use the

same work schedule format, two shifts that alternate every twenty-four hours, usually called A-shift & B-shift. Each shift was made up of the appropriate number of people to cover all of the positions needed at that particular facility, a number based on its physical size for the structural firefighting, and the type of aircraft, fighter or bomber or cargo, for the aerospace firefighting. At Kunsan, the 8th *Fighter Wing* flew two squadrons of F-16's (and still does), a hot little one-seat fighter. The calculus figured that we operate three aerospace fire-fighting trucks, which in the aviation world are typically called "crash trucks." At Kunsan, we had one P-2, a dual-engine monster carrying lots of water and foam, and two P-4's, a smaller, single engine version of the P-2.

The base itself, its physical make-up, was composed mostly of conventionally built two-story wooden structures to house the personnel, the offices, and the various warehouses necessary to run the whole shebang. Kunsan's flight-line was large and active. We were stationed close to those pesky Russians, this being in the days of The Cold War, and we had lots of real-war training going on, oftentimes with transient wings, some from other branches like the Marines. These groups would fly in for weeks of intense mock combat.

Despite the round-the-clock flight-line action, the potential was fairly low for an aircraft type of fire, thus our department had more of a structural feel, one that the general public would envision when thinking of fire departments. The fire trucks we used for structural firefighting are military versions of civilian trucks, and are just like the ones five-year-olds have models of to play with.

Our station in Kunsan had a combined kitchen and dining room, but we only used it for storing food in the fridge, or actually eating in. No one used it for cooking, and our

Korean co-workers ate prepared food just like we did. Unlike most other bases I knew of, where truck crews would go off to eat in the chow hall one truck at a time, the food services staff here at Kunsan brought food to us at the fire station for both the lunch and evening meals. The cooks would prepare full entrées over at their own kitchen, pack everything up, bring it over to the fire station, and unload it into steam trays. We'd then all get in line, Americans and our Korean counterparts alike, write our signatures on a sign-up sheet, grab trays and silverware, and side-shuffle through the line as if we were actually at the chow hall.

Camaraderie comes quick in a fire department, especially if it's at a military installation in a foreign land where homesick GIs are hungry for connections as much as food. I might have been at the department for only a week when I met someone even newer than I. He filed up right behind me when the call had come over the PA that "Chow is now being served!" (Everything said over the PA had an inflected energy.) I was first in line and I bent over to write my signature on the sheet. As I moved off to get my tray, a friendly voice called up to me saying, "You've got an excellent signature." He extended his hand and introduced himself, "I'm Pete."

I've loved signing my name ever since.

The Hypocrite in all of Us

I've been watching a show on Netflix that originally aired on the Discovery Channel back in 2010-2011 called *Flying Wild Alaska*. It documents the bush-pilot air operations of a business owned by the Tweto family, which services rural Alaska. Cameras trail after the Twetos, the pilots that work for them, and the planes they fly wherever they're going, from a charter flight bringing hunters into the vast wilderness to

the mundane process of booking passengers at a terminal that might be weathered-in for days. I watch it, not to hear the opinions of the dozens of people being followed during their day's work, but for the awe-inspiring footage of Alaska's outback and the great shots of flying. And of course I can't deny that I relish seeing any aspect of aviation, the mechanisms and the processes alike.

Alaska is beautiful. Its soaring mountain ranges and vast stretches of wilderness are untouched by humans. Glaciers plow the valleys and rivers cut the soil. During the warmer months the millions of hectares of green pump seemingly visible reservoirs of oxygen into the atmosphere, and during the colder months—which by all counts are much longer than the warmer—the stretches of white are almost too much to comprehend. Alaska straddles the Arctic Circle, and the northern third is categorized as sub-arctic. Looking at winter images invokes Antarctica instead of North America. This winter scene requires special flying techniques, and to whet the aviator's appetite there's lots of footage in *Flying Wild Alaska* with airplanes landing on the snow with skis. How fun is that?

Alaska's also huge: twice the size of Texas. It doesn't border the contiguous United States, or the "Lower 48," as they call us down here. Portions of the Aleutian Islands, Little Diomedé specifically, are only a couple of miles from Russia; this means that flying to the small villages that dot the area can be hair-raising missions—don't fly into Russian airspace, or you might get a visit from a MiG fighter jet.

The great distances from most of Earth's population centers breeds in the Alaskan citizen a maverick mentality. There are still subsistence hunters there, people who rely on themselves for everything they need. They find their own food; they live off of the land.

And in most of the places the pilots of *Flying Wild Alaska* visit, outside of places like Juneau or Anchorage, people are in touch with nature in a way that most of us can only dream about. They live a life separated by distance and by attitude.

But they're not immune to our ways. The plot-line of the show, the very title itself, belies the contradiction.

In one episode, a health clinic in a rural island community of 200 people needs a critical medication, and a bush pilot flies it in, landing on a precarious ice runway. The pilot makes the timely delivery, and then stops to gab with the village elder, being filmed all the while.

"How are things otherwise?" the pilot asks the elder, who responds in the halting and clicking English of the native Alaskan: "We're really starting to see the effects of Global Warming. I don't think the people of the Lower 48 realize how much their actions are having on our ability to live and hunt out here. Things have changed a lot in my lifetime."

Both men turn and go their separate ways. The film crew stays on the ground and follows the plane into the sky, then pans to the village. There are snowmobiles and generators everywhere.

The Spoils of Oil

It was a difficult slog through the majority of materials in a recent geography class I attended at the University of Southern Maine called *Global Environment Issues & Sustainability*. In it, we had no choice but to focus on the indecencies we humans put others of our species through, put others of different species through, and ultimately put our planet through. These indecencies are deeply inconsiderate. This inconsiderate aspect

of our behavior is perplexing, because we're endowed with such wonderful cerebrums, yet so few individuals in our rapidly expanding population actually use that cerebrum for understanding important matters like the health of our Earth-home. The concentration of inconsiderate people to considerate people is so caustic that large parts of our beautiful Earth are suffering as a consequence.

Even if whole districts forgo plastic bags, whole sectors of farming communities shun chemical fertilizers, whole cities decide to live in less square footage, whole cultures do without polluting vehicles, whole countries use alternative energy sources, we cannot stop the rapidly accelerating decimation of our planet. The inconsiderate wield far more decimation power than the considerate wield healing power.

It is difficult to tease apart the specific connections between population growth and planet decimation because there is a direct relationship between the two. The connections are numerous, complex, and intertwined, and energize a positive feedback loop. Hovering over it all are the graphical "curves over time" for both of them (growth and decimation), which are well underway and carry lots of momentum. But there is without a doubt a time when the connection became acute: the discovery of oil and the ever-expanding uses of its properties, especially the liberation of stored energy and the fabrication of plastics by Homo sapiens. The brunt of this essay concerns the liberation of stored energy and the negative ramifications of its exploitation.

Energy.

Our Universe is on the order of 13.8 billion years old. There have been several iterations of star-lives prior to our Sun and its Solar System accreting. These star-lives happen because of gravity and energy, which Albert Einstein realized and formulated

with his famous equation $E=mc^2/(1-u^2/c^2)^{1/2}$. The concepts subsumed within that equation coupled with the related concept that energy can neither be created nor destroyed, i.e. the total energy of the Universe is constant (Serway, pg. 197), are pivotal to understanding why Earth is a train-wreck in process. Most people appear to be aware of these energy connections only when specific events happen. One such event happened recently, a minor reminder, in Chebarkul, Russia on 15 February, 2013, when a meteor streaked across the sky, causing some minor property damage. Another, a major reminder, happened in Siberia, The Tunguska Event, on 30 June, 1908, when a small meteor impacted the planet and caused a large swath of environmental damage. About 66 million years ago, something happened that was vastly more influential: the Alvarez Impact marking the Cretaceous-Paleocene extinction event, when a large meteor impacted the planet and caused massive planet-wide destruction and extinctions (Fortey, pg. 282). There are also many other universal and consistent tectonic phenomena like earthquakes and volcanoes that remind us frequently, and sometimes catastrophically, of what happens when energy is released. These events are a re-arranging of energy as played out by the stated simple and universal laws. They are all *natural* (versus man-made).

But there are other significant reminders of energy re-arranging, and humans conceptualize, fabricate, and implement them. They're oftentimes used for the specific intent of causing destruction, like the firing of a bullet that, small as it is, is able to wreak havoc because it's propelled to high velocities. We all can picture the ravages of detonating dynamite on a mountainside to expose subsurface materials, and we're all familiar with the intense nuclear explosions thrust upon Hiroshima and Nagasaki by America at the end of WWII.

Each of these man-made events, and myriads of others similar to them, is a change in energy explained by the physical principles listed above. They happen quickly. It's this temporal focus that causes the observer to pay attention. We see the changes in matter brought about by the changes in energy, like a crumpled human body or the annihilation of a whole city, in real-time. We see it now.

In contrast, most of the changes in energy that we humans are orchestrating for our perceived "benefit", specifically those to produce electricity, those that power internal combustion engines in equipment and vehicles, and those that synthesize plastics, are taking place and accumulating over a larger time frame, relatively speaking. Because of this elongation of time, it is psychologically much easier for us to not notice, or to adjust to, the changes that are occurring because of those energy events.

To reiterate: when energy changes are large and instantaneous, like a bomb exploding, people realize that an energy event took place and grasp the consequences. But when the energy change is the sum of many small changes occurring over years, decades, or a century and a half, like the unleashing of energy events to power petroleum-based machinery, people will adjust their day-to-day thinking to accept the consequences. They do this because they're not associating the cause and effect, which is diluted by time passage. (Of course there are other factors affecting the thinking, a large one being greed at both the microscopic scale—preferring a snow blower to a shovel, and the macroscopic scale—Exxon's profit margin.)

Harmony.

In order to understand the importance of how post nineteenth-century humans have disrupted the overall energy balance of the planet, we need to look at a little history.

Wind power is currently the energy fad, as if it was something new. But up until the time oil became our primary energy source, wind power was already a primary energy source. It certainly dried clothes and foodstuffs for all of Homo sapiens' history. Wind powered long distance travel once we used our cerebrums to learn how to harness it, using simple mechanical laws culminating in sailing vessels. Seeds can be separated from chaff by the wind and then ground in a mill whose grinding wheels are powered by wind or water or other human or animal power sources.

Finally, as the Scientific Revolution helped bring about The Industrial Revolution, great advances in harnessing the water-gravity energy systems were engineered, powering looms and other machinery, further lessening the need to implement human and animal power.

Watching a cormorant standing motionless with wings spread in order to dry its feathers and warm its body can inspire in anyone a sense of understanding our primary energy source, the sun. That sun-warming image is one played out all over the Earth by all manner of creatures, including Homo sapiens, even as we learned to harness other radiant energy sources, notably fire, a hydrocarbon energy event. The Sun's fusion of hydrogen with its release of energy is what fuels all subsequent energy sources on Earth in a harmonious continuum, except for the already described celestial and tectonic energy events, unbroken until 150 years ago.

The Sun-Earth system is on the order of 4.6 billion years old. For the purposes of this essay there is no need to consider the energy events that power tectonic processes—radioactive decay (Bloom, pg. 29)—as it's sadly not a source humans have tapped with any success, though it is an essential component of the available energy of the Sun-Earth

system. For the past 3 billion years, life on Earth has proceeded step-by-step over the course of evolutionary time while utilizing the Sun-powered energy sources like wind and radiation, leading harmoniously and naturally to the beautiful planet we've been born on to.

Photosynthetic autotrophs developed a process for collecting, synthesizing, and storing photon energy. The process is summed-up in the simplified photosynthesis equation $\text{CO}_2 + \text{H}_2\text{O} \rightarrow [\text{CH}_2\text{O}] + \text{O}_2$ (Campbell, pg. 187), where the brackets indicate any particular sugar that is formed. Energy leaves the Sun and reaches the Earth in many wavelengths across the electromagnetic spectrum, but those most important to life are closely congregated around visible light and either side of it. This is how the basis of the food chain has been established, and of course, food is a synonym for "life's energy."

Oil.

What has become of all of the food from the food chain? Life on Earth has been evolving for over 3 billion years (Campbell, pg. 1), and humans would have to say it was a lucky energy-event that occurred when a meteor slammed into the planet 66 million years ago, wreaking enormous destruction, causing mass extinctions, and exposing a niche mammals could exploit (Campbell pg. 522). All the while and up to present-day, every living thing was dying and accumulating its stored hydrocarbons. Plants grab the light and use it to synthesize sugars. Some of them get eaten by other organisms for their metabolic energy, the rest die in situ, and so on up the carbon-based life energy food chain.

For most of the history of this food chain, the energy derived from the Sun that has powered it has been re-arranged in real-time within the food chain itself (plankton get

eaten by little fish, little fish get eaten by big fish, big fish get eaten by bigger fish) and then sequestered in the accumulations of dead organisms that fall to the bottom of the oceans or landform floors and then get covered by the lithosphere. The energy of the Sun that was used by all life that has existed has become coal and petroleum, like a battery that stores the energy of the Sun's visible wavelengths, made possible by photosynthesis.

Petroleum wasn't considered a resource to exploit, except for small pockets of people using it for mastics or medicines, mostly in proximity to sites where there was surface seepage. But in the 1850's experiments by chemists in the U.S and Europe were undertaken to find illumination fuels, culminating in the patenting of kerosene for "illuminating and other purposes" by the Canadian scientist Abraham Gesner (Maugieri, pg.3). There were no real petroleum extraction techniques in place at the time, though certain problems brought on by humans, namely overhunting of whales, the primary source of illuminating oils before kerosene, created the need to develop those techniques. Then, in 1859 in the hills of Western Pennsylvania, Edwin Drake struck subsurface oil by drilling for it, and the rest is, as they say, history.

Population.

Humans have taken full advantage of the battery we call "oil." Our beautiful Earth is part of a dynamic Universe, and as such is just as susceptible to the physical and chemical laws that govern that Universe. Understanding some of those dynamics, like the Milankovich Cycles—part of which is Earth's axis precession in relationship to the ecliptic—help us to better decipher phenomena that are nature-based versus Homo sapiens-based. We need to make the distinction, because choosing the proper path to whatever our destination is, in this case the rectification of problems brought on by

petroleum usage, relies on it. For example we need to understand that the Earth does indeed go through cycles of warming and cooling, and that it responds to them. It's becoming increasingly apparent that a period of warming is happening right now: by ruling out the physical laws stated so far in this essay as a cause, i.e. nature as a cause, we can deduce the precipitating events must be some form of human action. By having deduced this through study and not speculation, we are better able to devise a plan to help rectify the recognized problem. Again using global warming as an example, we find through scientific evidence that Earth warms on a regular basis, and its response is on a time scale appropriate with the warming; a natural ebb and flow over the course of eons.

But we humans are forcing warming through our petroleum-use actions, and in a time frame that is not in sync with what would be a natural ebb and flow; it is happening much faster, and the planet cannot respond in a proper, natural manner. (And global warming is only one negative ramification of human activities involving petroleum—pollution of every corner of the biosphere is another.)

Looking at a graph of population growth (Figure 1, next page), it's easy to see the correlation of explosive population growth following the discovery of petroleum. The cause of the growth is simple: life in the form of *Homo sapiens* found an energy source in the form stored hydrocarbons and is exploiting it, like any good organism would.

Prior to this there were lots of localized problems for sure, like over-hunting some species to extinction, caused by the inconsiderate manipulations we do because of our large brains and opposable thumbs. But those problems were only localized because humans, just like all other life on the planet, only had the energy of the food chain, wind,

or radiation (again, all manifestations of the prime energy source, the Sun), to be used in real-time. There was no stored energy source, with the possible exception of a minimal

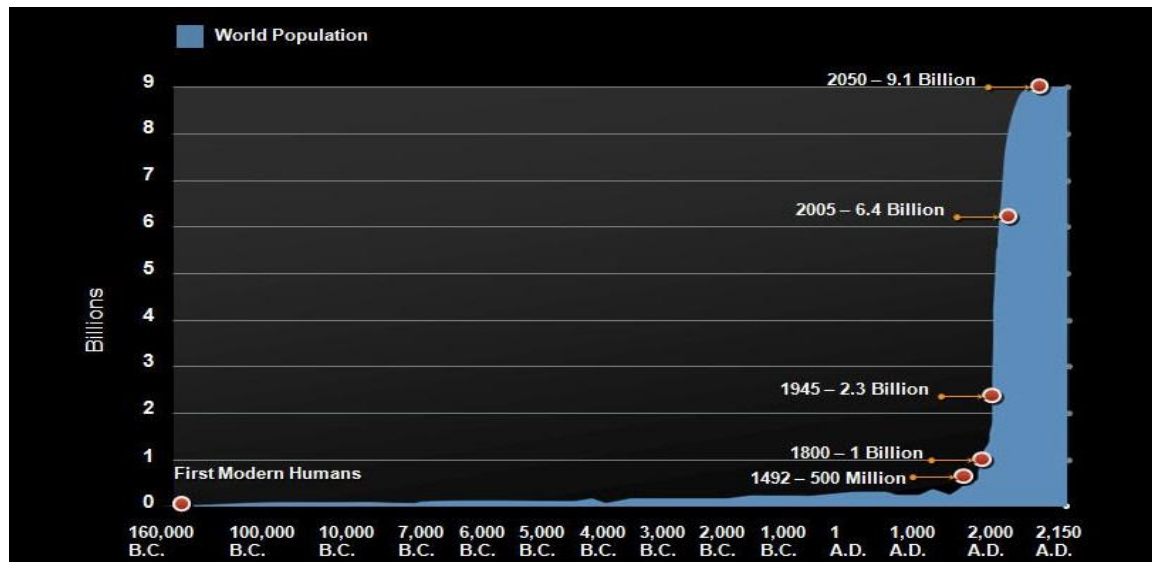


Figure 1

amount of dried plant or animal flesh that could be consumed at a later time. That is until 1859, when we found lots of stored energy (the battery given to us by photosynthesis), and started pumping energy events and their by-products into the ecosystem. Because of humans, Earth is in the midst of receiving 3 billion-years-worth of stored Sun energy along with the diurnal amounts, and it's falling apart as a consequence, just as a mountainside falls apart when the stored energy in dynamite is released. Tragically, we don't see this connection, because it's neither localized as quick.

During a presentation I gave that this paper is based on, I used Figure 1, human population from the time of the first modern humans, and Figure 2 (on page 88), that of petroleum production as compiled by the *Oil and Gas Journal* from industry numbers.

The significant concept on these graph is the number of barrels of oil produced, and it's used for the following calculations. A very basic visual averaging of the area under the curve of petroleum production comes up with a daily quantity that could realistically represent a number that is an *average* for the past 150 years, when humans tapped the stored energy of 3 billion years of photosynthesis and started releasing energy events with their associated destructive ramifications.

The barrel of oil equivalent (energy released from burning one barrel of oil) depends on how it's refined, and is between 5.4 GJ and 6.1 GJ as defined by the U.S. Internal Revenue Service. I've used the low number (5.4 GJ) to stay conservative. The visual average for petroleum production was the year 1970, when production (closely related to usage) was 15 Mbpd. Thus the average yearly number is $(15 \times 10^6 \text{ b/d})(365 \text{ d/y}) = 5.475 \times 10^9$ barrels per year. This is used as a number of barrels consumed for each year for 150 years. Therefore the energy equivalency of oil is $(5.475 \times 10^9 \text{ b/y})(5.4 \times 10^9 \text{ J/b}) = 29.565 \times 10^{18} \text{ J/y}$ for each year.

Little Boy was the name given to the bomb dropped on Hiroshima, Japan by the United States on 6 August, 1945. This particular catastrophe immediately conjures the consequences of an "energy event". Little Boy yielded an estimated 52 TJ (Bruce J. Cunningham. C-4/TNT equivalency technical report #EMPE-01-81, Lawrence Livermore National Laboratory). Dividing the energy released from petroleum by the energy released from Little Boy gives $(29.565 \times 10^{18} \text{ J/y}) / (52 \times 10^{12} \text{ J}) = 568,557.6/\text{y}$. That's like exploding more than half a million Little Boys a year! Over the past 150 years, humans have released the energy of 85,283,640 Hiroshima bombs. Our beautiful Earth "dealt" with that energy as it arrived from the Sun spread out across more than 3 billion years.

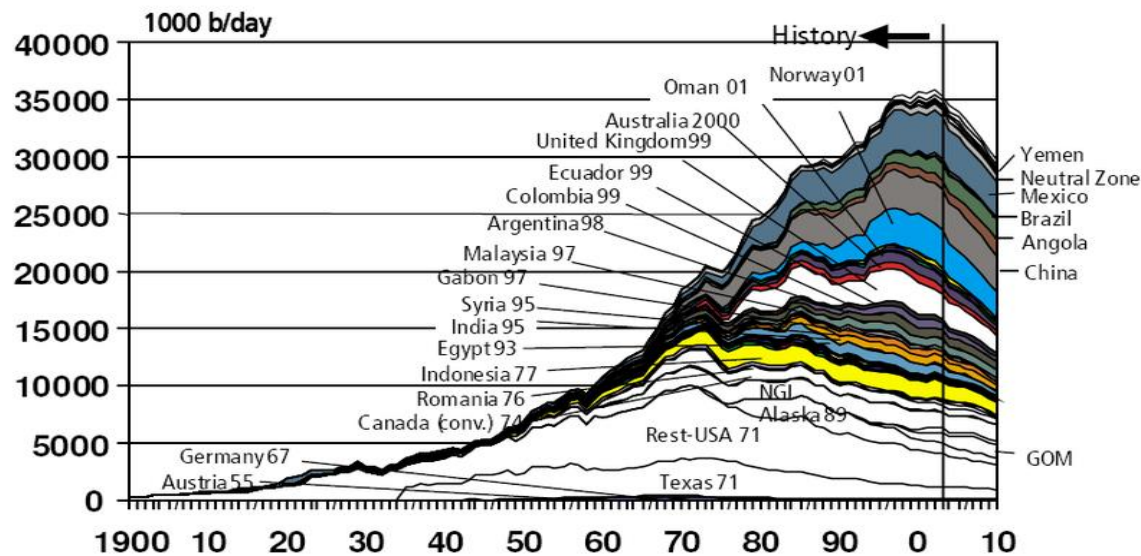


Figure 2

Now it has to "deal" with it almost instantaneously in astronomical time; however, human's perception of that time frame is one of generations, and thus we easily overlook it.

All of this is why there is no longer even a chance at sustainability; after 1859 humans started unleashing more energy than the Earth can cope with, and over the course of the next few centuries, as we continue to multiply and unleash more energy, we will see more of the consequences of energy events. Those consequences will grow in number and severity, like a Little Boy exploding in slow motion; as human population grows, the potential for ameliorating the decline will fade.

In 1859, we detonated a bomb. The energy seeking, metabolic organism *Homo sapiens* is feeding off of the energy released by that bomb, as evidenced by our explosive population growth. The by-products of the energy events are accumulating: global warming, air and water pollution, health abnormalities throughout the biosphere, etc. We all know these are only the surface ones and that there are many more insidious ones that

will only come to light when they affect Homo sapiens' quality of life, no matter what socio-economic sector that we are basing the quality on.

Sustainability only had a chance when human's energy consumption had stayed within diurnal parameters. After 1859, the only plausible scenario is the one you and I are in the middle of; polar bears quickly losing their icy hunting grounds, Lake Erie eutrophication, Bangladesh's inundation by sea-level rise, Beijing's increasingly severe air quality alerts, and the like. Because we found the potent stored energy source of petroleum, human's planet-wide population will grow, and our beautiful Earth and all of its vast and wondrous inhabitants will suffer.

The two cannot be separated.

The Pessimist.

My instructor remarked to the project this essay is based on by asking, "Do we just throw up our hands?" My response is similar in concept to the bombardier on the *Enola Gay* hypothetically saying "Whoops" after having pushed the drop button to release Little Boy on Hiroshima. It is *already out of our hands*. The only thing we can do for the future is to try and ameliorate the consequences of the action, which, as I've already alluded to, is but a pipe dream for those of us who wish to do so. There are wonderful people trying to stop tar sands oil production, or develop clean forms of energy capturing devices, or are trying to force implementation of governance to stop dumping in our oceans or to educate people on how to better live on our beautiful Earth. But they will not be able to stop the rapid decline of the planet as we know it. The greed of the inconsiderate is *vastly* greater in its capacity to force change than the love of the considerate.

I long for a future where our beautiful Earth once again exists in a natural concert between all of its inhabitants, not viewed by its "most intelligent" one as a resource for exploitation. I'm not saying the future is bleak for all inhabitants of the Earth, because life will continue, and we all know that creatures like the cockroach or spruce beetle or milfoil or parasitic worms and an abundance of others will thrive. And I dare say that Homo sapiens can be lumped in with that grouping. But polar bears and killer whales and manatees and Lake Erie's trout are disappearing as a direct consequence of human's energy exploitation, and there's not a damned thing we're able to do about it. Campbell states that there are more than a thousand species extinctions caused by Homo sapiens, and that number seems to be expanding in direct proportion with human's planetary exploitation (pp. 522-524). And "safe keeping" in a zoo is no place for any creature, no matter how righteous the ideology behind the practice.

There is only one thing capable of lighting in me even a glimmer of optimism for our beautiful Earth's future: education. Every member of our species needs to be introduced to the concepts in this essay. They need to be aware of exactly what the causes and effects of energy usage are, from the miniscule (what calories go into and get used by their bodies), to the moderate (what the consequences of bigger—like a car or a house or a population—has on any system), to the global (what it means to lose the polar ice caps). Every one of us has to learn to look at the whole Earth, not just myopically consider our own little slice.

Nipples

I think about Petey often. It's easy to conjure him because I have a picture hanging in a central location on one of my walls, and no matter where I've lived, since the

day I had the small photo developed, it's been prominently displayed. It's a self-portrait of three friends: me, Petey, and Bill, sitting in that order. It was taken in Petey's dorm room at Kunsan Air Base, Republic of Korea one morning just after getting off of our shift, a casual lark to burn-up the half-hour before breakfast. Petey is in the center of the shot, me and Bill leaning against him, and his arms are thrown casually around the two flanking necks, pulling our three smiling faces together, almost to touching. We were at ease with each other, it's plain to see.

It's also plain to see that Petey didn't look African-American. His ethnicity is hard to deduce, even in person, but if I try to describe him I'd say he's cute-mongrel Californian with a big helping of Hawaiian thrown in. The only significant features that Petey's paternal DNA seemed to have left him with was a loose though scrunchy afro that's almost copper in color, and a squat, wide nose. He was vibrant, intelligent, well-groomed, and in extremely good physical condition.

He was also intensely magnetic; I can't think of a time when he wasn't at the center of whatever we were up to: out drinking or out running, gabbing in the dorm's community bathroom while shaving, shooting hoops behind the fire station, on bus rides, at a monkey march, or when the subject of photographs.

His skin had a warm luster to it, as if he'd had sunlight tanning him from all directions at once, and this accentuated his bright white smile, his "hearty horse teeth," his mother had called that smile when he was a kid, a fact he loved to tell me. And Petey *was* hearty. No six-pack abs, though they were reasonably close. He was the epitome of health, as solid in his body as he was in knowing his life-long passion, that of being a fireman.

There had been one physical thing though that had bothered Petey when he was a teenager, and the vanity made him even more lovable: he'd felt his nipples were huge.

"You got those from your dad," his mom had told him when it'd become apparent to him they were a problem, his unknown dad's DNA showing up one more time, but in the wrong place.

"Well I'm going to do something about it," he'd shot back, and went out and got a job working on the loading dock at a local warehouse. It took him nearly two years to save the money to have the cosmetic surgery. His mom couldn't help financially; she was a single parent spending her not very large salary to keep the two of them in a small but nice home. What she did offer her only child, who she called "Sweetie" during the times I'd meet her years later, was a steadfast belief in his wisdom. She'd always stood behind him; Petey never once in all of the intimacies that I'd known him, had an unkind thing to say of his mom. Petey never had an unkind thing to say of anyone, not that I'd ever heard.

The photo on my wall shows the picture of man absolutely certain of himself, surrounded by the love two others have of him. Petey's pose and smile emanate all the love he gave back.

What a Gas

Petey and I had kept in touch during my two years in Japan, sometimes by telephone, and later, as Petey's LAFD probation wound down and he could relax, by letter. It became clear we wouldn't end up like most other military friendships, at least the ones I'd fostered, which tended to fade after a re-assignment. It was a testament to the quality of the man, because he's the one who reached out.

When I'd out-processed from the Air Force in 1985 after my tour in Japan, Petey drove the nearly six hour car ride from Los Angeles up to Travis AFB, near San Francisco, to get me so I could come back to LA and spent a few weeks with him before I headed home to Massachusetts. The return drive passed far too quickly in conversation, neither of us at a loss for material to talk about, most of it reminiscing about when we'd been stationed in Korea.

"Remember when we had the gas attack exercise over the weekend?" Petey'd asked.

In Kunsan, we were in war exercises at least a quarter of the time of our year's tour. It wasn't unheard of to spend as many as five days in a row that, when outside, it was necessary to wear our flack vest, helmet, and carry our chemical warfare gear and gas mask. The mask was usually stored in its pouch, but occasionally worn, cinched up against the face in a sweaty, claustrophobic embrace, much like the embryonic and crab-like life-form in the 1979 movie *Alien*. During these war exercises, the gear was part of our wardrobe. Even on our days off. Even in civilian clothes. Even at the chow hall. Even sometimes, to bed.

"How the fuck did Bill do that?" I replied rhetorically. We actually didn't need any words to replay the whole scenario in our heads, and I knew immediately that Petey's question was really about what Bill Hoseney had done, not about the gas attack exercise. Petey always liked to walk on the bright side of life.

"Man, Hoseless could sleep!" Petey'd nicknamed Bill Hoseney, the other in our close-knit group of three, Hoseless Bedmonster on account of Bill's penchant for long stretches of un-interrupted sleep. Weekends in a fire department, down-time is the modus

operandi, and Bill could sleep through a whole shift if the station didn't get any emergency response calls, the sleeper not even getting up to eat.

Once, early on a Sunday shift, the base sirens had wailed, signaling a gas attack exercise, the one Petey'd referenced. As was protocol, we got into our required warfare gear and then continued about our day pretty much as usual, checking out the trucks and equipment, then, because it was Sunday, having down-time. So Bill did what he always did on a down-time day, he went to bed. That evening after chow, Petey and I snuck into the bunkroom to check on him; he was sound asleep, still in his flack vest, his gas mask at his side, and his helmet somehow still on his head. We stood there giggling like girls; it never woke him.

"I think he's doing great, by the way," Petey'd told me, bringing us back to the present. "I received a card from him about three months ago."

"I wanna get his address and drop him a line," I promised Petey. Unlike the people I'd left behind at any of my other stations, I wanted to keep in touch with Bill. Petey'd be the cohesive element. Like the focal point of a picture of three friends.

Mediocre

I've figured it out. Mediocrity. That's what I'm good at. I can finally breathe a sigh of relief. You see, I've been wondering for my whole life, and it's kept me awake many a night, lying in bed trying to answer the self-imposed question of what it is I'm good at so that I can get a job and get paid for it. Plus I'll have a ready response when someone inevitably asks me what I do, because pigeon-holing one another is a natural phenomenon. An honest response would be "I'm a chocolate ice cream eater."

Mediocrity's been swimming around my blood stream for most of my life without me getting my hands on it and putting a name to it, rather like an undercurrent of stray electricity or a case of chronic mononucleosis. Which is strange, because it surfaces more often than I'd care to admit, thrashing out like a fish on a line, compared to the basal drip of mediocrity which emanates from me on the day-to-day, like a bad odor. These day-to-day emanations are the kind of mediocrity that women intuit, without it coalescing into a word that can be quantified, and are used as a reason to part ways with me, or to not get involved in the first place.

How does one categorize oneself this way? Mediocrity-maker? "Hi, I'm Bill. I'm a mediocrity-maker!" That does have a ring to it, especially if I were to introduce myself to someone who's just told me they're a homemaker. It makes us both, evenly, the creative type, the makers of something. I have to say,, though, I like the moniker mediocritist; when I introduce myself to a ventriloquist or a hypnotist or even a dentist, we'll have rhyming titles.

You'd think I could've figured this out a lot sooner than I have. If you'd any knowledge of my history, you'd wonder why I didn't catch on to it at least by the time I was a teenager. But my dad kept telling his kids "You can be anything you want to be," so I suppose I was aiming higher than mediocritist. There are plenty of times when I think I'm going to become the best thing that's ever happened to the particular sector of society I'm striving to get into: the next Miles Davis when I play the trumpet, the next Frank Lloyd Wright when I design a house, the next Thomas Moser when I build a dining room set, the next Patty Wagstaff when I fly a plane, the next E.B. White when I write an essay. Luckily, I seem to never excel at those activities, sometimes even undershooting a

median level of mediocrity; I've built many a wobbly chair and penned many a fragmented sentence. How's this for substandard mediocrity: I've been too scared to go flying! Now how can I expect to do a slow roll while I'm soiling myself?

I wanted to be an astronaut, not a mediocritist. But in realizing my calling, I see that part of what it takes to be a great mediocritist is to aspire to as many unreachable other callings as possible, thereby hedging my bets. For the mediocritist, it's a guarantee of sorts to want to be the anything that my dad had suggested I could become. Because of it, I've wanted to be everything fascinating in this world, thereby focusing all the energy and dedication needed to get there on nothing in particular. It's damn exhausting.

Now if only I could find a job ad on Craigslist looking for a mediocritist. My résumé is quite impressive.

The Atheist's Dilemma

There is a distinctive problem with being an atheist: death. And it's a helluva problem, too, because once it happens you can't go back for another go, as if you're filming a commercial, screw-up your lines, and get to do another take. I know everyone has this problem, no matter what theological bent they lean towards, but most non-atheists have ways of dealing with it. The atheist has nothing to soften death's blow, no reincarnation, no Heaven. There's nothing but the finality of it, and it scares the shit outta me. Both the finality and the death that comes before it.

I certainly wish I could go to Heaven. Sounds great, especially if I got to go to the one with all those virgins. I probably wouldn't get fat either, no matter how many bacon double-cheeseburgers I ate. I can see whole-heartedly the appeal Heaven has, and why so many people sign-up for the plan. No matter what you fuck-up down here,

Eternity's got you covered. I suppose that if you're Catholic, that guilt-ridden religion I grew up with, life saddles you with a bunch of do's and don'ts, mostly don'ts if I remember correctly, making you wish strongly for death to come and take you away. But lots of other religions, maybe Unitarianism, seem to have fun down here, then they get to have fun up there. They can't go wrong.

And there were those lucky folk, the rich land owners back there seventeen hundred years ago when Christianity was being subsumed within the polytheistic Roman Empire, who could pay the priests to have their sins removed, and then later go sacrifice something to Jupiter, thus hedging their eternity bets. I imagine they had no anxiety problems anticipating the after-life.

Being reincarnated doesn't sound too bad either, even if I came back as an aardvark. At least I'd get to come back, whatever the form. And possibly during one of the go-arounds I'd get lucky and become something cool, like a Hugh Heffner.

The point is, is that if you're anything but an atheist, during this short-lived, fast-paced life, you possess the thought that something else will be happening after the d-word happens. You don't have to spend all the time prior considering how much you love this shitty life and that when you're dead you don't get to have it any more. All right, maybe the Catholic has to worry about Hell, where, if I were to go, I'd be stuck eating vegetarian for a bajillion years. But the atheist realizes there isn't anything but this life, and then the same nothingness that there was before it. Which reminds me of a Woody Allen joke, one encompassing his philosophy about life: two old women are eating at a restaurant when one says "This food is terrible," and the other responds, "Yes, and such small portions too."

The atheist sees that there's nothing but a harsh, short life: period. I'm aiming for 90, which is a wee bit shy of the 14.5 billion years the Universe has been around, and that disparity has me paying more attention to it than to the wonderful sensations life can give.

Death is going to suck no matter what my outlook. No more sex, or movies, or boating, or sunsets, or Beethoven, or sitting on the couch with a purring kitty on my lap. It's the end of all things that hopefully I'm paying attention to while alive. Well, all those things that I imagine others are paying attention to. The others who think there's something else, a better place after this all ends.

Fergy-sama

I'm only somewhat sure I'd read James Clavell's book *Shogun* before Petey had, but I'm totally sure who'd made the all-important reference to it first.

The bunkroom lights had been turned on at the usual 6:15 by the individual working the night shift up in what we called "the alarm room," the communications center for the fire station, his voice singing into the PA, "Rise and shine Kunsan!" The bunkroom was the area of the station where the whole group of us slept, a large room with 24 beds arranged in neat 4-bed blocks. This particular winter morning it was unbearably hot, because one of the Korean nationals we worked side-by-side with undoubtedly got up in the night and turned up the heat, a luxury most of them didn't have in their own tiny homes. These first couple of minutes after the lights came on, as different guys got up at different rates, making their bunks, or lying in them trying to snooze, was always a time for goofing around. Joke telling was not the only form of fun, because in one particular guy's case, it was a time to see if he could beat the record he'd

set the shift before for the number of individual farts he could produce. Even more than sleeping in a group, waking up with them is the way to really know them. Each morning's waking reinforced our team spirit, the joking and farting equally.

Petey was always right out of bed, similar to me. Both of us wanted to get our days started, wishing to savor them right from the beginning. Where my bunk was in the middle of the room, Petey slept in a bunk close to the vehicle floor because he was usually assigned to Rescue-1—he was an EMT—a truck that would get emergency calls a lot during the night. So in the mornings we'd have to yell across the bunkroom to gab to each other. This particular morning, I saw what seemed a familiar book sitting on the nightstand next to his bunk. I yelled over to him.

"Petey, watcha readin'?"

"*Shogun!* I only started it two days ago and I'm almost done! I've hardly slept 'cause I can't put it down!" he yelled across to me. "You gotta read it!"

"Ya? Well read this..." intercepted Crank, raising his leg to go for a new record of seventeen; fart, fart, fart...

"Petey, whaddaya think of Mariko-san?" When I'd read the book, I'd fallen head-over-heels for the fictional Mariko, a smart and pretty woman who would be a warlord's liaison to the Dutch in 17th century feudal Japan.

Several guys lying in bed near Crank started counting out loud the number of farts he was up to, and everything else came to a standstill. Fart. "Sixteen." Fart. "Seventeen." Fart "Eighteen!" Crank really was a great farter.

"You've read it!" Petey yelled over while everyone else was waiting to see if now red-faced Crank could squeeze out one more before hurting himself.

"Hell yes. I thought it was an excellent book," I told him. Though fiction, it had historical accuracy, and reading it before coming to Korea started in me a love of eastern cultures. I'd used it as a primer of sorts when I learned I was going to be stationed at Kunsan.

"I'd love to meet someone like her," Petey said prophetically about Mariko. And then, for the first time, he used the highest honorific form of "san," one that we both knew from the book, as he added one more thought.

"She sounds beautiful, Fergy-*sama*!"

Test Anxiety

Chemistry's a hard class. There are reactions and moles and Avogadro's number and valence electrons and a helluva lot of mathematics. I took the class at UMass with about 450 other students in an amphitheater type of classroom, where, from the distance I usually sat, the professor seemed more of a stage performer than a teacher.

It was clear, after the first exam was passed back, that the professor was going to have to scale our scores, because the sad truth was that the class average was all of 48. I thought I'd done well when I took it, but seeing the big circled number 42 on the top right—in red ink no less—was a blow to my ego. The smell of dread permeated the amphitheater; the tension was palpable. We all knew we were in for a difficult semester. By mid-terms, the whole class had reached a discernable low-standard approach to the test-taking. I didn't know anyone who did well, and not doing well became the norm throughout the physical science departments. If you were a physics or chemistry major,

then it was par for the course to flunk an exam and hope for the scale. We called it "ridin' the wave."

Chem II was a repeat of the first semester.

"T, I can't take this flunking shit any longer," I told my friend Paul Tarasuk half-way through the term. "Wanna start doing something about it?" Paul was a plastics-engineering major, and though I was a physics major, we had most of the same classes together. T cared most about partying, and had come to the self-actualized enlightenment that all he really needed was a 2.01 GPA to land him a job after graduation, and thus shouldn't exert himself too strenuously in school. I fully expected a negative response.

"Alright. We've got an exam for Chem II this Wednesday at 11AM. How about we meet at Joe's at 7:30 and cram?"

"Done!" Joe's was a local American Legion that anyone over 21, and some younger, could go to drink beers and play pool. It opened at 7:30 in the morning so that the local vets could get their day started on the right foot.

Breakfast that morning looked like this: a beer and a shot in one hand and a fistful of quarters in the other. At the pool table, T broke. "What's the vapor pressure of carbon tetrachloride at room temperature," he asked amid the noise of the clinking balls ricocheting off one another like humongous atoms.

"What's its heat of vaporization?" I retorted and sunk a stripe. "Tryin' to trick me by not giving all of the information? Or did you forget?" I emphasized this insult with a friendly poke of my cue on his shoulder. Lots of fun, lots of beers, lots of racks, and lots of questions later, we were stumbling the two blocks to our exam in Olsen Hall.

I got my bluebook and pencil, plopped into my seat, and struggled to see straight. I'd lost most of my ability to fathom that I had three hours of mind-bending to get through, but at least I had a big grin on my face. Besides, by riding the wave, I might still pass. I was beginning to understand how T could be nonchalant about his college education. And there was one huge difference between taking this test and all the others of the grueling past semester and a half—I was relaxed as hell.

A week later I walked upright into the same room and got my test back.

I'd scored a 100.

T Two

Undoubtedly, T saw himself as one of the actors in the 1978 movie *Animal House*. It starred John Belushi acting the part of a college student—the lone word "college" stenciled on the front of his decrepit sweatshirt—who cared little for learning, but cared a lot for the constant and often drunken antics he and his fellow fraternity brothers played on the rest of the student body. The fraternity was the worst house on campus when it came to grades, but the best when it came to mischievousness. T perpetuated the tradition portrayed in the raucous film. I loved T for it, though I had a hard time keeping a balance between wanting to hang-out and wanting to actually do well in school.

We bumped into each other between classes one afternoon. "Where ya headed, Hen," he asked me. "I've got Calc III in twenty minutes. What's up?" Last year T and I took nearly all of the same classes. But this semester we weren't able to take calculus together: his section had filled up quickly because everyone wanted that professor, well-

known for his ability to explain three-space integration. I ended up in a section taught by a nice Russian fellow whose only understandable English was "You. Go to board." The phrase was accompanied by a finger point almost always aimed at me; the other students hid behind their books in an attempt to keep from doing the extended time at the blackboards needed to solve a problem. You read that right—blackboards, plural. Working a problem usually required filling the two full walls of blackboards and using most of the class's time period. The hope of the Russian was that his students wouldn't need much prompting at the board. The hope of his students was that they wouldn't get picked. I didn't care too much because I rather liked looking at all my equations up there. It made me feel smart.

T had become my wayward little brother, and it was my mission to see him through to graduation. I was always helping him with his homework and he was always getting me stoned. It was no surprise that the answer to my "What's up?" ended with us hiding behind the science building.

"This is excellent shit, Hen." T is for Tarasuk, his last name, and Hen is for Henry, my middle name. "I got it from a brother of mine who went to the Caribbean last week," T explained. The fraternity he belonged to had their house over on South Campus, and was well known, even off-campus, as the place to go to party and to get laid. T really liked college.

"I'd better be careful then," I said.

"Don't be a pussy." T always talks like this. It connects our common blue-collar backgrounds. T once got knocked off of a staging by hitting a live electrical wire with his hammer. He's also rolled a car over not once, but twice. The second time he was thrown

from the vehicle, and to this day swears that what saved his life was that he wasn't wearing a seatbelt.

After a few puffs and a few jokes, we walked back to my building where he gave me a friendly push into the open door. "Good luck in class!"

It was inevitable that I got called upon to "Go to board." Through the fog the pot had formed in my mind, I could see the Russian's perplexity while I stood there utterly dumbfounded. I had no idea where to even begin. All thanks again to T.

Pothead

I was trying to get the proper dosage of tetrahydrocannabinol into the brownies so that its effects wouldn't be overwhelming. The instructions in my book *The Cannabis Companion –The Ultimate Guide To Connoisseurship* went like this: "Use 2-7 grams of bud or ¼-1 oz. of leaf for a ¼-lb stick of butter, yielding a dose (in inverse proportion) of ½-2 tbsp. per person." Huh? I needed to do those calculations in my head a few times while reading the instructions slowly out loud, and then write them on paper to clarify. Then I had to figure out how many servings the brownies would make, and then combine the two results. I wanted to end up with a little brownie that would help my mom cope with pain of her diabetic neuropathy and help her to sleep, not send her to the moon.

Lately I've had this crazy vision of my not-very-nimble mom bumping around her small apartment high as a kite because of me. The vision had started about a month ago, when out of the blue she asked me if I knew where she could get some pot.

"I don't want to take the pain meds my doctor gives me. It makes me think I'm a pill-popper. And my friend Gladys told me how her daughter's father-in-law eats pot

brownies to go to sleep at night when his cancer pain gets to be too much," was her explanation.

"Have you ever smoked pot before?" I was pretty sure she hadn't.

"Well I'd eat it, not smoke it."

"Oh. Then that'll be okay," I joked. She talks incessantly about the pain her unhealthy body causes her, but things must be pretty severe if she's talking about what had always been a taboo subject in the Ferguson family. She'd changed. She now saw the pharmaceutical companies' legal but addiction-causing products as the real nemesis, like big-business pushers.

"Can't you get a doctor to prescribe you some?" Many places, her home town in Maine included, were warming-up to marijuana's benefits and relaxing their archaic laws. I've experienced those benefits my whole adult life—though illegally. I think it's great for my mom to experience them too, even if it is because of a medical reason.

"My heart doctor thinks it's a good idea, but because my pain isn't related to my heart problems, he won't give me a prescription." I insisted she could find someone.

But over the next weeks she told me similar stories of her other half-dozen doctors' unwillingness to prescribe marijuana; no problem giving those pills though. So I decided to do something I wasn't sure I would when she'd first asked. In my freezer were several small packets of bud, stored for future use. It was potent shit, but it'd been there for almost a year so maybe lost some of its efficacy. I decided to do the experiment.

I made the cannabutter and added it to a brownie recipe, all the while picturing my pothead mom giggling with her cronies over a game of dominoes. I cut and wrapped

the finished product into neat little squares and delivered them. I didn't explain how I got them; it only mattered to her that she'd possibly get some relief.

"Only eat half of one tonight," I said, uncertain as to the ultimate effect. I added: "There's nothing to worry about. Trust me."

In the morning I called her. She sounded more positive than I'd heard her in years:

"I can't believe it. I slept the whole night."

High (on women)

Today's bike ride has a different twist to it. Usually it feels like the meteorologically impossible happens: a headwind in every direction I turn. There may actually be a headwind today, but I'll be damned if I can tell—right now I'm high on women.

"I think every problem I've ever encountered," I say to myself with only a slight bit of exaggeration, "is a direct consequence of women." This last phrase comes out of my mouth loudly, and it's carried on the breeze towards two people sitting on the porch of a house I'm passing. What they don't hear, muttered under my breath now self-consciously, is the rest of this line of reasoning. The women don't cause my problems, my desire to have physical contact with them does. Gandhi realized this in his own life and tried, sometimes successfully, sometimes not, at celibacy. I'm certainly not going there. But there's an un-sought-after solution that's been thrust upon me: I've become sexually invisible to the lovelier gender. I've come to accept this horrible outcome along with the loss of my hair. And occasionally, like my present pedaling and talking aloud, it feels splendid.

This morning I met Joan. I'd never seen her before, but my brother had put together the logistics of scoring some marijuana for our mother, and meeting Joan was the last link. Almost my age, attractive and spirited, she gabbed easily. Though she was alone for our meeting, she's got a boyfriend and three kids. Because of this, our mission, and my invisibility, I didn't dwell on a possible hook-up.

There's potential for dwelling on a possible hook-up while I'm at the bank, like I was twenty minutes before meeting Joan. I love going to this branch: five people work there and they're all women. "Hi Bill!" is the wonderfully warm and genuine reception I get from all of them. This morning I interact with Catherine: she's gorgeous. I flirted with the bunch, but my animal instincts kept Catherine in my sights. Though her attention was on me, I realized she's practicing great customer service. Because of this, the fact that I estimate her age to be 27 to my 53, and because of my invisibility, I didn't dwell on a possible hook-up.

The juices were flowing by the time I'd returned home from my pot-scoring outing and headed out on my bicycle. I decided to insert a short run into the ride, but I don't have my lock, so as I reach the mid-point of my ride near the waterfront, I stop fortuitously at the lifeguard stand.

"Hi," I beam to the pretty young woman sitting upon her perch. "Could you watch over my bike for twenty minutes?"

"Sure," she beams back. After the run I stand gabbing with her for a pleasant, and for me far too short, conversation. I ask her name and we talk oceanography. Though Kailyn's vivacious and smiling, I realize she's a friendly type. Because of this, the fact

that I estimate her age to be 19 to my 53, and because of my invisibility, I didn't dwell on a possible hook-up.

"I love being around women," I yell out loud, this time not caring if anyone hears. I'm just a guy having a good day, hurting no one, voicing to the world one of the fundamental facts of life. As I grow more comfortable with my invisibility, I think I'll have more chances to get high on women instead of thinking them the root of my problems. I won't have to dwell on hooking-up any more.

Procreation

It doesn't take a rocket scientist to realize that our poor Earth is experiencing problems. There's lots of scientific evidence. And there's lots of intuitive stuff too. Just watch the news and see for yourself. You don't need a degree in climatology to see that the choking atmosphere of Beijing isn't right, or one in oceanography to see that a bleached and barren coral reef isn't normal. You don't need advanced studies in zoology to understand that the plastic grocery bag wrapped around the seal's neck isn't supposed to be there. Only 200 manatees left? That's not possible. No more fish in Lake Erie? How can that be?

If you can't see the problems then you've got no love, no compassion, no desires, and no life blood. We're nature, too, of this Earth and as much a symbiotic organism in the biosphere as the Right Whale. But our greed for energy resources far outweighs those of all other organisms combined. We humans have tipped the scales, and we turn our heads or blame any other mechanism but ourselves. Though the equations of decimation

are exponential, the time we've accomplished them in are fractional. Humans are awesome at destruction and terrible at creation.

Procreation, though, that's something we're also awesome at. All life procreates. It's part of the framework and definition of life. Living things metabolize and procreate. Humans are the epitome of both.

We're not going to find alternative energy sources as potent as oil—the battery that has stored 3 billion years-worth of energy. All "renewable" energy sources are based on the diurnal amounts of energy we receive from the Sun. We won't be able to devise ways of capturing enough energy to power our greedy consumption. We won't be able to make our usage efficient enough to off-set that imbalance. Humans continue to coast along on the assumption that we'll fix the mistakes that are leading to beautiful Earth's demise.

That won't do.

So what is there to do? Not enough of us forgo snow blowers for shovels or use canvas bags instead of plastic. Not enough of us are activists capable of stopping tar sands oil production or have the clout to shut-down Exxon. The Machine that is modern society is beyond our ability to stop or even slow down. The momentum is just too great.

True, not all of us, within the framework of modern society, can stop driving. It's too much to ask--that's certainly our perception. For example, all of us have found a reason why we must get to Stonecoast, and we'll use petroleum to do it. And we'll all use the A/C or heat and need to charge our phones and laptops. Hopefully, some of us will drive a small car, or commute with a group, or realize it's not so important to stay in constant communication; hopefully we'll try to limit our energy dependency. These are

small things that add up, though not too much, and certainly not enough, even if we could get the whole world to think similarly. There is something that each and every one of us can do to cause change. It's not the discovery of a cool power source or the invention of a better battery. It's not getting everyone to drive a Prius. The escalation of power usage, even if it's the most awesome and efficient power, is what needs to be brought into check. And that's what we all have the capacity to do.

We must stop procreating exponentially. We must use less, and have less of us doing the using.

Ride

After four days of something like a hot, vibrating hell, I'm finally on the *back* of Petey's motorcycle. My arms wound trustingly around the driver, owner, and friend, ending what had been a dreadful ride, but fulfilling what been an homage of endearment.

"Fergy-sama. Do something important for me?" Petey had asked two weeks earlier. I was leaving Korea for the States in a few days, Petey a few after that, and our whole gang of friends was partying our farewell. I'd told everyone my plans for my vacation back home before coming back to this part of the world to go my next duty station in Japan. I was in a wedding party rehearsal the very day of my stateside return, but the wedding itself wasn't until ten days after that, leaving some time without obligations. It was this window of opportunity that Petey was asking about.

"Fuck ya Petey-sssama," was my slurred reply, my arm around his shoulder, my friend keeping me from tumbling into the tub of soju-laced Kool-Aid, a potent concoction we called jungle juice. Petey was discharging from the Air Force and heading home to

Los Angeles where he'd be going immediately into training for the Los Angeles Fire Department.

"Would you be willing to ride my bike out to LA for me?" Petey'd been stationed at Columbus Air Force Base in Mississippi before coming to Kunsan. No American that I knew could have their own vehicle in Korea, so most left theirs home in storage or with friends at their previous base, like Petey'd done. We all knew Petey loved his bike, a black Honda CB750 that he'd bought new in 1981, less than a year before coming to the ROK. Of course I'd do this for him. The timing was perfect.

I was stateside a few days later. The day after the wedding rehearsal I flew to Columbus from Boston. Petey's friend Dave met me as planned, and I spent the afternoon reminiscing in a pot-smoke-filled haze with people who felt as highly of Petey as me.

"I kept the bike as pristine as Pete did," Dave had told me, jealously handing me the keys.

The route I'd planned brought me up the center of the country to Illinois to empty a savings account before angling over towards Southern California on the hypotenuse of a continental triangle. In St. Louis, during the hottest day on record for a July, 104 degrees, I got stuck melting in traffic. The next morning, I was so stiff and sore that I needed to use my arm to help lift my aching leg up and over the bike's seat. Each day started thus, and the day's ride became seemingly endless. Each evening I'd hobble to bed in a non-descript hotel, every fiber in my body quivering frantically in response to the motorcycle's vibrations. Each mile I'd think I couldn't imagine another mile. To pass the reluctant time, I'd play games with the tractor-trailers, pretending they were out to get me.

Our vast country crawled by in agonizing slowness. On day four there was a stretch of desert highway between Arizona and California that had a huge yellow sign giving the warning "Last Gas For 100 Miles." Then Palm Springs, San Bernardino, and finally, oh finally, LA. In the last few feet of the 2,500 miles, I was pulling into the driveway of a little house in Hollywood: Petey's mom's.

I'd turned the motor off blissfully. With seeming intuition to the moment of my arrival, Petey exuberantly materialized, smiling hugely and singing, "Fergy-saaaa! Let's take a ride."

Un-Fractured

It's one of the most difficult emotional conundrums a GI can go through: a Permanent Change of Station, a PCS. You spend lots of time getting to know the intricacies of your environment, understanding the workplace, and especially, building close personal relationships. And then at the needs of the government, you get torn away and sent somewhere else. Of course it's easy to think that you'll keep in touch, and it's absolutely the only way you can get through the upheaval. But it's only a thought; the reality is, is that you'll probably never see those familiar people again. You'll have to invest all of your time doing everything all over, scrambling to find the continuity within a short enough timeframe at your new location to keep from going insane with sadness and longing.

For my first duty station, I'd been sent to Southern California, and man was it great. I'd practically turned Native Californian, thinking that my place of birth in Massachusetts had somehow been fucked-up. But when my time there ended and I waved

good-bye to the friends who'd brought me to the airport, I went through a deep remorse, knowing they were gone for good.

There are photographs to spark the memory of course, and maybe sometimes a friendship forms that can endure the fracture. Hanging your psychological well-being on that slim chance is pure folly though.

I knew Petey-sama was going to be too deep into LAFD training and the following probationary period to dwell much on, what I'd hoped was for him, a loss of a good friend when I headed to Japan. He knew I was PCS-ing to Misawa Naval Air Facility. We didn't talk much about the fact while we were still together in Kunsan, because all around us were the Koreans who'd become our friends, and their national pride was still wounded over their culture's near demise at the hands of the Japanese. We didn't want to offend them by talking of how much I was going to enjoy it in Japan. Our few days together when I delivered his motorcycle after our stateside return were a whirlwind of fun but intense stimuli, as we re-acquainted ourselves with being back home, going out for good burgers and hearing English spoken everywhere again. We'd talked little of the sad future that we both were aware lay ahead when we went our separate ways. Petey-sama brought me to LAX for my return to Massachusetts, and we said our goodbye with a long embrace. We'd spoken no words of promise, both of us understanding the conundrum.

When I got to my new duty station in Japan, I did what I'd done before and after; I found a new group of people who fit the overall feel of the old. Because of the commonalities tying us, American GI's stationed overseas and working in the fire department, it wasn't too long before I felt comfortable within a new clique, and I loved

the country itself. I didn't try to eradicate the past, only set it aside, to pick up now and again to twirl around and smile over. I made good friends, people I felt at ease around, but there was always a hole.

I was settled in after nearly six months and at the station one day, having just backed-in one of our beautiful new and modern pumpers.

"Ferguson you got a call on line 2," came over the station's PA.

"Sgt. Ferguson," I said picking up the phone, expecting the fire chief to ask me about the new truck.

"Fergy-samaaa," Petey's cheerful voice chimed. My fracture was healed.

Ha Young

"There she is Ferg," Bill told me, pointing directly at her.

We'd done this so often that we'd forgone any decorum, and presently, being pointed at was the least of the girl's worries. We were leaning against a two-hundred-yard long wall, a decrepit and crumpling 8-foot tall cinder block structure with a pocked and equally crumbling concrete cap running along both sides of the gate to A-Town. It was a name no one really knew the derivation of, but most of us assumed it was American-Town, a town not quite a town, because there weren't that many people living in it, and all those that did were somehow associated with pleasing the Americans. We were stationed a scant two miles away at Kunsan AB and came here on a bus that swung through the base every half-hour between 8AM and 1AM day-in and day-out to drop us off at the gate. The town was comprised entirely of the bars and eateries and little places we called motels (but were really only sleazy rooms) that were open any time there was

someone looking for the services, not just when the bus ran. Oftentimes guys would spend several days straight roaming through the dusty little alleys, lost in a drunken haze in the bars whose walls all pretty much converged and joined the wall we were leaning against.

Bill was pointing out one of at least 100 girls, loosely grouped, walking down the main road from the heart of the town toward the gate, the chattering bunch walking right in front of us. Every two weeks the medical clinic on base would come into town to screen them, as a precaution, hoping to stave-off any outbreaks. The medics set up a tent at the end of this main road, a dirt one like all the others, close to where the bus stop is, and these girls, the *yobosayos*, the prostitutes, filter out of their respective bars or apartments or hotels and wait their turn to enter the tent and give their name, where they work, and a blood sample. Everyone, including the girls, calls it "the monkey march."

The clinic tries to be somewhat discreet about it by setting up at 10 a.m., thinking that most of the GI's are working, and as a whole A-Town is sparse at this time of day. But there are always some guys around, the jet-mecs who work at night, putting F-16 engines on test stands and running them up, the deafening roar heard for miles, the cops who work late shifts, the guys who move the bombs around at night so the enemy doesn't notice, and guys like me and Bill, who, as fireman, have a schedule that gives us a day off every other day. There's usually a group of guys leaning against the wall at a monkey march, 20 or 30, hanging around with a beer in hand, pointing out a girl who maybe gave him gonorrhea or who he was hoping to hook-up with.

"Damn," I said to Bill about the girl he'd pointed to, one better dressed than most, more self-assured. "She's cute. Did Petey tell you her name?" I knew Petey-sama had met

a *yobo* about a week before, but he'd been pretty hush-hush about it with me, almost shy. Someone had asked him to fill-in at the fire station for a few hours today, which he did without hesitation, and so he wasn't here with us to ask directly. Petey was healthy and smart and deeply committed; this girl was landing a good catch.

"Her name's Ha Young."

How Odd

I've been stationed on several different United States' military installations. Lived there, in other words. They are cities unto themselves, with their own fire stations and grocery stores and zip codes. Of course, not only did I live and work on the base –as we in the Air Force call our installations- but I'd go outside of the gates to take advantage of the surrounding community and countryside: go on bike rides, visit the beach, see a movie (if the ones playing at the base cinema weren't to my liking), go to the library (if the base library didn't have the book I was looking for), shop, drive, eat, and otherwise seek amusement. I'd experience my life while associated with the installation just as if I lived anywhere else as a civilian; just as you, dear reader, live your life somewhere.

Some of our installations are primo assignments. My first, in Southern California, was such an assignment, and being stationed there turned me into a beach bum. There are incredible and expansive pieces of land occupied by the different branches of the Department of Defense, and if you're a gearhead or motorhead of any mechanical inclination, a base or post is going to give you an erection (or the female equivalent) because of the wide range of esoteric and fascinating equipment on the sovereign property.

Mind you, all of this happens just as much overseas as it does here in the states. Plus, overseas there's the added benefit of doing the exotic things that we here at home only hear about, and they're the things that entice many a youth into joining the military in the first place, under the rubric "Seeing the World." Imagine how cool it is to go on a four day vacation with your friend to Tokyo in order to get a tattoo from an artist you've heard about. Or to eat the hottest kimchi in Seoul, or take the tram up Mt. Vesuvius, or to lie on the beach in Portimão, Portugal, or to get the world's best chicken curry to-go at Bahrain International Airport. Or to go out partying in any of these places and live it up with the locals. Or to fall in love with a woman who you can barely communicate with – well at least with words. These things are just the tip of the iceberg for the wide-eyed and involved G.I. In those many areas of the world where the U.S. has a large military presence, it's not unusual to walk the streets of a village or town or city, even those hours away, and bump into a fellow G.I. American military personnel have the extraordinary potential to experience a vast number of foreign scenarios.

But back here at home I rarely bump into a foreigner, never-mind someone from a foreign military. There are no Korean or Japanese or Italian or Portuguese military installations here in the United States. There are none at all. We've no sector of our society catering to the night life of a nearby group of crazy young men looking for a good time while they spend their year-long tour of duty away from home. We don't have nightly news shows highlighting the mistreatment of our local women.

How odd it must feel to someone from a village in Korea to have foreign F-16s doing mock battle over their home at night or to have an American G.I. rent a room from

them. How odd it must feel for these multitudes of other cultures to deal with the take-all attitudes of the American G.I.

Unsavory

Cigarette butts. They're strewn about the city, and it really pisses me off. They're gross for lots of reasons, starting before they even arrive on the scene. Think of who's putting them there. They're who I call *The Unsavories*, and I realize that not all unsavory types smoke and not all smokers are unsavory types. But there's certainly a large correlation between the two. The unsavory person is usually unkempt, definitely unhealthy, lacks self-respect, and most importantly for the wider world, is inconsiderate. They might be down-and-out, a common experience and a place I've been to myself, but *The Unsavories* don't want to take responsibility for themselves and they blame everything outside of themselves to rationalize their unsavoriness, as if it's a first amendment right. Each butt was previously attached to one of their mouths.

The flicker-of-butts is the bottom of the littering chain. Littering is a part of the habitual motions associated with smoking. They whack the still-sealed pack on their hand, which is to either look cool or to serve some purpose whose physics is lost on the whacker, then they pull the little thingy from the circumference of the pack and discard it to the wind. If they're using a match, that too follows its wrapper cousin in just a few seconds. As they're smoking, the ashes get tapped out into nether land and the smoke blown into the breeze, usually when I'm running by and having to force myself to exhale no matter what part of the breathing cycle I'm in. When the dwindled white cancer stick has imparted its nicotine wonders into their lungs, the brownish, probably plastic, filter, complete with concentrated toxins, slobber, and possibly lipstick, is flicked, spinning into

the air in a disgusting arc to land right where everyone else is forced to view it, and in the case of creatures orders of magnitude smaller than humans, forced to contend with its hazards. Other unsavory individuals take advantage of this open-viewing policy, picking up off of the ground, or from inside the occasional butt-can, a not-totally-smoked butt, to finish the job themselves, taking the butt for a second spin sort-of-speak, minus the cool pack-whacking.

Smoking activities are concentrated in some areas, as if everyone all at once is on a cigarette break, that odd, finally archaic social phenomenon. But, sadly, the butts aren't concentrated on those corners, not that that would alleviate any of the offensiveness, but it would make it easier for the pedestrian to avoid. Portland's newspaper, *The Portland Press Herald*, reported on 2 February 2012, that "The sight of cigarette butts, seemingly everywhere, is one of the most common complaints from tourists who visit Portland." The physical make-up of the city's sidewalks, the material itself, its brick, is part of what makes the problem more visible; the spacing between the brick is perfectly suited to catch and retain the cigarette butt, as if it were part of the design. And they are seemingly everywhere, which is really strange from a legal standpoint, because disposing of cigarette butts on public property in Portland, Maine, is illegal, and carries a fine of one hundred dollars. I look around, and within a hundred feet of the entrance to my building is a few hundred grand worth of law-breaking evidence. Something's missing within the civic duty, and enforcement is only one part of it; pride, respect, and consideration by its citizens –in this case especially the unsavory ones- is the other.

It's inevitable that I'll get hit by a casually flicked butt, and I'll say something, too. Ironically, I'll be the bad-guy.

Most Extraordinary Discovery

I'm troubled that people think finding life off-Earth will be extraordinary. Not many contemplate this potential on any real level, unless they're employed by NASA or the European Space Agency. But I'd watched a movie the other day, *The Europa Report*, which I thought was an excellent amalgam of fact and fiction contributing to a thought provoking plot-line. It's a good analogue to how some people are actually intrigued enough to ponder life outside of Earth. The movie investigated the concept in a real way; it was the best of science fiction—present or plausible science intertwined with human pathos. It utilized today's technology, it was set within contemporary cultural norms, and it targeted astrobiology paradigms.

The Europa Report, at least to my reasonably knowledgeable eye, is exactly what NASA or a commercial venture would be doing if it had shitloads of money to throw at pure discovery, like the Monarchs of Spain did with Columbus centuries ago. I was impressed enough by the film to advise friends to watch it too.

One of the crew members, a hot Russian cosmonaut with a Ph.D. in marine biology and a better command of English than me, is the lead scientist. Europa is a great place to go exploring for life: its cue-ball looking surface is water ice and it most likely has a source of heat energy caused by the enormous tidal forces with its home planet Jupiter. There's probably an ocean under that ice, and based on chemosynthetic communities right here on Earth, there's also plenty of reason to think there's life. A marine biologist is the perfect choice of scientist to send there, but it's a remark of hers that's got me worried.

Because the movie is constructed so well, it seems that conscientious thought went into every aspect of it, like the pathos that grabs the audience and has it rooting for the mission's success. Thus the ethos, too, appears to have weight, leading me to think that Katya's statements are a stand-in for humankind's thoughts on any of the subjects the movie targets. People who watch it are going to believe it. This is my trouble spot: *The Europa Report* states through Katya's luscious mouth that, "If [the mission] finds life of any form, it will be the most extraordinary discovery in the history of discovery." Hmmm...

Homo sapiens never learns from its mistakes. At every step of the way in the assemblage of Western civilization and culture, from ancient times to present, in every bit of spoken and written history, through all cosmologies, we put ourselves—humankind—at the center. This homocentric view then refracts the understanding of the whole rest of the Universe: many of human's diverse theologies do it, some to a great extent, others lesser—somehow the Universe is created for us, around us. The paradigm shift to heliocentrism after Copernicus is a perfect example of a before and after, but we still find mistaken reasons to think we're special in the cosmos.

Contemporary science has the tools necessary to see that the Universe is vast, yet relatively homogeneous. Gravity is everywhere, the elements of the periodic table are everywhere, water is everywhere, and organic compounds are everywhere. Solar systems, galaxies, and clusters of galaxies are everywhere. When are we humans going to stop being so naïve and egocentric to realize that life is going to be everywhere? There's nothing extraordinary here on Earth.

Rudder Emergency

The climbout, when the tires leave the runway and the wings start doing all of the work, was normal. But not for long.

In a propeller driven airplane there's a phenomenon known as "the left-turning tendency" caused by four physical forces every pilot knows, and during climbout I step hard on the right rudder pedal to overcome them and keep Five-Papa-Tango, the four-place Cessna I'm in, flying down the extended runway centerline. But today it seems that no matter how hard I push on the pedal, 5PT still wants to wander left. I relax my right foot as a test and this causes the tail to swing right which catches me by surprise, though it shouldn't, and making me step harder on the right pedal, causing the tail to swing violently left. These oscillations make me anxious that I'm inducing a cross-control situation that is absolutely going to make 5PT plummet to the ground in a fiery ball of my death.

I'd done a thorough preflight. I can be overly analytical, call me OCD, but in aviation, like any risky activity, it's the best way to be. An airplane is going to be up there away from the ground, and there's no place to pull over if something goes wrong. Like any prudent pilot, I look at every bit of my airplane as if my life depends on it before I take to the sky. I'd touched the rudder, lovingly tugging on it to verify it was attached and in good condition. Then, during the before take-off checklist, I wagged it from side to side using the pedals and looking out the rear window to see it moving appropriately. All systems were normal.

That was back then on the ground. But up here, climbing out of two hundred feet to level off at one thousand, I'm quickly losing any sense of control. I'm stuck in an

airplane that seems, in the escalating franticness of my mind, to be having a major problem. I've gone from a confident land-lubber to a panic-stricken pilot.

"Fly the airplane, Ferguson," I say out loud to the empty cockpit. The mantra keeps me from focusing on the seconds that are ticking by agonizingly slow. I need to get around the pattern and land—fast, before the rudder falls off. Because I know now that's what's going to happen. I missed something when I preflighted. A bolt or a pin or a push-rod or a washer or that hanging piece of metal, or the rudder was warped and I didn't see it. Or while I was taxiing a rock got thrown up and lodged inside the space between the vertical stabilizer and the rudder causing it to bind. Or I rotated too hard and struck the rudder on the runway but I didn't feel it because I wasn't paying attention.

Finally making the left turn to base, I don't use any rudder at all because if I do it'll detach. Turning to final and descending, I reduce power and any torque causing the left-turning tendency is gone now. It's easy to stay aligned with the runway as I come over the threshold and I grease it on. I step on the brakes and turn off at the first taxiway.

I park, shut down, and get out on violently shaking legs. I expect to see extensive damage, dangling parts. But there's not a thing wrong with the airplane.

Toilet Trainer

The C-5 Galaxy is such a large airplane that most people wonder how the hell it even flies. But fly it does, and it carries vast amounts of cargo too. A good visual, and one I've told many a person, is that we can put six Greyhound busses on it, driving them on from the back, and then off again from the front. Boats, Humvees, tanks, cranes, pallets (36!), and helicopters are just some of the stuff FRED, our fond name for the bird

and an acronym for Fucking Ridiculous Expenditure of Dollars, will carry. All of this cargo is strapped and chained to the floor of the cavernous fuselage. The front and back open up wide, and when the plane is kneeled and open for loading and I stand inside in the empty darkness, I'm reminded not so much of an airplane, but of one big-ass toilet paper tube.

Both ends of the tube have a stairway that retract up sixteen feet to the ceiling, out of the way for loading, and then lock back in place when it's done. The front stairs lead up to the flight deck. The C-5 requires a crew of four to fly, and when carrying cargo and flying on a mission, that number increases to at least ten, and sometimes as many as fifteen. Due to the nature of the missions, long-hauls often taking more than a week, the flight deck has a lot more than just the cockpit; it's where the crew lives. There are two bunkrooms, two avionics storage rooms, a crew compartment seating thirteen, with four of those around a table, and a galley with a sink and an oven. Walk back down the front stairs, weave through the cargo for a couple of hundred feet, and up the back stairs to the troop compartment. Here's additional seating for 73 passengers, usually the maintenance and support personnel for the cargo downstairs, seats for two crewmembers, and a galley with two more ovens.

FRED has three lavatories, one on the flight deck and two in the troop compartment. These shitters are typical airline style affairs, with the chemical-blue toilet flush and tiny sinks. On the flight deck the lav is spacious; roomy enough to change clothes in. But back there in the troop compartment, a dark, windowless hellhole of a place, one can barely back in to the damn things.

There's one other very important fact to remember about chemical toilets—they smell awful. And because the troop compartment is confined, up in the top of the fuselage, and a long stretch of ductwork away from the cooling system, it can be an airless and sweltering pressure cooker.

The orientation flight is any airman's weightiest. You've read the books; maybe you've already flown the simulator. You've met the crew and you undoubtedly have proven your knowledge of emergency procedures. But you don't know how to *behave* until that first flight.

It doesn't matter your crew position: pilot, engineer, loadmaster; you'll sit in the navigator's seat for that first take-off. After level-off you'll be brought back to the table, where you'll sit expectantly across from your instructor awaiting lessons on how to log your time and do the multitudes of calculations necessary to fly safely. Those things will come of course, and it will be of the utmost importance to learn everything there is, and on this humongous beast there are volumes.

But your initiation will be this: "Ferguson, if you've got to take a dump, go back to troop so the passengers can deal with it. Up here we have the no shit rule."

One Big Mistake

I wish I could change just one thing in my life: that I'd never moved to Vermont. I've made more mistakes than two average Joe's combined and occasionally made whopper life-changing decisions. Some were the spur-of-the-moment kind whose repercussions could be felt years later, like the time right out of high school when I spontaneously enlisted in the Air Force. Those other mistakes and decisions I can readily

shrug-off as me being me, and they're the sum accumulation of who I am. None of them I regret, though lots of them were stupid.

Moving to Vermont was not something I'd pondered nor wanted, rather, something Sandra wanted. When she'd first graduated from college, she worked at a firm in Woodstock, VT, and lived there for a few years, acquiring a taste for the place. Maybe she didn't want to move her life back to Vermont from where we lived in central Massachusetts, but she did want to work for a different publishing firm that had an office near Rutland. I was contentedly going about life back then. In the years after September 11th we'd bought a house, I was flying in the Air Force, I owned a plane that I kept at a small airport nearby, and had friends and family within a reasonable driving distance. It was a zenith for me.

It sadly was *not* a zenith for Sandra. She was working from home and missed the camaraderie of an office environment, and her own family was much farther away in Pennsylvania. She needed a change in her life. I knew this, and wanted to oblige her –I didn't want to keep the zenith to myself. I'm selfish, but I want everyone to find their own harmony. So when she started looking for a different workplace, I gave her my fullest support. It was exciting to think that we might make a change that brought her closer to feeling fulfilled. There were lots of dead-ends; Sandra started to despair. It became apparent she wasn't going to find something nearby, so she began searching in ever widening circles. Then one day when I called home, while I was flying a mission for the Air Force, she told me about Tuttle Publishing and that she had scored an interview there. And that they were in Vermont.

It was easy to sell our house. I'd made improvements, and the market was still viable, though sliding. Finding one to buy was a different story—a long one—but we did. Living in it less than a day, I knew with a dread unlike any I'd ever felt that I'd made a tremendous mistake. In an attempt to erase the mistake, I worked hard to make it a good house, using lots of my sweat and blood, and when I was done it had lots of features that contributed to a modicum of serenity. But flying in the mountains just plain sucked and I ended up selling my plane, and I was almost as far away from my family and friends as Sandra was. The bucolic beauty of living in the Green Mountains, the peace it could offer, was broken routinely by loud humans and their machinery. Within a year I stopped flying in the Air Force; the commute was too much. Our relationship crumbled. Too many tears were cried after we moved to Vermont, each one amplifying how good I'd had it before they started flowing.

I wish we'd kept our house in Massachusetts, and Sandra commuted on weekends or some such thing. Alone now, the mistake still pulsates achingly.

Two Forty Catch-up

I was moving to a place of my own choosing, Portland, ME, and though it was under bad circumstances, I was excited about it. I'd given away two-thirds of my possessions, streamlining my life to fit into a tiny apartment and a small storage unit, carefully determining what to keep to retain my sanity and what to discard to stay simple. My friends loved me.

I rented a U-Haul, backed it into the driveway and packed it myself according to a plan I'd drawn, fitting things just so. First into the truck went the things going into my apartment: a grandfather clock and cube chair, both of which I'd built, a modern-style

recliner, selected books, two guitars, a TV and music system, wall hangings and framed pictures, clothes, and the minimal amount of utensils and cookware. Hand and woodworking tools and machinery, my beer tap, the remainder of my books, and my bicycle all went in second since they'd be going into storage down the street from my apartment, and would be the first things to come off.

I stood back and looked at it. That truck contained my whole life, everything that was going to continue being me and mine, those telling possessions of a person. I only needed help with one thing, my couch, and Mike and I would load that in the morning when he came over to help me with the move. He'd be driving the truck while I drove my car, the trip to Maine taking slightly more than four hours. I'd carefully planned everything to cause the least impact on Mike, and I rented hotel rooms so we could spend the night and not crunch the move into one crazy and exhausting day.

We started off bright and early and we stopped at Dunkin Donuts first. In the parking lot I said to Mike, "I gotta stop and get gas. We're going Rt. 4 over to I89. You go ahead. I'll catch-up to you before we get to Killington. And be careful man, you've got all my worldly possessions in there."

Out of Rutland and up the hill to Killington, I passed cars and busses and trucks. I'd left the gas station no more than four minutes after I'd left Mike at Dunkin Donuts, and he was driving a truck up those four miles of steep grade, but I couldn't seem to catch him. At every turn I expected to spot him in the distance. Cresting the hill at Killington, I started getting anxious; down the other side, faster than the speed limit and shit, there's a cop. He caught me red-handed. "How come you're going so fast sir?" he asked, taking my information. "I'm trying to catch-up to a moving truck. But I guess this'll really put me

behind," I told him. After an eternal ten minutes, he returned with a one hundred and twenty dollar ticket.

Back on the road and thirteen minutes later, I'm desperate to catch up to Mike and my life, so I knowingly cruise right through a reduced speed zone –I didn't care anymore about the speed limit, I just wanted to see my truck again. But the trooper sitting hidden behind the bend cared very much about the speed limit, and pulled me over to issue another hundred and twenty dollar ticket.

Fearful I might lose my license and *never* see my things, I stayed legal. The next hour was a terrible string of imagined scenarios, my stuff gone. I finally caught up to Mike on the interstate, where he was driving contently.

My Dead Car

Cold? Damn right it's cold. My windows have a quarter inch of ice on every inside surface save the glass, despite the fact that the building has had all of its old windows replaced not more than three years ago. The glass itself must be well insulated; the modern-looking metal panes not so well. The image the windows present is opposite the dreamy one seen in movies, where frost builds up on the glass itself in soft swooshes that taper towards the middle, a romantic crystalline oval view of the world outside. No, my windows leave the view unobstructed, yet bring the icy weather inside in crusty rectangular chunks, a white frosting which sadly isn't, because I freakin' love frosting.

I'd prefer to not be able to look through the damn things at all though because something's sitting out there taunting me, saddling me with a subtle low-level anxiety that I won't be able to shake until I fix it. Yesterday, before the worst of the blizzard—the

National Weather Service issued an actual blizzard warning—I decided to go to the supermarket to get a chicken to roast. The savory smell of the bird roasting would be a warm and friendly counterpoint to the ice I'd be watching accumulate inside my apartment, and I couldn't repress treating me and Little Kitty to a succulent mid-winter pick-me-up. Snow was blowing into white mini-tornadoes and the temperature had plummeted to -3, so given the choice between walking to the store and driving, driving seemed the better option. It was easy enough to push the fluffy flakes off of my car door, but when I got in and turned the key, it wouldn't start. There wasn't even a whooma-whooma sound with its sickly sluggishness. Fuck.

I got out and kicked the sonnavabitch's tire. I jabbed irritably at the button on my key fob, adding another expletive or two, and there was enough power in the battery to lock the doors. I had to get that chicken, since I'd already talked me and Little Kitty into mouth-watering anticipation, and eating is my only weapon to combat the winter's blues. So I walked instead, tipped into the fierce wind. It was one of those rare times when I really wished I was driving, wondering how any animal, human or otherwise, was surviving such harsh conditions. Luckily the supermarket, which was surprisingly bustling, is only a little more than a mile away or my resolve would've collapsed under the weight of the vicious low-pressure system.

Home again, we're pleased with the mouth-watering aroma of the roasting chicken. I wish I could say it lightened my mood like it seemed to do to Little Kitty, who was curled up on my most comfortable chair and snoring, but it didn't. Out there, under ever-deepening snow drifts, something needed attention, most likely a new battery. I belong to UCarShare, a convenient U-Haul rental program, and just outside my less-than-

optimally insulated building is a vehicle belonging to it. "Easy enough," I thought as I went to the website to reserve the thing, "I'll go to Sears while the bird's in the oven." But the weather has thwarted this plan too, because Portland has issued a parking ban and the U-Haul site says that the vehicle won't be available to rent until two days hence.

So on this second frigid day I stand at my encrusted window eating a chicken sandwich and anxiously look out. Out into an agitated scene of swirling snow and chattering cold, out towards the scalloped drifts under which sits my dead car.

The Rig

Driving down the hill, following closely behind George's small pick-up, I'm saying this excellent word: jalopy. It rhymes with sloppy, which generally describes the condition the vehicle is in. George's truck fits: the rear bumper, broken and sagging in the middle, barely hangs on; the dusty cab is used to store a window air conditioner, 6-volt and 12-volt lead-acid batteries, a can of gas, several boxes containing assorted tools, and jumper cables. The exterior's faded multi-hued paint job last sported a shine forty years ago. I'm following closely because the overloaded and swaying vehicle has no registration, and we don't want a police cruiser to pull up behind.

George's jalopy is straining under the weight of cordwood. We'd just cut that wood in a flurry of activity, making short work of it, using a demonic looking table saw known affectionately as "The Rig."

The Rig was built by George's grandfather a half-century ago using the chopped-up frame of a '32 Dodge. It's got tires and a tongue; over the last three generations it's been towed with various jalopies to different family homes to cut up the firewood they've always used for heat. On the frame is a heavy sliding table to place the logs for cutting.

Pushing against it takes mannin' up, because after about five minutes of cutting, a weakling is going to be complaining about the bruises they've got on their thighs and hips.

Behind the sliding table is an axle with a pulley system connecting it to the PTU of the four-cylinder motor, its sparkplugs exposed. There's no muffler, and the exhaust manifold is open to the elements, occasionally belching flame straight up, precariously close to the gas tank.

To get us started cutting the wood, George connects a battery that he got from the jalopy's cab, sprays a few shots of ether into the carb's throat, and pushes a start button that looks like a high-beam switch from cars long ago. The Rig roars to life and settles into a pulsing rhythm. "My father's smiling now!" George yells proudly. He walks around to the PTU and pulls the handle to engage the pulley. The motor bogs momentarily as the belts grab and transmit the engine's violent energy to the axle behind the table.

As if this isn't scary—the flames, the noise, the exposed belts and pulleys, the weight, every surface capable of burning or crushing or dismembering—there's still the business end. Throughout the cutting process my precious fingers are in close proximity to a monstrous blade, damned close to four feet in diameter. The angry looking teeth are reminiscent of a shark's, and the kerf, the side-to-side measurement of the amount of wood those teeth are going to chew through with each cut, is about the width of a finger. The mass of the blade and the axle that spins it take a few seconds to whirl up to rotational speed after George pulls the handle.

George selects a log, throws it on the table, and extends the end to get cut towards me about a foot. He pushes the log through the blade; I grab the end and I can feel the

teeth rip through the wood's grain. As it drops I continue gravity's work and swoosh the chunk right into the jalopy's bed, not caring about the rear window, which is protected by a rusted but solid metal mesh. Repeat.

Between moments imagining the grotesque disfiguring that The Rig can inflict, I reflect on the fading days when hearty folk did what it took to get things done. I'm honored that I can help George continue the family tradition.

Solid heart. (Fragile glass.)

Though I haven't known her for very long, it's obvious that Katie is a daughter any father should be proud of. Vivacious, warm, and quick to smile (with a wit that takes after her old man's, George, to boot), she's a lively young woman. I was honored that she asked me to come into her and her new husband's home to enjoy good food, her extended family's company, and the many pictures she'd taken of her wedding and honeymoon to Italy. I gladly accepted.

Hubby Brian queued-up a selection of classical music sprinkled with Italian opera, apropos of the images flashing on the television screen in long slide-show loops. There's a picture of Katie's sneakers, hidden beneath her bridal gown. "The gown's been preserved," Brian tells the crowd proudly, me looking up from my dish of nearly devoured lasagna and meatballs to see the hermetically sealed box he's holding as proof. "Getting into Grandpa's Model A was a lot harder than it looks," Katie describes as several pictures scroll by of a bride and her chauffeur dad sitting all smiles in the antique.

The scenes move at a pleasing pace, chronicling the newlywed's first few days as Mr. & Mrs., while the food and talk and companionship I'm enjoying in their home melts into a warm and heartening atmosphere. How very nice.

Rome and the Coliseum are captured in well thought-out frames. The smell of spaghetti sauce, a family recipe, permeates the kitchen and harkens wonderfully to the photos of the food, food, food galore, that we see the honeymooners constantly eating. "I'd say it was an even score," Brian answers when someone asks him if they gained weight. "We walked so much!" Katie chimes in, and sure enough, on the big screen behind her we see the couple posing for a picture on a lush Italian hillside, the azure Mediterranean far below, village paths winding in the distance. Up comes a photo of a shirtless Brian. "Notice how Brian's chosen some of the photos that make it look like he's got six-pack abs," Katie chides with a mischievous sparkle.

Pompeii and Vesuvius get oohs and aahs from us viewers, many garbled between bites of wedding cake. As the digital sights flicker by, I sense that the two voyageurs enjoyed the potent history they'd experienced as much as the romance of such an excursion. Brian points out the engineering aspects of Pompeii's excavation; Katie acts out the poses of the choking victims. "They blocked their faces like this," she mimes playfully on the floor.

Finally, scenes of Venice appear: canals and bridges and gondolas. A trip to a glass-blower's studio is displayed in several active pictures, all capturing the intense heat of the fiery art. "They put globs of colors together before plunging it into the flames," Brian explains. Katie rushes out to gather up a collection of pieces they bought, and returning, inadvertently drops a small blue sailboat. It breaks. Katie's moistening eyes suggest that this mere speck of a tragedy is a symbol; the fragile, breaking glass a metaphor for a mistake not yet made apparent.

When I prepare to leave a short while later, I find her sobbing gently. I hug her, a gesture with powers I've only recently learned. I want it to convey this thought churning in my mind: you have nothing to fear lovely Katie. Your heart, solid and true, contains all you'll need for a long and vibrant relationship. Everything else is merely a small token that can be easily repaired or replaced. You're going to be fine my friend.

Lucky Turtles

On my bike ride today, on a mid-spring morning, I had a serendipitous encounter with a turtle. The winding road I was biking is well-travelled, though only with sporadic periods of traffic, which makes for a harrowing experience to any animal who thinks the coast is clear and decides to make a break for the other side. Without warning, a mass may come accelerating around a corner, and the road-crosser would surely end-up the loser in the confrontation.

This turtle was lucky. He was about half-way across the road, going from a wooded area to a pond. I stopped and carried the cereal bowl-sized turtle to the pond. When I first came near he'd withdrawn tightly into his shell, as I expected. But placing him down near the water's edge, he surprised me by becoming all perky, his head and legs extending with speedy excitement. His pulsing to life reminded me of a morning I'd had several years ago.

It was a sparkling sunrise on the island of St. Thomas. I'd awoken early at the seaside hotel and decided to go for a run on the densely wooded roads, occasionally catching glimpses of the secluded bay through the canopy. I concluded with a quick plunge into the water. I walked across the beach to the hotel's exterior shower to rinse off the saltiness, and noticed something out of place in the shower's drain.

Looking down I saw a black teardrop-shaped baby sea turtle. Then I saw three. None moved, and my mood quickly darkened as I realized that they were dead. I've seen documentaries of sea turtle eggs hatching in the night, the babies running a gauntlet every bit as nerve-wracking and deadly as a paved road, the most common being predators knowing the hatchlings are emerging and easy pickings. Another hazard, one that happens more often than one might expect, and the one that I was witnessing first-hand in the shower basin, is that the little creatures may go the wrong direction—instead of heading towards the water, they expend their energy moving away from it.

I knelt down to look more closely. The babies are tiny duplicates of the adult: they've got similar markings on their shells, big front flippers for swimming the ocean's depths, and a large pointed head with glassy eyes. And like all immature creatures, at least as we humans anthropomorphize them, they were plain and simply, adorable.

I decided to ameliorate my sorrow by putting these babies into the ocean so that they could be part of the wider world they'd intended to be in. I picked the three up reverentially. They weighed almost nothing, and I knew they'd quickly desiccate once the sunlight shown upon them. I whispered to the three that I wished for all-the-world that they'd made it, and had a chance to become enormous versions of themselves, gracing our wondrous and watery planet with their 100 million-year presence.

I crested the sand dune and came closer to the surf, all the while reciting this eulogy. And then a remarkable and overwhelming thing happened: the three little beings in my palm came to frantic life. Had they heard the ocean? Smelt it? Cradled in my hand they couldn't see it. Somehow they'd felt their home calling them. I lowered them into the refreshing waves and they swam off vigorously.

My soul soared in having been their fortunate witness.

Kitty

Little Kitty is adorable. She's playful in a soft way, conscientious not to hurt anything or anyone, and she loves attention—which works out perfectly because I love giving her attention. Plus she's a carnivore like me, thus I have someone to share a roasted chicken with. I sometimes watch over my neighbor's kitty, Mia Pharaoh, and when I'm feeding or playing or hanging out with her, I'm struck by how *similar* individual's traits are. This rubs against the familial grain, because there's no way in hell that any kitty could be similar to Little Kitty, especially when it comes to the all-important cuteness category. Sentiments like these say a lot about my feline loyalties, because I felt exactly the same emotions about Big Kitty when she was alive, especially before Little Kitty found me. Today though, the Big's memories weave lovingly with the Little's current mannerisms, warming my heart even from the grave.

Big Kitty's real name was Tova, and on Memorial Day a decade ago she was snoozing in the rural house that I used to own while I was out on the deck enjoying a morning cup of coffee. I'd placed the cup down on the step near ground level and tidied-up from the last evening's fun; family members had just arrived for a week's stay. When I came back for my cup, a stray little kitty was standing near it, her head fully down inside, sniffing. I said "hi", she lifted her small face and meowed "hi" back in a petite voice, tiptoed over to me cautiously but trustingly, peeped her high-pitched meow at me again, and implanted herself squarely into my heart. During the rest of that weekend we gave this little kitty everything we could to keep her satiated, but we didn't let her inside as we

decided how to proceed. In the weeks that followed, pictures were posted throughout town, and vet's offices were notified that an adorable little kitty seemed lost.

The young visiting niece was having a great time; a kitty inside the house to play with, a kitty outside the house play with. Her budding speech couldn't accommodate the difficult "T" of Tova, and it seemed unfair to name the new-comer. But the girl's bubbly mouth and sprouting intellect could handle the size differentiation: Tova, the inside kitty was contented and chubby, and this new outside kitty was happy but skinny as a rail. The niece's ecstatic two-year-old voice caught hold instantly of the names we adults offered her as a compromise: the Big Kitty and the Little Kitty.

These days, a ritual of sorts has formed for me and Little Kitty, the only two members of what I used to call "The Fam." We're alone here in the city now, in a small apartment, miles and light years away from that deck. At night I usually crawl into bed to read a bit before lights-out, and I prepare a spot on my left side, placing a pillow under the blanket. Even if Little Kitty is curled-up and snoozing out on a living room chair, she senses my absence, awakens, and comes in and hops up next to me. The spot I've prepared for her has a small dip between the pillow and my side, where she snuggles in; I place my arm up and around her, cradling her and offering protection, and she pushes her back up against it. Then, gracefully and warmly, she puts her cheek up against mine, her soft small nostrils inhaling my exhale. She sighs, closes her eyes and purrs her sleepy contentedness.

Chickens Are Cute

Her head bobs back and forth in synchronization with her legs, though in an opposite cycle. I'm watching her and wondering what the anatomy of her skeleton must be like, because her head motion is always parallel with the ground, which must require some kind of funky oblate vertebrae.

We got them as full-grown pullets from a neighbor's farm. I wasn't quite expecting it, but within an hour of their arrival they turned out to be more than just a foray into animal husbandry. Chickens are cute. And this one, Ayla, is walking around gulping bugs. Her cute motions aren't only confined to how she walks and runs. She'll stand stock still, head tilted comically to one side to look up at me with one eye, and then unexpectedly lift a leg to scratch under a wing. And that leg can move with such speed—I wish I could scratch so vigorously. I see she enjoys it; her eyes close and she stretches out the wing and protracts every feather in the region she's scratching. The claws on her foot, her toe-nails if you will, are big and powerful, but she uses them with finesse: a surgeon would envy it. Then as quick as a lightning flash, she pecks down at the ground at some unseen bug. Brrrrddd, another scratch, this time at her beak, and she continues walking.

Her ultimate destination is the small flock of friends over at the barn, in the sunny corner of our large field. Because her chicken-mind has sparked a thought, she decides she must run as fast as she can now, so she extends her wings and flaps madly, taking the weight off of her legs, though she gains flight only ever-so-slightly. For this brief moment in time I can easily imagine her two-hundred-million-year-old genetic

connection with the dinosaurs: she looks like a miniature Tyrannosaurus Rex accelerating towards its prey.

The girls (as we call them collectively) she's joining are taking dust baths in the ground-level window planters. They've commandeered the planters, and because it's the fall and the flowers are all gone, it looks like the planters are actually bathtubs, the insides filled with a dark organic soil instead of water. The others already there have claimed their places; some have their head snuggled down under a wing, snoozing pleasantly in the warm sunshine, while others occasionally get up to scratch the earth into a more comfortable bowl shape before settling down in, as if on a nest. There's a peaceful harmony, like it's siesta time in Mexico. Ayla, though a new arrival to the scene, cares not one bit about all of that, and energetically snuggles herself between two resting hens into a space that wouldn't be big enough for a chick, let alone her full-grown plumpness. And here is one of the most extraordinary things about chickens, a lesson I wish on the whole world: her friends accommodate her without complaint.

Ayla flaps her wings, in what little space she has, swooshing the dust all over her body. She goes from a lighter-colored chicken, a Golden Comet, to something more akin to a child who has just returned home from playing with her friends at the local mud pit. Everyone settles. I slowly approach the flock of contented birds and hear a wonderful lullaby: they're all softly cooing to themselves.

meYOU

There she goes again, garnering my attention. And she doesn't have to be in my presence to have it happen. Sometimes, when it feels as if I haven't seen her in a while, I

poke around the place trying to find her, calling in my sweetest, concerningest voice, "where are you?" like a troubled mother. "Meyou, meYOU" she answers back from a windowsill, the stress on the last syllable, like an untroubled child calling "I'm HERE." And it's a *voice* I hear, as plainly as if the Little Kitty was a person. In my world she's the most important creature alive, more important than any actual human being, thus in my hierarchy of humanity, the pinnacle of person-ness.

I'm always concerned with how my actions will affect her; I plan around her, even if it means my pleasures get cut short. "I've got to get home," I tell my brother who's just asked if I want another beer. "It's almost Little Kitty's supertime," will be the justification. Or when a friend asks me if I'm going to spend the night, I have to decline: "Nope. Little Kitty's home all by herself." Or when I take my mom out to breakfast: "I'll pick you up after I feed Little Kitty." Little Kitty gets to sit where she wants and she can walk on me in the middle of the night. When I'll be away from home for more than a few hours I keep music playing for her and I rearrange the furniture to safely leave a window open for her to sit in.

I've never quite understood compromise before. Sure I get the word's definition. But I've never internalized it. Over the course of so many relationships, and not just with women, I'd never realized that it's not what you do or not do, but rather, what you *allow* to be done. I want the beer my brother offers me, but it's okay that I won't have it, and it's okay that it's on account of a being other than myself. In past relationships, instead of allowing a situation to transpire freely, I'd be feeling sorry for myself and I'd be blaming. "Oh poor me," my internal dialogue would be complaining, "I don't get to have a beer because of [insert person's name]. They don't care about what I want." It makes me

wonder if selfishness is the opposite of compromise. Not self-LESS-ness; there's a distinction there. Because I do want, and in the case of Little Kitty, want desperately, to think about her comfort of life, even if guaranteeing it makes me uncomfortable in the process. Sort of like saying compromise is selfishly unselfish, eh?

And there's a beauty in that, a feeling of living correctly. The best way to live is to share. You get what you give. In the mellifluous words of Rush's lead singer Getty Lee "It's the way that you live, the gifts that you give." I'm not a commune guy. Nor am I necessarily a community guy. But the world—its biosphere—is comprised of a spectrum of individuals, and for any one of them to have a quality of life worth living, every other individual has to acknowledge their existence. That's the gift you give.

I roll over in the middle of the night, semi-awake. I wonder what my furry little companion is doing, hoping that whatever it is, she's safe and as happy as I have the capacity to give her. I gently reach out a hand towards Little Kitty's bed, which I've got strategically placed near mine. "Meyou, meYOU," she says. I'm here.

My Good Girl

I feel honored when she sits next to me. No one else elicits that emotion. I'm satisfied that someone trusts me. I'm always on the look-out for a glance from her, and when I notice one, I try to decipher it. "Does she need anything?" I wonder. Plus, any attention I get is, quite frankly, like a little nugget of gold.

She sits close. "Snuggle next to me," I almost plead to her upturned face. I put an arm around her, and cradle her, positioning myself to offer the most contact, warmth, and safety. Then she places her head on my lap and I caress her cheek; she closes her eyes

and softly purrs. "That's my good girl," I whisper softly to her, almost a coo. The only positive thing I feel in my life presently is this generous friend. I'll do anything for her. The depth of my love might be viewed as unhealthy by some, and sometimes even I question it. But the satisfaction I see in her closed eyes and kneading paws quickly dispels any such thoughts.

In my stunted world-view, Little Kitty encapsulates all of nature. I want to give her anything she needs and doing so allows me to feel like I'm making a difference to the world at large. I want to help all of the Earth and all of those that have lost their right to live in harmony, domestic creatures and wild ones alike. All individuals deserve to live a life free of the indecencies that the inconsiderate place upon them. I cry to think of the wondrous creatures of this planet who can't hunt because their environments have been plundered into imbalance. I cry to think of the seal with a plastic bag wrapped around its throat. I cry to think of the tortured animals used by humans for research. I cry to think of the amphibians with deformities and the chickens crammed 7 to a small cage. I cry to think of the cows on feed lots. I cry to think of the oil-soaked birds and the asphyxiated fishes. I cry a lot.

But for a little while, for a brief respite of soft petting and cozy, curled togetherness, I can keep those visions at bay. It's a heavy weight she bears, keeping me on this side of sanity. But she shoulders it adorably.

She spins around to find the spot. She usually ends up next to my thigh. This works out well because I can drape my arm along her so that my hand is near her head. She stretches out her legs, pushing them against me thus pushing her back snugly against my arm, and she places her head in my cupped hand. "You're my good, good girl," I tell

her again. I tell her how wonderful she is, how much I love her; she responds by falling asleep.

I watched the PBS show *Nature* last night while doing just such a thing. It was about a man who lives in the Rockies and studies mule deer. It took him more than two years of very specific activities to be accepted by a particular herd. But finally the deer would allow him to walk around in their presence, and occasionally they'd come up to him! There was one particular doe that became quite responsive. He could reach out and scratch her forehead.

Sitting comfortably with the Little Kitty snoring beside me, I was warmed to watch this show of friendship. And I could swear I saw him mouth to the doe "That's my good girl."

The Last Time

"Fergy-sama, you've got to watch this," Petey'd said to me over the phone one spring morning in 1989. Of course I would. I'd go out of my way to do anything Pete Rose asked me to do. He was then, and is to this day almost 25 years later, the best friend I've ever had.

"The show is a *Candid Camera* kind of thing called *Homes of the Stars*, and the episode I'm in airs next Thursday," he continued. "The show's hilarious, but the segment that's about me is only about a minute-and-a-half long." I knew the show, and my favorite Boston TV station played it at eight o'clock, just when I'd be kicking back after work and drinking a beer. The show's producers look through the Hollywood phonebook and find people who have the same names as their famous counterparts. They then send a film

crew out to find the house, go up and knock on the door, and with permission, do a brief interview trying to find parallel life stories to the actual stars. It was indeed funny.

"Shit ya, I'll be on the lookout. But don't tell me anything else except if Ha Young's in it too." Ha Young was Petey's pretty Korean wife, a woman he'd devoted himself to from the moment he first met her some seven years prior. It had been more than a year since I'd stayed at their house, a small and plain ranch in a densely packed neighborhood of similar, and sometimes exact, copies. I was looking forward to the surprise feelings of knowing that I was sure would come when I saw familiar bits of it in the show's segments. It would be like I actually *did* know someone famous.

"Ha Young's only in it when we're playing with Kunsan, but she doesn't say anything," Petey said. Ha Young's English had improved enormously since Petey married her and brought her back to the states. Though she was still shy in that typical way of women from the Far East, she opened-up warmly when around the many friends she'd met from the large Korean community in Los Angeles. She was settling-in to her new life as an American.

I joked, "Does Kunsan say anything?" Kunsan was their friendly Dalmatian, a fitting dog breed for a fireman.

"I think he sniffed the interviewer's crotch, but couldn't think of anything to say in response," he joked back with a hearty laugh and finished, "Alright man, I got a shift to make." His schedule was great, one 24-hour shift followed by three days off. Firemen's hours are primo, if you can handle the personal logistics of staying at the station and thus away from your home and family for a whole day and night. I'm sure this made for some

anxious nights for Petey when he and Ha Young were first married, having to leave her alone. But he never complained.

Petey'd tried, to no avail, to get me to apply to the LAFD over the years since we left Korea. That last time I'd visited, back in the summer of '87, when I'd stayed around for almost two months, he nearly had me convinced. Not doing it is one of the few decisions I actually regret making, not only from a career standpoint, but from having lost out in the pleasure of being in Petey-sama's company.

We ended the conversation with our usual "Later!" and hung up the line, breaking the 3,000 mile telephone connection between Massachusetts and California. It was the last time I would ever talk to him.

Heart Attack

December 5, 2013. Laying on the gurney, eight electrodes stuck to my chest, their multi-colored leads looping up to the EKG machine, I think of Petey-sama. An hour before, I'd been on the phone with a nurse, giving answers to a long string of questions she was asking. After the five minute inquisition, she said she was "*obligated*" to tell me to seek immediate medical attention. So I did, landing me on the gurney. Over the past 25 years this scenario has played out similarly more than a few times.

"Where's the pain Mr. Ferguson?"

"It starts about an inch above my navel, and travels up into my left shoulder blade." I've learned a lot about heart function over the years. The lessons fuel the hypochondriac piece of my family's genetic code, steering my anxious brain towards recognizing what is sure to come: a heart attack.

"Your EKG is fine. Let's do some blood tests and a couple of chest x-rays," the doctor says after asking about today's events: what I ate, what I did, how my bowel movements were.

Starting yesterday, I'd been experiencing a pain that I've come to associate with my aorta. In my mind it's based physiologically on things I've learned academically; but more importantly it's based psychologically on one very specific event in my past. The pain was still there this morning, and anxiety got the better of me. So I decided to do two things: first, go on a run, figuring that if my damn aorta was going to rip asunder, it may as well happen while I'm overlooking the Atlantic in mid-gait and breathing the salt air; and second, if the explosion didn't occur, call to schedule an appointment with my doctor, hoping to finally get to the bottom of this recurring red-colored searing pain.

I suppose humans are mostly an anxious lot. But I know fully that my family is. About the only things my mom and sister talk about (and my dad too before he died) is what's ailing them. They don't live life, they're rendered immobile by it. Being afraid of too much guarantees that your life will be miserable. I know. The Fergusons are afraid of damn near everything. I recognize this, and I've tried to overcome it by conquering the ignorance that lies at the base of those fears. It was an important part of becoming a fireman in the Air Force, on par with meeting Petey: I overcame a debilitating fear of fire.

There's more to it though. Some thoughts are just too damn difficult to override, and there are events in my life that solidify them. Like, it's hard to think of a healthier individual than Los Angeles Fireman Peter D. Rose. Since the moment I'd met him, Petey-sama has been my mind's image of solidity and strength. He's one of the rare individuals that make society that much better for having been part of it. A true hero.

May 2, 1989. "Hello," I say, picking up the ringing phone.

"Ferg. It's Bill." A nice surprise.

"Hey Bill, what's up?"

"Petey died yesterday of a heart attack," was his terrible reply, and the root of my life-long obsession.

*

I'm contemplating that difficult call so many years ago as I walk back to my car on this cold December evening, the doctor discharging me, thinking that maybe I'd had some gastric upset. Once again, my mind has played tricks with me. I contemplate that, through this repeating scenario, I'll be forever connecting myself to Petey on a level I can't seem to override. No matter how much knowledge I acquire.

What a Harbor

Portland Yacht Services is the gritty, no-frills establishment where my small and weathered boat, the Miles Davis, floats. To get there I walk through the similarly gritty city, my home for almost two years now. I navigate a zig-zagging course along the narrow streets, like a sailboat tacking, always sensing the harbor's proximity as being in front of me because I'm so eager to reach it. On this summer day, the neighborhoods closer to the waterfront are teeming with tourists—Portland has reestablished itself as a destination for shopping, eating, and drinking some of Maine's excellent local beers. I wonder if the people sitting on the docks under the umbrellas can imagine where I'm headed with such determination.

A half-mile north of the waterfront district's restaurants is PYS. The boat yard is bisected by the Maine Narrow Gauge Railroad tracks. One half is the marina with a boat launch, a small crane used mainly to step masts, and the docks and moorings floating on the sea. It bustles with activity during "the season," mid-May to mid-October. The boatyard's other half is comprised of two old brick buildings (smaller, and weathered like the Miles Davis) with offices and repair shops, and several large warehouses where all manner of sailboats and motorboats are stored. On this side of the tracks, the business has a more even paced, year-round buzz, keeping busy fixing the boater's unfortunate summertime troubles, even when the snow flies.

Most of the structures on this year-round side of PYS were once foundries and factories. They're the stout brick buildings seen everywhere in Portland and most of the other New England towns that'd hit their stride during The Industrial Revolution. Back then, the buildings were part of The Portland Company, and the name is still visible, though faded, painted in white on the gable-end of one of the larger structures in the compound. The company was established in 1846 primarily to build steam locomotives and other large machinery like boilers, paper mill equipment, early steam-operated fire engines, and gigantic marine engines.

The railroad tracks that separate these buildings from the marina were installed to transport the massive cargo to the ships docked at the piers on this portion of Portland's waterfront. The multi-masted sailing ships of the halcyon days have been replaced by pleasure boats today, though it's nice to see the tracks are still used by the Maine Narrow Gauge Railroad and Museum to run open-sided rail cars back and forth for sight-seeing tours on pleasant summer afternoons. Adding to the authenticity (and also the charm) the

museum keeps a running example of a steam locomotive, and several times a year they stoke-up its coal-fired boiler, hook-up to the cars for the sight-seeing run, and chug-chug along the tracks like the good ol' days. When the engineer sounds the screeching whistle, I close my eyes and can imagine the sights, sounds, and smells of the 1860's as vividly as if I was there. It's eerily anachronistic on a foggy day.

Over the tracks, on the water side of the boatyard (pronounced "boatyahd" in the local drawl) there are three ramps allowing access between the solid land and the floating docks. (They're all removed for the off-season in a mad rush of workers and cranes.) On the land-end each ramp pivots on creaky, rusty hinges sunk into the seawall. On the water-end the ramps slide on rollers down at the docks, allowing them to follow the docks tidal up and down undulations without binding-up like an old seaman's knee.

Here in Portland Harbor the tides range anywhere from 9 1/2 to almost 11 feet. During low tide the ramps can plunge at an alarming angle, forcing me to hang on to the handrails to keep from making a fast and un-glamorous fall to the docks. Below, the H-shaped docks are a maze of floating walkways divided into slips. These slips have cleats for boats to tie-up, and Portland Yacht Services has a vast array of boats tied-up: small day sailers to open-ocean yachts requiring dedicated crews, and from ugly tubs to gorgeous, floating palaces envied by the less fortunate (and less wealthy). When these palaces leave the dock for a cruise, their absence is noticed by how much more view there is of the harbor, as if someone picked-up one of the brick buildings and moved it out of sight.

The most easterly walkway is the humble dingy dock, on the end closest to the seawall where the flotsam and jetsam collects as it's funneled in by the waves. Even the

novice notices there are no slips and no cleats here, only a raised wooden rail for tying-up. Because there are no dedicated spaces, any opening between two boats is fair game to try and squeeze into. And the boats that are tied-up here are a class entirely different, less about expensive recreation, more about utility, and sometimes even suggesting a sense of poverty.

Walking along the wooden dock, I'm always aware of this diversity. Here's a long-forgotten homemade plywood rowboat, half-swamped, with a beer bottle floating in it, the label disintegrating. Over there's a little inflatable zodiac that has leaked so much air it's wilted like a lonely, wrinkled balloon. That other boat there is listing to one side, dangerously close to taking on water and sinking. Most of these boats are faded to a dull rendition of their original color: a once bright red now a mottled pink, or an original white turned a sallow skin-color, all a testimony to the harsh sunlight, salt air, and a general lack of tender loving care. If they have motors, they're tiny compared to the monstrosities on the transoms of the slipped boats. Some have none at all, instead propelled on the water by rowing. These little boats are mostly tenders, known in the parlance of local mariners as "stink pots." The majority take their owners from the dock and out to handsomer pleasure boats tied-up at the numerous moorings bobbing further out on the water.

Near the end of the dingy dock, one of these lesser boats is mine. Like its wrinkled cousin tied down the rail a bit, it's what some would call a zodiac, 10 feet long, with a trumpet case-sized outboard motor. I'm sure Miles would much rather have had his name stenciled on the back of one the more prestigious boats, but since he's no longer around to complain, it probably shouldn't matter much. Besides, I take the Miles Davis on

far more interesting expeditions than most of those bigger boats are able to handle, which would have made the trumpeter laugh his smoky, almost whispered, "heh."

I can pull The Miles Davis up anywhere, draft is not a problem, and because she's inflatable, thus flexible, I can bump into rocks without the concern of breaching the hull and sinking. Plus, when the season is over, I deflate her, roll her up, and store her easily and cheaply, an impossible feat for the vast majority of the other boats at PYS. She takes me out to the open ocean, to gunkhole the islands of Freeport, or to tool around in the mudflats of Back Cove.

Most frequently though the Miles Davis takes me across the harbor to a massive block garrison, called Ft. Gorges. How apropos—it's pronounced "gorgeous," a perfect description of the feelings it elicits in me when I'm there.

*

Ft. Gorges is strategically placed in the middle of Portland harbor, where the Army engineers took advantage of an already existing geological formation. Maine's topography has been shaped by the comings and goings of glaciers, and the latest retreat left the landscape that we see in Portland today, like the smooth slope of Munjoy Hill, the cragged cliff edge that the Maine Narrow Gauge Railroad butts against, and the ledges scattered throughout the harbor that unaware boaters sometimes strike. The sliding of the mile-deep ice from the northeast to the southwest carved the smoothness, like a wood plane singing sweetly along a board, and crumbled the lee rock by pulling on it on the southwest side. Known by geomorphologists as stoss-and-lee topography, it's the rugged, ragged beauty that Mainers are so proud to associate with their coast.

Walking over Munjoy Hill towards PYS, I have a good view of the harbor and its islands. Ft. Gorges is prominent, damn near in the center. Construction out on the ledge began in 1857 when the U.S. Congress appropriated the funds just prior to the beginning of the Civil War, and the fort took seven years to build. Several miles off in the distance are Ft. Scammel and Ft. Preble; these forts peppered about attest to Portland's past importance as a well-protected harbor, though none are operational now.

Ft. Gorges itself was never garrisoned and, in fact, never quite finished. It was used by the U.S. Army for storage until just after WWII and then sat idle for years until the City of Portland bought it in 1961. They called it a park and erected a cheap sign on it saying that it had no restroom facilities but lots of falling hazards—"use at your own risk," it warns. There's no ferry service to the island, so the only way to get there is by private boat, and most visitors that I see kayak.

*

The trip out to Ft. Gorges only takes me 3 or 4 minutes in the Miles Davis. There's always traffic in the harbor; lobster boats dotting their buoys everywhere to dodge, pleasure boats on the good weather days, sailing vessels on the windy days, freighters and ferries that ply people and materials back-and-forth from the islands always, cruise ships a few times a week during the season, and mammoth tankers bringing oil and cargo into the port no matter the weather or time of day. Surprisingly, because Boston is so close and New York City not much farther south, Portland harbor is the second busiest commercial water port on the eastern seaboard.

I approach the fort, which is shaped like half an octagon, from the north side. The cliff-like side walls all plunge right into the sea, making it nearly impossible to gain

access into the fort. The ledge the fort is built on is exposed only on the northern side, and seawalls forming a large jetty are made of the same granite blocks as the fort itself. Huge iron rings sunk deep into the top blocks are where supply ships once tied-up—they're rusty and pitted now, but still heavy and sound. There's a sand bar running midline to this ledge, and it's where I plan to beach the Miles Davis.

There's another smaller ledge to one side of the sandbar. As this ledge disappears under a rising tide, the birds who like to rest here, mostly cormorants and seagulls who've been standing up preening or lying down snoozing with plenty of personal space between them, get squeezed closer together. When this happens, the raucous calls of "this is mine!-this is mine!" escalate to a cacophony and don't settle down until the pecking order has been re-established.

Today though, it's low tide as I approach and the birds are peaceful cohabitants. There's lots of space and the cormorants especially take advantage, spreading out their long, angular wings to warm up and dry off, looking huge and black, rather like the bat icon of the sixties era TV show Batman, only with a long skinny necks and heads. Loons are paddling around in small groups with several adults and more than several babies, poking around in the jagged spaces between the rocks, the newest, littlest members peeping incessantly to stay in contact with their guardians.

When the tide is low like this, the surf is calmer as more land shelters the tide pools, and the pigeons that live here, lucky brethren to the flocks stuck in the city with the humans, come down from their nests high up in the walls of the fort. They use the casemate openings as their personal front doors, flying to the water's edge to look for food amongst the newly exposed rocks. When the tide turns and more fish come in with

the rising water, terns go plunge-diving for a meal, pulling their wings in close to their bodies to shoot into the water like an arrow, looking like an F-16 fighter jet, even down to the grey color on their upper bodies.

I coast-in towards the sand bar for the last few feet, shut off the motor and tilt it up to keep the lower end from scraping the quickly shallowing bottom. I hop out into ankle-deep water. Shoes are a must here: the sand bar itself is only truly sandy on one side; everywhere else the land next to the sea is made up of sharp-edged pebbles, sharper-still shards of innumerable shells, and progressively larger stones and boulders that have barnacles living all over them—painful to walk on.

I pull Miles in and tie-off to a piece of the granite that's strewn about at the water's edge. I'll check on her from time-to-time, making small re-adjustments to always keep her floating by paying-out or taking-in line. Visiting kayakers usually drag their boats all the way up to above the high tide line because they're light enough, and because it would be pretty embarrassing to have to go swimming for a boat that's floated away, though I've helped a few out of that situation. I've also helped to push the occasional bigger boat that comes in and beaches, no concern about rocks or the tide, and ends up stranded as the tide goes out, the owner red-faced and apologetic as we heave it back to the element for which it was designed.

Most of my time at Ft. Gorges is spent alone, and it's absolutely how I prefer it. Being insular on an island is a wondrous magnification of freedom. During my isolation, I tend to prefer particular habits that are best done without an audience, one of which might be illegal, and certainly not something an unsuspecting family paddling over from Peaks Island or East End Beach for a picnic would want to see. I skinny-dip. I quickly

glance at both sides of the sandbar to ensure no one is coming in, take off my clothes including my shoes, and dive into the breathtakingly cold water. "Waahaaa!" explodes out of my lungs as I re-surface, my own contribution to the cacophony of the birds fighting for space on the disappearing ledge. The intensity of feeling alive by this one small act is reason enough for coming out here, and the naturalness of being all naked animal strikes a primordial chord.

Checking again to see if I'll still be alone for a bit, I gingerly walk across the sand bar and sit on one of the big granite blocks to dry in the sun like the cormorants. I gaze back out at the harbor and the city of Portland perched atop the saddle-shaped hill beyond. There are boats crossing every which-a-way out beyond the ledge, and I wonder if they can see me and my white ass imposing on the landscape. But I quickly dismiss the idea; they're moving too fast, they're paying attention to other things, they couldn't see me, a small speck in the larger world, and even if they could, would it really matter?

One thought though usually brings me a chuckle: many times The Channel 8 News, WMTW, when I watch it briefly in the mornings, has a camera atop one of the buildings in the city focused out on Ft. Gorges. Its image lingers as the station segues to a commercial, and it seems to have the resolution necessary to pick out a guy sitting naked on the island. So sometimes while lounging I wave in the general direction of where I think the camera is, smiling widely and giggling sheepishly in case anyone out there can actually pick me out. In case anyone out there is paying attention.

*

The sun warmed granite block I'm sitting on is about 5 feet long, 4 feet wide, and 3 feet thick. The vast majority of the blocks on the island are of similar proportions,

whether installed in the fort or in the jetty, and have been hand chiseled to this size and shape. Many of the un-worked blocks, larger and misshapen, still have the drilling holes that were strategically placed to hewn them from the mountainside they came from.

At one corner of the never-finished fort is a block pile where the masons most likely did their work. There are completed blocks still waiting for the installation that never came, balanced proudly atop uncompleted ones. Not all of them are so square; I'd say there are about a dozen different block shapes making up the fort. The engineers used a modular pattern, thus keeping the masons chiseling large numbers of the same dozen shapes. The persons laying the blocks could then choose the shape necessary for whatever feature they were at, like a corner, or an opening header or sill, or the razor sharp rifle slits whose openings protected the northern walls of the fort.

Since I have building experience, I can see the remarkable precision in their work; eyeing any wall it's easy to see how square, plumb, and level the whole structure is, and how crisp the seams are. The exposed sides of the blocks are all only roughly chiseled, but the edges where the joints are, and about two inches either side of them, are precisely etched. It's readily apparent that there's a level of craftsmanship here not so easily spotted in today's world of computer aided design and fabrication.

The central portion of the fort, about the size of a football field, is also becoming over-run with grasses, shrubs, and trees, and because of this additional habitat, there are now numerous tree-bird species on the island. When standing inside the fort, I can hear that the muffled sloshing of the waves outside and the drone of distant boat motors is accompanied by singing. Sparrows, chickadees, cowbirds, finches, nuthatches, and others fly into the old parade grounds to snack on bugs. Snuck underneath all of these natural

and not-so-natural noises, dispersed in many confusing directions by the casemate's parabolic ceilings, are the sounds of pigeon wings beating as they come and go through the canon openings, heading outside to check on things, or coming back in to feed their youngsters.

*

I put my clothes back on (and no longer worry about being respectable if other visitors come) and go about experiencing some of the other wonders I long for. One in particular is not to be missed. The best times are when the sand bar is nearly exposed, or at least walkable in no more than knee-deep water. And, it's important to take my shoes off.

On one of my first trips out to Ft. Gorges, the tide was just at this level and ebbing, and I was standing on the sand bar with a beer in hand, gazing out to the west dreamily, feeling the flow of the water pulling past my calves and watching it head out towards the deep ocean. It's a cool visual phenomenon to look out over large expanses of water when your eyes are almost at the level of the horizon; it's like you *are* the horizon, or better still, the opposite, like the vanishing point of a perspective drawing.

These thoughts were going through my mind when I noticed a little tickling, nothing pronounced, down at my feet. It took me a moment to adjust my focus from infinity and down through the two feet of water. What I saw was just plain adorable: hermit crabs were nibbling at my toes.

Staying absolutely still (which is tough to do when being tickled) so as not to disturb or hurt them, I watched as a dozen small hermit crabs, carrying their snail shell homes with them, went about pulling bits of flaking skin off of and from between my

toes and around the soles of my feet. It's the crawling part that tickles; you don't even notice their little claws grabbing flecks to bring up to their mouths. They work quickly and move off, no individual spending more than about 30 seconds, uncaring that it happened to be a human toe they were just feasting on. It's a lovely reminder of how life goes on, and living it means being involved in it.

Just a subtle wagging of my toes is enough to swish everyone out of harm's way, and I walk cautiously to the dry land of the smaller ledge so I can visually take in the full expanse of the fort.

Beyond, out between the islands towards the south and the open Atlantic, is an un-interrupted corridor where the summer's southerly winds flow inland. Those winds sail down the channel, hit the fort, and are directed upward by the walls causing a phenomenon known in the aviation world as mechanical lift. In the avian world though, I'd bet it's known as *fun*, and the seagulls take full advantage of the effortless flying they get to do because of it. Watching them I easily get caught up in the wonder of flight by pretending to be one of the Wright Brothers and scrutinizing the gull's movements for clues on how the birds do it.

I walk to the inside of the fort, the thick walls surrounding me, to watch the aerobats up close, soaring not much higher than the wall itself. As a pilot and fellow flyer, I envy their natural ability. The gulls are almost always flying in groups, spread out in single file. They're following the line of the wall below, thus the line of the mechanical lift. They all take turns being at the most up-wind location, hanging motionless for long moments of sailplaning seagull meditation, then turn their tail-feathers ever-so-slightly to fall-off downwind, come around to the last position, and patiently go through the cycle

again. Occasionally I hear someone say "caawww," and though I don't speak the language, I understand it's a sound of pleasure uttered as they realize their fortune, the same way the pain of love can be felt in a Puccini opera without knowing one word of Italian.

I'm reminded of a previous day, when I came inside the fort to see who might be flying, and looked up to witness a rare sight. There wasn't a sound anywhere within the fort, just the usual muffled drone of the world outside. I saw a fabulous raptor, soaring in the lift, its wingspan longer than I am tall. Its powerful beak was prominent, and its head scanned back-and-forth, keeping tabs of the world around it. It was an osprey, regal-looking and dignified, and I realized the silence in the fort was because any creature in their right mind was staying as still as if their life depended on it. I've seen ospreys before, carrying relatively large tree branches from the mainland, flying low over the water and out to wherever they were building their nest.

This osprey was obviously successful, a tribute to her fortitude, because off to her left, about fifty feet away, was a miniature version of herself. This little one must have been a fledgling, beating its wings madly in an attempt to learn the finer points of flight. Where mom was silent, baby was screeching its protest that in the not too distant future there'd be an end to mom's nurturing. But I could sense there was excitement too (maybe even a bit of fear) as the fledgling started to get a feel for its element. I hope it grows and hunts and procreates, perpetuating the beauty it lends to this Earth.

After catching-up on the goings-on inside the fort, I turn around and walk back out through the entryway. In this tunnel there's always a brisk and cool breeze. During the hottest days of summer, it's luxurious to sit in here. Out of the blinding sunshine, the

massive blocks, cooled by the night air, are an electricity-free form of air conditioning. When no one else is on the island, I sit here propped up against the cool granite, wondering if I should just give away all of my possessions and live out here, illegally but blissfully, a hermit with a castle on my back.

Outside on the fill that makes up part of the jetty, more grasses and a birch tree grow, and there's a long row of wild roses, the blooms of white, red, and pink emanating a perfume no store bought eau could emulate. It wafts on the ocean breeze and infuses the clean, hearty smell of the salt water with its aroma. I stand for minutes at a time, taking in huge breaths until my very bones are saturated with its salty sweetness.

Other parts of my life need my attention too, so I turn towards my boat to start the journey home, to commence my return dance across the harbor. I pick up a lobster buoy that has managed to break free and float here to wash-up on the sand bar. I put it in the Miles Davis to bring back and place next to the dumpster at PYS, where most assuredly someone will find it, a treasure to nail to their garage to remind them of their experiences of the Maine shore.

I take off my shoes a last time and wade into the brisk water, submerging my ankles. Within seconds I get a nibbled parting gift from my little decapod crustacean friends. Their tickling isn't just a cleansing of the sloughed-off skin at my toes or a contribution to the crab's livelihood; it's a brightening and powerful rejuvenation of my spirit—my own intimate experience of the Maine shore.

The Point of Departure

(third semester project)

There are innumerable facts that we readers and writers live with and manipulate in our day-to-day lives. We bring water to a certain temperature to cause it to boil, we use selective serotonin re-uptake inhibitors to ameliorate a perceived problem within the chemistry of our synapses, we compress and explode hydrocarbons to extract energy to run our machinery, we dry our clothes in the radiant heat of the sun, and we wind our grandfather clocks so that gravity keeps them ticking as it pulls on the weights. We watch thunderstorms build and we build to withstand earthquakes. We act out our individual lives within the confines of the universe's laws. Life itself, the chemistry and the mechanics, functions under them. And even when we don't know of the exact nature of these laws, we still intuit their veracity.

Generally speaking, for an author it's important to get all those facts straight. But there's also a time and a place in a story for twisting or manipulating the facts, sometimes even for an outright disregarding of them. A writer must be aware of when and where that time is, and choose to either remain faithful to the Universe's laws or to deviate from them.

I contend that there is a need for the writer to remain conscious of this place, a place I call the point of departure. When used judiciously, the author can manipulate it to advantage. Its misuse, though, will immediately put the story at risk of falling apart, or even worse, put the author at risk of losing his or her credibility.

There is, of course, a spectrum of what is thought of or defined as 'fact', and the point of departure has to be viewed along that spectrum, the author taking care to understand what the fact is, how it came into being, and what the deviation, if there is

one, will cost in terms of authenticity and authority. In the words of the late science fiction author Hal Clement, "A violation of the laws of thermodynamics by the author can spoil a story just as effectively as having Abraham Lincoln changing a set of sparkplugs in a historical novel" (Tourtellotte, pg. 221).

For the author, who may have his or her focus placed on other facets of the writing, detecting the distinctive point is often a subtle thing. I once read the manuscript of a fellow student who was trying to write a memoir depicting herself as someone aware of the planet's current environmental issues. Scattered here and there within her text's scene building were tidbits of scientific awareness. She wasn't claiming herself to be an expert, only making allusions to her possession of a larger awareness. She was stating this awareness to gain some credibility in making worthy remarks about those environmental issues. One included a reference to the earth's moon, and in it she'd noted that it was millions of miles away (it averages 238,855 miles—Roy, pg. 112). With this one blunder, all of her previous solicitations at gaining authenticity were dashed.

It's easy enough to make a mistake of specifics: should she have used the moon's distance at apogee or of perigee, or of their average? If she'd stated the distance as an approximate one—if she'd have been 'in the ballpark'—I'd have judged her as someone having an awareness of parameters, though I wouldn't have asked her for opinions on astronomical phenomena. The author's mistake pushed me back from aligning myself with her in direct proportion to the magnitude of the mistake.

Should the reader forgive such digressions? At first glance, one might think that the digression should be condemned in a non-fiction work, but awarded some leeway in fiction. As with the writer's right to deviate from fact, which I'll explore, the reader can

do so too, and there's always The First Amendment to hide behind. I'm compelled though to chastise the forgiving reader as much as chastising the blundering writer, because the reader should not be forgiving in the first place. When a fact has been misrepresented by the author, the reader experiencing it should question the author's wisdom. And it may very well be experienced, a vague notion that something's amiss, as if the reader has intuited the fault. The reader has asked the author to come into his or her life by virtue of a piece of writing, and if the writer isn't capable of building a worldview that grabs the reader whole, then the book should be put down—by both the author and the reader.

Every one of us is capable of spotting facts that are wrong, and the author of any genre has to acknowledge this. How many times have we as writers heard the phrase "trust in the intelligence of the reader"? This does not mean readers have all the facts at their fingertips, as if they're some kind of walking encyclopedia; it means they are suspect of information that flies in the face of what their perception tells them is true, because they too experience these facts. "This doesn't feel right," the readers complain, or "Something's out of whack," they mumble, their head cocked slightly. They know the moon is far away relative to their son's Peace Corps assignment in Central Africa. But millions of miles? It just doesn't feel right.

Setting aside fantasy.

As lawyers prove time and again, following traditions set down by the sophists of Aristotle's time, facts can be pretty much what we make of them. "The proof is in the pudding." Writers can be seen in the same light as lawyers addressing a jury: they're building a case. The writer wants to prove to the reader how each piece of the writing comes together to form a cohesive whole. The writer is in a sense manipulating the mind

of the reader. The sophists did this by taking advantage of their target's ignorance. Writers, on the other hand, trust in the intelligence of the reader. They're trying to manipulate the mind of the reader because the reader has allowed them access to do so. The reader is giving permission freely; the reader is suspending his or her own belief system and passively analyzing that of the writer's.

Nothing suggests this theory more than fantasy writing. (We'll see that there are other times when the reader is actively analyzing the writing. For now it's safe to say that when we read for pleasure we're only passively analyzing. One is assuredly reading fantasy for pleasure, right?)

In a piece from *The New York Times* titled *Finding My Voice in Fantasy*, fiction writer Lev Grossman talks about fantasy writers, saying that "these people were doing things with fantasy that I had no idea fantasy could do." How can an educated person—Grossman attended Harvard and Yale—suggest anything other than the obvious about fantasy, that it has no boundaries and thus can "do" whatever it wants?

As he continues describing his enlightenment, discovering that he has an inner and until-now-sequestered desire to write fantasy, he comes face-to-face with the argument I've been putting forth. Here he calls out the point of departure, what it feels like, and how it's experienced, in his own words:

"The first time I wrote a sentence about a person casting a spell, it was like I heard distant alarms going off. I felt like there must be a control room somewhere with a bunch of people sitting wearing headsets and looking at a red dot blinking on a map, and the dot was me, and the people were saying, *He's breaking the rules! We can't let him get away with this!* I was writing against reality itself—I was breaking rules, and not just the literary kind but the thermodynamic kind, too. It felt forbidden."

When Grossman states "I was writing against reality itself," he aligns himself with the sentiment that I'll explore a bit more: the rather intuitive idea of Homo sapiens' highly evolved brains formulating infinite thoughts ultimately leading to invention. Grossman tells of breaking the rules and how it felt forbidden. And he likes doing it, admitting to us that "it felt good." He explains that "In the real world, all your hopes and dreams and desires and feelings are trapped inside you. Reality doesn't care—it's stiffly, primly indifferent to your inner life." Of all the genres, fantasy blatantly disregards facts as natural occurrences, rationalizing that the only way to unleash all hopes and dreams is to do so. Grossman himself is differentiating fantasy from reality. He and others, when writing fantasy, are finding points of departure—from reality itself—and conscientiously departing from them.

Obviously fantasy has its place in society's search for entertainment. People want, oftentimes need, to suspend their own belief systems and enter a totally different realm. They turn to an author's worldview as one escape route. Similarly, children's literature, with its non-threatening disregard for natural occurrences, also occupies a solid place on the bookshelves. For writers in these genres, credibility is much more about consistency and integrity. They can use the format of the genre itself as permission to deviate as far from fact as they care to without questioning from anyone, as long as they propagate the deviation throughout the worldview. These genres, and any like them, needn't be considered in light of this essay's theme. In each, that there's a distinctive point of departure to be taken advantage of, is as obvious as gravity.

One last point here: no matter the genre, the consistency of the deviation from fact has to be followed throughout the entire piece. If an author invents a talking feline, the

child reader (or any age reader for that matter) had better not be left to wonder why the kitty had suddenly become mute. The cat that talks is the distinctive point of departure, and the author needs to stick to it. The author must keep whole the worldview he or she has built, be it fiction or fact.

Fact.

What is a fact anyway? Here's a reference from that wonderful contemporary source of information, Wikipedia. Remember that information is certainly not the same as fact: "A fact (derived from the Latin *factum*) is something that has really occurred or is actually the case. A test for a statement of fact is verifiability, that is, whether it can be demonstrated to correspond to experience" (Wikipedia.org).

What Wikipedia is calling "verifiability" is the key to what a fact is in essence, and it's something that each and every one of us, independent of our culture, socio-economic status, intelligence, or other quantifiable differences, is capable of discerning. A fact is something accessible to everyone, and will impact each the same way as it impacts everyone else. Facts are what tie the Universe together, and may be the single, most striking concept begging for interpretation by creative non-fiction writers. "These [facts] remind us, that, not only for strength, but for beauty, the poet must, from time to time, travel the logger's path and the Indian's trail, to drink at some new and more bracing fountain of the Muses, far in the recesses of the wilderness," (Thoreau, pg. 414). I don't think it's too much of a stretch to think that what I'm calling the universe is what Thoreau called the wilderness.

Verifying something is easy enough in the real world, even without a laboratory. For example, our earth is a water planet, and all humans know how water reacts when we

add energy to it. We add some water to a container, put it over a fire to add heat—a specific amount, readily identifiable through simple chemistry—and boil it. We've all done this. Some of us ask why this is and experiment to gain to a deeper understanding. But your run-of-the-mill water-boilers don't need to understand those deeper meanings in order to verify that water does indeed boil. It's a real world phenomenon that corresponds to experience. On a spectrum of fact, it's undeniably so.

One reason why real world facts, like how water behaves when we add energy to it or how gravity pulls on the clock's weights, are verifiable and intuitive, is because they are natural, like Thoreau's wilderness. We mortal readers and writers are subsumed within the natural world and are a consequence of it. But we are manipulators too, toolmakers, thinkers—Homo sapiens (wise man). In the modern world we humans have become so immersed in our own possibilities that the possibilities have become probabilities and oftentimes become certainties. We've stepped out of our natural world of facts into many worlds of fiction, something Thoreau was trying to reverse by going into the woods to live deliberately.

I've looked up a word in several sources, including dictionaries and search engines, and haven't found it. I think it's a word that I have fabricated using the rules of English grammar, and my human propensity to invent. Even as I type it, Microsoft Word underlines it with its serrated red line to tell me it's got a problem with it. The word: fictioner. I propose it for usage here, because it's what humans are, each of us. To be human is to invent, thus fictioner.

Look around you. Everything about your space, everything you wear and use, is fiction: it's been fabricated. Unless you're wearing garments made from animal hides

(which would still require some form of working in order to prepare them for use) or are leaning against a rock or tree (same scenario—within reason), it's fabricated. The floor may be made of oak, but it's been worked; the fireplace may be made of stone, but it's been worked. Paper, worked; cotton fiber, leather shoes, wool carpet, gold jewelry, clay pots, cedar siding—all worked. This list could go on, using the same parameters—natural substances formed into useful products by human hands based on ideas from human minds—for many pages. Then there's another list that uses other parameters—natural substances combined in unnatural ways—that are the very definition of today's "modern" world. That list includes computers and cars and shopping malls, and is practically endless, growing all the time.

Based on this definition, shoes are fiction. They are not a natural consequence. They've been fabricated, made by fictioners. Here's the kicker, and it has a direct connection with how an author can detect if there's a point of departure in his or her writing: everyone has become so immersed in a world where shoes, an unnatural occurrence, exist, that everyone thinks they're natural. This demarcation between non-existence and existence **is** the distinctive point of departure. An author must acquiesce to this semantic point when writing about anything that is not a consequence of nature as we humans are subsumed within it. By focusing on it (assuming they've detected it), he or she can use it to propel the story, as we'll see.

Quality One and Quality Two.

I'll bring us back in line with reality because, using Woody Allen's phrase in a scene from *Annie Hall*, "I'm due back on Earth now." Since the shoes I'm wearing are both decidedly not fictitious and also not a consequence of nature, I'm proposing that fact

be subdivided into two specific qualities which I'll call Quality One and Quality Two. It's by reflecting on these two qualities that an author can question if the story he or she is writing will cause a dilemma in authenticity. Quality One is the panorama of natural phenomena like, but not limited to: evolutionary processes, the elements on the periodic table, gravity, or electromagnetic and thermodynamic laws—universal, natural constituents that humans (and everything else) are subsumed within and constrained by. Quality Two is the way that a fictioner builds his or her world, mostly by using Quality One, for "much if not most fiction seeks to present universal laws and reality in as precise and specific and fetching a manner as is possible" (Bass, personal correspondence).

Quality Two is the quality that we readers and writers focus our artful attention on (though to this writer, science is resolutely more fascinating), and is how we rate the overall aspect of the writing. The manipulation of this second quality is, as Bass continues, "the definition of craft". The writer is trying to create a world, so they need to populate that world with the facts that bring the reader to an understanding of how that particular world operates. Thus, if an author is inventing a world, they need to make sure the facts are correct, *even if they have to invent them*. Wikipedia again: "Fiction is the form of any work that deals, in part or in whole, with information or events not real, but rather, imaginary or theoretical—that is, invented by the author." (Wikipedia.org)

The crux of my contention is aimed directly at the clash caused between the preceding two qualities of fact, which are often competing. If an author—fictioner extraordinaire—blunders in his or her fabrications, the story they're trying to build may fall apart just as a shoe that doesn't have its sole stitched on properly. This clash is the distinctive point of departure mentioned earlier. Stick to one side of it, the side where the

story's facts are portrayed by the author within the story's rules, and the author will maintain credibility. Fall to the other side, and the reader will feel the mistake, even if they can't spot the weakness with specificity.

When readers decide to embark on a journey with an author, they suspend reality as they're experiencing it, and enter into the reality created by the author. The intelligent reader will follow the logic of the author and assess it, consciously (actively) or not (passively). Authors can target an audience by determining which group will be reading their stuff—giving them a clue as to the probability for having a point of departure. There's a greater potential for the author to make a mistake and depart if the audience is consciously involved, like those who read non-fiction.

On one end of the spectrum is the non-fiction author who doesn't ask the reader to depart from real world facts; he or she may even be asking the reader to probe deeper into the scientific meanings of them. As Elise Hancock puts it, "Scientific truth is not a matter of opinion, not even in the so-called 'soft' sciences, like sociology or psychology. Scientific truth is a matter of evidence" (Hancock, pg. 14). Many writers, E.O. Wilson, Timothy Ferris, Stephen Hawking, and the like, strive to keep the reader grounded in our shared reality, exploring the universe's facts in an unbiased view (usually noting that humans-as-fictioners never have a truly unbiased view). These authors are constantly asking the reader to verify the facts they point out, usually by producing evidence gleaned through research. The reader of these works is likely armed with an academic background, and as a consequence, more experienced in following a more rigorous logic train. The writer is aware at every turn that the facts are being scrutinized by the reader.

In his book *A Brief History of Time*, Stephen Hawking states that "Heisenberg's uncertainty principle is a fundamental, inescapable property of the world" (Hawking, pg.55). (As a refresher, Werner Heisenberg was a theoretical physicist who stated—and I'm paraphrasing—that the more precisely you measure a particle's position, the less precisely you can measure its momentum.) Though we all know Hawking to be a powerhouse in the world of cosmology and astrophysics (based on his extensive background), as a writer he doesn't just assume the reader is going to believe this statement about Heisenberg's principle without proof. He specifically tells us why it's fundamental, using many pages of historical reference, including quotes from other theories, which he distills to layman's terms. Hawking knows he's being scrutinized; it is part of his world (as an academic and as a theorist) to be exposed to constant questioning.

For Hawking, the chance of stumbling over a distinctive point of departure is *everywhere*; it is the nature of being a scientist. Science is all about Quality One. All writing of this kind falls under the umbrella of 'peer reviewed'. The author hopes to have inconsistencies pointed out to him, and probably has had many illuminated along the way, ending up with a book only after fixing those blunders.

At this end of the writer's spectrum, where the author is sticking to ubiquitous reality, where scientific truth is a matter of evidence, the potential for departing from a distinctive point is everywhere. But the author uses every caution to keep from actually departing—they stay aware. At the other end—fantasy and the like—where "all stories take place in a setting contrary to known reality" (Card, pg.17), everything is in actuality a distinctive point of departure, and the author takes every opportunity to depart. (Though the author needs to keep all of his or her ducks in a row, like keeping the talking kitty

talking. If they don't, it could be an *anti*-distinctive point of departure if the kitty goes mute.) The quality of those authors' craft is often viewed in light of how far a departure from reality they can make themselves go.

What's in a word?

Let's look at a piece of writing where the author uses an idea from Quality One, in this case the biology of a moon snail, to invent a story. Barbara Hurd's essay *Moon Snail* revolves around the facts that every reader can verify, at least through a thorough researching of the snail's physiology, taxonomy, toxicology, ecosystem, etc.

Hurd uses precise science and historical references as sounding boards to launch into a philosophical treatise concerning life and death. The essay is 'about' Hurd's musings, but because she's backed-up all of her facts, using the appropriate nomenclatures for example, I as the reader feel as if I've learned about the moon snail in as direct a manner as I would have from reading a biology textbook. She has used Quality One to build the world she wants the reader to inhabit. Trusting in Hurd's knowledge, I'm willing to relinquish to her the time it takes to read the story, and the time that the reading has forced me to spend thinking about Quality Two—her world as it involves the moon snail. Using Quality One, she's convinced me of the success in the artful side of the fictioner known as Barbara Hurd.

In *Moon Snail*, Hurd is aware of the facts and hasn't manipulated or misconstrued them. There is no point of departure (though there's a *possible one*). Not only is her credibility intact, but because of the obvious care for getting things right as regarding the snail's life, it's heightened.

"Moon snails are carnivores," Hurd tells us. "They kill with their feet and their tongues." (Kitchen, pg. 197). Just the one word 'carnivore' carries with it two sides of intelligence: it's a word the author trusts the intelligent reader to understand; and an intelligent word choice by the author. The word 'carnivore' carries with it a swirling nebula of ambience, like its own little Oort Cloud. It (and many others—the wise word choices made by crafty authors) has subsumed within it many layers of unspoken meaning. We usually associate carnivores with swift actions and snarling vocalizations, things we don't associate with a snail. Hurd has set up a possible distinctive point of departure in the passive mind of the reader—snails aren't violent, are they?—and she uses this notion as a fulcrum. We readers are being swayed by the logic Hurd uses throughout the rest of the piece to show just how voracious these little creatures are. Hurd never actually departs from the distinctive point. What a wonderful tension.

When the author of the manuscript I'd mentioned earlier put the distance to the moon as "millions of miles," she assuredly was trying to invoke her own swirling nebula of ambience. I'm sure she wanted the reader to think "wow, that's far." She didn't trust in the reader's intelligence, that they'd understand 240,000 miles as a "wow, that's far" moment. (Nor did she accept that some readers might know the actual distance.) She tried to set up a tension, but instead set up a distinctive point of departure, departed from it, and lost the tension.

It appears that as humanity accumulates more tools for understanding the universe, we pre-load our propensity for making these kinds of mistakes in communication. Take for example this situation: the European Space Agency's mission to comet 67P Churyumov-Gerasiminko. After a 10-year trip, Rosetta (the craft's name)

finally succeeded in catching up to the comet and sending a probe to its surface. It made the headlines, including an article in the *London Telegraph* from 16 November 2014. In it, after a good summary of the mission's over-all objectives and the information it's designed to seek, the science editor writes, "The information includes results from sophisticated devices designed to analyze the comet's chemical make-up and throw new light on what could have been the building blocks of the universe."

To the actively involved reader, the point of departure is a glaring mistake. It's one that should get the *Telegraph's* editor a major chastising, because it has potential to take the uninitiated reader down the wrong path of reasoning, possibly perpetuating a wrong concept (of how the universe is constructed). I trusted her credibility until I read the last word of the clause "throw new light on what could have been the building blocks of the *universe*." The words she should have used were '*solar system*' (along with making the clause present tense). They are very different animals universe and solar system. Her misuse of such profound nouns causes me to think she doesn't really know all the other stuff.

The editor's use of the word universe is the distinctive point of departure. She took an idea from Quality One, misused it, and her story, otherwise credible, becomes suspect. Should I go back and verify all of the story's facts? Is this a question a writer wants his or her readers to be asking as those readers are entering the writer's written territory? Would the reader be willing to read the writer's future work? Each question should be answered with an emphatic NO! In this particular case, there may be more people involved with the blunder (fact checker oversight? fact checker ignorance?). This reader may never look at the *Telegraph* again.

There are other ways in which a writer can pronounce with a shout that they know what they're talking about. One way sets a tone that puts the reader into a comfortable position reclining in the passenger's seat, knowing the author is a good driver: the driver/author states crosscutting facts from as many different angles as possible. By doing this, the author negates any potential for falling to the wrong side of possible points of departure, almost like doing a geometric proof:

"At noon today, local apparent sidereal time will be approximately 1:29. The Julian Day will be 2450384, which is the number of days since high noon on the first of January 4713 B.C.E. That was the last time the twenty-eight-year solar and nineteen-year lunar cycles began on the same day as a fifteen-year Roman tax cycle, a coincidence first noticed in 1582 by the percipient Joseph Justus Scaliger, who invented the Julian calendar. Exactly 7,980 years will have passed before these cycles resume in unison and a new Julian Period begins, in the year 3267," (Klinkenborg, pg. 177).

I can vividly picture Mr. Klinkenborg slamming his hand down on the table at the end of that pronouncement and exclaiming "Q.E.D.!" (Quod erat demonstrandum—it has been demonstrated.) A wonderful consequence of his specificity is the almost nonsensical notion which the piece is really about. It's powerful and funny when this part is juxtaposed against the above excerpt:

"But what do we call the hour we gained when we set our clocks back last night? It has no name. You make a pilgrimage to all the appliances—the alarm clocks, the wall clocks, the coffeemaker, the telephone, the VCR, the PC—and it seems for a moment as though time were a utility that got pumped into the house with the alternating current" (pg. 178).

As Hurd did in *Moon Snail*, Klinkenborg emphasizes (in a figurative sense) that he'll be offering to the reader a distinctive point of departure, *and not departing*. The essential theme in the essay that I've excerpted is about humanity's current obsession with time, and the often comical consequences of the obsession. Klinkenborg proves he understands the long road leading to this obsession. It's how he takes advantage of the opportunity offered by the possible point of departure. Hurd did it with the use of a specific word—carnivore--and Klinkenborg with many intersecting words of similar conceptual notions. Each author has used their individual possible points of departure as a fulcrum to balance the actual subject of their essay. Each author actually amplifies his or her prowess by using it.

There are also authors that admit to their blunders, and the often negative ramifications caused by them. The one I mention here should have been seen by my fellow student writer before she embarked on her memoir; it's also an interesting coincidence showing the prevalence in misunderstanding of astronomical phenomena. Eudora Welty, while talking about her love of the word moon, admits to the reader that "This love did not prevent me from living for years in foolish error about the moon," (Welty, pg. 11). She explains that in her childhood she built a worldview wherein the sun rose in the east and the moon in the west. She didn't find out the moon didn't come up in the west until she became a writer, wrote a story with the misplaced moon, and heard from the literary critic Herschel Brickell (a series editor for *The O. Henry Prize Stories*, which Welty received several times.). Welty said that Herschel gave her valuable advice about her new profession by telling her to "Always be sure you get your moon in the right part of the sky" (pg. 12).

Fiction and Quality Two.

What if you want to put your moon in a different place? For the moment let's only use that phrase figuratively, and remain here on Woody Allen's earth. As Bass has noted, much if not most fiction seeks to present universal laws and reality in as precise and specific and fetching a manner as is possible. We've also seen that a good definition of fiction is Wikipedia's notion that it's a form of any work that deals with information or events not real, but rather, imaginary or theoretical—that is, invented by the author.

Most fiction then, uses imagined information or events fabricated by the fictioner/author. They are made-up, but the author keeps Quality One intact. These authors exemplify the best of Quality Two.

John Updike, Richard Ford, John Casey, and Annie Proulx are some of the authors that come to mind who seamlessly weave both Bass's and Wikipedia's statements. They are the epitome of the writer's craft specifically because they never leave loose ends for the reader to trip up on. This is because they're excellent at choosing the details that become the possible points of departure from which they never depart. As Elizabeth Bowen states in Eudora Welty's *One Writer's Beginnings* "Physical detail cannot be invented. It can only be chosen" (Welty, pg.99).

So that readers don't trip over a point of departure, it's necessary for the author to inform them that the details he or she has chosen are propped-up, and the author should do this with compelling evidence. It's like the part of the iceberg that is seen floating above water, buoyed by the majority of factual connections hidden beneath the waves. Characters, their names, the clothes they wear, the barns they work in, the mines that collapse on them, the towns they live in and escape from, are all made-up. But the

essence of each of these things, characters and towns and situations, is based squarely on fact.

Take for example a scene from Proulx's book *Postcards*. A fictional character named Dub has lost an arm and has had it replaced with a prosthetic one. Proulx takes advantage of the factual consequences of using a prosthetic arm to heighten the story's fabricated world. Dub has started one of countless jobs the man can't seem to hold on to:

"He started the day after the big windstorm in November, people out sawing downed trees and working on washed-out roads, but Dub up at Elmore wrestling grain bags all day. He got back in time for milking. They let him go at the end of two days. The hook ripped three out of four bags, and the yellow grain trickled off the trucks and into the street, drawing flocks of birds and even a few barn rats," (Proulx, pg.102).

Quality Two—a fictional man with a prosthetic limb—has been exposed as a point of departure and used to promote things from Quality One—a hook would rip bags of grain, leading to further consequences—all of which propel Proulx's story.

These subtle pieces fit together into a larger puzzle that the reader understands. Proulx trusts in the intelligence of the reader. If she'd allowed Dub to continue working at the grain factory, something wouldn't feel right in the reader's mind; the reader would be wondering passively, maybe even actively, how come the man with a hook was able to do this type of work, moving around bags that can get ripped. In this hypothetical scene (Dub continuing to load bags of grain without his hook doing damage), the point of departure would have been crossed and Proulx might have lost credibility. Instead, her

credibility is affirmed by demonstrating that she understands where there could be a problem by highlighting it, and giving the reader the justification necessary to do so.

John Updike is another master at this formula. His book, *The Witches of Eastwick*, is filled with exploited points of departure. They are carefully crafted, a blending of the manipulation of the facts from Quality One with the fictioner's fabricated Quality Two. The book uses everyday experiences, couples them with fictional characters in fictional scenes, and takes advantage of the reader's desire to enter a realm that's plausibly real, but also isn't. Updike doesn't have his characters cast spells the way Grossman's fantasy writers do with theirs. Rather, he's illuminating a possible point of departure, but explaining it in a way that circumvents the point of departure altogether. Real people aren't capable of conjuring up a thunderstorm; but thunderstorms do happen as manifestations of real atmospheric phenomena, and when you're in the right place at the right time, you can watch it build.

Updike seizes the opportunity to mix all of this into a splendid world, the fictioner molding fact to his whim. There is a scene in *Witches* where a woman is walking on a beach, a bit chaffed that she can't have the place to herself, and wishes to do something about it. It's the last of summer and the mostly teenage beachgoers are scrambling to escape a storm that has quickly and seemingly built out of nowhere:

"Her clothes even to her underwear had been plastered against her skin so that she felt to herself like a statue by Segal, pure white... Alexandra strode to the end of the purged public beach, to the wire-topped wall, and back. She reached the parking lot and picked up her sodden espadrilles where she had left them, behind a tuft of *Ammophila breviligulata*. Its long arrowlike blades glistened, having relaxed their edges in the rain.

She opened the door of her Subaru and turned to call loudly for Coal, who had vanished in the dunes... To the eyes of the young people huddled with their sodden gritty towels and ignominious goosebumps inside the gray-shingled bathhouse and underneath the pizza shack's awning, Alexandra appeared miraculously dry, not a hair of her massive braid out of place, not a patch of her brocaded green jacket damp. It was such unverifiable impressions that spread among us in Eastwick the rumor of witchcraft" (Updike, pg. 17).

Talk about trusting in the reader's intelligence! Updike lays bare the point of departure, calling attention to it by using the words "unverifiable impressions." He's savvy enough to use the lexicographer's notion that "a test for a statement of fact is verifiability" (Wikipedia).

And like Hurd, Updike is quick to use all the tools of language to bolster his credibility, referencing Latin names, famous artists, and often using multiple adjectives. How often does one use the word ignominious?

Fiction and Quality One.

No doubt about it, writing science fiction is all about focusing on, calling out, and oftentimes manipulating the facts of Quality One. The good science fiction author will be creative in his or her manipulations of events too, like the previously mentioned fictioners Hurd or Updike. But equally important to the quality of the story, of the art, they'll need to be creative in the manipulations of facts.

Science fiction writers must understand the facts that they're going to manipulate, and have all the appropriate justifications to do so, even if they have to invent those too. They must understand how the manipulations are going to impact all parameters of the

world they're building. The easiest way to do this is to understand how all facts in the non-manipulated, i.e. natural, world affect the fabricated worldview, and then plug the changed facts into the manipulated one. When readers become engrossed in the manipulated world, they'll intuitively notice something out-of-place in that worldview if the author has omitted the appropriate connection. For the science fiction writer, this is like trusting in the intelligence of the reader, and it has everything to do with our initial investigation into fact being something which is verifiable. If the reader of the manipulated world view (or the non-manipulated world-view in the case of non-fiction) stumbles upon a fact that's out-of-place or hasn't been addressed by the author prior to its insertion, the reader intuits the blunder. It's up to the author "to make the thesis credible" (Heinlein, 7).

Let's go back to the idea of putting the moon in a different part of the sky. What's cool here is that you don't have to change anything about Quality One in order to do it. The only thing the writer needs to do to maintain credibility is give the reader all the necessary backstory. They help to land the reader in the worldview of a different moon's placement strictly by manipulating Quality Two and being a good fictioner. If the writer understands the universe's laws—the facts of Quality One—all it takes is one reference, preferably as early in the piece as possible. In establishing this they no longer need to worry if they'll fall to the wrong side of the point of departure.

Here's another great quote from Hal Clement to cement this idea (and bring up another to look at momentarily):

"Writing a science fiction story is fun, not work. The fun lies in treating the whole thing as a game. The rules are quite simple. They are: for the reader of a science fiction story they consist of finding as many as possible

of the author's statements or implications that conflict with the facts as science currently understands them. For the author, the rule is to make as few such slips as he possibly can. Certain exceptions are made (e.g. to allow travel faster than the speed of light), but fair play demands that all such matters be mentioned as early as possible in the story" (Wikipedia.org).

Well put Hal.

The slips Clement talks about are the blunders manifested from an author's not paying attention to the point of departure, like the student writer putting our very own moon "millions of miles away." If a writer were to state plainly that he or she will call any satellite orbiting a celestial body a moon, and then populate a solar system with bodies whose sizes follow the laws of physics, then there very well could be a moon orbiting millions of miles away. (Which, to emphasize, is not science fiction, but science fact.) Authors following those rules, ones they'd invented based on actual science, would not be caught tripping over a point of departure. They'd have understood what exposes the point of departure and buried it by creating a cohesive world that allowed such things. But that's not how it happened in the world built by my terrestrial student acquaintance.

Many science fiction writers stay within the confines of Quality One, and I can't think of anyone who'd argue that Arthur C. Clarke isn't one of the best. His science fiction is grounded directly in science; his storylines are guided by Quality Two, but he always keeps Quality One in mind. It's this choice to remain faithful to the universe's laws that virtually guarantee Clarke won't blunder or slip. I haven't found direct evidence that Hal Clement and Arthur C. Clarke ever met or exchanged words, but Clarke's work follows the advice given by Clement in the above quote.

In *2001: A Space Odyssey* (interestingly, the book was written almost concurrently with the screenplay, the two feeding off of each other), Clarke the fictioner is writing about a possible future. There are multitudes of points of departure, but Clarke addresses them all, making the story seem plausible, if not down-right probable. His credibility is established much like Klinenborg's geometric proof, the words written with a factual, technical flair. The reader comes to trust the scene as Clarke builds it, as he prepares to make a departure from reality with a simple (fictional) satellite:

"Radiation detectors noted and analyzed incoming cosmic rays from the galaxy and points beyond; neutron and X-ray telescopes kept watch on strange stars that no human eye would ever see; magnetometers observed the gusts and hurricanes of the solar winds, as the Sun breathed million-mile-an-hour blasts of tenuous plasma into the faces of its circling children. All these things, and many others, were patiently noted by Deep Space Monitor 79, and recorded in its crystalline memory," (Clarke, pg. 101).

We're there now with Deep Space Monitor 79 because Clarke has proven its authenticity—making him credible. Clarke actually departs at this point, and we go with him whole-heartedly, leaving the realm of reality and entering into one of fiction. He makes the jump:

"And now Deep Space Monitor 79 had noted something strange—a faint, yet unmistakable disturbance rippling across the Solar System, and quite unlike any natural phenomenon it had ever observed in the past. Automatically it recorded the direction, the time, the intensity; in a few hours it would pass the information to Earth," (Clarke, pg. 103).

Quality Two has taken the hand-off from Quality One, and the reader follows it. It's delicious this demarcation, this clash between fact and fiction, and Clarke uses it to his advantage. He amplifies it, insinuating his knowledge that the place—the point of departure—is distinct by using phrases like "something strange" and "quite unlike any natural phenomenon it had ever observed." The reader absorbs these innuendos, experiencing them rather than actively calculating their worth on a spectrum of fact. Talk about craft!

There is another way to use Quality One, by making a blatant misuse, a total disregard, of a fact. Frank Hebert's *Dune* is an excellent example. Fictioner Herbert has built a world that uses some of the laws of reality as we know them, but departs from others, all mixed together into a homogeneous soup. How is it that the reader is able to follow, allowing Hebert to drive them off into a new universe, his credibility intact? His fantastically creative Quality Two incorporates answers to any question the reader may have. Hebert, the writer, is acting like a teacher towards his reader, the student. He realizes he's departing, and he justifies each point as he does so. For help and credibility, he employs a great tool: a glossary. In *Dune* it's titled the *Terminology of the Imperium*, and in it Hebert invents facts to bolster his fiction, braiding them expertly. He introduces it with a tongue-in-cheek nod to the point of departure:

"In studying the Imperium, Arrakis, and the whole culture which produced Muad'Dib, many unfamiliar terms occur. To increase understanding is a laudable goal, hence the definitions and explanations given below.

DEW COLLECTORS [An example]: not to be confused with dew gatherers. Collectors or precipitators are egg-shaped devices about four centimeters on the long axis. They are made of chromoplastic that turns a reflecting white when subjected to light, and reverts to transparency in

darkness. The collector forms a markedly cold surface upon which dawn dew will precipitate. They are used by Fremen to line concave planting depressions where they provide a small but reliable source of water." (Hebert, pg. 838).

Notice how Hebert uses familiar words like dew, depressions, water, plastic (though "chromoplastic" is a point of departure), and words the reader will associate with solid science and mathematics like centimeters, long axis, and concave. As with the Clarke excerpt above, the dew collectors' plausibility (an invention of a plastic capable of temperature-based transparency changes feels to the reader like it should exist) amplifies Hebert's credibility. His manipulation of Quality One, coerces the reader into thinking he or she has embarked on a journey of science, which, like it or not, feels right.

Investigation of a fictioner's plausible theory is the highest accolade for a science fiction writer, and it's the rather hazy place where science fiction drives science fact. It's similar to the scenario where someone watches the 1985 movie *Back to the Future* (directed by Robert Zemeckis) and decides to become a scientist and inventor so they can actualize a hoverboard, a fictive device sprung from the mind of a fictioner. (This exact example is relevant—see *The New York Times* article "Hoverboard? Still in the Future" dated October 21, 2014.) Hebert, Clarke, Clement, and other science fiction writers produce best-selling stories because they understand when and where the points of departure occur in their writing and address them head-on.

Summary.

The point of departure can be a difficult thing to grasp, as elusive as a ball bearing. There's potential for it to be anywhere in a writer's story, whatever the genre,

though it's most likely to be found where fact and fiction collide. To remain credible, the writer must be continually on the lookout for a point of departure, for it carries with it the potential to erode his or her prior work if it's left unaddressed.

This is just a theory, but I think part of the reason why writers miss a point of departure, is his or her fear of society's emphasis on 'political correctness', summed-up thus: it has become anathema to state anything with certainty. This fear creates a distance between science and culture that could easily be eradicated if ego-centric Homo sapiens would come to realize that fiction is a consequence of our brain's wonderful capacity to formulate infinite thoughts.

There's the stuff we invent, and there are the facts we have no choice but to adhere to. The conscientious author knows the difference.

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