

2014



30 NOVEMBER 2014

DOW SUSTAINABILITY FELLOWS REPORT

HOW TO MAKE REAL CHANGE STICK

KELSEA BALLANTYNE, CHARLISE RANDALL & DAN TISH

THANK YOUS...

The team would like to thank everyone behind the Dow Sustainability Fellows Program for their time and support in making this effort possible. This includes The Dow Chemical Company, the Graham Sustainability Institute, and in particular our amazing program advisors - Gregory Bond and Anne Wallin. We would also like to thank our client and advisor, Raymond DeYoung.

PAGE 6-7

OUR PROCESS

PAGE 8-9

THE FOOD PROBLEM

PAGE 10-11

THE SOLUTION

PAGE 12-13

OUR STORIES

PAGE 14-17

THE WEBSITE

PAGE 18-19

IMPLICATIONS

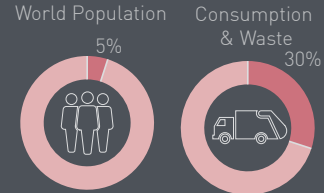
Capping Consumption with Intrinsic Satisfaction: how to make real change stick

kelsea ballantyne,
charlise randall,
& dan tish

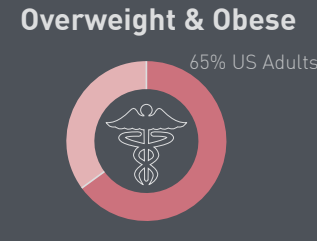
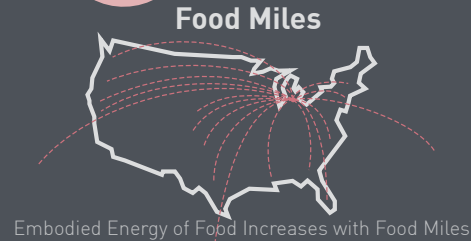
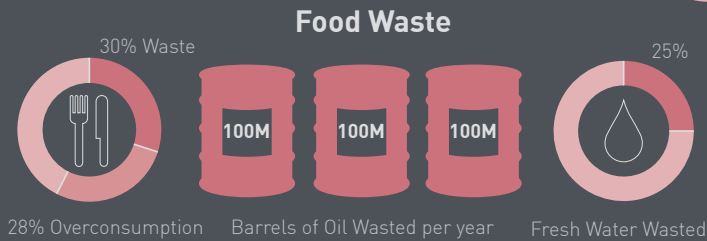
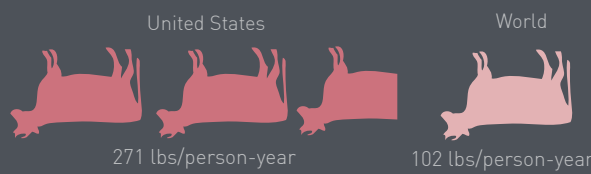
The Problem

For much of the last century, a culture of overconsumption has been running rampant in the US. No matter how fast technology changes and how efficient processes become, population growth and overconsumption have overshadowed the progress. Even when we have enough food to survive, we buy and eat in excess. Not only do we over consume, we also consume foods that quickly deplete the world's resources, contribute to global warming and are harmful to our bodies.

US Over Consumption



US Over Consumption of Meat



Ourfoodstories.org



Our website takes people through the process of understanding intrinsic satisfaction, inspires them with stories from around the United States and then provides them with a call to action. The website can be found at the address above.

Call to Action!



Learn more about the problem and Intrinsic Satisfaction as the answer



Tell us your Story!



Commit to Behavior Change & follow through!

The Solution: Intrinsic Satisfaction & Storytelling

Instead of using the typical methods to educate the public, we are partnering with individuals and organizations to create a website showcasing intrinsic satisfaction frameworks overlaid on inspiring stories. The target audience will better understand intrinsic satisfaction and will be inspired to the stories that they read, and the end result will be their commitment to changing their food consumption behaviors.



Intrinsic Satisfaction

Intrinsic Satisfaction comprises five different elements: luxury, frugality, participation, competence and fun. These categories are defined by research produced by University of Michigan Professor Ray DeYoung.



Competence

- * Learning how to solve most problems I face
- * Remaining competent at meeting life's challenges
- * Discovering new things I'm good at doing



Participation

- * Taking actions which can change the world
- * Helping to make sense out of the world
- * Working with others to solve problems



Frugality

- * Finding ways to avoid waste
- * Keeping something running past its normal life
- * Finding ways to use things over and over
- * Repairing rather than throwing things away



Luxury

- * Being the first to own an unusual product
- * Having luxuries and conveniences of our society

Intrinsic satisfaction is derived from luxury from both the conveniences of our modern society and access to new and novel products. Although logic might suggest a negative correlation between luxury and the other intrinsic satisfaction categories. This is a very hopeful finding, for it suggests that there need not be extensive internal dissonance as people begin a transition from a material-focused to a conservation-focused lifestyle.



Fun

Actions that are more durable simply don't need forcing, but rather individuals complete these actions because they are enjoyable or satisfying in and of themselves.

Storytelling



What is Storytelling?

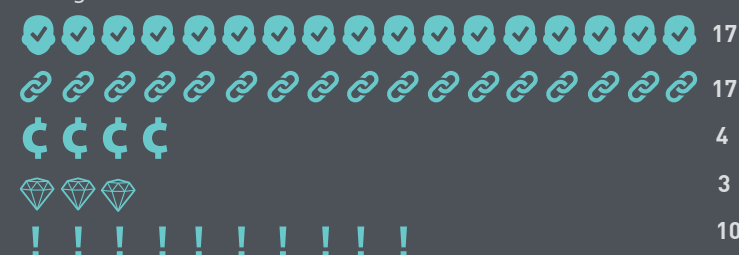
A story is a form of information transfer that relies on narrative structures—based on the very human actions of thinking, perceiving and, most of all, imagining—to elicit a change in perspectives and ultimately behavior in a target audience.

By relying on the imagination, emotions and cultural biases built into the collective experience of a target audience, stories have the unique power to frame factual consequences in emotional terms, thereby appealing to the widest range of intrinsic motivators of the target audience. Stories give the pallor of facts and graphs a tangible character that can be tested and adapted to yield a precise outcome.

All is paraphrased from: Young, Raymond De, and Martha C. Monroe. "Some Fundamentals of Engaging Stories" Environmental Education Research: 171-87. Accessed October 21, 2014.

The Results

After collecting many stories through our online survey, we sorted and categorized the intrinsic motivations behind people's behavior changes. Below are our results:



Excerpts from Stories



Traci



"I have learned that food has the power to change the world. If we can get one person in each family to focus on the food, to have a nice meal ready three times a day for the family, then the individual family members health begins to improve and they each begin to feel very loved, nurtured and taken care of on a very deep level. This, over time, gives them the love and energy reserve necessary to begin to help others in their community, to care for the planet and its creatures."



Brent



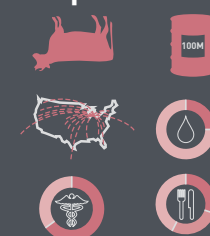
"This all began when I first volunteered on an organic farm during the summer of 2013. I found the work so agreeable that I soon began working on the farm as my job. Having a daily interaction with food made me truly consider what I was putting in my body and realize the amount of hard work required to produce healthy sustenance. Prior to this I felt disconnected from food and it was difficult to realize its true importance."

Behavior Changes Represented

Behavior

- * Joining a CSA
- * Buying Local
- * Becoming Vegan or Vegetarian
- * Eating Healthy
- * Farming/Gardening
- * Appreciation for the Food System

Impact



OUR PROCESS

Our Food Stories

Together, we have the opportunity to transform the American food system. This starts with recognizing the problem, understanding the solution and being inspired by stories of change. Check out the website, commit & one day we look forward to sharing your food story!



The interdisciplinary team came together with a passion to find ways to combat the overarching problem of overconsumption and waste in the United States. The team's first proposal sought to look at ways to reduce consumption while changing the manufacturing process, because they understood that issues of overconsumption and wasteful manufacturing processes go hand in hand. In order to make a meaningful change, the team agreed that it must take a holistic look at the entire system - from the manufacturers to the consumers. After identifying this problem within society and manufacturing, the team proposed ways to fix it. Each of the team members had some previous experience with the issues at play within this realm; together, their experience was diverse enough to tackle issues of consumerism, manufacturing, and product design simultaneously.

After a discussion with Dow Executives and much research into the issues of both overconsumption and manufacturing, the team decided to focus on the underdeveloped area of reducing overconsumption through intrinsic satisfaction and storytelling.

For the project, the team further researched intrinsic satisfaction - a concept proposing that people are better motivated to perform certain tasks if they find inherent value, whether it is interest or fun, in that task. The team recognized that the concept had powerful implications on how businesses, governments and non-profit organizations motivate the general public to adopt a more environmentally friendly lifestyle. Furthermore, they realized these groups have typically relied on guilt or fiscal arguments to try to promote "green" lifestyle changes.

However, research suggested that intrinsic satisfaction could be more effective in changing citizen's habits towards more environmentally friendly actions in the long run. While certain strategies, processes, and products for how people can cut their carbon footprint have been proposed many times over, the environmental community has struggled to figure out how to convince people to adopt these strategies with any consistency or longevity. The team therefore found intrinsic satisfaction as an important tool for seeing real change in people's behavior and effectively reducing carbon footprints and waste.

In order to test the effectiveness of this concept, the team honed in on a particular market - in this case food. The team members conducted interviews to better understand what intrinsic motivations encouraged the adoption of frugal behaviors regarding food consumption. From this research, the team distilled common themes into a "toolset" of characteristics, motivations, emotions, and experiences to tap into for intrinsic motivation. This information was then presented on a website to collect further stories and commitments and be used by environmental psychology researchers in Professor Ray DeYoung's lab.

The following describes the process in detail.

“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.”

-Margaret Mead

THE FOOD PROBLEM

For much of the last century, consumption has defined American culture. “The U.S. has 5% of the world’s population but consumes 30% of the world’s resources and creates 30% of the world’s waste.” (Leonard 2001) Our progress is measured in consumption, we all strive for bigger homes and better cars, and much of our culture is oriented towards materiality. We often credit our ingenuity and know-how with allowing us to accomplish this ever-growing production using less raw inputs than previous generations.

However, no matter how fast technology changes and how efficient processes become, population growth and unchecked consumption rates have overshadowed our technological prowess. Even when we have enough food to survive, we buy, eat and waste food in excess. Still for some Americans, chronic hunger and malnutrition are a daily reality through food deserts, empty calorie foods and poverty. We are over-consuming as a nation, and we cultivate foods that quickly deplete the world’s resources, contribute to global warming and can be harmful to our bodies.

OVERCONSUMPTION & WASTE

Not only are we consuming resource intensive products, we are consuming in a way that creates massive amounts of waste. “US per capita food waste has progressively increased by approximately 50% since 1974 reaching more than 1400 kcal per person per day or 150 trillion kcal per year. Food waste now accounts for more than one quarter of the total freshwater consumption and approximately 300 million barrels of oil per year.” (Hall 2009) Specifically, “analysis shows that avoidable food waste in the US exceeds 55 million metric tonnes per year, nearly 29% of annual production. This waste produces life-cycle greenhouse gas emissions of at least 113 million metric tonnes of CO₂ annually, and costs \$198 billion.” (Venkat 2012)

OBESITY & HUNGER

These two words--obesity and hunger--seem to be at far ends of the spectrum. Unfortunately, in the US, we have an estimated 65% of adults who are overweight or obese. (World 2013) Many children are struggling with obesity as well. At the same time, we are a nation that still faces chronic hunger and malnutrition in both urban and rural contexts.

“Relationships exist between unhealthful diets and their impact on body weight. Plant-based diets are associated with lower rates of obesity. It follows that a “positive shift” toward a more plant-based diet should “not only reduce body weight but also contribute to reducing an individual’s carbon footprint and hence, environmental impact.” (Yasgur 2013)

“The U.S. has 5% of the world’s population but consumes 30% of the world’s resources and creates 30% of the world’s waste.”

MEAT OVERCONSUMPTION

In the United States, the average annual meat consumed per person is estimated at a staggering 270.71 pounds. In stark contrast, the 2007 world average was 102.5 pounds per person per year. (FAO 2010) Meat is resource intensive. Beef production emits greenhouse gases that contribute more than 57 times as greenhouse gases when compared to the gases emitted from producing potatoes. (Fiala 2009) Meat is a huge contributor to GHGs--“Production levels of meat contribute between 14 - 22 percent of the 36 billion tons of “CO₂-equivalent” greenhouse gases the world produces every year.” (Steinfeld 2006)

FOOD MILES

Transportation of food from one place to another accounts for 15% all GHG emissions from food. We want our strawberries in the middle of winter and kiwis in the middle of the desert. As Americans we have distanced ourselves from the production of food and have forgotten how to eat with the seasons and the resources that exist around us.

THE SOLUTION

Food is resource intensive, it is required by every human on the planet, but frequently in the United States it is over consumed and wasted. Instead of using the typical methods to educate the public, we are partnering with individuals and organizations to showcase intrinsic satisfaction frameworks overlaid on inspiring stories of sustainable behavior change. We hope to help people better understand intrinsic satisfaction and be inspired by the stories that they read. With the tools and inspiration, we ask for a commitment to changing food consumption behaviors.

INTRINSIC SATISFACTION

Intrinsic satisfaction is a concept proposing that people are better motivated to perform certain tasks if they find inherent value, whether it is interest or fun, in that task. In the past many groups have typically relied on guilt or fiscal arguments to try to promote “green” lifestyle changes. However, research suggests that intrinsic satisfaction can be more effective in changing people’s habits towards actions that are more durable and lasting.

COMPETENCE



- * Learning how to solve most problems I face
- * Remaining competent at meeting life’s challenges
- * Discovering new things I’m good at doing

PARTICIPATION



- * Taking actions which can change the world
- * Helping to make sense out of the world
- * Working with others to solve problems

FRUGALITY



- * Finding ways to avoid waste
- * Keeping something running past its normal life
- * Finding ways to use things over and over
- * Repairing rather than throwing things away

LUXURY



- * Being the first to own an unusual product
- * Having luxuries and conveniences of our society

Intrinsic satisfaction is derived from luxury from both the conveniences of our modern society and access to new and novel products. Although logic might suggest a negative correlation between luxury and the other intrinsic satisfaction categories. This is a very hopeful finding, for it suggests that there need not be extensive internal dissonance as people begin a transition from a material-focused to a conservation-focused lifestyle.

FUN



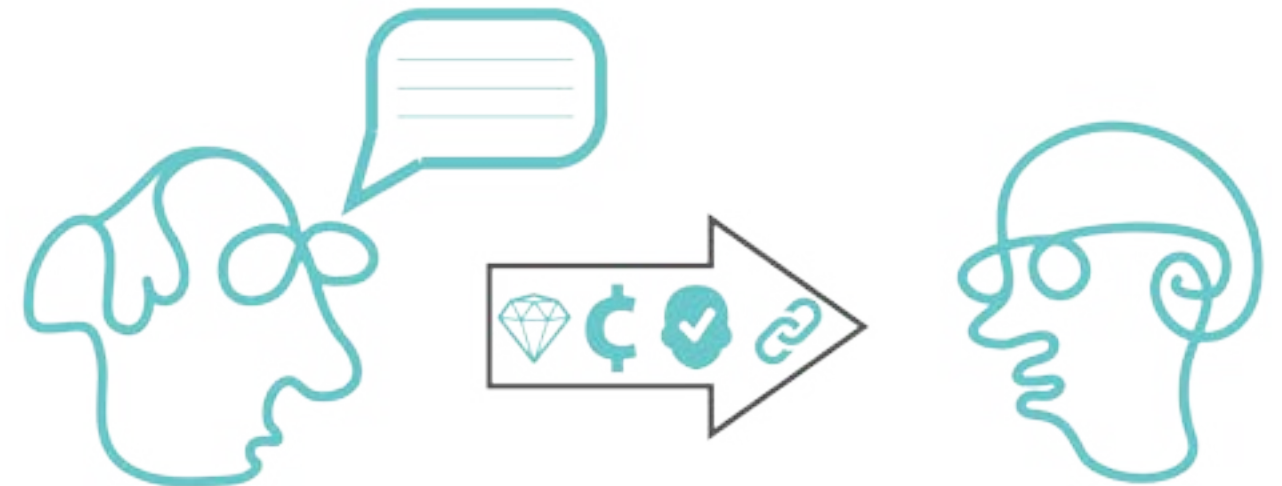
Actions that are more durable simply don’t need forcing, but rather individuals complete these actions because they are enjoyable or satisfying in and of themselves

All is paraphrased from: De Young, R. “Expanding and Evaluating Motives for Environmentally Responsible Behavior.” *Journal of Social Issues*, 56.3 (2000): 509-526

“Storytelling is the most powerful way to put ideas into the world today.”

—Robert McKee

STORYTELLING



What is storytelling?

A story is a form of information transfer that relies on narrative structures—based on the very human actions of thinking, perceiving and, most of all, imagining—to elicit a change in perspectives and ultimately behavior in a target audience.

Why is storytelling important?

By relying on the imagination, emotions and cultural biases built into the collective experience of a target audience, stories have the unique power to frame factual consequences in emotional terms, thereby appealing to the widest range of intrinsic motivators of the target audience. Stories give the pallor of facts and graphs a tangible character that can be tested and adapted to yield a precise outcome, tailored to elicit a specific emotional and behavior response from the target audience.

Stories are more powerful today than ever. Why?

- * We are drowning in information. Good stories can cut through the noise.
- * Personal stories feel “real” vs abstract concepts, statistics, or logical arguments
- * Stories capture people on an emotional level, creating a deeper, intimate bond.
- * Stories are memorable. People forget facts but remember stories.

All is paraphrased from: DE Young, R., and Martha C. Monroe. “Some Fundamentals of Engaging Stories.” *Environmental Education Research*: 171-87. Accessed October 21, 2014.

OUR STORIES

Many inspiring stories were collected through a Call to Action. Below are results and a few excerpts from the stories.

THE RESULTS

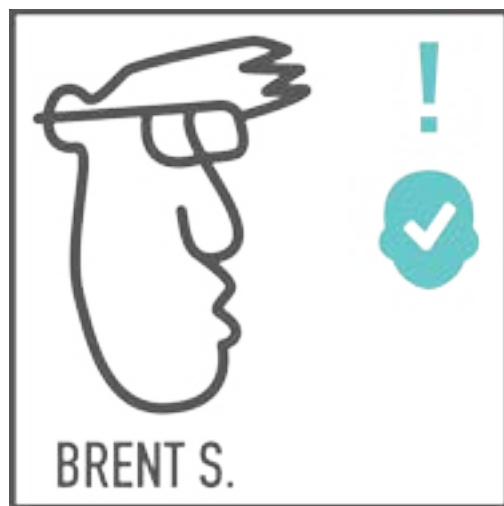
After collecting 40 stories through the online questionnaire, the results were sorted and categorized into the intrinsic motivations behind people's behavior changes. Below are the results:



Some examples of the way people's stories show their changed food behaviors include:

- * Joining a Community Supported Agriculture (CSA)
- * Buying local
- * Becoming vegan or vegetarian
- * Eating healthy
- * Farming and/or gardening
- * Appreciation and respect for the food system
- * Volunteering with community food service organizations

AN EXAMPLE



"This all began when I first volunteered on an organic farm during the summer of 2013. I found the work so agreeable that I soon began working on the farm as my job. Having a daily interaction with food made me truly consider what I was putting in my body and realize the amount of hard work required to produce healthy sustenance. Prior to this I felt disconnected from food and it was difficult to realize its true importance."

TO READ MORE EXCERPTS: <http://www.ourfoodstories.org/our-stories>
 TO READ MORE FULL STORIES: <http://tinyurl.com/k32areq>

ELKE'S STORY

What Have You Done To Change Your Food Behaviors And For How Long?

I was inspired to try veganism when I stayed at the Sadhana Forest commune in India. There are a plethora of arguments for adopting a plant based diet which are backed by reasons of health, ethics, animal treatment, environmental impact and more. For example, an average person using about 5,200 gallons of water YEARLY in their showers, while it takes about that same amount of water to raise ONE POUND of beef! I maintained complete veganism for 5 years.

Why Have You Continued This Behavior?

I continue to eat a plant based, local and organic diet because I firmly believe in the concept of Food and Medicine. I hardly ever get sick because I am getting a full range of vitamins, minerals, probiotics and other micro nutrients directly from my food. It is even more gratifying to get into the cycles of nature and assume a state of childlike wonder when watching the food grow right in front of your eyes.

Tell Us A Specific Story About This Behavior Change.

Currently, the most important key to my diet isn't veganism, but healthy eating of local and organic foods, and staying away from packaged food of any kind. We currently manifest this by growing as much of our own food as possible here at our house. When I was a little girl I remember how amazing it was to harvest food straight out of the garden, and it is even more powerful to watch my son explore foods fresh from the plant. Gabriel loves to tear leaves off of a kale plant and stuff them directly in his mouth, or munch on a head of broccoli just like an ice cream cone!

What Has Been Most Enriching About This Behavior Change?

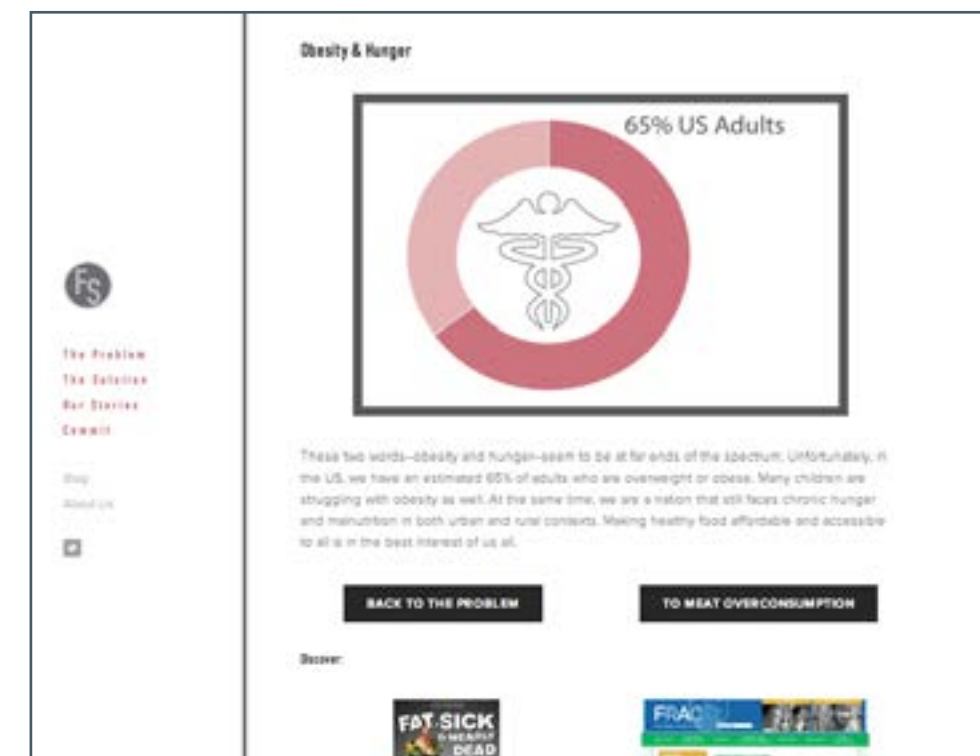
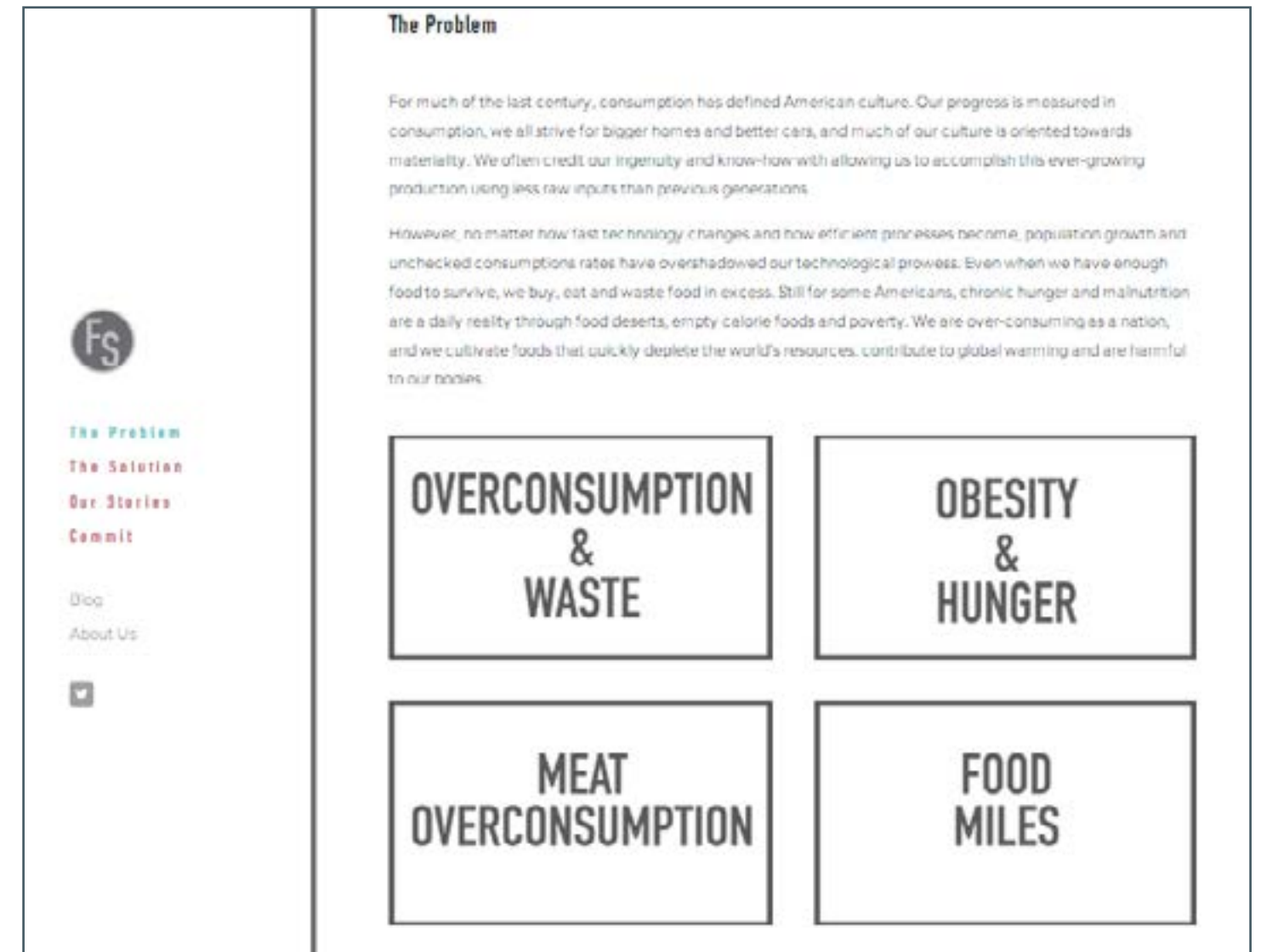
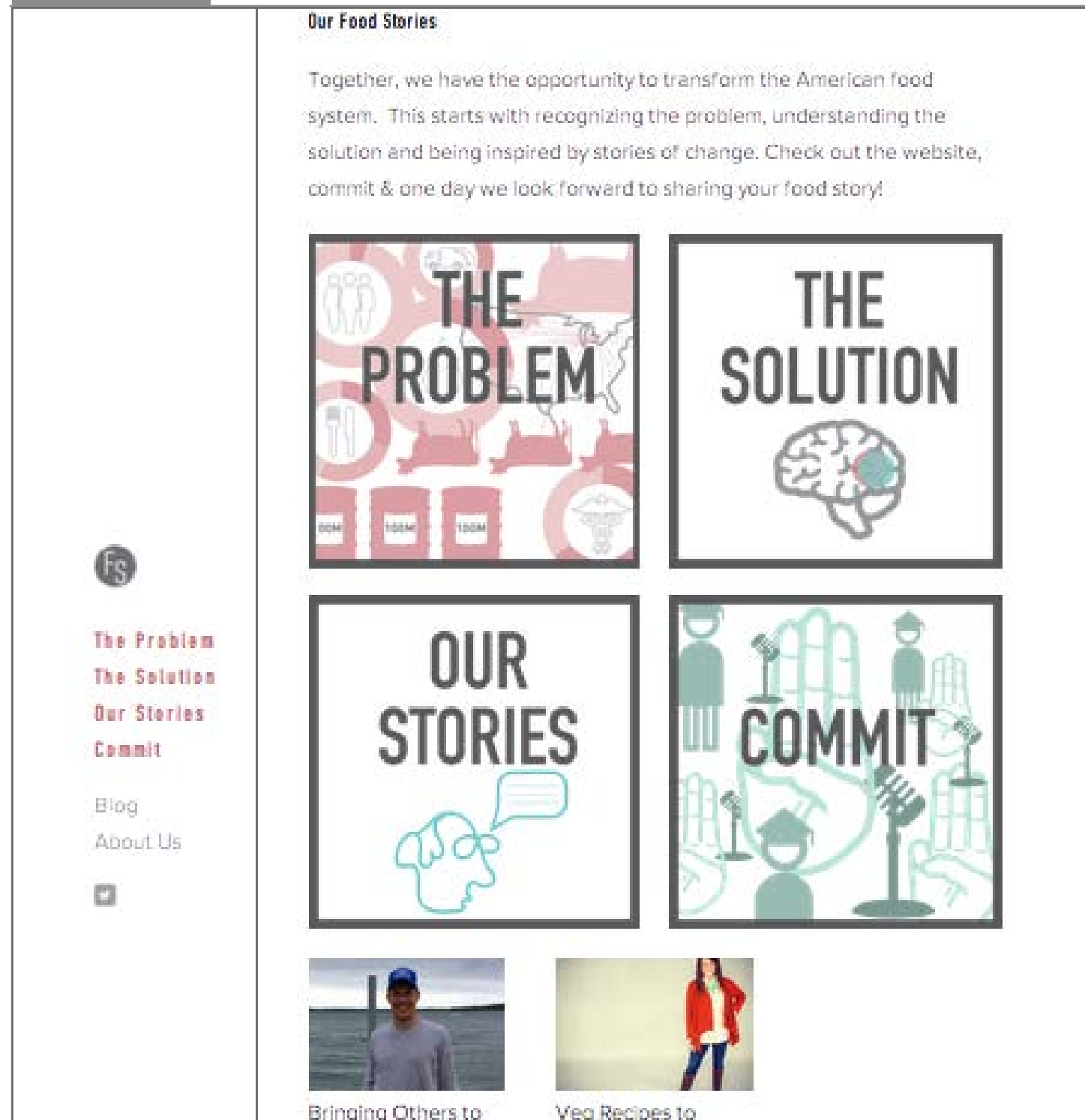
It is amazing to not have to buy produce from a grocery store. I know that even organic produce sometimes employs practices I don't fully agree with. When I pick produce from garden, I know exactly what energy, materials and efforts have gone into growing it. I also believe that growing our food is a right that we have to exercise; it is so liberating to know that a pack of seeds and some physical labor can create pounds upon pounds of the most nutritious food imaginable. I am supremely gratified to be able to share this experience with my son; at two and a half he has already participated in soil preparation, planting, weeding, watering, harvesting, eating, and seed saving from our crops.



THE WEBSITE

OURFOODSTORIES.ORG

A website was created to educate others about the problem, the solution, share stories and ultimately ask for more commitments and stories. This website will be used by Ray DeYoung and his lab to better understand intrinsic satisfaction as an effective tool for reducing consumption and waste. On the following pages are screen shots of the actual website.



THE WEBSITE

OURFOODSTORIES.ORG

The Solution

Food is resource intensive, it is required by every human on the planet and, in the United States in some places, it is over consumed and wasted. Instead of using the typical methods to educate the public, we are partnering with individuals and organizations to showcase intrinsic satisfaction frameworks overlaid on inspiring stories. We hope to help people better understand intrinsic satisfaction and be inspired by the stories that they read. With the tools and inspiration, we ask for a commitment to changing food consumption behaviors.

MOTIVATION

TELLING STORIES

Navigation: **The Problem**, **The Solution**, **Our Stories**, **Commit**, **Blog**, **About Us**

AMANDA H.

ANDREA & SCOTT

Navigation: **The Problem**, **The Solution**, **Our Stories**, **Commit**

Commit

Now that you've had a chance to understand the problem and see how Our Food Stories presents a personal solution, it's time to make your commitment AND tell us your story. When you make a commitment, you'll be crafting a personalized set of objectives that will integrate the intrinsic satisfaction elements into the way you interact with food and effect change in your personal food system. By telling us your story, we will work together to broadcast our collective commitment. Together, we can make a more just and sustainable food system.

Learn more about the problem and Intrinsic Satisfaction as the answer

Commit to Behavior Change & follow through!

Tell us your Story!

Navigation: **The Problem**, **The Solution**, **Our Stories**, **Commit**, **Blog**, **About Us**

Tell Your Story

Have you recently joined a CSA? Do you volunteer at a farm? Have you become a vegetarian? Do you participate in community potlucks or shared food gatherings? Do you volunteer with food organizations? Is there anyway you have changed your food behaviors to help yourself or society?

Tell us more about your food story:

Your Name*

First Name Last Name

Your Email Address*

Is this story about a commitment you made here on Our Food Stories?
 Yes
 No

If so, what was your commitment?

What have you done to change your food behaviors and for how long?

Navigation: **The Problem**, **The Solution**, **Our Stories**, **Commit**, **Blog**, **About Us**

IMPLICATIONS

IMPLICATIONS FOR INTRINSIC SATISFACTION & STORYTELLING AS A BEHAVIOR CHANGE TOOL

Climate change and sustainability present many challenges for this generation and generations to come. We need to make significant technological process and change the way we live our everyday life in order to amend the problems we've created. In many situations, we are already half way there. Scientists, engineers, designers, and business people have devised solutions for us to start cutting back and lowering our carbon footprint on the planet. However, implementation of these solutions has been arduous due to a lack of support from citizens and politicians alike. It is becoming clearer and clear that

sustainability has a marketing problem. The arguments that target extrinsic motivations - arguments based around monetary savings and guilt - have failed to produce durable behavior change in the residents of developed nations. This is why intrinsic satisfaction is so important to not only the food system, but to sustainability as a whole.

Waste and overconsumption are issues that affect many industries, and their solution is never just on the supply side. There are many markets and products that can learn from the values of intrinsic satisfaction in order to produce more durable

behavior change that reduces waste in our society. The toolkit presented here is meant to give business people, marketing professionals, and designers the knowledge to reconceptualize their products to create a connection in their customers to sustainable products that goes beyond savings or guilt. By connecting sustainable behavior change to tasks that one enjoys doing in and of itself, that behavior is more durable. From a business perspective, that durability equates to a customer base that may be consuming less, but is highly loyal, coming back to familiar products again and again for the enjoyment they produce.

BUSINESS BUY-IN

One of our goals moving forward would be to attract like minded businesses to partner with in order to strengthen our organization as well as those we work with. Businesses that have a focus and commitment to sustainability would be natural partners. Our stories and toolkit could become a valuable asset to any business looking to reduce waste and reinforce positive sustainable changes. These tools could be

used to connect with customers intrinsically, creating a long lasting, devoted customer base. These businesses would be researched and screened before receiving an intrinsic satisfaction certification of sorts. This would gain them a greater audience of highly committed potential customers. The first businesses to attract would be B-Corps members or the like, who have already proven to be dedicated to sustainable practices.

Given the nature of our research, another possible partnership would be with local small farms around Michigan. Farmers could offer us greater expertise in the day to day operations of organic and sustainable farming practices. Community members would thoroughly enjoy planned trips to the farm to help work the land, gaining a greater knowledge and appreciation of where our food comes from. This would only reinforce

BUSINESS BUY-IN CONTINUED...

intrinsic motivation values of participation, competence and fun. These farmers would have access to our database of stories, to help attract new customers and learn about the trends in consumer knowledge and experiences that drive purchasing decisions.

Larger companies that are

looking to make a greater impact on sustainability issues could also be enrolled. Our expertise could help shift the perspective for these companies that may be contributing more to an over consuming, waste-producing society than they realize. Intrinsic satisfaction motivators work across all industries and can help solidify a customer

base by improving public image and making customers feel good about the products their purchasing. Like all the others, large companies would be featured on our website expressing to the public that they have made a commitment to reducing waste through novel techniques.

OTHER PROBLEM FOCUS AREAS

As previously stated, the issue of over consumption goes far beyond the realm of food. Particularly egregious is the waste of the small electronics industry. The manufacturing of these electronics requires the extraction of many different types of materials, including a number of rare-earth metals that make up their circuitry. The extraction of rare earth metals is a highly inefficient process, and as its name suggests, their supplies are extremely limited. Also involved in the process of reclaiming these and other value raw materials is the social issues surrounding their unsafe recycling practices that occur in third world countries. Nonetheless, we replace our phones, laptops, and headsets before they have reached the end of their useful lives, compounding the extraction

toll on the landscape. Intrinsic satisfaction could be used to rethink how we make decisions regarding consumer electronics. The trend can be shifted from replacing to fixing, from needing the latest gizmo to learning how to use all of the features of your current model. Using the toolkit developed through food stories, we can try to slow the incredible pace of small electronics replacement.

With the expansion of online shopping into unprecedented territories of same day delivery models, these practices will need to receive attention as well from a waste reduction standpoint. With these new advances, it is becoming easier and easier for customers to purchase goods on a whim adding to overconsumption. Storytelling and intrinsic

satisfaction could be a key component to getting consumers to curb their online shopping habits, preferencing the social implications of supporting local small businesses.

This effort of determining the intrinsic satisfaction and storytelling toolkit was always meant to reach beyond issues surrounding food. Put in the hands of intelligent, dedicated sustainability supporters, it can have a broad and meaningful impact on the way we make our purchasing and consumption decisions. Our work has shown that intrinsic satisfaction has had a profound effect on individuals trying to change their food habits, it will prove to be a crucial tool to confronting overconsumption and waste in other industries.

WORKS CITED

Cooke, Anna, and Kelly Fielding. "Fun Environmentalism!: Potential Contributions of Autonomy Supportive Psychology to Sustainable Lifestyles." *Management of Environmental Quality: An International Journal* 21.2 (2010): 155-64. Print.

DeYoung, R. "Encouraging Environmentally Appropriate Behavior: The Role of Intrinsic Motivation." *Journal of Environmental Systems* 15.4 (1985): 281-92. Print.

DeYoung, R. "Slow Wins: Patience, Perseverance and Behavior Change." *Carbon Management* 2.6 (2011): 607-11. Print.

DeYoung, R. "Some Psychological Aspects of Living Lightly: Desired Lifestyle Patterns and Conservation Behavior." *Journal of Environmental Systems* 20.3 (1991): 215-27. Print.

DeYoung, R. "Expanding and Evaluating Motives for Environmentally Responsible Behavior." *Journal of Social Issues*, 56.3 (2000): 509-526

DeYoung, R. "Transitioning to a New Normal: How Ecopsychology Can Help Society Prepare for the Harder Times Ahead." *Ecopsychology* 5.4 (2013): 237-239

DeYoung, R., and S. Kaplan. "On Averting The Tragedy Of The Commons." *Environmental Management* 12.3: 273-83. Print.

DeYoung, Raymond, and Martha C. Monroe. "Some Fundamentals of Engaging Stories." *Environmental Education Research* 2.2 (1996): 171-87. Print.

Fiala, Nathan. "How meat contributes to global warming." *Scientific American* 4 (2009).

Food and Agriculture Organization of the United Nations (FAO). (2010). *Livestock and Fish Primary Equivalent*, 02 June 2010, FAOSTAT on-line statistical service, FAO, Rome

Hall, Kevin D., et al. "The progressive increase of food waste in America and its environmental impact." *PLoS One* 4.11 (2009): e7940.

Hunt, M. E. "Environmental Learning without Being There." *Environment and Behavior* 16.3 (1984): 307-34. Print.

Leonard, A. 2001. *The Story of Stuff*. Free Press. Accessed Online: http://storyofstuff.org/wp-content/uploads/2011/03/annie_leonard_facts.pdf

Miller, Timothy. *Wanting What You Have: A Self-discovery Workbook*. Oakland, CA: New Harbinger Publications, 1998. Print.

Steinfeld, Henning, Pierre Gerber, Tom Wassenaar, Vincent Castel, Mauricio Rosales, and Cees De Haan. *Livestock's Long Shadow: Environmental Issues and Options*. Rep. Food and Agriculture Organization of the United Nations, 2006.

Venkat, Kumar. "The climate change and economic impacts of food waste in the United States." *International Journal on Food System Dynamics* 2.4 (2012): 431-446.

World Watch Institute. 2013. *The State of Consumption Today*. Accessed Online: <http://www.worldwatch.org/node/810>

Yasgur, Batya Swift. "Are Obesity and Climate Change Connected." *MPR*. November 13, 2013.

