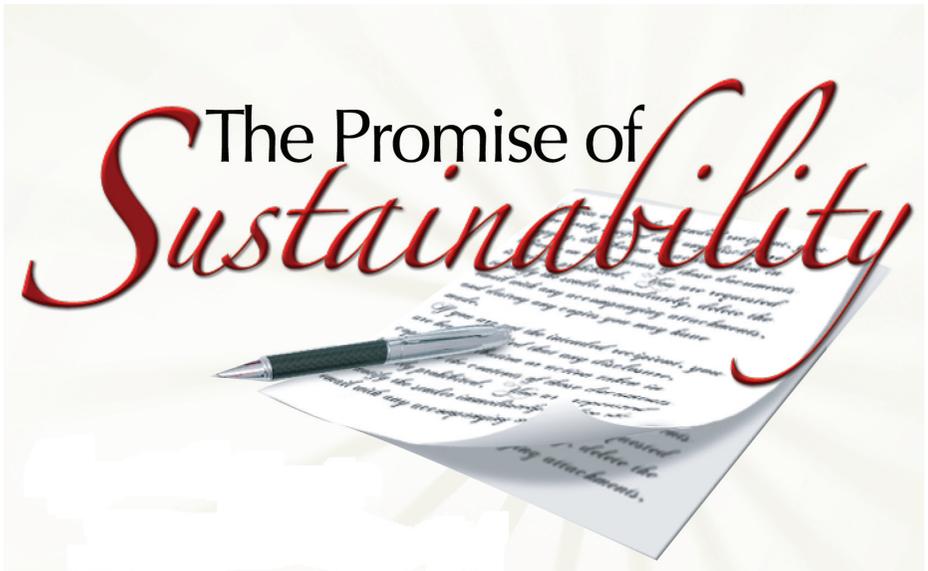
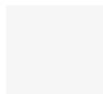


Rochester Institute of Technology



Student and Alumni  
Anthology

RIT Libraries  
Rochester, New York



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The Promise of Sustainability

An anthology consisting of short stories, essays, poetry, fiction, scholarly/creative nonfiction and images all based on the theme of sustainability. All works were submitted by RIT students or RIT alumni.

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The contest planning and anthology editorial-and-design teams included John Roche (Department of English), and from the RIT Libraries, Chandra McKenzie, Marianne Buehler, Robert Chandler, Nick Paulus, Adwoa Boateng, Gina Bush, and Ann Gilbert. The contest judges included Sandra Connelly (COS), Sandra Rothenberg (SCB), Paul Stiebetz (GIS), John Roche (CLA), and Adwoa Boateng (RIT Libraries). Acknowledgements are also due to the staff of LuLu.com, especially to Sarah Burris and David Spain for their assistance and collaboration in planning and supporting the contest and also to RIT's Office of Alumni Relations.

In the desire to engage RIT students and alumni in writing about a current challenging theme, the contest organizers engaged in conversation about potential writing topics that revolved around universal global responsibilities, such as sustainability, in all the forms it could possibly be manifested. We hoped that, when applied, the ideas and practices generated would meet current social, economical, and ecological needs without compromising future generations' needs. Interestingly, a number of students and alumni contacted us inquiring as to what sustainability is or what it means. Thus, a learning component entered into the contest, providing an unexpected holistic benefit to the process.

In the past year, RIT's Golisano Institute of Sustainability was created to apply a sustainable systems approach to industrial optimization while addressing business economies, technology, ecological impacts, societal needs, material flow, and energy utilization. Recently, the RIT campus has taken steps to become more "green" by adding bike paths, encouraging carpooling, constructing a LEED-certified building, conserving energy, intensifying recycling efforts, and composting dining hall vegetable scraps. Given RIT's commitment to sustainable practices, we wanted to hear from students and alumni about their ideas.

Anthology submissions came from Washington State, Minnesota, Illinois, North Carolina, New York State, and the Ukraine in the form of poetry, creative prose, scholarly works, creative nonfiction, and images. After reading and viewing the submissions based on sustainability, I believe there is hope for our Earth given the many excellent ideas and thoughts, and most of all, feeling the mindset of caring for our now-and-future planet.

*Marianne A. Buehler*  
RIT Libraries



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Winner:  
Best Theme Interpretation

Sustainable Tree

*Sustainability can come in the form of James who owns a car that rides on hydrogen or solar power that takes him to and from work everyday. Sustainability could come in the form of Jan who runs a web-development agency entirely off of energy efficient alternative fuel run servers. Or maybe it's Erik who decided to take up gardening to reduce his carbon footprint. Sustainability is partly Claire who is everyday brings a mug to her local coffee shop where she goes to write her novel. Sustainability is Ryan, who has now wears more sweaters in the winter rather than turning the heat up to beat the chill. Up late night is Sazzad studying electrical engineering and learning how to make a circuit more efficient this too is sustainability. How about Tony who did several audits on his home to check for energy efficiency? That too is helping with sustainability. Sustainability is even Lauren who goes out to shovel the snow and rake leaves, she gets a smile knowing she isn't using a gas powered snow blower or leaf blower. Brandon enjoys going to the farmers market every Saturday in the name of a healthier diet and a healthier planet. Jeff is not known for being an extremely green person but he still knows in the back of his mind that his biking to work is not only a healthy way to move, but is also helps the world be more sustainable. Sustainability is in all sorts of forms from Arielle who always finds a good re-use for her scraps from working in the shop to Sam who wrote a software to force printers to print dual sided so that in some small way he saves some trees. But sustainability is so much more than that and could be even more. Sustainability isn't a lifestyle or concept, it's an idea. An idea that we morally should do our part to help this planet be there and in just as wonderful of a condition as we have it today if not better. It doesn't take much but every little bit to help reduce our carbon emissions helps. People often debate the validity of the concept of sustainability, whether it is something we really should be concerned about, but when you look at the base of the word, sustainable and what it means, there is no reason we would want a planet that is anything but sustainable. It is for this reason alone that we must all do our part to help keep lower carbon emissions and keep the planet not only safe for us but for many many many future generations. Sure it might be a little extra work now, but a little extra work today for the good of tomorrow is a concept that is rarely found these days living in worlds of instant gratification. And of course as time and innovation beings happening, these inconveniences will quickly disperse. But it takes collaboration, if any one member of the aforementioned people were to be performing their task it would simply not be enough to call the world sustainable, we need global support and aid in making a sustainable world a reality. It is only through collaboration and innovation that we can truly find a way to create and live in a sustainable world.*

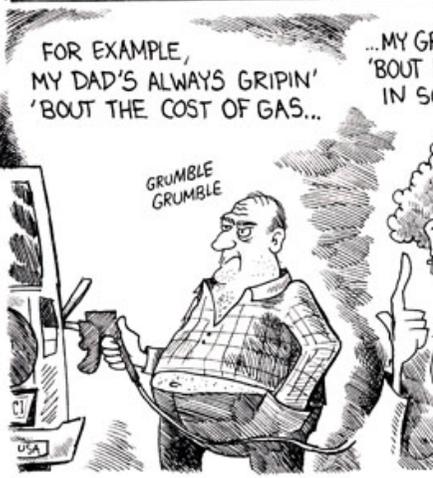
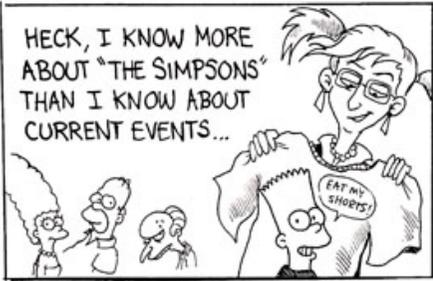
*Matthew Gordon*

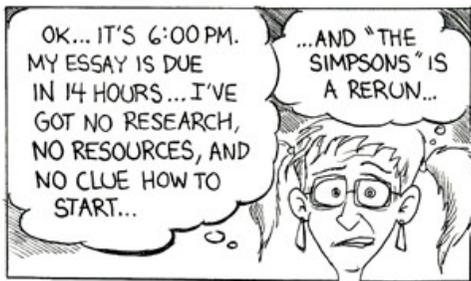
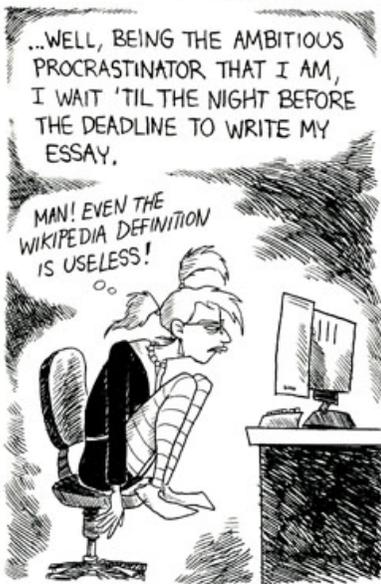
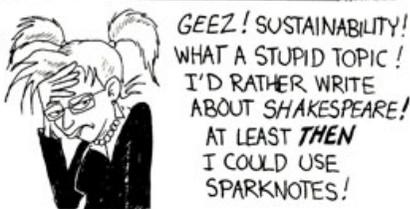
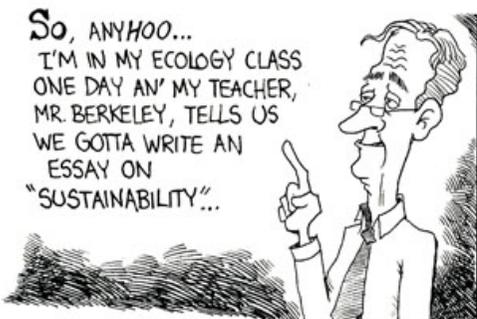
Information Technology / GCCIS



Winner:  
Most Innovative

An Essay, a Bullfrog, 'n Me. A SHORT STORY BY KORY MERRITT





BEHIND MY HOUSE IS A SWAMPY, BRAMBLY FOREST. THIS IS WHERE I GO WHEN I WANT TO REGAIN MY SANITY.



THE AUTUMN AIR IS BRISK AND REFRESHING. THE RUSTLE OF THE DYING LEAVES SOOTHES MY FRAZZLED MIND.



SITTING DOWN ON MY FAVORITE BOULDER, I STARE INTO THE MURKY BOG AND TAKE SOME DEEP BREATHS.

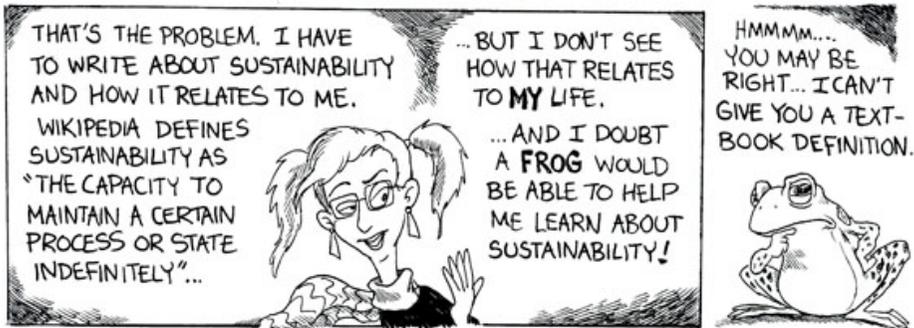


BUT EVEN NOW IT'S HARD NOT TO THINK ABOUT THAT ESSAY. MY HEAD IN MY HANDS, I TRY TO COME UP WITH A SOLUTION.

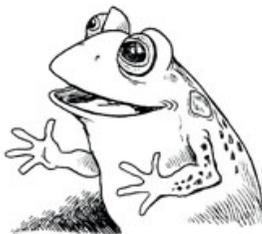


...AND THEN I HEAR A VOICE...





... BUT I **CAN** TELL YOU AN OLD SWAMP LEGEND THAT MAY HELP YOU FORM SOME THOUGHTS...



LONG AGO THERE WAS A POND...



...IN THIS POND LIVED MANY AMPHIBIANS... FROGS, TOADS, SALAMANDERS, and NEWTS...

THIS POND WAS RICH WITH RESOURCES. THERE WAS PLENTY OF WATER TO SWIM IN, INSECTS TO EAT, AND LILY PADS TO SIT ON. THE AMPHIBIANS LIVED HAPPILY.

...AND BECAUSE OF THEIR WEALTH, THE AMPHIBIANS LIVED LONG AND HAD MANY OFFSPRING. THE POPULATIONS OF EACH AMPHIBIAN SPECIES BOOMED.



BUT AS THE POPULATIONS GREW, PROBLEMS STARTED TO SURFACE. DISPUTES OVER FOOD AND SPACE BECAME COMMON.



THESE FIGHTS LED TO HOSTILITY BETWEEN THE SPECIES. FROGS BICKERED WITH TOADS OVER LILY PAD RIGHTS. SALAMANDERS QUARRELED WITH NEWTS OVER INSECT LARVAE RESERVES.



TO PROTECT THEIR RESOURCES, THE AMPHIBIAN SPECIES DIVIDED THE POND INTO SEPERATE TERRITORIES.



... BUT THE HOSTILITY DID NOT END. THE POPULATIONS OF EACH SPECIES JUST KEPT GETTING BIGGER AND BIGGER.

...AND **VIOLENCE** BROKE OUT! FROGS INVADDED TOAD TERRITORY TO STEAL SOME TASTY MAYFLIES. TOADS ATTACKED THE NEWTS SO THEY COULD EXPAND THEIR SWIMMING SPACE. IT WASN'T PRETTY!

THE ONCE BEAUTIFUL POND SUFFERED. WITH SO MANY AMPHIBIANS RUTHLESSLY EXPLOITING THE FOOD, WATER, AND SPACE, RESOURCES STARTED TO DWINDLE. FIGHTS BETWEEN SPECIES AND EXCESSIVE WASTE CAUSED SECTIONS OF THE POND TO DETERIORATE.



**FINALLY**, THE **GREAT BUFO**, THE WISEST CREATURE IN THE LAND, APPEARED AT THE POND...



THE **GREAT BUFO** TOLD THE AMPHIBIANS THAT IN ORDER TO SAVE THEIR POND, THEIR FAMILIES, AND THEMSELVES, THEY **HAD** TO STOP FIGHTING AND LEARN TO COEXIST.



ACTING ON THE GREAT BUFO'S ADVICE, THE AMPHIBIANS STOPPED BATTLING AND TRIED THEIR BEST TO SHARE AND PRESERVE THE REMAINING RESOURCES.



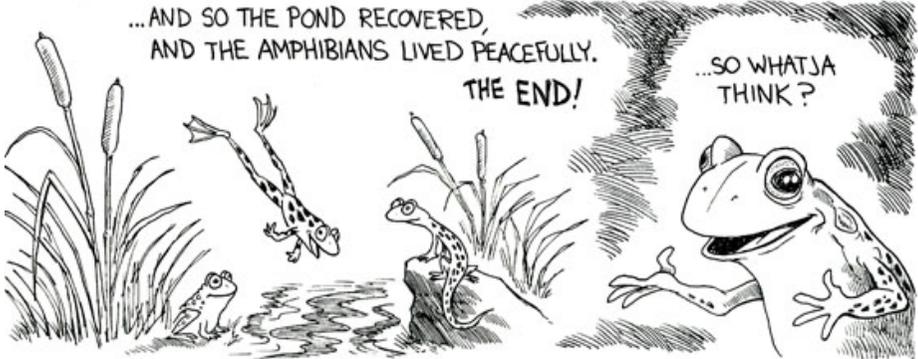
OF COURSE, THIS REQUIRED MAKING SOME SACRIFICES — SOMETHING THE AMPHIBIANS WERE NOT USED TO DOING. FOOD HAD TO BE RATIONED... SWIMMING AREAS AND LILY PADS HAD TO BE SHARED.



BUT SLOWLY THINGS STARTED TO GET BETTER. WITHOUT THE GORGING AND HORDING, FOOD BECAME MORE PLENTIFUL AS THE INSECT STOCKS RECOVERED... AND THE AMPHIBIANS FOUND THAT IT WAS EASIER TO SHARE SWIMMING SPACE THAN TO FIGHT OVER IT. WITH ALL OF THE CAREFUL PLANNING AND COMMITMENT, THE QUALITY OF LIFE IMPROVED.



...AND SO THE POND RECOVERED,  
AND THE AMPHIBIANS LIVED PEACEFULLY.  
THE END!



UHHH... THAT WAS... UM... AN **INTERESTING** STORY... BUT WHAT DOES IT HAVE TO DO WITH MY ESSAY?



WELL, MAYBE NOTHING...

BUT NOTICE HOW THE POND COULD ONLY **SUSTAIN** THE AMPHIBIANS WHEN THEY BEGAN TO WORK TOGETHER AND PLAN AHEAD.



LIKE THE POND, THE REAL WORLD HAS PLENTY OF PROBLEMS... THERE'S WAR, POVERTY, and ENVIRONMENTAL ISSUES.



...BUT IF EVERYONE STARTED TO SEE THE WORLD AS A WHOLE INSTEAD OF FOCUSING SOLELY ON THEIR OWN LIVES, I THINK THINGS WOULD IMPROVE.



PEOPLE WOULD MAKE SMALL SACRIFICES TO HELP END THESE PROBLEMS.



...GRADUALLY, THE WORLD WOULD BE A BETTER PLACE FOR PRESENT AND FUTURE GENERATIONS... **WE** SUSTAIN THE EARTH AS IT SUSTAINS **US!**



Y'SEE?

BY NOW IT WAS GETTING DARK,  
SO I THANKED THE FROG  
AND HURRIED HOME...



I'M NOT SURE IF THAT OL' FROG  
KNEW WHAT HE WAS TALKING  
ABOUT, BUT HIS  
STORY DID GET  
MY THOUGHTS  
FLOWING.



I CENTERED MY ESSAY ON  
HOW I WOULD PERSONALLY  
TRY TO MAKE THE WORLD A  
MORE SUSTAINABLE PLACE...



"USE LESS GAS BY CARPOOLING WITH  
FRIENDS... BE RESPECTFUL OF OTHER  
CULTURES... SAVE WATER BY TAKING  
SHORTER SHOWERS..."



WELL, I DON'T KNOW  
WHAT SORTA GRADE  
I'LL GET ON THIS ESSAY...



...HOWEVER, I **DO** KNOW THAT I'LL TRULY TRY  
TO MAKE THESE CHANGES IN MY LIFE.  
IT'S NOT MUCH, BUT AT LEAST IT'S A STEP...  
A STEP TOWARD SUSTAINABILITY... AND A  
BETTER WORLD FOR PEOPLE EVERYWHERE...



...AND  
FROGS.



*Kory Merritt*  
Design / CIAS



**Winner:**  
**Most Persuasive**

Haunting Sky Glow

Funny how there are no stars tonight,  
Just a strange glow of colorful light.  
I lie on this sturdy bench on the quarter mile,  
Hoping for inspiration in this world of denial.  
But all I see is a blank emptiness.  
The moon shines in an effort to heighten my dreaming,  
But I need stars to connect my mind's scattered feeling.

Maybe missing constellations are a sign of another crime.  
Human made pollution affecting scenery of a starry nighttime.  
While visions of global crises are constantly pondered,  
Like melting ice, losing trees, and wondering levels of seas,  
I still wonder why this sky now looks so much darker to me.  
We have no North Star to follow because of ominous glowing.  
This light pollution is destroying another beauty from showing.

The stars cannot be seen anymore, making the sky look obscure.  
We know that turning off harmful lights is the only cure.  
With so many problems that many people do not see-  
We don't live in the arctic or jungles or polluted seas.  
So some do not understand the problem facing sustainability.  
When all they really need to do is look up to see our vulnerability.

Lacking a connection to the cosmos is a problem we all face,  
Because the night sky is shared by the entire human race.  
It might seem minimal that the stars are not shining,  
But I see it as their rejection of current human living.  
We have the knowledge for environmentally friendly capability  
And until we accept that, the sky will give us no more stability.

Even if you and I can adapt to sky glow,  
There are young children, who will never know,  
The comfort of seeing stars high in the sky-  
Giving them a mark to set their dreams by.  
Animals are affected by our mistakes of light pollution.  
It is sad to admit this troubling evolution.  
We need to change our lives in order for resolution.

I want to look up and see the familiar stars I used to know by name.  
Because it has been far too long since I have seen them.  
We want to make a difference in global warming but where to start-  
I suggest we begin here and work towards the greater good.  
This is a problem we can solve which will give us light,  
To solve other problems and make the world right.

*Michelle DeFino*  
Graphic Media Marketing / SCB

## Living Fossil

The ginkgo  
Is an ancient of the Earth.  
Two hundred seventy million  
Years ago, its ancestors,  
Now pressed into fossils,  
Waved their fanned leaves.  
Still they grow, on through history  
Quietly, perpetually,  
Generation to generation,  
Seed to seed, one notched leaf  
After another.

In Hiroshima,  
We burned shadows onto walls  
Lit birds aflame midair,  
Vaporized thousands instantly.  
Then the firestorm raged  
And the black rain fell,  
Killing fish in ponds and rivers,  
And then the thirsty people.

A mile away,  
Next to temple ruins:  
A ginkgo tree budding.  
Three others survive:  
One bent, almost toppled  
Scorched and scarred  
But standing, living, growing  
To this day, bearing hope:  
That we have all changed  
That we will stop putting holes  
In the ozone, in the earth, in each other  
That our understanding, too, has evolved  
And we will embrace the future  
With the thousand-year arms  
Of a ginkgo.

*Whitney Gratten*  
RIT Alumna



## I Am Now the Present, But I Will be the Past

I know what I want, what I need.  
I know that what I want is too much.  
I know that what I need is enough.

I know there is too much for me alone,  
but not enough for the rest of the throng.

So I take only what I need,  
and only enough of it,  
so that when they come,  
there is enough.

And if I take one out, I make sure there is another put back in  
for there cannot be growth without life, and there cannot be life without seeds.

Like this, my day moves on:  
taking out, putting back in,  
and only taking what I need,  
so that when the hands run 'round and 'round,  
and I exist no more in these grounds,  
from the clouds I will watch and say:

Good job Past, you let the Future stay.

*Marion Paredes Pages*  
Industrial & Systems Engineering / KGCOE



## Sustainability in a Creative Career

As I write this, I look at the mountains. They are bluish-silver. Each day and each hour the colors change, along with the texture of the light. It has been twenty-six days, so far. I am living and working on a ranch in Grand Teton National Park. The work is basic, the opportunities vast. Last week on our way back from a float trip, the guide asked, “You ever expect to be out on a ranch in Wyoming?” For both of us, the answer was no. But our paths, like those of countless other employees who have come and gone since the ranch first opened in 1925, have demonstrated the same simple yet complex story.

We are drawn by what friends have said, a craving for new experiences, the search for a little adventure. For me, ranch life has been a welcome if unexpected twist. It adds to the experience of Berkeley, where I would bike to the marina, spend hour upon hour alone with the Pacific. It contrasts with Brooklyn, where my partner and I developed a ritual out of cheap iced coffee, Polish danishes, our biweekly fix of Thai. Both were beautiful, if precarious, situations. Each could be woven into almost any sort of career.

But when the probable security of a traditional career is abandoned, a box of dreams and options is opened. This can be intimidating. As an undergraduate, I struggled to articulate a plan that did not correlate with the ones show-cased around me. The choice between Fine Arts, Illustration, or Medical Illustration was weighted with undue importance. I sought out professors, who in their kindness, offered bits and pieces of their own life stories. Yet upon graduation, I remained uncertain how to move forward. In retrospect, I am certain that this struggle was not unique. Whether an artist’s goals are commercial or humanitarian, the process of achieving them is not easily delineated. It requires a practical context.

It is in this context that sustainability is found. The details will always vary widely from one career to the next. This is not to say they are unimportant – but they depend on outward circumstances and inward decisions. Each artist must move forward as he or she sees fit. This often requires a high degree of trust in the abstract, a willingness to live with uncertainty. But the artist can continue to take educated guesses. Eventually these guesses will inform one another, to reveal patterns of success. It does take work. It takes a confidence to believe it is worthwhile to persevere. Then the resultant path will be much more rewarding than one summed up by any single title.

*Bennie McLaughlin*  
RIT Alumna



## Sustainability is the Future

It is late morning. My hair is lifted by the wind while the car moves along a curvy road on campus. I look out the passenger side window to take in the beauty. There is nothing but trees, flowers and grass beyond the asphalt. I turn back to face the road ahead. Suddenly, I see something tan walking out of the bushes. I slowly adjust my vision, realizing what it is. I quickly yell out “Deer!” and the car stops slowly. Right in front of us, an adult doe crosses while its three fawns follow behind.

Deer have been on campus and interacting with people for decades. Until recently, more of them have been sighted during hours when they are inactive. One of the main reasons this is happening is because of the development of Park Point. This expansion of new housing has caused the deer to be temporarily displaced, so they have moved into campus or elsewhere. Although it has not caused many problems, this calls to question RIT’s impact on the environment. In order to understand this, we need to answer the following questions: What was the nature of RIT’s land before all human impact? How did RIT’s initial expansion affect the environment? What are some present day issues RIT has been dealing with that impact the environment? What is sustainability, and why is RIT making strides for it? And what does RIT have in mind for the future of the institution with regards to sustainability, locally as well as globally? There is not one answer for this complex subject, but responding to these numerous questions will help us understand RIT’s environmental path in the past, present and future.

Before anyone settled on RIT’s property, it was considered to be wetlands. There is not an agreed upon definition of what a wetland is, but generally it is considered land that contains both dry and saturated soil. According to *Applied Wetlands Science and Technology*, by Donald M. Kent, wetlands are delicate systems that are important ecosystems. They provide numerous services such as a habitat for wildlife, trapping of inorganic and organic chemicals, and altering flood flow. Many of the wildlife that live in wetlands are aquatic as well as land animals. They support aquatic life through surface waters throughout the year and the land itself offers residence for endangered species depending on the type of wetland it is. One of the most important reasons wetlands exist is because they are nature’s way of filtering. Inorganic and organic chemicals such as nitrogen, phosphorus, carbon, sulfur and iron, enter the wetland area through different means, whether precipitation or ground water or even carbon fixation from plants and bacteria. The chemicals are then exported through burial in sediment, outflow to ground water, or release in their gaseous forms. This traps many of the chemicals in the soil. Wetlands are also useful in reducing downstream peak flows through absorption in soil,

plants and debris, which helps with coastal flooding when storms hit (57-9). As for RIT's wetlands, after settlers came, they converted most of the land to farming but left large areas untouched (Korfmacher). The new Henrietta campus of Rochester Institute of Technology was completed by 1968, but the Institute had to overcome many obstacles. In the book, *Rochester Institute of Technology*, it discusses the history of the school from its conception to the present day. The original campus was located in the heart of downtown Rochester, occupying 100 acres when it was bought in 1803. By 1959, RIT was in a dilemma. The state authorities wanted to demolish the Eastman building along with others in order to build a link to the inner loop of the New York State Thruway. This prompted the school to find new ways to recover, such as expanding the campus to other parts of Rochester or relocating. The Institute also had to factor in the growing number of students, which meant more buildings and parking spaces. The final factor to this decision was an endowment from Mrs. Grace Watson of over 3.27 million dollars, which convinced board members to move the school. With the help of Emil Muller, an alumnus, RIT purchased the 1,300 acres of land in Henrietta. Construction began in 1964. The school only took up a small proportion of the large tract of land they had bought and it was constructed on the high grounds to save the Institute from flooding. At the end, some of the residential side of RIT, apartments, and the academic buildings (Booth and Gannett, George Eastman, Liberal Arts, Wallace Library, Gosnell, Gleason and computer engineering) were built. By the time the school was fully completed, the impact on the environment was not drastic. It was built on the original farmland and conserved most of the wetland areas that were not developed (Gordon 246-256).

Presently, RIT has expanded from what it once was. The Institute has added more buildings to housing as well as the academic areas and is continuing to do so with the additions of Global Village and the Student/Administrative Services Center. In 2007, however, construction began on the project College Town, now known as Park Point, which ran into problems that dealt with the wetlands. According to Karl Korfmacher, an associate professor of environmental science, this 60-acre site, located at the corner of John Street and Jefferson Road, was sold to Wiljeff LLC/Wilmorite for the development of commercial and residential structures. However, since the site being built on was considered wetlands, RIT and Wilmorite ran into problems. There are strict laws that are enforced when development happens on wetlands. In order to build structures, the state or whoever is in charge must offset the lost wetlands. Essentially, when wetlands are lost in a certain area, they need to be rebuilt somewhere else and they have to be bigger. Here in the situation of Park Point, the state did not have the wetlands mapped on campus, but the federal government did. In order to solve this problem, RIT used the wetlands

map made by a hired private consultant. The Department of Environmental Conservation then used this map to determine where Park Point was able to be built. About six acres of wetlands were lost to the development of Park Point and it was only allowed to be built along the edges of the property. To offset the wetland loss, RIT agreed to build new wetlands south of campus. For every one acre that was lost, the Institute built three acres at the end totaling up to 18 new acres. The only environmental problem this situation faced was the fact that destroying wetlands created changes in the land and hydrology, but through offsetting it, the water in the soil is gained in other areas. By doing so, this caused minimal change to the wetlands, due to RIT's dedication to the environment.

As the school has been expanding, it is taking the environment into consideration. As a result, RIT is making strides for sustainability. However, what is sustainability exactly? It is defined as meeting the needs of the present without compromising the needs of future generations. This idea, however, is not new for this institution. For example, RIT took many steps to conserve energy during the '90s by switching to fluorescent lighting, installing motion sensors to shut off lights and even had a hydrogen fuel cell to power the microelectronics building (Keniry 65-7). These changes were mainly motivated by economic reasons, however, inadvertently the school was contributing to sustainability. Now, presently, RIT is readapting this idea of conservation and is educating, practicing and inventing new ways to better the environment and ourselves.

One of the main ways RIT is striving for sustainability is through education. Recently, the Golisano Institute for Sustainability was granted the green light to proceed with the world's first doctoral program in sustainability. This is a huge step towards the environmental revolution that is happening now. According to the Golisano Institute for Sustainability website, the program will comprise students focusing on remanufacturing, sustainable production, mobility, and technology. In remanufacturing, students will learn how to develop, test and implement ways that are efficient and cost effective to clean and repair a product. They also learn how to produce product designs that have very little negative impact on the environment. In sustainable production, students learn how produce products and systems that are efficient and have minimal environment impact. By learning this, students can assist companies to maximize product reuse and remanufacturing. In sustainable mobility, students learn the alternative energy sources to fuel cars and other transportations. They study the emerging fuel technologies and their applications so they can understand how they work and use that information to create a cleaner future. Lastly in sustainable technology, students learn how to develop technology that lasts a long time as well as modernizing large equipment systems. Not only does RIT have this program in sustainability, it also has Master's and Undergraduate programs also oriented to this subject.

Along with education, the Institute has been practicing sustainability through construction of LEED certified buildings, renovating old ones, implementing recycling programs, and changing old systems. LEED stands for Leadership in Energy and Environmental Standards and is a set of guidelines that certifies a building to be environmentally sustainable. It is a voluntary program based on a points system. At the end of accumulating a certain amount of points, a building is certified with either a bronze, silver, gold or platinum. Currently, RIT's CAST building has a gold LEED certification and while, in the coming months, the new Golisano Institute for Sustainability structure will be striving for platinum. As for the existing buildings, they are being renovated with energy efficient lights, better heating and cooling systems and water conservancy (RIT Green).

Not only does constructing these energy efficient and greener buildings add to sustainability in RIT, but it is trying its best to promote recycling and reusing. Within the past year, the school has increased accessibility of recycling bins all around campus as well as the apartments and changing container materials to biodegradable in the Ritz. These biodegradable materials are made from corn, and unlike plastic, these items are composted under certain conditions instead of staying in landfills forever (RIT Green). RIT has also teamed up with the club SEAL (Student Environmental Action League) to raise awareness and encourage students to start recycling through programs and events. According to one of the SEAL members, Heather, some of the big recycling events that happen are Recyclemania, E-waste Recycling Day and Project Runway. Recyclemania is a nationwide competition between colleges and universities to attain the highest reuse and recycle results in their own community. E-waste Day is an event held a few times a year where the facilities management services and SEAL accept old electronic equipment from students to prevent them ending up in landfills. The Project Runway event is a little different from the others. Instead of recycling materials, Project Runway's goal is to see how creative students are to make clothes out of used materials, cloth not included. These recycled fashions are then presented in a runway type of event.

One of the most noticeable ways RIT is contributing to sustainability is changing many old systems, from food to housing. Students who walk into Gracie's this year will see one less item, food trays. RIT is joining many other colleges and universities that are eliminating food trays this year. With this initiative, the school is hoping that students will be able to choose how much food they take to reduce waste. It also saves time, energy and water because there would be no more food trays to wash. According to the RIT Green website, another system that is being renovated is the heating system on the residence side. [This project will expand for two years] replacing the

40-year-old system with more efficient boilers, controls and pumps. When this is completed, it will reduce boiler emissions and gas consumption. Other systems that are being changed are the conversion of using cleaning chemical products to greener products, replacing gasoline powered vehicles on campus with diesel or electric fueled ones and adding more bus services to reduce car usage on campus.

As for the future, RIT's goal with sustainability is to be a local and global leader. Locally, the school will be changing and upgrading to newer and cleaner technology as it becomes available. Globally, RIT will be developing and evolving technology to a greener future. The Institute hopes to create automobiles that run independently from oil and power sources that use hydrogen or other renewable energy. Through educating students in the new PhD program and putting research into these topics, RIT will be able to put themselves on the map as the sustainability leader (Golisano Institute for Sustainability).

RIT's impact on the environment has been changing ever since its beginning when it decided to develop on this property. Some of these impacts have been negative, like expanding to build on the wetlands. On the other hand, a lot of the impact RIT is doing now is having a positive impact on the environment. Building new wetlands to offset the destroyed ones is a win-win situation. Through upgrading the old facilities and buildings, RIT is able to save money as well as reduce energy usage. Lastly, with research and experimentation, RIT will be able to develop new ways to help people contribute substantially through independence of oil to achieve what sustainability really is: to meet the needs of the present without compromising future generations.

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## Running On Empty

As the engine sputtered to life following an hour of pulling the start cord, and adjusting valves, my friends and I leapt into the air yelling victoriously. We did it! We had made the engine run on wood chips. This was one of the biggest achievements in my life. After a year of research, cutting, and welding, two of my friends and I had got an engine running on woodgas.

The engine was mounted on a small cart, with two twelve inch steel cylinders behind it, the gasifier and filter. A hopper at the top of the gasifier was filled with woodchips that funneled down into a very hot bed of burning chips. In the absence of oxygen, the chips released a combustible gas which was filtered, and used as fuel for the internal combustion engine. The technology was not new, but rather a resurfacing of a century-old technology that was essentially lost after the Second World War when gasoline was too cheap to justify the inconvenience of wood fuel. Still, this was a major accomplishment for us young teenagers who saw it as an alternative to the oil we pay over \$3.00 a gallon for at the pump.

It all started when talking about alternative energy with an old neighbor. He told me about the woodgas generators and vehicles that he drove and operated during World War II in Paraguay. We did a bit of research on this wood fuel online, and decided to see if we could build a woodgas powered engine.

After failing to coax even a combustible gas out of our first trial gasifier, made of a few coffee cans, we spent weeks building a larger gasifier to run a 3 hp pump engine from my garage, using plans that we got online. After several trials with multiple types of wood, we finally produced a combustible gas that would burn as a large flame at the end of the steel pipe we used for starting it up - but we still couldn't get the engine to run. After weeks of modification work and engine rebuilding, we tried yet another batch of chips and finally, it ran. I was so excited, that I knocked off one of my friend's glasses and broke them in my excitement. That evening, my friends and I pulled off yet another successful trial run, showing off our woodgas engine to our parents, who had been quite skeptical of the entire project.

Since that eventful day, we spent another year building and tuning an even larger gasifier, this time in the bed of an old beat up pickup truck. After failing to make a successful run again and again, and making extensive changes to our system, the truck finally ran. Even then, it needed additional work to make it run consistently and gain power, until we were finally satisfied that it ran as well as we could get it.

While working on this project, my friends and I gained a wealth of knowledge about engines, wood, chemistry, and metal fabrication. The feeling of satisfaction in having persevered through multiple failures and years of

hard work to produce a finished product we could be proud of made the whole project worth the effort.

Sustainability is not just some abstract conceptual agenda pushed by liberal lobbyists; sustainability is an attitude, a mindset, a way of life that sooner or later we will all have to live by. This is not a depressing thought, but as my friends and I found out, it is an exciting opportunity to experiment and explore unconventional possibilities.

*Glen Kleinsasser*

Engineering Technology / CAST

## Saving Cake

With icing of every hue,  
There was but one cake,  
And everyone wants some.  
There was enough for you,  
And there should be for lives to come.

But change may daily disappear,  
All things go toward the crumbs.  
Repayment for what can no longer be bought,  
The less it's here,  
The more it will be sought.

Once crisis shows its ugly might,  
The world can't rise beneath the weight,  
Of preserving many lives,  
No time nor coin to set things right,  
Too late, everybody's straining just to survive.

How much can you take?  
When it's your turn to cut,  
Why should you care?  
Life is short, but it's yours to break.  
Take as much as you dare,

So the next time, when you hear,  
"Daddy, can I have a piece?"  
Don't cry and say,  
"Sorry, dear,  
But we'll all die in ten years anyway."

*Catherine Fhecu*  
Computer Science / GCCIS



# Colony Collapse Disorder



*Stephanie Haas*  
Photographic Arts & Sciences / CIAS



## Don't Give Up, Sustain!

### Philosophy

Human, “don't give up your planet.” We can achieve the promise of sustainability ---

As I think of planet earth, I am reminded of a photo that an astronaut took of a small beautiful blue and white sphere in a sea of blackness. I bought a copy of that photo when I visited the space centers. As I looked at the photo, I thought... this is it... this is where I live... it is beautiful, fragile and alone in a vastness. This was my reminder to try to better understand the ecosystem complexities of earth and humankind and to help better direct my own daily decisions. Perhaps, that beautiful photo is a reminder to all of us, of our personal and collective responsibility to take care of our home, Earth.

Each of us may have different interpretations of the meaning of sustainability. Indeed, in consulting other people on the topic, many areas of interest were mentioned, such as knowledge, religion and humanity. If we put this theme in the context of the planet Earth, the very source of humanity's sustained existence, we begin to realize the need to protect earth as a primary goal of humankind. If our primary goal is to protect our planet, we must continue to aggressively study our planet with sophisticated technical resources and expert, rigorous scientific talent. Sustainability must be a global and universal effort... to better understand our planet so that humankind will survive on earth for generations to come.

Humans really need to assess the often-intangible things we truly value in life. As a species in search of harmonization and sustainability as well as personal happiness, we need a paradigm shift in our priorities. A paradigm shift can be interpreted as a major philosophical change. However, the major change may consist of many small changes. For example: we cannot enjoy our life if we are sick. We know illness brings unhappiness to us personally and to those around us. We will consider what makes and keeps us physically and mentally well and strong.

This may vary from individual to individual, however, some criteria are basic to all. Breathing clean air, drinking pure water, eating fresh food (fruits and vegetables), having time to relax with family and friends, exercising in natural surroundings such as our state and national parks, getting enough sleep, freedom of spiritual choice... all of these things will keep humans healthy.

Humanity's good health and therefore our collective happiness depends greatly on the health of our planet's resources, such as clean air and

clean water and having a climate that is conducive to our agricultural food production to sustain our global population. Clean air, clean water, food production, clean safe energy production, all of these things are important to a healthy human population. All of these sound basic. However, as we progress into the future we continuously learn just how complex these “basic things” really are.

## **Historic Example and Current Example**

In the past, and even now we have taken a lot for granted... almost like when we were 18-years-old and felt we were invincible... now we are beginning to mature, now we are beginning to comprehend; humans must move in the direction of greatly developing our understanding and our research into the ecosystem complexities of earth and humankind. Humanity must develop a new focus on our basic needs to sustain our collective good health. Good health and longevity are basic criterion of general positive human sustainability.

So, “What is the promise of sustainability?” you ask. Human sustainability is nothing less than human survival. Our promise to future generations is to avoid going in the same direction as our predecessors the dinosaurs. How does humanity survive? We do that by making it our collective and individual goal.

Can we look back to history to give us some clues and examples of humanity’s survival struggles in the past? Yes. One survival example is the terrible ecological disaster and resulting human suffering that occurred in the 1930s, commonly referred to as the “Dust Bowl” years. Years and years of human suffering... wave after wave of immense amounts of top soil blown into gigantic black dirt clouds stretching completely across the plains of the United States from Texas through Iowa... as high as 30,000 feet... completely blocking out the sunlight... an ecological nightmare that drove people to run for shelter underground. Finally the winds literally carried the airborne dust to Washington DC. At the time a man named, Mr. Hugh Hammond Bennett, was speaking to Congress to implore the federal government to take action. Just as he was ending his speech the dust from the worst and blackest dust storm, “Black Sunday,” arrived in Washington DC. “Gentlemen, look out the windows” he said, as day turned to night as a result of this ecological disaster. Two weeks later the Soil Conservation Service, now called the Natural Resources Conservation Service, was formed as a part of the Department of Agriculture. Mr. Hugh Bennett was not the only citizen that was concerned about this disaster. There were many people, photographers, writers, conservationists, scholars, farmers, religious leaders and more.

What was done? First: understanding what actually happened, second: a new way of thinking about farming and about soil conservation (paradigm

shift)... third: a plan or strategy to correct the damage (cumulative small steps)... fourth: mobilization and implementation of the plan (teach everyone the new ideas and enlist everyone's help)... fifth: work hard to make the improvements... have patience... and don't give up.

Step by step solution:

1. What actually happened? Prairie grasslands held the soil in place. People removed the grasslands by deep plowing and exposed the soil to the winds. Extended drought resulted in dead crops. With no plants to hold the soil, the winds took the soil into the air.
2. New way of thinking: Understand causes of soil erosion. Soil conservation was made a goal and a top priority by the government.
3. The Soil Conservation Service recommended a number of steps to implement: such as planting a huge belt of trees from Canada to Abilene, Texas to hold the soil and block the wind. "Contour farming," a new way of tilling the soil, crop rotation, "terracing," "strip farming" and further developing the science of "cloud seeding" to bring more rain for the crops.
4. Teaching the people and food producers (farmers) the new methods, paying farmers to use the methods and mobilizing the people to plant the trees and implement the programs to restore the farmland to produce the food we need with a better understanding of our ecosystems.

We may consider... "The Dust Bowl was pretty horrible... but that situation really isn't happening now." Unfortunately, these lessons were not learned in our global community and are happening today in northwestern China. A wasteland is again being created due to lack of human understanding. The more technical term for this human-made disaster is "desertification." "In the northwest, where the biggest problems lie, desertification has escalated from 1,550 sq km annually in the 1970s to 2,100-2,400 sq km in the 1990s. According to many environmentalists, Beijing has been largely content to issue proclamations about student-supported tree-planting rather than tackle complex land and soil issues" (<http://www.gluckman.com/ChinaDesert.html>), as was done by United States President Franklin D. Roosevelt in the 1930s. More recently, villagers in China have been drafted into China's new "green army" of tree-planters. "We'll plant trees every day for five years," a villager states. Environmentalists in China, say Beijing is really missing the big picture. Land and water use, grasslands and forests, desert and climate changes are all interconnected.

## **Solutions**

Humans always want to jump to the solutions right away... but before anyone can determine solutions, scientists, engineers and others need to research and systematically understand the complex problems humans are currently facing. Chinese Premier Wen Jiabao is correct in stating, "Science must take the lead role in economic development." Wen Jiabao's plan for development includes four goals: 1. people come first 2. integration of social, economic, political and cultural development 3. resolution of wealth, regional and urban-rural disparities 4. achievement of sustainable development.

On global warming, Wen Jiabao states the government must play its part by restricting high-energy-consuming and heavily polluting enterprises. Scientists have an important role to play in bringing countries together because of their cooperation in the common pursuit of the truth through facts.

## **Language Barriers**

Since human impact on the ecosystem is really a global issue, solutions need to be communicated in different languages. For example: American soil erosion research in English could be translated into Chinese and shared with the Chinese people and local farmers. New Chinese research can be translated into English and shared with American people and farmers. Experts in the science of soil conservation from China and the US will have the freedom to cooperate with other countries and share historical knowledge as well as new scientific ideas. This strategy of positive cooperation and language translations will also yield new and more productive jobs for both countries that follow the new human philosophy of healthy local and global ecosystems, which in turn yields a healthy population and sustainable future for all humans.

## **Economics**

Humans have learned that human use of natural resources is not free. Clean up of human pollution of our local ecosystems is in fact very expensive. "Placing a true value on these types of goods, together with finding the optimal balance between ecosystem service use and pollution, has become the focus of such areas of study known as 'environmental economics' and 'ecological economics' ( Duraiappah para. 4). Environmental economists distinguish between the value people derive from directly (or indirectly) using a good or service, and the value derived from ensuring we have the option to use it later. A third distinction is the value gained from simply knowing that a resource – for example, an endangered species – exists (Duraiappah para. 5). Alternatively, ecological economists adopt a holistic approach that sees the human economy as embed-

ded within a broader natural system (Duraiappah para. 22). One criticism often heard of environmental economists is that their need for monetary analyses leads to a lack of appreciation of the physical limits to natural systems. However, there are many overlaps between the two disciplines, especially in the valuation strategies used” (Duraiappah para. 23). It is significant to note that both areas support “sustainable development.” Especially in developing nations, greater decision- making authority needs to be granted to environmental ministries to help achieve the sustainable developmental direction and philosophy humans need to survive. We know from experience that a decline in ecosystem services has a negative effect on human well-being. Yet, exponential population growth and an increasing demand for greater material wealth currently is exerting unprecedented pressures on the earth’s natural systems and the planet’s ability to support unbridled human ecosystem destruction. Environmental economics can help identify how people value ecosystem services and the true human costs of products that destroy and degrade the ecosystem.

### **“Green” Products For Sustainable Human Life**

What is the definition of a “green” product? There is no real qualification test for a product to pass and therefore qualify as a “green” product. What we currently have are numerous regulations to reduce certain specific areas of pollution that a product may emit, for example, exhaust emissions from an engine to control air pollution.

Recently, a new eco-standard is evolving termed “Cradle to Cradle.” These products are designed with “end-of-life” built into the design cycle. At the end of their life, they are taken apart and either turned into raw material for new products or returned to the earth as compost. Mr. William McDonough and Michael Braungart founded a company to assess and certify products, such as diapers that qualify as cradle-to-cradle products. Global product design and development cycle teams need to ask themselves... how “green” is this product? Specific assessment criteria need to be established to answer that question. The automotive companies are developing “green” transportation alternatives, but how “green” are they and what criteria did they pass to qualify as a “green” product? There is no answer, because there is no automotive standard or standards for assessment.

### **Prairie Grasses and Biodiversity**

Recent research has indicated a “bio-diverse” crop contains more energy than a “bio-mono” crop. By doing prescribed burns of specific prairie grass ecosystems university researchers can see the energy stored in those

systems. Prescribed burns are used to replicate the role of fire in prairie ecosystems. The Shakopee Mdewakanton Sioux Community in Minnesota is working on a program to restore native prairie grasses. The prairie grasses will feed the tribe's new biofuel energy plant, Koda Energy. Side benefits include original prairie birds, such as Bobolink and Eastern Meadow Lark have returned to the new prairie areas. The tribe is finding a sustainable solution for human energy needs.

China can also use this solution for the soil erosion problems they are currently battling. Grasses take root faster and spread faster to hold the soil in place. Once the grasses are ready, they can be carefully harvested in an eco-friendly manner and used as biofuel for new energy plants, thus solving a number of problems with one very well managed eco-solution.

## **Conclusion**

The challenge of human sustainability on this planet is so extensive; it truly should be able to employ many, many people from all areas of life from everywhere on our beautiful, fragile and precious planet. Fortunately America is blessed with another valuable resource... and that is the curiosity, creativity, innovation and caring nature of its human resource. Don't give up! Sustain.

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## What Does Global History Say About the Promise of Sustainability?

Imagine sliding through a thick fog. Little droplets of mist dissolve on your face as your eyes are enveloped in whiteness. A dark cliff suddenly juts from beneath you, and below, grey waters churn with frequent explosions of white foaming furies. You fall. Exactly one hundred and sixty-two meters below, two-fifths of the way before your body fractures from the impact of the sea, you disappear.

Somewhere else you materialize. You see a creature swaying up and down on a see-saw. At least, this is how your brain interprets it. In reality, there is only energy.

### Part 1: Primordialism and God

The creature is a small female with an unusually pronounced forehead and a small jaw. Her skin is rough and covered in unseemly hair. She does not wear clothes, and her language is rudimentary. She lolls around and takes what she needs: fruit and nuts from the trees, harvest from various vines, roots, and bushes. She eats bugs for the protein, fish if she's lucky enough to catch one with her bare hands. Her face is wrinkled and saggy, and her jaw does not work very well after years of hard wear. She is one and twenty.

A voice: "Where are you?"

Her guilt is betrayed by her mouth, which is stained with red pomegranate juice. Ashamed for taking what wasn't hers, she hides. She is naked before her conscience, and she cannot understand why, for the life of her, she took more than she needed though she was provided for on a young, virginal Earth—not the matronly Earth you are so familiar with, that bears the scars of the consuming humanity she birthed.

Unhappily, the voice expels her. The land is swept with flood and then drought; burning heat and freezing cold; the earth shakes, and volcanoes erupt in the distance. Terrified, the First Woman flees the once-utopian Africa.

For years, she struggles to survive in the wilderness. The once-young Earth has buckled under the strain of a single forbidden fruit. The soil is hard to till, wicked serpents strike her daughters, and the land is barren. There is no reassuring Voice in the sky, water, or earth.

Unexpectedly, the First Man is born. The little creature is frightfully rapacious, and the Women do not watch him as carefully, hoping that the strange "female" will somehow go away. He does, but another one quickly takes his place.

Astonishingly, the strange females keep coming. After a period of time from birthday, their inherent lack of femaleness is more obvious. They

are simply “male.” At this stage, the Women have almost crossed the Great Barrier that divides Africa from what will come to be the Fertile Crescent. In this arid land, each works tirelessly to extract as many resources as he or she can from the tired Earth while renewing what they can. But the Men insist on expanding. They can no longer bear watching their fellow humans starve. They decide to go big-game hunting.

Horror-stricken, the Women marvel at the waste the carcass produces. It is good food, but they cannot imagine taking so much at once. Who will replace the doe? They express the same reaction when the Men can no longer bear watching their fellow humans shiver from the cold and chop down aged trees. The Women find they can no longer gather food in the “cleared” areas.

The Women still carry the guilt of their ancestress, who overstepped the only boundary that existed; who, when given the spiritual choice to live as the Last Man would, in solipsism and absolute *safety*, chose to shove forward the wheel of human progress. Though the First Woman made freedom possible through the act of eating the forbidden fruit, she also condemned us to a state of consistent *endeavoring* towards perfection. Suffering is a prerequisite before one can move closer to unattainable perfection.

The Men comfort the Women. Improving our conditions is progress, they say, take what you need, and give it back when the rewards come. And so they replanted what they could, and they hunted when there were plenty of deer, and they did not hunt when the population seemed low.

The see-saw drifts up and down. The First Woman grows taller and lighter and less hairy. She sports a fashionably made skin and a necklace made from stones and teeth, whose ivory shades gleam against the brown hue of her skin. Her cranium expands, and she stretches her hand towards the Man who is now opposite her on the see-saw. They are Cro-Magnons.

Eden has been re-established. Men and women work in mobile communities to provide food, shelter, and safety. And despite the casualties of a pre-modern society, people are happy. But the engine of progress is still churning in the ever-innovative women and the men too, who were, after all, born of women. Finding larger numbers appealing, the men conspire to join two bands of hunter-gatherers and form a more permanent settlement. And so the subordination of the Earth to humans begins.

*Thunka-thunk.*

## Part II: The Beginning of Human History

The see-saw disappears. A long, thick prosperous tree limb extends from a stolid trunk. One can see the tree’s age and durability. The Man and Woman are replaced by two youths with supple limbs and glossy hair with

their feet firmly planted onto the tree limb. You are intrigued at the sight of the prosperous young couple and approach them (perhaps you will even see what lies beneath their feet). The sight below causes you to pitch forward, and you are falling through white clouds and blue sky.

A hot desert stretches into the unknown. Behind is a great-walled city, teeming with dark-skinned life. The air is heavy with commerce, law, passion, and above all, survival. In Mesopotamia you find the first city and, requisitely, the beginning of the sewer system. Stormwater drains litter the street, made from cut stone or sun-baked bricks like the other structures. There are clay pipes molded from potter's wheels, and eventually these pipes will be joined at various angles to construct an advanced drainage system. Despite these sanitation efforts, the air is ripe with the stink of several hundred humans crowded in an enclosed space. The heat makes it unbearable. Ox blood runs in the streets, mixing with animal feces. It poisons the food supply.

Dams and aqueducts are constructed. Agriculture is already at an advanced stage, as the Sumerians use wooden plows to till the earth before planting crops of barley, onions, grapes, and turnips. Cows and lambs are bred and domesticated for consumption in case of crop failure, and the Code of Hammurabi is the Law.

As early as four thousand years before the time of Christ, human societies were already beginning to modernize. Human history can always be represented with the image of a rapacious Man and Woman looking to the horizon, ignoring the increasing strain on the tree branch that supports them.

After several hundred years Mesopotamia, as all great civilizations do, declines. Human history finds another location to resume the churning of its engine towards bigger and better things. We see the rise and fall of the various Chinese empires, the organization of Europe into feudal states, the inertness of Eden-Africa, whose environment is perpetually inhospitable to civilization as punishment and a reminder of what can happen to a beautiful and prosperous land once a human's reach becomes too far and wide.

The modern world is a developmental whirlwind. You witness Europe's shrugging off of the bonds of dogmatic inertness as preached by the Catholic Church. For nearly fifteen hundred years, humanity's efforts toward modernization were stifled by organized religion, which discouraged the hedonistic tendency to look for ways to improve the secular life through world domination. Once the shackles of medieval inwardness are broken, Man and Woman once again hurtle themselves toward the Promise, using the tree branch below them as their jumping-off point.

The stolid limb snaps once the Man and Woman take off, their arms outstretched, embracing the end. They sail upwards, on a tremendous, greater-than-exponential path of progress, unheeding of where they will next land

now that the tree branch is irreparably broken.

There is an explosion of self-awareness. Art and the humanities move to the forefront as the quintessence of mankind is explored and celebrated. The poetic age waxes and wanes into an epistemological age, where the subjective is shunned in favor of the objective. Discontented with the mere realization of human worth, Man and Woman begin to make it into a reality. Instead of being heirs of the Earth, humanity creates itself into a demigod of reason that inherits the Earth. The first words the Voice spoke were, "Let there be light." In the age of Enlightenment, it was not the Voice but Man and Woman who spoke "Let there be light." And so it was.

After the Enlightenment, the Age of Machines dawned. Having affirmed their right to the Earth, humanity sets out to conquer itself. The Man and Woman are no longer content with their fragile, weak bodies. They die too young, they live too uncomfortably, and their soft flesh is too imperfect. The Age of Machines begins innocuously enough. The cotton gin, the cast-iron tip plough, the reaping machine, the sewing machine, and the threshing machine are all among the first generation of machines. Tasting the greater freedom and perfectibility that machines promise, the concept is seized upon with the greatest energy. Anesthesia, the cylinder printing press, vulcanized rubber, the telegraph, the passenger elevator, the burglar alarm, roller skates, oil pipelines, the typewriter, the electric dental drill, telephone, incandescent light bulb, hearing aid, electric fan, thrill ride, Kodak camera, skyscraper, dishwasher, escalator, and finally, the peep show exploded onto the scene within a mere sixty years.

Though the engine of progress hurtles faster and faster towards that elusive Promise, the Man and Woman decline. They are already coping with the first signs of disillusionment, boredom, dissatisfaction, greed, and softness. The Last Man is already beginning to show himself, a scant few years after the beginning of the Age of Machines.

### Part III: The Future of Sustainability

After a century of mass conflict and bloodshed, you recognize your own time. It is a haven of wireless technology, medical advancement, slight economic and political instability, and comfort. The wholesale slaughter of the 20th century has not done much to ruffle the feathers of the 21st century youths. But there is one problem.

The Man and Woman, so wrapped up in war and progress, have now realized their predicament. They search frantically for something soft to land on so they can take off again and hopefully reach that ever-elusive Promise. Promise of what? You wonder. They cannot tell you; you cannot even try to comprehend

it. We are all working towards something and so we “improve” ourselves, but to reach the Promise—if at all possible—is to become the Last Man.

Let us take a look at the Last Man. Realizing that the tree branch has snapped off, that we are about to crash into the reality of unsustainability, humanity tries to correct itself. It tries to implement international justice and law, hoping to codify the greatest moral truths. More and more global institutions pop up, and the sovereignty of individual nations continues to erode as humankind moves closer and closer to a universal government. The Promise—of peace, sustainability, and comfort—overhangs. The Man and Woman scramble towards it.

They disappear. You are in a green field dotted with shelters. Everyone is spoon-fed nutritious and flavored “food.” Money does not exist. Conflict is unheard of. The Last Man stares at you with pleasantly dull eyes. He has no motivation to create art. He has no will to think. He is comfortable in his safe enclosure. For him, the Promise has been met, but at what cost?

Dismayed, you reflect upon the promise of sustainability. If human history is earmarked with continual progress and if the End is in fact, undesirable from our modern perspective, what hope is there for the future of Earth and its inhabitants? Will it be continuously betrayed by men and women who busy themselves with the endless search for More and Better?

#### Part IV: Reflections and Answers

The greatest science-fiction authors of our time are an invaluable resource when seeking the End of Promise. In Isaac Asimov’s short story, “The Last Question,” there is “insufficient data for a meaningful answer” to the question “what is the meaning of life?” Millions of years pass, but there is never enough “data” for an answer. As long as we are limited to, or consider ourselves limited to, this world we cannot hope to reach the Promise. In the Bible the Promise is never given in this life or this world. It is reserved for another kingdom.

Douglas Adams book, *The Hitchhiker’s Guide to the Galaxy*, is more ironic and humorous, though it focuses on the absurdity of asking such questions. A man’s world ends, and he is thrust into an inhospitable universe on a quest for an answer to the meaning of life. He finally gets it after a series of misadventures. It is forty-two.

He finds another planet, one that resembles Earth, and the whole story of Adam and Eve unfolds. Human progress is always going to be stuck in a rut. If it gets too close to the end of history, there will be another hiccup, and human history will begin again. At least, that is the premise of the book.

There is no answer to the question of sustainability. We can only hope

to survive in this world while trying our best to make moral and rational judgments about how we can best create a blueprint for a sustainable Earth. But it will always be a blueprint that will be endlessly revised and reformulated. If you see Utopia just around the corner, run for your life. In fact, you probably won't, because by then you'll be the Last Man or Woman, and the only thing that can save you by then is the return of *promise*.

*Rachel Mesetich*

Environmental Management & Technology / CAST

## The Promise of Sustainability: How America Holds the Key

Today, probably every department of every college is researching the topic of ‘sustainability’ in some way or the other. Although much is being written about it, the sad thing is that not many people actually practice sustainable living outside the gates of college or their workplace. This year on the 6th of November, our college hosted a lecture by the author and environmental activist - Bill McKibben. During the Q&A session that followed, a gentleman from the audience asked Prof. McKibben why we (America) should be telling developing countries like India and China to adopt sustainable and eco-friendly practices? I pondered over the question in my mind and finally came up with an answer. It was then that I felt the urge to share my views about sustainability with everyone.

I feel America holds the key to a more sustainable planet. Although, I agree it would be hypocrisy on America’s part to tell other nations to clean up their act, as the country itself is responsible for 25% of the carbon dioxide emissions in the world, there are many reasons for my strong belief that the United States will have a major role to play in any sustainability efforts.

Belonging to a well-to-do family, over the years I’ve had the opportunity to travel across the globe. Not only have I travelled to typical tourist destinations like the UK and Japan, but also to many developing countries like Bangladesh and Sri Lanka. The people in these countries may have unique cultures and traditions, but it’s not hard to notice the influence of the American culture on them as well.

Big corporations, nuclear families, multiplexes, supermarkets and SUVs are gaining popularity and have sadly come to stand for the economic growth and prosperity of a nation. People are eating more fast food, watching more Hollywood movies and listening to more music featured on the Billboard U.S. Top 100 than ever before. My intent is not to question the rightness of it all, but to make readers aware of the extent to which America has influenced the way of life in other nations.

Trends are set in America and followed elsewhere. Take the example of shopping malls. A decade back, my native country India, had no shopping malls to boast of. But over a period of five years, more than 22 malls have sprouted up in my hometown of Gurgaon alone. In fact, if you searched on the Internet, you would find the town has had no historical significance, and that it’s only claim to fame are these malls that are literally everywhere now. People in the United States may have been buying things from malls for decades, but the trend has only caught up in my country recently.

Although at present the economy here is experiencing a downfall,

over the past many decades the success of the business model followed here has prompted overseas businesses to believe that “efficiency” and “growth” are the key to success in any field. Industries everywhere are substituting manual labor with sophisticated machines to step up production. And as resources like energy, raw materials and labor become scarce and costlier, corporations expand across national borders so that they can continue growing while maximizing profits. If businesses in America were to adopt “sustainable” practices and development, their counterparts in other countries would undoubtedly follow.

In simple speak, the point I wish to make through these examples is that America is like the elder-most brother in a family of many siblings. What the eldest brother does sets an example for the youngsters. Some people may disagree with this analogy but there are numerous examples like the ones I’ve mentioned that point towards the same. As we become more technologically advanced, our capacity to work hard keeps diminishing. Everybody wants to live the “American dream,” but sadly the definition of living the American dream has changed from that of “working hard to achieve your goals” into a pursuit for material prosperity taking the shortest route possible.

Many people around the world have taken up the challenge of leading a sustainable lifestyle, but there are millions who do not see its benefits still. The prime reason is that it doesn’t show instant results. Our world has become a world of instant gratification - instant meals, instant family and instant communications. Most people are used to getting what they want and when they want it. If I can switch on the microwave to boil a jug of water instantaneously, why would I use a solar water heater? If I can reach the mall in minutes in a car, why would I walk to get there? ... These are just some of the many reasons people give in defense of their current lifestyles. They do not realize that every small step in the direction of sustainability counts. People are so disconnected from their community and so occupied with work and their own family, that they do not see the bigger picture anymore. Unless we change our attitudes and revive our sense of community, any efforts to bring out major change would remain futile.

The transition cannot take place at the grassroots level alone. Governments must act in this direction as well. America has taken the first step in many critical situations and has pioneered everything from agriculture to space travel. Many governments around the world have started taking measures, then why should America stay behind in a race against time to save the planet?

*Sumit Paul*  
Design / CIAS

A Different Perspective



*Justin Kretzmann*

Environmental Management & Technology / CAST



## Fashionably Green

More With Less,  
is just a ploy I guess,  
to get the fat cat bankers to invest.  
They'll try to paint a picture of inevitable doom,  
just to sell t-shirts, make you consume  
and put fluorescent light bulbs around the room.  
But we must resist,  
no matter how much they persist,  
because it's this mentality in which we'll cease to exist.  
Who decides what's best?  
Because there is no key and this is not a test  
but it is about time to make less with less.

*"Jim"*

Mechanical Engineering / KGCOE



## Programming the Promise of Sustainability

Line 10:       Print “At RIT we embody sustainability, innovation, humor and creativity. We have a commitment to sustainability in product development, design, life-cycle engineering, remanufacturing, programming and pollution prevention. Come and see how we can learn together from previous mistakes.”

Line 20:       Go to line 10.

Line 30:       End.

*Dave Casilio*  
RIT Alumnus



## Perhaps the Promise

Sustainability can certainly be considered a promise, but it is a promise which comes with conditions and prerequisites that must be fulfilled for the promise to be truly realized. Employing ethics of sustainability as a guideline is noble and well intended. But sustainability can take on so many meanings, connotations, and implied nuances in today's vocabulary that it might be hard to pinpoint exactly what "sustainability" means and what methodology should be utilized while enacting sustainable ethics. Sustainability will likely be enacted in many ways, but we must keep in mind that any sustainable action must operate by key principles associated with sustainability. These methods of sustainability, which we hope will be triumphant in the end, will nonetheless be filled with trial and error, misconceptions, unknowns, and ultimately failures. Learning from these failures will be an important key for approaching an understanding of sustainability and will offer hope to the current and future generations.

Sustainability has already become a "movement" among many people, one they are ready to join and embrace as a new lifestyle. Embodying different concepts, keywords, and actions, sustainability as a movement has fascinated my generation, the idea of sustainability is *ours*: it is a movement that this generation can grasp and carry with us, pass along to future generations. It is also a movement that we will be inherently responsible for. Our actions will account for the direction of sustainability, whether or not the "promise" will be realized. This is the quirky part of sustainability. Future generations are going to look upon our efforts at sustainability and shake their heads. They will do so with the grimace of pity, a small smile, while commenting, "What were they thinking? This is not sustainable!" This sort of thinking by the next generation is one that is prevalent among all upcoming generations as they scrutinize over the previous generations ideals and mistakes. Because of this, it is a movement – which like so many others – will be known for its faults and failures, in addition to its successes.

The scorn of upcoming generations is not a new phenomenon. It is one that I partake in myself. It is indeed a process this analysis will employ as it studies other events throughout history which have lead to this movement of sustainability. By using this process it will demonstrate that the lessons from the past must be remembered and expounded upon for true sustainable resolutions. I will attempt to show the ways in which preceding generations have abused the very essential components of our life cycle, acting in anti-sustainable ways, and what that means for those of us claiming the promise of sustainability today and in the future. The study will show full-circle the acts of judgment on part of a late generation and a lack of knowing on part of past generations, which if we are not careful will turn on itself and repeat in a

generational process, leaving the promise of sustainability unfulfilled.

Additionally, this analysis will challenge the concept of a people who are really ready to realize the promise. Sustainability requires an attitude change, an extreme adjustment to society's previous ways of viewing the world. The following case studies will demonstrate that sustainability is not ripe for the picking; requirements include hard work, new ideas, and an extreme shift in ideals. The analysis will also show hope. There is much to be learned from the errors of the past, as long as we are ready to be taught and to recognize that we are not in complete knowledge about the environment we live in. These are the keys to realizing the true promise of sustainability.

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At the beginning of the twentieth century, Manifest Destiny was a fundamental of American methodology. Homesteading was increasingly becoming a way for penniless immigrants or lower class Americans to make a way for themselves. Westward expansion became much talked about in politics and popular literature of the time. This was partly facilitated by the Homestead Act of 1862. The United States government began to run out of the northern fertile lands, larger tracts of what was seen as less fertile land in the Southern Great Plains became prime homesteader land.

The American West was known as "free land." Consequently Americans treated it as free and in limitless supply. Frederick Jackson Turner, commentator on the frontier and American democracy, saw this cycle as he commented on the free land of the west and grieved the closing of the frontier as homesteaders grabbed up the last of the Great Plains, "Never again will such gifts of free land offer themselves" commented Turner in 1893.<sup>1</sup> Mourning the lost frontier was very popular during this time period. And had Turner known better, he would have mourned the loss of the frontier according to what that loss would come to mean for the environment and inhabitants of the Dust Bowl region during the 1930s.

The last push for homesteading in the Great Plains, mixed with poor agricultural processes and drought, would soon turn the Plains into a barren wasteland, whipping up ferocious storms of over eighty miles per hour. These storms wreaked havoc on communities across Northern Texas, Colorado, New Mexico, Kansas, Nebraska, and Oklahoma. While scientists agree that the drought may not have been avoidable, it is unarguable that the ecological

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<sup>1</sup> Turner, F. J. (2001). The significance of the frontier in American history. In L. Fink (Ed.) *Major Problems in the Gilded Age and the Progressive Era*. Boston: Houghton Mifflin Co. (2001), 54.

disaster that resulted in the Dust Bowl could have been controlled or the damages lessened if farmers had been educated in the consequences of removing all the prairie grass (causing erosion), proper tilling methods, and crop rotation. But these are things the farmers simply didn't know. What farmers throughout the early 1900s knew was what their government was propagating; land was bountiful and for the taking, soil was America's unending supply, and that "rain follows the plow." Historians have argued that due to incomplete information the Great Plains were settled too quickly, were too crowded, and homesteads were too small to sustain themselves.<sup>2</sup> This caused terrible repercussions as described by one Dust Bowl historian:

In no other instance was there greater or more sustained damage to the American land, and there have been few times when so much tragedy was visited on its inhabitants. Not even the Depression was more devastating, economically ... in the decade of the 1930s the dust storms of the plains were an unqualified disaster.<sup>3</sup>

The perception that the Great Plains were continuously bountiful and for the taking embodies one of the key issues associated with the ethics of sustainability, that of frontierism. This view asserts that the earth possesses an unlimited supply of resources (land, water, air, food supply) which are all an exclusive right of humanity to enjoy. While Manifest Destiny and westward expansion were not the first forms of frontierism for mankind, (this sort of thinking has been prevalent throughout all of history) the case of the American West was one that was far removed from the concepts of sustainability. The principle behind frontier ethics is for humans to use what they need, as much as they need now, and to do so without regard to other living things. While this may be successful for a short time period – such as in the case prior to the Dust Bowl years when the Great Plains exhibited record crops due to modern agricultural machinery and rare wet weather – it ultimately results in disaster. History has shown that when the earth is pushed too far, beyond its limits, it

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<sup>2</sup> Libecap, G. D. and Hansen, Z. K. (2002, March). 'Rain Follows the Plow' and dryfarming doctrine: The climate information problem and homestead failure in the upper Great Plains, 1890-1925. *The Journal of Economic History*, 62(1), 86-120.

<sup>3</sup> Worster, D. (1979). *Dust bowl: The Southern Plains in the 1930's*. New York: Oxford University Press.

can only withstand so much of that abuse before catastrophic, anthropogenic reactions result.<sup>4</sup>

Because frontier ethics has been a part of our nation's mentality and strategies for centuries, it must be emphasized within the sustainability movement that as long as frontier mentality is a part of our rhetoric and decision making process, we will never truly be sustainable as a nation. We must recognize that our resources are severely limited, and resources which are available are not entirely for us – we share this world with other creatures and they also rely on the same environmental structures and cycles as humans. When that cycle is interrupted, or the structure fractured because we believe that there is plenty in the world and that it is all for us, we are not sustainable and frontierism is still a part of us. Indeed, creating a true sustainable society demands a reversal of our value system, one that does not promote quick fixes that seem to bring about prosperity, but are in fact damaging to the environment and to the concept of sustainability. Sustainability takes the long-term into consideration.

It is easy to believe that because the ethics of frontierism caused the Dust Bowl in the 1930s (more than a generation ago) humanity has learned and modernized since then, we have evolved into creatures who know better, a society that is above making similar mistakes. We shake our heads and find it hard to believe that farmers in the Dust Bowl believed that repeatedly tilling their soil was the solution to growing crops again. But that thinking is the egotism of current generations. A potential danger and threat to sustainability is to believe that humanity completely understands our occupied environment. Society can never be completely aware of what they don't know, but despite this, decisions are made as if we are in complete knowledge. This is a dangerous error. We can not assume that we have learned how to navigate our way around environmental disasters in the last seventy years and are therefore immune to them. It is crucial to keep in mind that there will always be things in our world that we can not be completely sure of. This should cause us not to live in fear, but to live on the side of precaution, accepting that what we don't know can be potential danger down the road and accepting that the earth's resources are not limitless. Past generations have refused to accept these basic principles connected with sustainability and have suffered serious consequences.

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Poisoning of ground water by manufacturing plants and factories throughout the last fifty years around the United States demonstrates that we do not know everything there is to know about protecting the environment and

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<sup>4</sup> Chiras, D. D. (2006). *Environmental science*. Massachusetts: Jones & Bartlett Publishers, 45-46.

implementing sustainable methods. A main cause of these chemical dumps was modernization during the Industrial Era. Large manufacturing/production plants spread up with extreme amounts of waste. Waste in this capacity was new and no method was available of how to effectively control it. One concept for getting rid of waste was via a water way or burial in the ground. Now, it was no longer viewed as a problem – out of sight, out of mind. But the problem was not solved; basic principles of ground water flow kicked in and toxic dumps became a disaster as communities were poisoned by polluted water sources. Aquifers were contaminated and the damages were widespread throughout the communities. Cases of sick, maimed, disabled, and even deathly ill children were prevalent. The health of adults was also affected by the poisoned water, in addition to their sanity as they helplessly watched the children die, only to discover it was the water they had given their children to drink and the water they had bathed them in that caused the illnesses. Two specific cases where this has happened are Love Canal in Niagara Falls, NY and the poisoned wells in Woburn, Ma.

An important theme represented in both the Love Canal and Woburn cases, is that sustainable environmental action must carry with it a level of precaution, especially for the decision makers. This can also be seen in the Dust Bowl example. The precautionary principle establishes that those who promote a certain action or enforce laws which implement questionable or unproven methods that affect the environment and/or health and safety of those living in the environment should also be held responsible for such actions if negative outcomes are realized. In both Woburn and Love Canal, the citizens who were poisoned were unaware of the dangerous chemicals contained in the water. They were suspicious about the water, but they were told over and over again the water was fine and that no action would be taken to remedy the situation. *A Civil Action*, an account of Woburn, Ma, shows that citizens constantly complained about the water and knew it wasn't quite right: "the problem with the water was no secret, everyone knew about it," what they didn't know was that it was poisoning them.<sup>5</sup> In this case, those to be held responsible would be the officials and experts who claimed the water was safe. Because of their expert claim and the trust citizens placed in these claims, many became ill and died. Also those in leadership positions at the production facilities were to be held at a level of responsibility according to the precautionary principle.

The outbreaks in Woburn were related to the addition of two new wells within the community. These wells tapped a public water source that was contaminated from the local production facilities. The wells were installed to solve the town's water supply issue. This demonstrates that sustain-

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<sup>5</sup> Harr, J. (1995). *A civil action*. New York: Random House, Inc., 25.

able thinking looks not to fix a problem at hand immediately and with the quickest, cheapest solution, but to examine the problem from a sustainable viewpoint which takes into consideration health and safety of the public, as well as the influence it will have on the environment around us. If sustainable thinking is employed, it will present a resolution which is best in the long run and will likely save lives and millions of dollars in clean-up and retributions.

Woburn, Love Canal and the Dust Bowl all illustrate that what we don't know can cause severe damage. Acting as if we are in complete knowledge of the environment around us is an error on our part; an error that impacts not only decision makers, but also those relying on the decisions made. What we don't know will come back to haunt us in more ways than one. As a citizen from Woburn sums up, "If you talk to any intelligent twenty year old today, he'd say nobody could be that stupid. Your children are going to ask you, Did they really spray insecticides from airplanes?"<sup>6</sup> Scorn from future generations may be one of the great ironies of sustainability, but also a method to keep us in check. As we labor to make the world safe for them by improving the environment and implementing sustainable methods we should be sure to consider all the avenues, so they can not sit back and shake their heads at the previous generations rash actions and beliefs that they knew all there was to know about the environment they lived in.

The tagline "Promise of Sustainability" is a nice phrase that describes what the outcome of sustainable actions should be. But it isn't a cut and dry promise. When a promise is made, the outcome is guaranteed. In the case for sustainability, that outcome is not yet guaranteed. The promise will only be realized as we apply the precautionary principle, change our frontierism ideals, keep in mind what we do not know, and apply the lessons of the past. If we do not do these things, than sustainability will not be a promise, it will be a perhaps.

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<sup>6</sup> Harr, 136.

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*Serenity Sutherland*

Environmental Management & Technology / CAST



## A Promise, a Lie

I am sorry my child, I am sorry for what we have done.  
We consumed the planet; we have abused the only one.  
As centuries passed, we degraded and only took from her,  
I know it's now our time to give back and save the earth.  
I am aware of the debt; we have left for you to pay,  
But I want to make a promise, or a Lie I want to say.

The decades of impurities that your ancestors have left,  
Is killing your planet, is making her bleed and sweat.  
But there is hope, as our conscience awakens to her cries,  
Once again the people will think, they will stop before she dies.  
Humanity will rise as one or our own mother we would slay,  
But I want to make a promise, or a Lie I want to say.

We will try to stop the mayhem, the global massacre of nature,  
Only we have a choice to give you a dark or a hopeful future.  
I apologize to all your friends and to you my child,  
For killing the beautiful creations of God that once roamed in the wild.  
You may not see the amazing vistas painted by Him or you may,  
But I want to make a promise, or a Lie I want to say.

Ravaged by greed, war and selfish lust for power,  
We cut down every tree in the forest, stepped on every flower.  
I can't get back the things we lost in the fires of our past,  
But I will make an effort to create for you, a new world to last.  
I wish others understand this before in their graves they lay,  
But I want to make a promise, or a Lie I want to say.

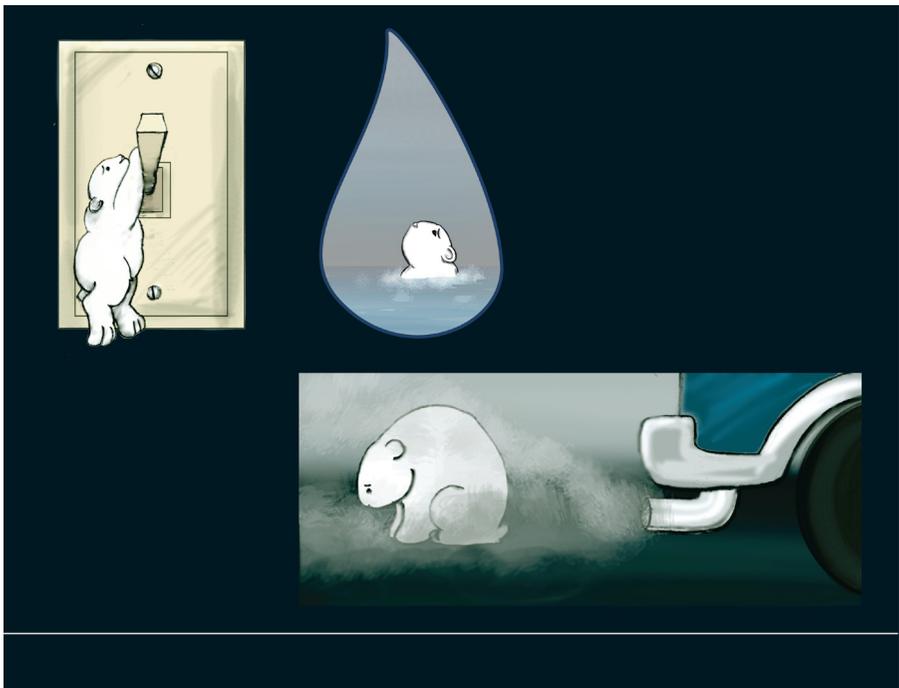
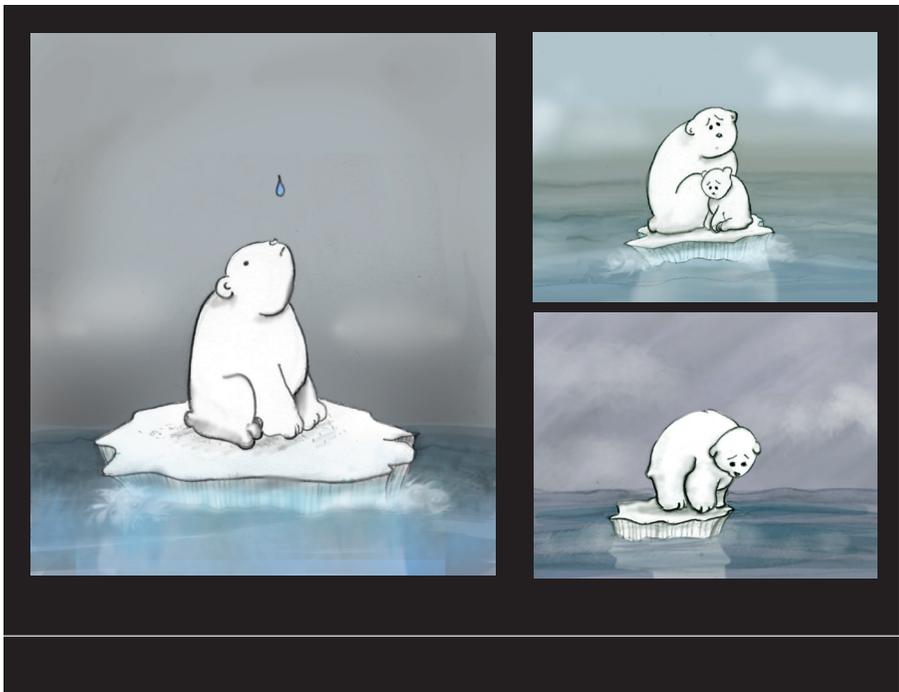
I want you to see the waterfalls, the rainbows and the Sun set in the west,  
Let you swim in clear lakes, in the lush meadows let your body rest.  
I will make the skies clear for you; make the oceans blue again,  
I will tell the others to learn from their mistakes and become sane.  
We will have to make these changes for our children in every way,  
But I want to make a promise, or a Lie I want to say.

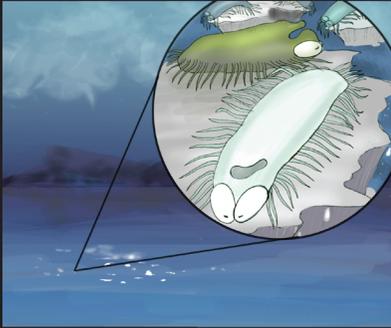
We will not let you drink poisoned water, we will not let you breathe death,  
We will right our wrongs, each and every folly, have that faith.  
It will start from our home, our neighbors, and our borough,  
We should be making this promise, more responsibility we need to show.  
As the dusk of time comes closer with every passing day,  
I will give you the earth you deserve, is the only truth I want to say.

*Aditya Manjrekar*

Industrial & Systems Engineering / KGCOE

Polar Barometers, a Series of Eight Images Exploring the Facets of Arctic Melt





Don't Forget the Bacteria



The One Who Evolved

*Rose C. Figliomeni Khan*  
Art Education / CIAS

*The Big City thrives upon itself — a giant self-sustaining organism that consumes, regenerates, and perpetuates — in a microcosm of social interaction. You see a lot of strange things in the Big City. After awhile you tend to develop a hardened outer shell that inures you from the idiosyncratic happenstances of everyday life. Still, while one's outward reactionary manifestation may be inhibited, the inescapable observation of behavioral diversity is hard to ignore. Take for example this tale of an ostensible tatterdemalion.*

### The Resurrection of the Detritus of Humanity

I live in the Big City. To be more specific, I live in an area known as the financial district. It is an odd juxtaposition of commercial and residential property but I like to be close to my money and you can't buy better protection than that which is subsidized by the Department of Homeland Security. It is an area rife with domestic and international tourists who on weekdays commingle with the local workaday populace. My observations of this insular neighborhood activity are limited in time and space for it is a brief perambulation from the great stone edifice I call home to the hole in the ground that houses the conveyance for my daily transport uptown.

The constancy of my quotidian commute is comprised of two indelible artifacts. The first is the hustle-bustle activity of the workers and the tourists whose hither and thither movements are reminiscent of the morning ritual seen on *The Truman Show*, but absent the exchange of pleasantries (for strangers rarely ever talk to one another in the Big City). The second is the fifty-something street waif whose daily perch is an upside-down official United States Post Office mail container and whose sole function appears to be sentinel for the underground portal I routinely descend. I imagine him to be a secret undercover CIA operative planted and paid for by the Department of Homeland Security but he is more than likely just a burned out Vietnam veteran who was cast aside by society like yesterday's trash.

On my day-to-day navigation through this familiar neighborhood terrain my wandering eyes tend to filter out the humdrum monotony of these artifacts. Thus it was with an unexpected sense of awareness that I first took notice of a new player upon this tableau. Perhaps it was his darting movements and singular sense of purpose that initially drew my attention or maybe it was his relatively natty appearance in contrast with the ne'er-do-well world of society's dropouts. His youthful countenance both surprised and disturbed me. How does one so young, plumb to depths so low? His Mediterranean good looks seemed so antithetical to his apparent avocation. The 7-day growth of beard he sported would have been stylishly chic on a Brett Favre or a George Michael but on this certifiable reprobate from Any University USA the

designer stubble just served to heighten the pathetic nature of his endeavors. In one hand he toted an oversized plastic baggy of the type us Big City dwellers use to scoop up the doggie doo deposited on Fido's daily constitutional. In the other hand he wielded what looked like an implement for a barbecue grill.

I watched as he stooped over a construction dumpster rummaging about for what, I could not imagine. This was no errant contractor looking for a quick five finger discount on construction materials. I observed his urban hunting skills with detached and abbreviated amusement as I made my way to the portal of the underground labyrinth, which serves as both ingress and egress for my daily commute.

I gave no further thought to our passing encounter until the next day when I saw him again and my curiosity was further piqued. The plastic baggy had been replaced by an over the shoulder canvas bag somewhat reminiscent of the satchel once worn by newspaper delivery boys. He was hunched over and meandering about with a herky-jerky gait typically associated with the overconsumption of alcohol. Sad as that might be, it was barely 7 o'clock on a Wednesday morning. I gave him no more notice as I descended beneath the surface to board my subterranean chariot.

And so it continued for the next couple of weeks. The two constancies of my early morning sojourn, namely the helter-skelter movement of the working class and the vigilant street corner vagrant, were now accompanied by a third artifact, the street scavenger.

Every sustainable ecosystem has them I suppose. Whether it is the algae eating bottom feeders in your home aquarium or the carnivorous hyena in the Serengeti, the dung beetle of Egypt or the flesh-eating vulture of the American Southwest, they each serve the same purpose. Production begets consumption, consumption begets elimination, and elimination begets production and so it proceeds circuitously in the closed-loop biological model that supports the circle of life.

And in the Big City, we too have producers and consumers. Mandatory recycling legislation has driven a residential recycling attainment rate of 20%. But that is the dominion of Big Government and Big Business. In the streets and down the alleys of the Big City roams a different breed of environmentalist.

It had been some ten days or so since my initial chance encounter with the urban hunter-gatherer. The heavy rain caught me by surprise that particular morning as I exited my downtown aerie and it caught me without the umbrage of overhead protection. In my dash to the underground refuge and my endeavor to stay dry (or more aptly put, to not get soaking wet) I was oblivious to the familiar sites and surroundings that on a more pleasant morning would occupy my thoughts and give rise to inventive whimsy. No, this morning I was merely bent on keeping dry.

So it was upon the next day that I consciously registered the missing artifact. Present were the ersatz CIA operative and the accompanying hurryscurry of the world's financial community commingling with the sightseers, but gone was the meandering miscreant and purveyor of street side trash. Like I said, you see a lot of strange things in the Big City. They tend to appear and disappear with ephemeral regularity. The collector of castoffs that had populated my daily commute for the last few weeks was gone as abruptly as he had appeared. I never did see him on the street again, but I would meet him one more time.

Several weeks later I was making my way home from work early one evening, surfacing as I usually do near the bovine beast and symbol of the financial markets, when I happened upon a showcase window displaying a colorful and artistic array of chocolates. That's the funny thing about the Big City. No matter how often you may frequent an area you never quite seem to assimilate all there is to see. Maybe it is because there is so much to see or maybe it is because so much of what you see changes. Regardless, I had not observed these chocolaty confections before and intent on assuaging the Pavlovian response they engendered, I entered the establishment.

The shopkeeper turned out to be of the loquacious type, effusively extolling the quality and artistic attributes of his merchandise and insisting that I indulge in a complimentary tasting. I needed little inducement to scoop up one of the ornately decorated pieces of chocolate, a tricolored assemblage of milk, dark, and white chocolate arranged in a delicate pinnate pattern. It tasted every bit as good as it looked. Having developed a sense of obligation from my free sample, I selected six of the handcrafted deliciously delectable looking miniature objects d'art for which I paid \$27.64. It was while I was casually peeling off a pair of twenty dollar bills and trying to look aloof in the face of such a profligate purchase that I became aware of the interesting décor of this most interesting chocolatier. In a corner of the shop stood an old telephone booth festooned with brightly colored wires and all manner of interesting paraphernalia. Next to it was what appeared to once be a functioning fire hydrant, now encumbered with baubles and bangles and other appurtenances incongruent to its original function. The effect was quite remarkable.

The purveyor of artistic chocolates smiled and nodded enthusiastically following my gaze. He explained that the pieces were samples of work from his partner. "He is heavily into environmental art," I was told. The shopkeeper then informed me that his partner would soon be exhibiting his work at a nearby gallery and handed me an invitation to the opening night. "Please come," he exhorted and added "there will be free champagne and hors d'oeuvres."

The following week astep in the dog days of August and awash in the heavy humid evening air, I was traipsing ponderously upon my homeward

path when I reached into my jacket pocket for a tissue and pulled out a small card that read, “*Forward Extrapolations Exhibit dates: August 4<sup>th</sup> through September 26<sup>th</sup>.*” I checked the calendar on my watch. The date was August 4<sup>th</sup>. Ah yes, free champagne and hors d’oeuvres. What the heck! The gallery was nearby, it was hot, and I had nothing planned for the evening so I ambled over to the opening of the art exhibit I had been invited to the week prior.

I entered the gallery feeling a bit awkward, for I was alone and not connected with anyone in the art world. In fact my most serious art encounter of the summer had been the shameless consumption of six pieces of chocolate which cost me nearly thirty bucks! Yet, boldly I ventured forth and was warmly welcomed with a glass of cool champagne and the smiling knowing nods of the assembled dilettantes as they sipped their wine and admired the various paintings and sculptures adorning the gallery lobby.

It was while I was sipping my second glass of champagne that my eyes were drawn to a curious figure in a far off recess of the room. From a distance it reminded me of the type of humanoid figure one might see in a museum of natural history yet as I approached the exhibit, the humanoid started to transform and from a distance of half-way across the room it suddenly began to resemble C-3PO from the Star Wars films: a creature not from the past but from the future! Upon closing the space between us I stared eye-to-eye in rapt fascination at the assembled bits of junk and odds and ends one would most likely find in a trash heap. There were scraps and pieces of discarded hardware, rebar and sheet metal along with batteries, buttons, a water pistol, rag doll, a few soda cans, coat hangers, a barbecue tong — a potpourri of discarded debris — all fashioned into a lifelike model of a human being.

I was startled out of my reverie by a gentle hand on my shoulder. Turning to look at its owner I was stunned to see the stubbly bearded visage of the wandering junk collector whose early morning foraging had been the subject of my bemusement several weeks earlier. I almost screamed at him, “What the heck are you doing here?” My innate civility held this outburst in check and as I took in his lean features, the faint aroma of Aramis, and the stylishly knotted Hermes scarf tied gaily around his neck, I heard a timid voice with just the slightest hint of affectation, “I see you are admiring my work. It is a piece from my Eco-art collection. Do you like it?” With these words dully sounding in my ears I gazed down at the placard on the pedestal upon which the junkman stood. It read, “*The Resurrection of the Detritus of Humanity,*” by Diego Vasquez.

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## What Is New is Old and Still Works

Out of a story can come a window into the soul and the intent of an author. There are a variety of stories in the world. Some are written merely to make the reader laugh. Certain tomes masquerade as a story when in reality they are an attempt to change the perceptions of the audience that reads them. Still others change the way its readers see the world, without forcing them to realizing their views are changing. Science Fiction is by no means exempt from this phenomenon, and indeed is as good a medium as any to explore narrative traits that influence the culture of the day. Take the stories of James H. Schmitz for example: like most science fiction stories, Schmitz addresses the idea of what the future holds. In doing so he expands upon the present. In this paper, we will be examining James H. Schmitz's story "Balanced Ecology" in order to gain a new perspective on the role that basic cultural perceptions, can play in shaping a storyteller's ability to in turn adjust his audience's views and perceptions of the world around them.

So let's get this show on the road, shall we? Schmitz's story "Balanced Ecology" takes place exclusively on a diamondwood plantation on the planet Wrake, which was colonized by humanity on the not-too-distant past. The diamondwood trees are "farmed" for their fantastically valuable lumber which is used to create equally fantastically expensive luxury goods and furniture (Schmitz 104). Throughout the story we learn about the various forms of flora and fauna throughout the diamondwood forest, including "Slurps," giant mossbacks named Sam (very similar to massive turtles), tumbleweeds which are half-animal and half-plant, and something referred to as "the clean-up squad" which lives entirely underground and lives up to its name (Schmitz 98-103).

While this sounds very science fiction-esque, with distant planets and foreign flora abounding, it should be noted the basic precepts of our "modern world" are kept intact. Spaceships aren't all that different from the cargo ships of today; the diamondwood trees are distant kin to the redwoods of California. Throughout the story, signs of a familiar world appear before our eyes. Cars merely hover instead of roll, factories still process, and the marketplace might be on several different planets but the business world is still cut-throat and ruthless, as we will see later (Schmitz 105).

In doing so, Schmitz ensures the unfamiliar is made familiar, sometimes just through the use of understandable word-choices, where the creation of more "authentic-sounding" alien terms would just be off-putting for the reader. This is actually a hallmark of Schmitz's writing, as the science fiction editor Guy Gordon points out: "The future [written by Schmitz] is assumed. These Characters live in it. It's not new to them, so they don't notice it. We readers do, and we're fascinated by it. But it's all secondary to the plot and the action" (397).

In short, Schmitz creates a story where the world of Ilf and Auris, the two child protagonists, is separated from our own world merely by time, not by overwhelming unfamiliarity. While we have no doubt that the story takes place far into the future, on a distant world far beyond our material grasp, it doesn't feel beyond our understanding, nor beyond our reach. Schmitz creates a realm that embraces a non-radical future.

So Schmitz has created a familiar future that the audience can feel comfortable and integrated within. And with this familiarity with concrete realities comes an open forum to speak to social realities of the day. Most characters in the story give voice to recognizable social factions of Schmitz's day and age. The character of Uncle Kugus quickly comes to represent the harsh and unfeeling mindset of the business world that sees the natural realm as a resource to be exploited to the full. This is seen in Kugus's rather crude attempt to take control of the diamondwood plantation and sell off all of the lumber at once, never mind that doing so would permanently level the whole forest (Schmitz 107).

Riquol Cholm, the grandfather and guardian of the protagonist children, Ilf and Auris, represents the united stand of the diamondwood farmers who, while having nothing at all against making money, believe in the bigger picture of a sustainable business effort within the existing ecology of the diamondwood forests (Schmitz 105). Grandfather Riquol Cholm represents the budding environmentalist movement that was becoming more and more visible in the world that Schmitz was writing out of.

So we have the voices of the profit-obsessed businessman Uncle Kugus, and the environmentalism- and sustainability-endorsing Grandfather Riquol. Talking is all well and good, but what happens when Kugus, through a rather clever use of legal loopholes, has a plan to gain control of the diamondwood farm through the rather forced adoption of Auris? (Auris is the daughter of the former, and now *conveniently* deceased, owner of the plantation. Auris is the heir of 90% of the forest.) Not only is Kugus attempting to take over the company, but he is willing to forge, kill, kidnap, and mind wipe anyone who gets in his way (Schmitz 107).

As you may remember, the diamondwood forest is home to much more than just trees. While all forms of wildlife are given a warm and inviting light through the eyes of the children, when Uncle Kugus stuns Ilf and Auris's grandparents, and is clearly attempting a hostile takeover, the forest suddenly transforms into a not-so-friendly space. The children, who had been listening in on the conversation where Kugus tells of his plan to level the forest, come hell or high water, they run off into the woods to hide. Kugus and his minions run after them (Schmitz 110). Then the noise kicks up. Ilf notes:

It was the sound of the giant greenweb sometimes made to trick a flock of silver-bells into fluttering straight towards it, a deep drone which suddenly seemed to be pouring down from the trees and rising up from the ground. (Schmitz 111)

And that is when Kugus's men start disappearing. The men are separated and vanish, one by one. The clean-up squad is busy, and Kugus himself disappears into the ground before he can know what is happening. In fact, not only do all the men disappear, but so does all their equipment and even their hovercars (Schmitz 113). After the opposition has been removed from the face of Wrake, the boy Ilf mentions to Auris:

“Should we have done it?”  
Auris was silent a moment.  
“Nobody did anything,” she said then. “They’ve just gone away again...”  
(Schmitz 113)

If you are reading the descriptions of the following scenes and thinking: “Wow, that sounds like something out of a horror movie.” Good for you; you’ve found the cliché. Science fiction has absolutely no problem stealing clichés and making them its own, and “the monster in the woods” is no exception. From tried-and-true clichés Schmitz can and does bring forth ingenious twists, clever nuances, and complete overhauls of an unoriginal clichéd plot to create something new, deep, inspiring, and even entertaining.

Not only that, but Schmitz has one more twist for us. As it turns out, it wasn't the grandfather, nor the uncle, nor even the children who had been pulling the ultimate strings of the entire episode. It wasn't the human beings, not even the nefarious Uncle Kugus who was planning the events that unfold in “Balanced Ecology.” No, it was not human influences that won the day, but the inhuman. *It was the forest itself.* Schmitz tells us, right at the end of his story, that the diamondwood forest is actually one giant interconnected organism, and a sentient one at that. It had been defending itself from the very real threat to its survival posed by humanity (Schmitz 113).

In the words of the forest, “The only defense against man is man,” and the best way to use man as a defense was to welcome him into its ecosystem, its ecology, and create a new synergy from the addition (Schmitz 113). So herein lies the twist. When you're the big and scary woods-creature, what counts as the monster in the woods for *you*? In this case, it was humanity itself which became the “monster in the woods,” the dangerous unknown which had

to be made knowable and defended against. And defend it did, through the use of humans it had taken into itself, who it helped to help it grow, the humans who defended it from their own kind.

This use of “inverted clichés” according to Gordon, is a classic technique of Schmitz (396). What is assumed to be a constant is turned on its head, and what you “know” to be an old standby in a story might not be anymore. Gordon remarks, “if you run across a cliché in a Schmitz story, you can be sure the author is having fun at the expense of your expectations” (396). Clichés being used to further a better story with deeper topics and existential meaning? Why the heck not?

If you remember, we made mention of Schmitz giving voice to certain social or political groups of his day in his characters. This is the last voice of the story: the very woods themselves made themselves heard, in the subtlest of ways, in the most cautious of plans. What in our own world is voiceless now has a voice and a will of its own, and it speaks out. The woods do not mind humanity, so long as humanity allows it to survive. In Schmitz’s story, while the humans might not be aware of the monster that is the woods, the woods are more than aware of the monsters that encroach upon it.

Which brings up the point: while we now know that Schmitz is very good at lulling his audience into a sense of familiarity, turning clichés on their heads, and giving voices not only to factions of his own day-and-age in his characters, but entire ecosystems, how much of this artful storytelling was artful manipulation, and how much artistic narrative? In short, is the author trying to shape the culture of his audience, or being shaped by it?

Schmitz writes strong words which actually interact with his characters. Editor Guy Gordon points out that Schmitz’s goals while focusing on imaginary ecosystems was to raise awareness about the depth of the complexities of an ecological system, and the logical results of human interference (Gordon 402). In many of his stories, including his story “Compulsion” and many others, the themes described above are very evident. Guy Gordon himself makes mention of the stories “Grandpa,” “Balanced Ecology,” and especially “The Demon Breed” for their strong use of an alien ecology within a story (402). However, the presence of narrative traits does not guarantee inherent intent to preach or persuade the masses.

James H. Schmitz himself wrote an autobiographical account of his literary career for an interview series conducted by one Paul Walker. Other than one mention of six months spent on a lake in Minnesota, where he mentions letting “the lake and forest sink into [his] bones,” he makes no mention whatsoever of any overt focus on ecologically-minded patterns of thought (Walker 90). In fact, the feel of the entire interview is of an author who just likes to write fun stories. He’s not there to preach, or to change the world, he’s

there to tell you a tale, paint a vision of the future, give you some interesting ideas, and leave you with a chuckle or two.

So which was preeminent, cultural views or the intent to change the views of culture? I would say that there probably is a little bit of both in the answer. If he was only writing to preach, the stories wouldn't be nearly as good as they are. And I don't believe that he was solely writing out of a mere wish to entertain, though it was probably the lion's share of his intent. Like most science fiction writers, Schmitz enjoys to "enlarge the here and now," in the words of Ursula LeGuin. He likes to take the future and use it as a tool to reflect on current issues and circumstances, and in so doing, comments on possible solutions or ignored aspects of contemporary issues. Schmitz's stories, much like any other author's, cannot escape the culture and time they were written in. And equally so, Schmitz's stories speak of his own views and hopes for the future. Through the use clever storytelling, Schmitz creates a world worth reading about, and worth learning from.

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## Ecotopia and the Period of Consequences

In 1975, Ernest Callenbach published a novel entitled *Ecotopia* that spoke of a time in the future where parts of the Western United States seceded from the country in order to achieve a more sustainable society. In Callenbach's story, a *Times-Post* reporter by the name of William Weston is sent in to observe and assess the current state of the then cut off country of Ecotopia. What Weston finds is a stable nation, led by women, based on a larger purpose than mankind, and dedicated to the advancement and preservation of the ecological environment. The following entries revisit the world of Ecotopia, 30 years after Weston's arrival.

(June 2, 2031) – The Arrival:

Due to the additional security obstacle set forth by the Ecotopian government of an expanded air zone protection, I arrived in Carson City, behind schedule. The train system in and out of Ecotopia had been suspended and military personnel patrolled the country's wooden fenced borders. This was all due to high tensions caused by the now third attempt at territory reworking talks regarding the boundaries between Ecotopia and the United States.

With the rising sea levels, the people of both nations have been forced inland. San Francisco for one, that once housed the chief line of the Sierra Express in and out of Ecotopia as well as the nation's capital, with its vulnerable location, now stood partially covered under the bay's near doubled size. The capital city moved inland to Concord, where, conveniently, the Sierra Express line already passed through. Other coastal cities were feeling the toll of this natural progression. Miami had been engulfed and parts of the now evacuated Manhattan could only be recognized by the upper stories of skyscrapers piercing the seas.

Upon initial request to grant the US more territory, the government of Ecotopia refused, stating that they too were in need of additional land. The US government persisted a second time, with Ecotopia agreeing to take on American citizens if they were granted more land to house them, thus expanding their territorial area. This angered US officials and now, on the brink of international war, the US is making one last effort at negotiating, this time in person, before taking more dire actions.

I have been called to speak on behalf of the US in order to compromise with the Ecotopian people. Both nations face hardship and, with my knowledge in the legal field and my current position on the FEMA agency of the US Department of Homeland Security, I intend to work with the Ecotopian government to find a solution.

Based on the importance of this enterprise, as well as the lack of

information on the nation of Ecotopia as a whole, due to the US cutting off ties in 2015 when controversial climate change propaganda began to filter into American institutions, I have decided to keep a journal as a record. The only real piece of recorded information about Ecotopia other than tourist accounts from the nation's allied visitors is the journal and documents kept by a reporter, William Weston, in the late 1990s on a somewhat unofficial assignment. This I have studied as a reference to the culture.

(June 3, 2031) – Ecotopia:

My car arrived five minutes ahead of its 9:30 arrival schedule outside of my Carson City hotel room. Once at the gate, a guard greeted me by my first name. I was expected. After checking to see that I had all the proper paperwork I proceeded through the gate.

The “car” that was scheduled to receive me at the entrance did so in the form of what looked like a modern age horse and buggy. There was a carriage, whose ceiling was currently in the down position (similar, but more compact, to a modern day convertible), sitting behind a single horse with traditional reins and attachments. Rubber-like wheels, shaped to conform to any terrain, sat atop an axel system, fixed with both ABS breaks and heavy-duty shocks. The front bumper was fixed with headlights. Could the Ecotopians have slipped so far behind in time that they have resorted to ancient technologies?

I made my way to the carriage, and found the driver, Gor, who would act as a guide for me throughout my stay in Ecotopia. Being born and raised in Ecotopia, he had never met an American and was excited to learn of our “exciting culture.” It was to be a long day of travel and we wouldn't arrive to our destination until nightfall. Here, I would spend the night and take a train into the capital come morning.

He directed me to a restroom at the border station where I could dress in my cooling armor, though he assured me that it would not be necessary with Ecotopia's mild climate in relation to that of the US. Surprisingly, I found this statement to be quite accurate. As we made our way toward the town I needed not adjust the settings past the third level. Gor informed me that the advanced climate was a result of the large black platforms seen upon the terrain. These platforms were cells that individually absorbed sunlight to reduce the heat refracted back into the atmosphere. Collectively the cells would reduce climate temperature a few degrees and over time, as more platforms were distributed, the effect would increase. The energy collected by these cells powered most of their country.

Despite the minor climate adjustments, remnants of natural disasters could be spotted throughout the journey. Ecotopia had been no exception to the tornados, forest fires, droughts, and sudden flooding that plagued much of

the rest continent. Gor informed me that Ecotopian scientists were currently looking into a way to create an organic soil additive that would help the earth adapt more rapidly to the unprofitable climate conditions. This development was viewed as top priority. Its goal was to lock in nutrients taken from soil erosion and potentially to break down certain waste products into an active fertilizer. Gor seemed quite excited about the study.

For what I predicted to be a long and bumpy ride, the coach provided a smooth and luxurious experience. Lunch and dinner was provided in an accompanied refrigerator, powered, along with Gor's dashboard and the coach's headlights, by exterior mini solar panels that were sensitive to the sun's direction and adjusted as needed. The coach even had a bathroom system on board that proved handy along the deserted road but somewhat uncomfortable to use. Gor described the carriage as Ecotopia's answer to fossil fuel emissions and air pollution.

*(June 4, 2031) – The Polar Bears*

We caught an early train ride into the capital. Much to the poor planning of my administration, I had arrived on the recognition day of Ecotopia's independence. I would be unable to speak with anyone of authority until the morning of the fifth. People gathered outside to witness an enormous parade of magnificent colors. The culmination of the parade ended in a gathering at the center of the town, where a "unity tree" was planted in honor of the Ecotopians connection with the earth.

From what I could tell through the crowds, Ecotopia remained mostly unchanged from what Weston described 30 years prior. Streams still ran through centers of the tree spotted streets and the public bike system still appeared to be in order. However, the kiosks that Weston described as holding magazines and newspapers, now housed several drives that could upload digital news and entertainment onto portable, folding LCD screens. An electric taxi and bus system remained standard as well, which was a remarkable site in itself. "Not a single carbon dioxide molecule coming from that now," Gor said, catching my stare at a bus as it eased by. Everything seemed in place, with a bit of modern essence.

After the ceremony, Gor showed me to a reserve in the basement of what used to be a football stadium. There, in an enclosed arctic environment were, much to my amazement, five polar bears. The species had been reported extinct three years ago, after remaining on the endangered list for over two decades. The majority of the species allegedly drowned as a result of the melting ice sheets. Gor informed me that, other than these five, Ecotopian scientists believed the species to have died out over ten years back, and that US scientists could only clarify this three years ago. We stood and watched a mother

and her cub for a moment, then left.

(June 5, 2031) – Meeting with Allwen

Gor showed me to the capital building in the heart of the city where I was to have a private meeting with Ecotopia's chief of state, Annie Allwen, the granddaughter of Vera Allwen, who held the position in the time of Weston's arrival. This curious coincidence, I later discovered, served no significance to what might have appeared to be a monarchy in power.

We sat down and had tea, first giving each other status updates of each of our respected countries. For a person of such prestigious status her office was quite thrifty. There was a worn desk and chair (I guessed oak), unpolished and unfinished, displaying only a monitor and keyboard all on top of a dull throw rug. I assumed the lack of paper was a sign of Allwen's commitment to Ecotopia's *No Paper Act of 2007*, which Gor had mentioned briefly.

Allwen informed me that little had changed in Ecotopian policy since the time of Weston's visit. She had read his account and stated that, for the most part, the details held true to date. She explained the Survivalist party in power had expanded some; adding additional departments and agencies with the new onset of temperature and sea level rises. The female dominating ratio in the party remained present, though not enforced. Strangely so, the party's policy to accommodate the environmental situation seemed to favor the land over its people at times. Rather than working to keep up with technologies to improve things like human communications and productivity, Ecotopia was putting most of its funds into planting trees and extensive, eco-friendly irrigation systems.

When the subject of negotiations was brought forward, however, it was met with a reaction that was both irresponsible and abrupt on Allwen's part. I can only portray the close-mindedness of Allwen's response through a transposition of a recording that I was taking during the conversation.

“...Since 2015, our policy has gone through a bit of reworking based on the new developments in the climate. I understand the United States has implemented changes as well, though for different reasons... Have you ever heard of global warming?”

I had. It was a misconception, debunked about 15 years back – before I was involved in the administration, though I had followed the news on the subject. She refreshed my memory, going over the specifics. An organized group of scientists at NASA led a man by the name of Hansen had been pushing the Obama administration since it took office in 2009 to suspend coal

burning solely to the power plants where carbon dioxide emission could be contained. At that time, the atmospheric carbon dioxide level was lingering around 385 parts per million; a level that, if left in the atmosphere, would react as a tipping point to the effects of global warming, causing sea levels to rise several meters. In 2013, when the campaign began to take off and Hansen's efforts were put into action, it was reported to the American people that scientists were mistaken and that the current environmental state of the earth, referred to as global warming, was in fact a cycle of a natural processes that would, over time, revert. She went on:

“What was not reported was that, during that year of 2013, the carbon dioxide levels in the atmosphere had reached 468 parts per million. Even with improved agricultural techniques and reforestation, only 50 ppm could be removed from the atmosphere, leaving the carbon dioxide well over a safe level of 350 ppm... The administration of the United States did not have evidence proving that a natural cycle was mistaken in the form of a global warming hypothesis. Their evidence was completely backing the contrary and thus, department heads realized the process could not be reversed... As I stated, our efforts and policies have changed. We have done so, not to accommodate our people in these harsh conditions, but to comfort our earth in its time of suffering. Our world is dying. Whether your country accepts this fact is out of our hands, but we will not allow you more land to tread on while the earth already gives its last breaths to support your people.”

With that, the meeting was over.

*(June 6, 2031) – Departure*

My meeting with Allwen, leads me to believe efforts of compromise will prove futile. I have decided to depart before my scheduled meeting with Ecotopia's Survivalist department. It appears that the only way for to win these Ecotopians over - stuck in their ways supported by outdated beliefs and anarchistic theories - is through force. Though, with Ecotopia's strong backing by Europe, France, Japan, and Russia, I cringe at the idea of a military incursion. I must note to request the calling for support of our allies, China and Australia, before doing so. Only time will tell what will come of this earth.

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*John Howard*

Film & Animation / CIAS

## Sustainability

As I grow old I look down at the eyes of my children.  
Everything I am capable of passing along is a gift  
to my children. Like the August sunflower: she looks down  
with everything she is capable of passing along:  
a gift to her children. Without what she gives,  
they cannot be...But say there is a young flower  
underneath her tired neck.

Brazen, with much spirit,  
give him words and he'll say "I don't need what you give,  
here I am, with all this sky above me!"  
Life after him, he considers a plaything, a riddle, only...  
Still, the future is not lost,  
nor gained, by opinion,  
but in the case of the sunflower,  
by what is either held onto  
or what is passed along  
by gravity and a gracious wind.

Enough of flowers: what of sustainability  
when we do not know what the seed of Earth is?  
Ruth Stone wrote, my children,  
do not confuse hunger with greed!<sup>1</sup>  
In the aftermath of such a statement,  
we must ask: what should we be eating  
instead, if our habits do nothing  
to fill us? We begin, then, to listen.  
We change our list of demands.  
We are like seedlings--ridiculous, spindly,  
not a shot at survival, pragmatically speaking.  
So we begin to rely on poetry.  
We cast aside everything extra. From our efforts  
we learn something of nature, something of circular,  
rhythmic Time. We seek to know, to make sense, to shout our songs  
with the certainty of laughter. We tiptoe toward the seed of Earth,  
so that someday our children may plant Her.

<sup>1</sup> from Ruth Stone's 1991 book, *Who is the Widow's Muse?*



## Sustaining a Healthy Planet

*I'd like to share a revelation that I have had during my time here. It came to me when I tried to classify your species and I realized that you are not actually mammals. Every mammal on this planet instinctively develops a natural equilibrium with the surrounding environment but you humans do not. You move to an area and you multiply, and multiply until every natural resource is consumed and the only way you can survive is to spread to another area. There is another organism on this planet that follows the same pattern, do you know what it is? ... a virus. Human beings are a disease, a cancer of this planet, you are a plague and we are the cure. Those were the words of Agent Smith as he tried to hack into Morpheus' mind in the movie, *The Matrix*.*

I have always wondered if the earth was a part of a larger organism the way an organ is a part of us. If so, it is interesting to think of our growth as cancerous. A group of renegade cells growing out of control, but if you look close enough that is what we have become.

I recently took a Sustainability/Carbon footprint test for an ethics class to see how many planets we would need if everyone on the planet should live as I did. I was shocked when the results came back as 4.9 planets to sustain my lifestyle. I was more shocked when they said it takes 6 planets to sustain an average American lifestyle. It was interesting to watch some of my classmates turn up results like 8 and 9 planets. You begin to wonder how people live. The population of the planet is growing exponentially with the low child mortality rates and the high reproduction rates. It is becoming apparent that we are in danger of quickly running out of planet.

We are running out of resources and we are running out fast. This has become a major issue in our society, it has transitioned beyond the argument of whether we are destroying the planet by our activities to what measures we should take to mitigate the problem. RIT has wasted no time on this issue and has pioneered a sustainability major as well as encouraged more green activity on campus. There are more bicycles on campus, more people take the bus as supposed to driving to school and even the freshman reading this year was an environmental conscious book, *Deep Economy*, by Bill McKibben.

In many scientific and philosophical circles the deterioration of our planet is seen as an ethical issue, a moral dilemma to be precise and it is our duty to help save the planet. So how many planets does it take to sustain your lifestyle? How much do you pay attention to environmentally friendly products? Well if you have been in the dark all this time it is not too late. As we transition into 2009 add, "going green" on your resolution list, reduce all your activities that cause pollution to the planet, you can make a difference and you can make a change.

The promise of sustainability is a promise for a future. A future for you and I, a future for our children, a future for the human race. Although we are all individually significant, the preservation of our species supersedes all and as a member of the human race it is our duty to protect it and to do so we have to change our ways, we have to move down from a 6 planet lifestyle to a 1 planet lifestyle. This change has to occur across the board for it to work, from cooperation's to nuclear families. It is our duty to enlighten others and persuade them to follow the right path. I am determined to do it and you should to. But first you must change yourself, change your ways to reflect what you preach and then people will follow and then, you can make a real change. Mahatma Gandhi said it best when he said, "You must be the change you want to see in the world."

*Adimalua Ofunne*

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## A Turn Towards the Infinite

The winds of change were thundering, alternately at his back and at his face. Nothing seemed consistent in his journey – nothing, that is, except a constant need for re-evaluation. He was a running man, both in the figurative and the literal. It seemed he was always moving – always struggling to get ahead or, most often, just to stay afloat. But he also ran for the therapeutic aspect. He ran to clear his mind – to free his thoughts of the day-to-day tangles that cluttered his conscious and distorted his vision. And so here he was again... on the move.

He wasn't the athletic type, or, at least, anything to be mistaken for a physical specimen. But he didn't need to be – that wasn't the point. The point was to exercise himself and to allow for a reinvigoration. All too often he saw his friends and associates falter, falling victim to their own stagnation and apathy. His goal was simply to stay viable and to allow for continued progress and growth – to accelerate where possible, but, more importantly, to sustain himself and to sustain his abilities to contribute and provide.

He opened up his gait. He had a long straightaway ahead of him, and he felt that the open road gave him the energy that he needed to push harder and to stride longer. His limits were unbounded, and he felt that anything was possible – nothing was beyond the realm of attainability. It was his own motion that kept him powered. A simple thought, he realized, but counterintuitive and truthful all at once.

The sun cast its rays down upon him, and the light guided his path in more than just the obvious fashion. It seemed to be the force that kept him going – the trusty source of energy that never failed and that always could be counted on to turn his ambitions into actions. Even when the sun took its nightly break, the knowledge of its imminent return was more than enough to carry him over to the next day. It was the basis of his outlook, the source of his optimism, and the fuel for his fire. And now, not only was the light beaming down on him, but its accompanying warmth was powering him as well. It loosened him up, allowed him to stretch that much further, and gave him that extra measure of strength. It was a wonderful and complex power that the sun possessed – an ability to drive, to inspire, and to fuel, all while residing so passively in its spot that is so often taken for granted by all.

He sped up as he approached the curve ahead. He always enjoyed this part of his route. The banking of the road seemed to bring the surface up to meet his feet, and it gave him the energy to push harder into his strides. It began a gentle incline, but it didn't seem to require any more effort. As he turned into the corner, he looked off to the open pasture beyond. He enjoyed the scenery here, and seeing these sights always brought out his reflective side. He soaked up the symbolism of the vacant field – the unending opportunity, the

vast expanse of the world's possibilities, and the belief – no, the knowledge – that anything was possible. He, too, gazed out over the rising wisps of steam that emerged from the warm-water marsh that was situated at the edge of the green. He was always amazed at how that swampy area could possess such unceasing warmth – a true phenomenon of the earth, he realized. The power of the ground to produce an infinite supply of heat convinced him of the existence of possibilities beyond the scope of his, and most, imaginations.

He leveled again, and the road seemed to roll back to the even plane – at least for a moment. This section was one of the unique pieces of his circuit -- A section of cobblestone that, for some reason not quite clear to him, reminded him of his time at the esteemed upstate school which was proved so formative to his ideas and philosophy at this point in life. This section, he felt, could appropriately be labeled, “The bricks of our future,” for it seemed to lay the groundwork for the unsettled piece of terrain ahead.

As he advanced beyond that solid footing, the road turned sharply upward, and he could begin to feel the resistance of the steep slopes that lie ahead. He questioned his energy, but only for a moment, for his prospect of the next challenge seemed familiar given his prior successes. The road seemed to fall off now, falling quickly below the short horizon. It was a daunting stretch of trail, but all at once intriguing, and he had no hesitation to continue with vigor. The winds that were previously presented as foe were now firmly at his back, and he couldn't help but think how his persistence in this run and, strangely, in his life, came back to pay the dividends that were implicitly promised at the onset of each journey.

His perspective, at times now, seemed upside down – unclear of the road ahead, but always certain of his potential. He didn't doubt the prospect of continuation, because his past experiences told him he shouldn't. He felt he was at his starting point, for it looked strangely familiar, as if viewed from an opposite perspective as before. He had expended vast quantities of energy in achieving his current spot, but he knew he'd expend much more in the time ahead. And he embraced that opportunity, because that idea of future growth held the promise.

*Joseph J. Quinn*  
RIT Alumnus

## To a Passing Related Stranger

thinking of you -  
right now at the moment.  
recalling the true  
blue eyes and not only.  
the white shirt, the face,  
small scarf and the sadness.  
you calmness within...  
momentarily madness.  
I'm thinking of you  
today. and not only?  
who cares, again? -  
the one who has hope.  
I'm happy to see  
you are one of those -  
choosing not simply to flee,  
but to Live= Create, Love and Grow!

*Myroslava Symonenko*  
RIT Alumna





