by Charles Albert Samuels

Origin theory is a written discourse on the way in which the origins of objects — both creative and material — can connect people and influence personal lifestyles, the environment, and our collective future. It relates the power of having a hand in the creation of the world around us and the reflection of identity involved in this kind of active and collective design of the future. Finally, it explores the potential for a shift away from the industrial, impersonal, and homogenizing methods by which we shape our world toward a more self-reliant, self-reflective future-seeking.

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Objects

What did you do today? Got up out of your bed first thing? A mattress, a box spring, a bed frame, sheets, and a few pillows: Even in the waking minutes of your morning you are likely coming into contact with at least five different products. You likely sleep differently given different mattresses to sleep on; each product that we come into contact with defines particular behaviors that we engage in. The mattress, box spring, bed frame, sheets, and pillows all influence the way we sleep. Sleep quality has far ranging effects into the quality and efficiency of our behavior, and has a tremendous effect on well-being. Getting quality sleep can make or break the health of your immune system as well as the rejuvenation and health of your muscles and even your psyche.

Those are the potential effects of just the first five products that you likely engage in, even before you are fully awake. And mattress companies use this kind of information to advertise their brand and try and get consumers like you and I to purchase their product. Because it will really make a difference in your life. The fact is, there are likely so many products involved in even the first hour of your morning routine that all have sway on the way in which you live your life. Your toothbrush, your coffee mug, your frying pan and stove, your toaster and bread or bagels: all of these things define who you are in some way. It may seem like each only has a very small range of influence, and there are the occasional items that have much more sway: a car, an apartment, a computer. But each of these items has some measure of authority over the way we act and therefore who we are: My chair tells me how to sit in it, my pen tells me how to grip it, my desk tells my body at what height to hold itself; so what kind of story am I writing? I don't believe that it's entirely my own.

All of these products — in fact, all objects that are man-made — have been designed. Whether it's a "designer" item from the shelves of a hip boutique where items are almost *about* the fact that they were designed — through clever use of some kind of marketing gimmick or genuine ingenuity and thoughtful functionality — or it's an industrially manufactured gasket in the plumbing section of your local hardware store, every object was thought up, drafted for manufacture or otherwise produced, and then shipped to a location where you can now conveniently purchase it.

So, Who Are You?

It might be comforting for us to think that when a designer was conceiving the fork and knife that you use to eat every day and every night he or she likely wanted to provide the best experience for you. Ease of use, quality of construction, and aesthetic qualities all contribute: make it beautiful and when you see it on the shelf you will imagine it in your own home; make it so that it will last a lifetime and fit nicely in the hand and easily cut and maneuver food and you will enjoy using it and will keep it and its brand in mind next time you visit the store.

The truth is, the designer did not have you in mind when creating this lovely silverware set. The designer most likely has no idea who you are, and has no idea

what your personal preferences are — he or she likely knows absolutely nothing about what makes you, you. On the contrary, the designer and his or her marketing team likely know exactly what it is that makes you the same as everybody else. This is because of the market research that shows where you and everyone else have cast your monetary 'votes' by purchasing products.

So who really are you? Maybe you're a sweetheart, maybe you're a doll. But how am I going to read that from those four inch Manolos and the gold and black leather Gucci clutch? You might be a real bookworm, but what are you doing in those flashy Air Jordans? You just bought a new Dyson! You must have more money than you need to spend on a vacuum cleaner and an employee to use the thing for you! Now that's a classy coffee table; simple, functional, elegant. Matches the mantelpiece too! You must have an eye for these things. Either that or you put in a great deal of effort to seem like you do.

But seriously. I know you like rubik's cubes and Mensa cards, I know you play racquetball and don Livestrong wristbands, I know you love satin and silk and floral print wallpapers. But: *who are you*?

The Potential of Design

'This... stuff'? Oh. Okay. I see. You think this has nothing to do with you. You go to your closet and you select... I don't know... that lumpy blue sweater, for instance because you're trying to tell the world that you take yourself too seriously to care about what you put on your back. But what you don't know is that that sweater is not just blue, it's not turquoise. It's not lapis. It's actually cerulean. And you're also blithely unaware of the fact that in 2002, Oscar de la Renta did a collection of cerulean gowns. And then I think it was Yves Saint Laurent... wasn't it who showed cerulean military jackets? I think we need a jacket here. And then cerulean quickly showed up in the collections of eight different designers. And then it, uh, filtered down through the department stores and then trickled on down into some tragic Casual Corner where you, no doubt, fished it out of some clearance bin. However, that blue represents millions of dollars and countless jobs and it's sort of comical how you think that you've made a choice that exempts you from the fashion industry when, in fact, you're wearing the sweater that was selected for you by the people in this room from a pile of stuff.[1]

It is something of a biting monologue delivered by Meryl Streep, who plays a fictional equivalent of Ana Wintour — the infamous editor of Vogue Magazine — in the film *The Devil Wears Prada*. But it delivers the cogent message of the power of design with a punch, warning that the design decisions that you make in your life have the potential to make you omnipotent — determining the directionalities of the masses — or instead just one of many sheep in the herd.

It is my belief—and I think or hope that I share it with anybody who is both self-respecting and a designer—that the act of designing objects, interfaces and spaces creates change and influence outside of oneself. 'Design' is more than just defining the way things look and function, and instead is a mode of manipulating these facets to define the way people behave, the way lifestyles are formed, and the

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1 IMDb. (n.d.). The devil wears prada (2006) — quotes. Retrieved from

http://www.imdb.com/title/tt0458352/trivia?tab=qt&ref_=tt_trv_qu

path that culture takes into the future. Tony Fry calls this phenomenon 'Design Futuring' —the title of one of his books — and he claims in his book *Design as Politics* that design is the method by which we entirely define our future. It is the way in which we make decisions about our lifestyles and incorporate the elements of our infrastructure:

> Human beings have turned the very ground of being into design, the designed, decision and direction — this not least by how 'we' live and act upon our world and the worlds of others. 'We' live in a world where 'everything "is made" and can "be made"'. This means that everything actually and metaphorically, touched by human hands has, by degree, a determinant consequence on the form of the future. Effectively, artifice does not arrive without design and design and artifice combine to render 'the world of our dwelling' political, and thus contestable.[2]

 So if 'design' is the process by which we define how we live and what our future looks like, shouldn't it be something that everyone knows about? And what are the ultimate goals, then, of design and thus of ourselves and our culture?

I am idealistic and egotistical enough (I consider myself a designer) to believe that 'design' has the potential to solve all of our problems, from global climate change and economic inequality, to desk cable management and the inability to write upside-down (or in space) with an average ballpoint pen, to personal and individual fulfillment and happiness. As a student of design I have learned to apply methodology to go about solving a design problem, but many contemporary methodologies—such as Human Centered Design (created by IDEO), Cradle to Cradle, and Contextual Design—are aimed at applying the specifics of the problem's context in order to synthesize a solution. For many designers, choosing a particular methodology to use is itself informed by contextual data about the problem. 'Design' thus seems like flexible problem solving. Those with more experience tend to make better-informed decisions, at least as far as their goals are concerned. It could be argued that what a 'designer' brings to the table is primarily experience in defining goals.

However, if I need something with which to bundle some of the cables behind my desk so that they don't tangle, I don't need a designer to define my goals for me because I already have, and I certainly don't need to go to the store when I can think of ten perfectly adequate solutions using items that are within my house and free of charge (the first of which is a twist tie that came with a loaf of bread). Moreover, when it comes to decisions that influence my mental and emotional well-being, having someone else make my decisions for me may be harmful. So:

The Question

Have you ever participated in the design conversation for any product you've ever purchased?

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2 Fry, T. (2011). Design as politics. New York: Berg.

I use this question not just for its literal yes-or-no intent, but also rhetorically. Just hearing it is a shock to some. It takes them a few seconds to realize what the question's intentions are before they respond with "no." Some people have designed their own t-shirt, or helped with the interior decorating, and there is the rare person who has designed a product that ended up on store shelves. However, that person usually got enough of the product for free, or at least all of the prototypes, that he or she never actually had to make a purchase for it.

The question is designed to present a dichotomy: on one hand there is a design conversation, on the other, a product purchase. When purchasing a product, I am literally buying into a relationship by which I am relinquishing control of the design of the product to someone else, be it a designer, an engineer, or a financier. I am also buying into a relationship that is not specifically designed or tailored to my own personal specifications, but that is most often rather broadened to optimize revenue for the product. Not only am I losing some of my individuality (and often I actually believe that I am gaining it by being able to choose from a limited selection) but I am enabling someone somewhere else who I likely have never met and will never meet to determine what certain behaviors of mine are going to look like; what part of my lifestyle will be like. This is a homogenization of consumer identity, and all consumers seem to welcome it with open arms. As a consumer, I am paying for the designer, the engineer, and or the financier's authority; for their dictation of how I should act.

Direction

There is a reason the word 'object' is named as it is: an object is the 'object' of some kind of action, just as in grammar an object is the entity acted upon by the subject of a sentence. In the sentence, "I use you," I am the subject, use is the action, and you are my object. I have thus objectified you. Outside of the world of grammar, physical objects would not exist without the functions that they allow for their subjects to carry out. What would be the point of a toothbrush if the act of brushing your teeth did not exist? However, often objects have an inverse relationship with their respective actions: the object defines the way an action is carried out, or defines what the action is altogether. Consider, "I spin the wheel"; spin is one of only a set of reasonable actions that I can perform with a wheel. Therefore the wheel itself is limiting the range of action that I can perform. Within the realm of design, there are certain objects that invent new actions that can only be performed with that particular object: typing, for example, is limited to the accessibility of a keyboard. In some cases this is a completely literal connection: you can't vacuum without a vacuum.

This relationship allows for some products to manipulate dependency: if you don't have a vacuum, how else are you going to vacuum the carpet? An alternative is precluded from the entire scenario because of the semantics of the product relationship. Vacuum's occupy their own space within the catalogue of products in the cultural consciousness. Products such as Kleenex or the iPod take this to the next level: where vacuums are a unique product that is occupied by a range of

competing brands, Kleenex and the iPod — both single products with singular brands — have become synonymous for their own unique product range and occupy unique positions within consumer consciousness. I don't usually say, "pass me a tissue"— rather it is most often, "pass me a Kleenex."

These objects thus begin to have power over us, and this gives their creators even more power. As new objects are created that incite desire in consumers, an expansion of an idea of what is 'needed' can occur:

> Innate needs are physiological, and include needs such as the need for shelter, food and oxygen, whereas acquired needs are psychological and may include needs, for example, such as the desire for prestige, status, friendship and social recognition.[3]

These needs can be manipulated by advances in technology and by devices of design and marketing: I truly believe that I need a cell phone, even though I didn't have one ten years ago. I need it because it fulfills a function that my life and the lives of those around me have adapted into.

This makes Tony Fry's idea of 'Design Futuring' more tangible; by means of creating behavior where there was none before, the design of everyday objects can forever change the way in which society functions on a political level. So how can we become citizens of the future rather than consumers? There are expanding fields of technology devoted to personal digital fabrication as well as the broadening accessibility of information. The Internet is an ever-growing resource of almost infinite information, and this advance in turns provides broad access to information to access and learn the tools by which further innovations can occur. 3D printing, laser cutting, and any number of Computer Numerical Control (CNC) devices allow for the rapid manifestations of digital ideas in the physical realm.

This and Fry's ideology, however, are more reflective of a phrase that Marshall McLuhan coined in his 1964 book *Understanding Media*: "the medium is the message."[4] This idea gives light to the difficulty of the idea that every object that enters your life has tremendous individual importance; more important than the way the objects' individual meanings is the way in which they enter into your life and are given meaning via this "medium". This may better illustrate the purpose of the earlier question. It means to ask not just the importance of product—consumer relationships, but also means to bring into question the very purpose of design as it exists today, as the authoritative medium by which our products enter our lives. It is this authoritative medium that reflects upon the greater society. As McLuhan was fond of broad swaths of cause-effect, so will I say that the issues with personal consumer-product relationships potentially stem directly from the authoritative design establishment from which all of these products come, and that very medium, or idea, of the "product—consumer" relationship is to blame.

So it is the goal of this writing to empower you, the reader, not just to reflect on the relationships that you have with the various products in your life, and to look at their origins as well as your own. It is rather to look at the systematic origins of

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3 Chapman, J. (2005). Emotionally durable design: Objects, experiences & empathy. London: Earthscan.

4 McLuhan, M. (1964). Understanding media: The extensions of man. McGraw-Hill.

the problems of consumerism within the media from which the objects and their meanings come, and to take action. This comes from an amalgam of heavy research, academic insights, as well as personal experiences that have influenced the way in which I perceive and enact design. There are more and more ways every day to design the world around you, and to create reflections of your individuality and your origins by design in the environment. Furthermore, to become part of the origins of a new medium itself — the Internet and all of its Information Technology counterparts — by which information, design and innovations are spread, is to have a real personal impact on the future political landscape of our world — far beyond what a 'vote' of consumption by means of a credit card can earn: "For non-designers and designers, the potential (rather than actual) capability of design as an instrument of change needs to be grasped."[2]

Origins

Have you ever heard it said that we are all made from the same matter — the stuff of distant stars and supernovas? Well it's a pretty radical hypothesis when you think about it, but everything we know about space and the physical world seems to point to it. It's not that we are necessarily stardust now, just that we all were, at some point in the great expanse of time and space. We humans now perceive ourselves to be individuals; separate consciousnesses and distinct bodies of matter. Regardless, the idea of shared origins exists throughout many of the predominant belief systems that we humans engage in: While science's predominant theory in physics is that of the Big Bang, many of Earth's predominant religions — theistic or not — have some form of creation or origin story, some kind of narrative that places all of the matter from which we have come at the same point in time and space.: there is the Garden of Eden in the monotheistic triplet of Christianity, Islam and Judaism; Samsara and Nirvana in Buddhism; The Tao, or The Way, in Taoism. The list goes on.

These are ideas that give us a sense of meaning and purpose. Knowing where an object comes from provides a major piece of evidence to clarify a picture of where it exists in space and where it's going. The same goes for people; understanding someone's back-story gives a whole lot of insight into that person's behaviors. Having faith in a creation story might give a person a sense of purpose and direction in life. It is a sense of inertia, a connection between where you come from, where you're at, and where you're going. That connection is incredibly potent and ultimately revealing, because the only thing that connects you to your past and future selves is exactly what makes you, you.

Biological Origins; the Family

When it comes to connecting to others, origins are paramount. Why is it that we love our families unconditionally? Yes, God commanded that *thou shalt honor thy father and thy mother*, but what is it about parents that makes them different from others? They are the origin. There is something about being spawned from people that creates a uniquely powerful connection to them. I could never love anyone else like I love my mother and father. They created me, they are my origin, and as such they have deeply defined my character. I could not possibly exist as I do now without them.

I have never birthed a child, nor am I a father. And I can only imagine the kind of bond that parents have with their children. My mother has told me that "you don't fully understand your purpose in this world until you have a child of your own." But what is it — all preconceived notions aside — that connects a baby to its mother, that makes it completely different for that mother than any other baby ever born? Why can't a mother pick up a child that is not her own and love it as if she had birthed it (not that the love isn't as strong for those who adopt or are adopted, but that it is certainly different)? It is because of origins. Knowing that you have

spawned something in your own image, that it comes from you and that you are literally a part of it, carries enormous weight and an inherent connection. That is why nobody could ever replace *your* baby; it is blood of your blood and flesh of your flesh.

There are two broad sources of influence that define us in life: the circumstances of our birth and the experiences that we encounter. We begin our journeys in a certain way, with a certain inertia that is the result of every circumstance of our origins. What food your mother was eating while pregnant with you, how often she got sun, how much exercise she got ten years before your birth, what hospital you were born in, whether the lights were on or off when you first opened your eyes. For some of these things it is even hard to draw the line between which is origin and which is experience; you opened your eyes well after you first would have been considered alive, but also well before any of your first memories started. Wherever you draw it though, origin even influences experience in a large way. Where your parents chose to give birth to you likely defined whether the lights were on or off when you first opened your eyes. Where your parents chose to live to bring you up and the genes that they passed on to you likely influenced if you played football in high school or if you even went to high school at all.

Andrew Solomon, a writer on politics and psychology, defines origin and experiential influences as "vertical" and "horizontal identities," respectively, in his book *Far From the Tree: Parents, Children, and the Search for Identity*:

> Because of the transmission of identity from one generation to the next, most children share at least some traits with their parents. These are *vertical* identities. Attributes and values are passed down from parent to child across the generations not only through strands of DNA, but also through shared cultural norms. Ethnicity, for example, is a vertical identity. Children of color are in general born to parents of color; the genetic fact of skin pigmentation is transmitted across generations along with a self-image as a person of color, even though that self-image may be subject to generational flux. Language is usually vertical, since most people who speak Greek raise their children to speak Greek, too, even if they inflect it differently or speak another language much of the time. Religion is moderately vertical: Catholic parents will tend to bring up Catholic children, though the children may turn irreligious or convert to another faith. Nationality is vertical, except for immigrants. Blondness and myopia are often transmitted from parent to child, but in most cases do not form a significant basis for identity— blondness because it is fairly insignificant, and myopia because it is easily corrected.
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> Often, however, someone has an inherent or acquired trait that is foreign to his or her parents and must therefore acquire identity from a peer group. This is a *horizontal* identity. Such horizontal identities may reflect recessive genes, random mutations, prenatal influences, or values and preferences that a child does not share with his progenitors. Being gay is a horizontal identity; most gay kids are born to straight parents, and while their sexuality is not determined by their peers, they learn gay identity by observing and participating in a subculture outside the family. Physical disability tends to be horizontal, as does genius. Psychopathy, too, is often horizontal; most criminals are not raised by mobsters and must invent their own treachery. So are conditions such as autism and intellectual disability.[5]

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5 Solomon, A. (2012). Far from the tree: Parents, children, and the search for identity. (1st ed.). Scribner. Retrieved from

http://www.brainpickings.org/index.php/2013/06/12/andrew-solomon-far-from-the-tree/

Solomon posits that parents often view their children as extensions of themselves through the traits that they share with their children and which relate directly to the child's origins. By passing on a piece of themselves, parents can achieve some degree of immortality; a legacy that passes on and serves as continuity of their state of existence. As an extension of his theory, Solomon also believes that elements of children's *horizontal* identities have the potential to alienate parents from their children and make more difficult the connection to their offspring:

> In the subconscious fantasies that make conception look so alluring, it is often ourselves that we would like to see live forever, not someone with a personality of his own. Having anticipated the onward march of our selfish genes, many of us are unprepared for children who present unfamiliar needs. Parenthood abruptly catapults us into a permanent relationship with a stranger, and the more alien the stranger, the stronger the whiff of negativity. We depend on the guarantee in our children's faces that we will not die. Children whose defining quality annihilates that fantasy of immortality are a particular insult; we must love them for themselves, and not for the best of ourselves in them, and that is a great deal harder to do. Loving our own children is an exercise for the imagination. ... [But] our children are not us: they carry throwback genes and recessive traits and are subject right from the start to environmental stimuli beyond our control.[5]

Circumstance can create unexpected turns — even chaos or rebellion — in a child. Parents likely want the best for their children but maybe push too hard in the wrong way and achieve an unexpected result. Origins are therefore not just a mode by which connections are made intrinsically, but also the greatest source of influence over identity. Where we come from defines our inertia in some way, even if it causes an unexpected result. When you look at a broader picture of the influences involved, the cause effect always makes sense just as does a balanced equation for a chemical reaction. The issue for humans is that we often don't have the foresight to see all of the potential forces at work in a situation. As Solomon states, loving ones children can sometimes test a parent's imagination and will. However, in many cases harsh differences in opinion can be remedied by the intrinsic bond that comes from family origins and the unconditional love that that bond carries.

This theme exists not just for interpersonal relationships, but for many of the connections that we form throughout our lives: A film director is invested significantly more in a project that he or she is working on than any other project because that projects has the power to both influence and to communicate a piece of the director's identity; an inventor is much spend much more time and effort laboring over his or her own creation than that of anyone else. These things that relate directly to our own origins and thus the seeds of our own identities are the things that we connect to and that have the greatest potential to satisfy and fulfill our lives.

Creativity and Connection

Mark Bittman recently published an article in the New York Times entitled *Sustainable Resolutions for Your Diet* in which he goes through myriad potential opportunities to eat healthily and sustainably. And reading the article, the theme

that runs through all of his suggestions is that taking raw ingredients and making home staples yourself is easy and healthy. The underlying idea, however, is that defining your own basic foods, condiments and the overall structure of your diet provides immense satisfaction:

> **Make your own condiments.**
> Store-bought versions of ketchup, barbeque sauce, salsa and the like are often loaded with preservatives and sugar. Besides, creating your own recipes is a blast.[6]

Although Bittman's logic is casual here, he is working with a new trend whose ideologies stem from a need for self-reliance. Cuisine is a form of creation and expression that all humans participate in some form. Even in the least socio-normative or 'civilized' human cultures there are food traditions that relate to the local agriculture, livestock, and wildlife. These food traditions allow people to connect to the land from which they came, their origins. The ideal of living off local land also has much to do with sustainable living, as it forces those involved to deal directly with the repercussions of their consumption and involve themselves in a relationship of sustainment with the land; understanding the local land allows people to feed it as it feeds them.

This also has everything to do with cultural and individual identity. Within self-reliant tradition is a need not only to be self-sustaining, but also to be self-reflective. In the same way that *your* baby is special to *you*, a homemade ketchup can have a similar specialty. When you eat it you might remember the hard work you put into giving it just the right mixture of celery salt and mustard powder, or that special secret ingredient that change the entire taste spectrum of the mixture, and that has the potential to give you great satisfaction.

Have you ever heard someone say that when you make it yourself it just tastes better? I've had these kinds of moments myself, and I always want to share my creations with other people. They never seem to appreciate them in the same way that I do though. Either I'm even more amateur in my culinary skills than I would have thought, or the people I'm feeding simply don't have sufficiently sophisticated palettes (it's likely the former). One way or another, nobody has the same kind of connection that I do to foods that I create and nobody enjoys them nearly as much as I do; how can they when they were not involved in the creative process?

When two people involve themselves in the creative origins of a product (and food is an easy one, because it is an everyday activity — not everyone is off building houses and furniture or consumer products on a regular basis) not only do the creators connect independently to what they are making, but the experience also has the potential to connect to two of them. I know this may sound overly dramatic, but the two people involved become bound together by the fate of the creation: Have you ever cooked a meal with someone? It can be a difficult task; in a tight kitchen you might spend a lot of time just trying to get out of the other person's way

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6 Bittman, M. (2013, 12 31). Sustainable resolutions for your diet. New York Times. Retrieved from

http://www.nytimes.com/2014/01/01/dining/sustainable-resolutions-for-your-diet.html?_r=0

or reaching across: "I'll dice these while you sauté that, and then we'll switch in 30 seconds!" But, especially with labor-intensive meals where it's a challenge and both cooks emerge sweaty and slightly frustrated, pulling the pan out of the oven and having all that work pay off can almost make me fall in love with my co-chef. Date nights in the kitchen are so much more fulfilling than going out to a restaurant; creating sustenance together is a far more connective experience than sitting across a table from one another.

Of course there is always the 'recipe gone wrong' where something gets burnt to a crisp or irreversibly over-seasoned with garlic or chili powder. I once had an incident when cooking for my family when I failed to notice that the filtering cap of the Basil shaker was missing. The entire container's worth ended up in the sauce. But for me these are always learning experiences. I have a few dishes that are staples in my diet because they are incredibly simple but can be incredibly tasty and healthy, and because they mostly use non-perishable ingredients. Burrito mix with black beans, brown rice, onions and peppers of all kinds (some like it hot), and quinoa stir-fry with an assortment of veggies are two dishes in particular. I've made them both many, many times. I go to Costco. But every time I make them, they are different. I have gotten the dishes down to something of a science in terms of the steps for cooking them, but I like to experiment with new ingredients here and there. They are very simple dishes, but I spend a lot of time refining them and creating alternate versions through simple ingredient swaps that change the entire flavor picture. Every time I make the dishes I learn something new about one ingredient or another, about the way the texture of the quinoa changes when different sauces are added, the way in which the sauce in the burrito mix thickens given how long it sits in the pan and how long the onions sautéed for at the very beginning.

This is a prime example of an everyday design process. While the task of making a burrito mix may on the surface seem very simple, all of the potential variables allow the mix's refinement to become a very complex and exacting science. Each ingredient and respective amount, every cooking process, every appliance and piece of kitchenware is a variable and affects the process differently, therefore affecting the result differently. Flavor, texture, nutrition, function, and appearance are all criteria by which the goals of the cooking process can be specified. Deciding to grill instead of roast, to use a food processor or a hand whisk, to use butter or olive oil in the pan when sautéing; all of these are choices and they affect the end result of the dish differently. Even a few seconds on the heat or a few extra drops of oil will affect the end result. I'm sure if I were a judge on Top Chef every dish would taste like the best thing I had ever eaten. But it is a fierce competition, and contestants can be told to "pack up their knives and go" having added a grain too many or too few of salt and pepper.

In every decision we make in our lives there is a level of complexity that may sometimes belie the seeming simplicity of the yes-or-no question. Yes, you might decide to go for a run today, and it may seem as simple as just a 'yes.' But in fact that 'yes' comes from a history of complex decisions and lifestyle choices and has the potential to affect the course of your life. If you say 'yes' today then you might also tomorrow, and today might be the start of a habit that adds years to your life via a

healthy cardiovascular system. Otherwise it can be a step in maintaining the cycle of a habit; for me a simple 'no' can set a habit into a gradual downspiral that ends in the habit's eventual disappearance.

We are constantly making decisions — thousands of them each day — many of which have the potential to have a huge impact on our health and well-being. The body of these decisions is forms our action and behavior, and these are the core components of identity. This is why we care so much about the things that we create ourselves: we identify with them, and they reflect who we are and the decisions we make. When I am involved in the origin point of some manifestation of matter, it becomes part of my identity and I become part of its. That is why my home-cooked food satisfies me more than anything, why my family is more important to me than any other group of people on Earth, and why I consider myself an artist and designer.

Consumption

Only until very recently, local agriculture was the primary mode of consumption. Trucks, trains and planes — only developed within the last century or so — have completely changed the global landscape and allow any American to walk into a supermarket and, without a stray thought, buy goods from China, Argentina, Italy, Japan, or Mexico. The displacement of these goods doesn't just require additional energy for transportation and the use of unhealthy preservatives to prevent deterioration in quality, but also allows consumption in one place to affect another place that is completely out of sight. The consequences of consumption beyond sustainable means therefore go unseen. This is the kind of disconnect from origins that has allowed humans to use the planet and turn a blind eye; it is a theme throughout global commercialism. Not only, this, but it has allowed us to lose sight of our own original identities where materialism can stand in as a surrogate.

In his book *Emotionally Durable Design*, designer Jonathan Chapman begins his second chapter by stating emphatically that "consumption is natural."[2] It is part of the human condition, and it is a condition of life itself. For a bacterium to survive and grow, it must eat and digest nutrients in the environment that surrounds it. In order for you to understand the ideas that I am writing on the page, you have to consume the words. Consumption is the catalyst for change, and is the impetus for what we humans might call 'progress.' It is the means by which we sustain our existences, learn, develop, change, and grow. If I didn't consume anything I would be more like a rock than myself.

This is not to say that Chapman condones the kind of overconsumption that is frequently condemned by environmentalists and the like:

> In ecological circles consumption is spoken of with a practically universal disdain, and not without just cause Within the last 50 years alone, the world has lost over a quarter of its ancient rainforests, posing a large threat not only to biodiversity but also to the planet's air quality. In addition, both carbon dioxide (CO_2) emissions and the consumption of fossil fuels themselves have increased almost 400 per cent within the same period, catalyzing further irreversible devastation to the biosphere.[3]

He quite clearly acknowledges the damaging cycle represented by modern consumerism: "Production and consumption in their current guises are both inequitable, and without future."[3] In other words: our current practices of consumption are unsustainable. We cannot consume at this rate and continue to do so unless we change the way we interact with our resources. The way in which I define sustainability is thus: the ability to sustain a resource as it sustains you in a cycle of consumption and restoration.

But if consumption is natural, and we have been doing it forever, there must be certain kinds that are destructive and unsustainable and certain others that are not. Consuming the pages of this writing is sustainable because you are not deteriorating the resource from which you are gaining. Any number of people can read this writing and it would not deteriorate in the least. However, when your iPhone screen shatters so that checking your email is like reading through a spider

web and you have to replace the entire device as a result, you are contributing to resource depletion of coltan ores — from which heavy metals are extracted that make up critical computing parts — in Australia, Brazil and Canada,[7] as well as "within the Democratic Republic of Congo (DRC) and adjoining countries. Extraction of these minerals may finance or benefit armed groups that are associated with human rights violations."[8] You are also partially contributing to the unhealthy conditions that workers in Apple factories in China are subjected to:

> Exposure to the dangerous toxic chemicals used in the manufacturing process of parts that go on to make up Apple products can lead to cancer, nerve damage and reproductive health issues, says [the non-profit organization Green America], warning that staff are not always given adequate training in their use or access to the correct protective equipment.
> Such chemicals include n-hexane, used to clean screens because it evaporates more quickly than other solvents, which can cause nerve damage and, in severe cases, paralysis. Another, carcinogenic benzene, is used to coat certain electronic components.[8]

This is not to mention the waste produced by the large majority of materials that go into the manufacturing of the device. Many of these materials — especially gold, which is used to plate electronic parts in the device — have material costs in the manufacturing process that are far beyond the amount of material used in the final product: "a wedding ring equivalent to one ounce of gold creates up to 30 tons of toxic waste."[9]

If you knew all of this, then you are likely far ahead of the curve; Apple goes to lengthy measures to keep the public from information about its suppliers and manufacturing processes. Likely the great majority of iPhone users do not know where their iPhone has come from and or where their iPhone is going after its screen spider webs.

If you are an iPhone user, when was the last time you had it replaced? Not so long ago, I bet. Two years, tops. If you have some other kind of cellphone, how long has it been for you? Even less time? "Inform, a nonprofit environmental research group, says the disposal of cell phones presents a potential pollution problem as users upgrade and toss their old phones. By 2005, there could be as many as 500 million cell phones headed for the garbage heap, representing 65,000 tons of hazardous waste."[10] I have a Samsung-made Android phone, and I have been struggling with it for about a year now. Recently the quality of its user experience has deteriorated; it doesn't respond to text inputs occasionally, and frequently crashing when I open basic apps. Sometimes the dialer freezes up and then makes all of the phone call I have tried to make while it was frozen simultaneously, fifteen

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7 USGS, (2014). Niobium (columbium) and tantalum statistics and information. Retrieved from website:

http://minerals.usgs.gov/minerals/pubs/commodity/niobium/

8 Cancer and nerve damage: Is this the human cost of an iPhone? (2014, Mar 13). Telegraph.Co.Uk. Retrieved from

http://search.proquest.com/docview/1507030024?accountid=4314

9 Howden, D. (2005, Oct 26). Pollution threat: THE REAL PRICE OF GOLD ; it weighs 1oz. it costs pounds 1,000. and it creates

30 tons of toxic waste. The Independent. Retrieved from http://search.proquest.com/docview/310899728?accountid=4314

10 Davies, J. (2002, May 10). Cell pollution | study sees phone disposal as critical unsolved problem. The San Diego Union -

Tribune. Retrieved from http://search.proquest.com/docview/271981269?accountid=4314

minutes later. What am I going to do about it? I need a new phone, but I don't feel like I can easily disregard the life span of my current phone.

At the same time, though, this only motivated by my awareness of the environmental issues that my discarded phone will impact. When it comes down to it, I'm likely going to simply throw it away for a new one that serves its purpose better. The fact of the matter is that my phone does not really feel like part of my identity. There are plenty of objects that I have that I believe reflect who I am, but my phone is not one of them. Where does this detachment come from?

Objects of Identity

I have to wear glasses to see, and — as an artist and designer — this is a very important element of life for me. I rarely take them off. Because I wear them so frequently, my glasses blend into my body, almost becoming part of my physical being. I don't notice them on my face unless I make a point to do so, and when I remove them sometime I get phantom glasses syndrome as if I were an amputee: I'll occasionally reach up to adjust them on my face or push them up my nose even when they are not there. My glasses have broken about 7 times, and you wouldn't know it if you saw me wearing them because I have superglued them back together with care and then sanded and polished them back to normal. When they break again — and always in the same place — I am ready to fix them to keep them looking exactly the same way they always do.

This is because they're a part of the way my face looks to people, and a cardinal element of my physical identity: on the rare occasion that I decide to wear contacts, people I know well frequently do double takes before they identify me. When I finally decided to get another pair, as the pair I had was breaking with increasing frequency, I talked to my mother, who has access to the boutique in New York from which I originally got these frames in high school. When she told me that I should get a pair from my local optometrist in Michigan, I flipped out. I hadn't expected to care so much, but I felt like I needed the same pair of frames, that I would change as a person if I got anything with even the slightest difference.

While it is likely that I wouldn't change on the inside as a direct result of getting different glasses, it is true that my face would suddenly read differently to the people around me. My expressions would be different, and elicit different responses, even if very slightly different, from the people I was interacting with. In turn, being treated differently would have an effect on my behaviors, and influence my identity.

I was so unwilling to get rid of my glasses that I would spend hours fixing them rather than get a new pair. And those glasses were not nearly as expensive to replace as a cell phone. What I cared about, though, was not the material cost or the market value of these items, but rather the way in which each of these objects reflected my identity. The glasses are black, matte, from my hometown, and are the instruments that enable my sense of sight. They are part of the way I look and dress; they are simple and without labels or branding; they are mine. My phone reads Samsung and Verizon across the front, and is filled with Google products that shout

their own origins at me: there is very little room for my own identifying impressions on this device. My glasses are fit to my face, and were chosen from countless alternatives to match my features and fashion identity; my phone has a background image that is a photograph of mine — but what cellphone cannot adapt to that requirement? My phone could be easily replaced by countless others that would reflect my identity as little as this one does. That is why I am not as unwilling to part with it as I have been my spectacles.

While it may seem that the difference between these two consumer items is only semantic, in my world it makes a tremendous difference; it is night and day. Jonathan Chapman writes:

> Material consumption is driven by far more complex motivations and is about far more than just the acquisition of newer, shinier things. It is an endless personal journey toward the ideal or desired self that by its very nature becomes a process of incremental destruction; this take-up and subsequent displacement of matter enables the consumer to perceive their individual evolution as is occurs ontologically.[3]

We layer our lives with objects so that we can define and signal our identities; this is where the importance is. Many objects have cultural significances, and acquiring them signals externally a certain series of qualities. By attributing the object to yourself, you are attributing the qualities that that object signals. There is always some level of subjectivity here, and some amount of miscommunication that can occur, but on a broad scale these objects have general cultural connotations. You ride a long-board, you are attributed the qualities of a skater boy. You wear Oscar de la Renta ball gowns, you are attributed the qualities of the high-society. These objects allow us to externalize our identities, to shape them like silly putty so that they appear exactly the way we want them to appear. But are you really the sum of the assumptions that anybody who sees you on the street could make? And what does this external image lend to you? It will never be enough, there will always be refining to do, more objects to acquire. It is an existentialist pursuit that will never fully satisfy because it never fully connects the external identity to the internal identity. Chapman says that "the potency of objects in symbolically designating our particular being cannot be understated." And I agree with him, but to what extent is this a positive potential and to what extent is it negative?

The Burning House Hypothetical

I like to use a hypothetical situation to try and separate the meaningful from the meaningless: If you woke up and your house was on fire and you could only save your most valuable belongings and yourself, which items would you immediately look to? For me, anything that can easily be replaced goes up in flames. I would grab my watch — my last memento from my mother's father — and the civil war era cufflinks that my mother passed down to me from generations in her family. I would grab my glasses. I would grab my computer, not because of its value but because of all of the work that I have on it. I would grab my woodblocks and my

prints, and the photos I keep in my desk of my family and my dog. I would grab my Leica M3 camera, which I was given and taught to use by my father' father.

These are things that reflect my internal identity: because when everything goes up in flames, it is really only the things that remind you of who you are and where you came from that are truly meaningful. Everything else comes from cultural identifiers; it comes from other people and other places. Anybody can buy the same shoes that I have; the same books and records; the same couch, the same speakers, and the same clothes that I have. If I amounted to the sum of all of the things that I have purchased, what makes me different from anybody else? Where is my identity?

There is a potential in many objects to transform from commercial objects into sentimentally valuable objects. What is the value of sentiment? Well it is certainly not commercial value or monetary value. Commercial value functions in a system in which sentimental value is too subjective — too contextually defined — to provide any reasonable, relative, and steady approximation of 'value.' Instead, money is a form of 'value' that can apply to anything under the sun, and do so in steady numerical form. The Merriam-Webster Dictionary defines 'Sentimental' as "based on, showing, or resulting from feelings or emotions rather than thought and reason."[11] While it is subjective, sentimental value comes from the connection of internal and external identities. It is contextual, so that it may give one particular object extraordinary value to one person and only that person. For anyone else, the object's value could be very little — but to that one person, it could be tremendous. In my experience, sentimental value is what saves an object from the burning house scenario, not commercial value. This is *because* sentimental value is contextual: it provides a reflection of emotional identity — internal identity — rather than the universal identification that commercial value provides.

When my grandfather bought his watch, it was just a Timex watch. Not too fancy, gold in color but not in material, with a very simple and legible face and an elastic metal bad. I would likely never have thought to buy myself such a watch, or even any watch in general. But now I wear this watch every day, and wouldn't trade it for a watch of any price. I received it after my grandfather's funeral, and it is his life and death that empower this object. I've since become enamored with the simultaneous minimalism and understated flair of the simple black, white and gold. But more than this, it reminds me of my grandfather and his character. For anybody else all that can be read on its face is the time; for me, much more about my family and myself is reflected every time I look at it.

The Value of Heirlooms

Saul Griffith is a designer who looks for these kinds of transformations within objects. He is a tremendous proponent of a theory called Heirloom Design, which intends to create objects that have the potential to become heirlooms via their

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11 Sentimental. In Mirriam-Webster Dictionary. Encyclopedia Britannica. Retrieved from http://www.merriam-webster.com/dictionary/sentimental

quality: "An object with 'heirloom design' is something that will not only last through your lifetime and on to the next generation, but that you also desire to keep that long because it's beautiful, functional, and timeless."[12] Heirlooms are items with longevity, designed with sturdy materials, and designed in a way that makes them compelling objects, and Griffiths believes that these objects allow us to have more fulfilling relationships with objects while reducing our consumptive footprint. The idea is that if I buy one pen for $100 that will last my lifetime, it is an investment that will save me all of the money I would spend buying cheap plastic pen after cheap plastic pen as well as all of the plastic material waste involved therein. Additionally, Griffiths notes that all products have "'embodied energy.' It's trapped, or embodied, in the materials our stuff is made of. It's the energy we use to mine the materials and process them into products."[12] As a result, Griffiths states:

> While we can choose materials that have less embodied energy for any given product, it's much better to choose objects that last two or three, or preferably 10 times longer. As I see the climate change and carbon dioxide problem, it is one way of figuring out how to life the best quality of life while using much less energy. Heirloom products are one way to make a significant contribution. It probably means you will end up owning less junk, your life will be less cluttered, and your stuff will be more beautiful and serve you with more joy. [12]

Griffith's ideals are admirable; Heirloom Design is in the legitimate pursuit of better object-consumer relationships and in aid of the climate change crisis. But this theory approaches only the symptoms of these problems and aims to function like a Band-aid in a system that is, as Chapman stated, "inequitable and without future."[3] This is because items are not inherently heirlooms when purchased. They may be designed for quality, but the only value that an object has when you first purchase it is its commercial value. There is only sentimental value involved right off the bat in a very small number of consumer purchases; maybe the particular company and product has been a part of your family history since you can remember, or maybe you had been using a similar object in your travels in foreign places and now wanted one of your own for your home. Either way, these potentially immediate sentimental connections to products have nothing to do the design of the products; rather they have to do with your set of personal experiences in life, a set of experiences that is far beyond the reach of any designer or marketing director who is trying to suss out your desire without even getting to know you first.

Objective vs. Subjective; Universal vs. Sentimental

I'd like, here, to again make the distinction between an object with sentimental value and an object with a solid brand placement: you might see an object on a store shelf and feel the pull of it and think about the way it makes you look and feel. There are plenty of objects and brands out there that I have this kind of lusty relationship with. But the key is that branding is all about making objects desirable in the public eye. It's not just that I want the object for me, but often that I

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12 Built to last. (2010, 01 13). GOOD, Retrieved from http://magazine.good.is/articles/built-to-last

want the object so that people will see that I have it. It is an externalizing of identity, and it should not by any means be mistaken with sentimental value.

True sentimental value comes from internal identification. Branded products are never created for your specific and unique identity: this would not be in the least bit profitable. Instead, a well-crafted brand specifies its target demographic in a way that makes the consumer feel unique when in reality it is part of a much larger group of people that the brand identifies all together. This has a homogenizing effect, just as do Nielsen ratings and consumer polling data, and all of the resources that most marketing departments rely upon for determining exactly how to get inside the minds of as broad a group of people as possible. The more people that they can rely upon to react the same way when encountering a particular product, the more money they will make. It's not about you, and it certainly is not about your individual identity. Usually it is about the exact opposite.

Heirloom Design as a theory intends to use what culture perceives as universal values in order to connect consumer with product. This is why heirloom products fail to ameliorate the homogenization of consumer identity: these universal 'values' are the impetus behind the homogenization of consumer identity in the first place. Because certain characteristics are valued more highly than others within culture, objects that reflect these characteristics are likely to be more desirable in consumers who are intent on constructing attractive external identities (and who do you know who is not, to some degree, concerned with being attractive to others?).

Rather, Heirloom Design runs the risk of actually reinforcing the cultural values that stifle individual identity, and thus also runs the risk of stifling consumers' individual identification within objects. Saul Griffith decided to give his newborn son a couple gifts in the form of a Rolex watch and a Montblanc pen,[13] as a demonstration of Heirloom Design:

> I just have to own less stuff and make it last ten times as long. Sometimes I call this the Rolex and Montblanc approach to life. So that just made me sound like a pretentious wanker. I am really not. I am a deep green environmentalist and so what you want is when your child is born or when you are born to be issued a Rolex and a Montblanc pen and that's the only writing implement, the only time piece you get for your whole life.[14]

And why is it that he may seem like a 'pretentious wanker' when he says that, despite having a trail of logic to back himself up? Well, I decided to navigate to the Montblanc website to check out their catalog of pens. What's the most money you've ever paid for a pen? I bet it was not $330, which is the price of the cheapest pen that Montblanc sells. Carl Richards illustrates the principle motivating Saul's purchase through a simple napkin-drawn graph of 'cost per use' in an article published in the New York Times.[13] It compares the cost per use of a pair of 'expensive' flip-flops that last and 'cheap' flip-flops that break: the 'expensive' flip-flops have a lower cost per use in the bar graph than the 'cheap' flip-flops. He lists

13 Richards, C. (2012, 09 04). Striving to lead more of an heirloom life. New York Times. Retrieved from

http://bucks.blogs.nytimes.com/2012/09/04/striving-to-lead-more-of-an-heirloom-life/?_php=true&_type=blogs&_r=0

14 Brown, A. (2009, 08 28). Last year's model. Retrieved from http://blog.longnow.org/02009/08/28/last-years-model/

some sayings that illustrate this principle: "'We're too poor to buy cheap things.' [...] 'Buy cheap, buy twice!' [...] 'Buy the best and buy it once'."[13] This theory seems very logical in a satisfyingly counterintuitive way. But the fact is, a Montblanc pen is a luxury item. It has connotations of wealth and affluence, and of exclusive elitism. The price doesn't start at $330 because Montblanc's material expenses require them to set their price higher, or because it will last any longer than pens marked at $5 or $50 or $100, but because the price excludes those who cannot regularly afford such items. Exclusion is attractive:

> Modern consumption conveys an approach of selecting unique products that meet specific values and lifestyles, and is manifested in the desire to buy products that satisfy perceived lifestyle preferences... it represents a consumption pattern that is designed to pursue a unique way of life and which differs from that of other people.[15]

And so is spending money on an item. Conspicuous consumption is the phenomenon by which people buy expensive items just to show off their ability to spend money on those items. My suspicion is that Montblanc and Rolex are often the targets of buyers looking to consume conspicuously. The longevity of these expensive items is not contingent on whether they are designed with quality in mind.

Rather, the longevity of expensive items frequently has to do directly with how much you spent on the item. Carrying around a $330 pen is going to make you want to hold on to it, not because you have a deep and abiding connection to the pen but because you just spent $330 on the thing. If you were to lose it, that's a whole lot of money down the drain. For those with deep pockets, Montblanc pens are the kinds of objects that come and go without notice: I'm sure that more than a few Wall Street CEOs — much to Saul Griffith's chagrin — have tossed a Montblanc pen in the waste-paper basket. For people who can't easily get their hands on $330, though, that kind of act could be viewed as wastefully negligent.

While 'cost per use' is certainly a better indicator of worth than cost off the shelf, the problem here goes much deeper. Using 'universal values' such as commerce isn't effective on an individual level at connecting people to objects; instead commerce homogenizes 'value' as 'commercial value' and polarizes groups of people with and without money. This is true for anything that is set as a cultural standard for what is 'good': people will shirk their own internal identities in pursuit of the appearance of whatever that characteristic is. Money and wealth happen to be the paramount examples of this trend in America, and are the reason that so many people spend far beyond their personal budgets in pursuit of a more comfortable, affluent identity. This is part of the great Gospel of Consumption, the systematic marketing of a way of life that keeps consumer demand in excess of an already excessive rate of supply.

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15 Nitto, N. and Shiozaki, J., 'Changing consumption patterns and new lifestyles in the 21st century', NRI Papers, no 24, March 2001, p12

Growth Economy Gospel

The late 19th and early 20th centuries brought about a new industrial age: the way we shaped the Earth around us and produced items for ourselves was rapidly developing due to new technologies and new ways of thinking. Factories and conglomerates began to replace local business, and the production of goods and agriculture increased in output while the costs of production decreased. Supply began to surpass demand, as there was an excess of production

> By the late 1920s, America's business and political elite had found a way to defuse the dual threat of stagnating economic growth and a radicalized working class in what one industrial consultant called "the gospel of consumption"— the notion that people could be convinced that however much they have, it isn't enough. Today "work and more work" is the accepted way of doing things. The machinery offers people an opportunity to work less, an opportunity that as a society they have chosen not to take. … people allowed the owners of those machines to define their purpose: not reduction of labor, but "higher productivity" — and with is the imperative to consume virtually everything that the machinery can possibly produce.[16]

This trend was motivated by what economists believed to be a need for constant economic growth; that without growth the economy would disintegrate and everyone would suffer for it:

> Can the Earth support endless growth? Traditionally, economists have argued the answer is yes. In the 1960s … a steady rise in gross domestic product (GDP) – the combined value of our paid work and the things we produce – was seen as crucial for raising living standards and keeping the masses out of poverty. We grow or we languish: This assumption has become so central to our economic identity that it underpins almost every financial move our leaders make.[17]

And it is likely that we would be able to continue in growth forever if not for resource limitations and the effects on the environment: machines provided us with a choice between higher productivity and reduction of labor and society chose higher productivity. This illustrates Jevons paradox to a tee: "improved efficiency will lead to increased consumption as long as humankind's desire to consume other goods and services remains unlimited."[18] Therefore where increases in efficiency may aim to correct issues of overconsumption, instead they themselves allow for increased consumption: "the increased energy efficiency of cars, measured by miles per gallon in the 1980s-90s, led to an increase in miles driven per car as people desired to travel more due to the savings from efficiency."[18]

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16 Kaplan, J. (2008, May). The gospel of consumption. Orion, 27, 38. Retrieved from

http://search.proquest.com/docview/217765645?accountid=4314

17 Thompson, C. (2010, Nov). Nothing grows forever. Utne, , 48-53. Retrieved from

http://search.proquest.com/docview/854279337?accountid=4314

18 Miller, D. D. (2008). The jevons paradox and the myth of resource efficiency improvements. Choice, 46(1), 159. Retrieved

from http://search.proquest.com/docview/225731495?accountid=4314

The Jevons paradox is a tool that could be used to increase economic growth and consumption, but it requires that "humankind's desire to consume … remains unlimited." The gospel of consumption aimed consumers at a way of life through steady, strong, and often subliminal marketing. The 'American Dream' falls squarely into its lap, giving Americans an ideal of living that they should aspire to: wealth, affluence, and comfort partnered with hard work and sacrifice.

The 'American Dream' is a hollow paragon; in reality no amount of money or objects can make you into someone you are not, or even make you happy. But this is actually what has made the gospel of consumption so successful: it is entirely unattainable.

The Machine Aesthetic

In 1934 the fledgling Museum of Modern Art introduced industrial design to the public through the *Machine Art* exhibition.   This exhibition, hence its name, displayed a variety of conventional mass produced objects. The enormous inventory of the exhibition was arranged into six categories: 'industrial units', 'household and office equipment', kitchenware', 'house furnishings and accessories', 'scientific instruments', and 'Laboratory glass and porcelain'. These were items that in some cases were everyday items that people might encounter in domestic life, and some were more industrially oriented objects, that might compose a part of machinery a piece of a vehicle, or a piece of lab equipment. There were arrays of beakers and Erlenmeyer flasks arranged on display as would be a series of sculpture; a large polished steel propeller hung on a museum wall like a painting; cabinets full of modern dishware and kitchen appliances on display as would be antiques in the Metropolitan Museum of Art.

But everything in the *Machine Art* show had one thing in common: its industrial origins. Everything in the gallery spaces was crafted in a factory or from an assembly line and all involved the efficient precision tooling of machines. These products were carefully presented as aesthetic objects: the exhibition was entirely three dimensional, with everyday items on pedestals and in display cases, as would be traditional artwork. Rather than be able to use them for the functions that they were designed for, their placement on display would require viewers to look at them completely differently.

The industrial aesthetic was foreign to people at the time; people were used to the more expressive forms of homespun, hand-worked objects and products rather than the minimalistic geometries of the mass produced, machine made objects. *Machine Art* became an opportunity for the appreciation for this new aesthetic to spread, and became almost like a marketing device: the dichotomy of form and function was very important to the *Machine Art* show, as it was modeled around the platonic ideal of Forms. Platonism states that every particular object is defined and identified by a universal ideal, or form. In this way, a variable particular is identified only because we have knowledge of the universal ideal of what that particular is. Plato's belief that the form of beauty is absolute was central to the show, epitomized by the quotation on the wall of the first gallery:

> By beauty of shapes I do not mean, as most people would suppose, the beauty of living figures or of pictures, but, to make my point clear, I mean straight lines and circles, and shapes, plane or solid, made from them by lathe, ruler and square. These are not, like other things, beautiful relatively, but always and absolutely. –Plato [19]

This idea of absolute beauty — of some universal truth — is the seed of the aesthetic appeal of industrial goods. That we embrace the perceived perfection of the mathematical axiom allows the perceived perfection of the machined object, made with mathematical precision. Perfection in an object? The gallery was an ideal place for this kind of objective principling; when this kind of thinking creeps into a person's home and personal life, however, it has the potential to supersede that person's individually subjective way of looking at things. I may have shied at the aesthetics of pure geometries until Plato decided that I was ultimately and 'absolutely' wrong. Out the window goes the grain of salt with which you are supposed to consume things.

The Commercial Identity of the 'Consumer'

This industrial aesthetic quickly became *the* aesthetic. There was nothing to compete with its quantity, efficiency, and Platonic perfection. More importantly, though, this aesthetic was created by commerce, and had grown to reflect commerce. In fact — devoid of a human touch and individualistic identity because of its origins in mass-production — the aesthetic hardly reflected much more than its commercial means. You could say it reflected the consumer, because who is the consumer anyway? It's not me. Is it you? Could you name him or her? No, 'the consumer' is a title for the homogenous entity to which all of these mass-produced products have been marketed. 'The consumer' is such a one-dimensional character — a bit in an economic algorithm — that I would loathe to be called such a name. And it is a semantic issue, because I do purchase objects in stores and appreciate their use; but rather than being a 'consumer' who represents a few ticks on a sheet of market research, I want to be a 'citizen' — someone who participates in the creation of objects and the world around me, allowing elements of it to reflect my identity instead of that of commerce.

So really the problem is not that products are not designed well enough, or that product-consumer relationships have the potential to break down over time. Rather it is that the materials involved in our lives should be more than 'products' and we should be much more than 'consumers.' Even if you consider all individuals to be the equivalents of cells in the larger collective organism of humanity: cells in the organism of any creature behave within the context of their specific local environments. These are their identities, and they are treated with respect to their

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19 Marshall, Jennifer Jane. "In Form We Trust: Neoplatonism, the Gold Standard, and the Machine Art Show, 1934. " The Art Bulletin (2008)". Platinum Periodicals. ProQuest.

unique identities and functions with respect to the larger organism. This is what allows them to function at their peak.

Have you ever participated in the design conversation of any product you have ever purchased? I don't really ever hear 'yes' as a response to this question. Even design professors who have products out on the market say 'no.' maybe they have products available for sale, but they don't purchase them, as they often have the original prototypes. My most common response to the question is surprise. It's something that most of us never really ask of ourselves.

The reason for this is the way in which the question is set up. When you take a second, it might seem pretty reasonable to want to have a say in the way the objects in our lives look, feel, and work. It might seem pretty unreasonable *not* to have a say. Then the word 'purchase'; it is about a transaction of goods for capital. When it comes to objects, much of the capital that you spend when purchasing an object funds the time and effort that someone else spent designing it so that you didn't have to. In a way, spending money on a product is a 'vote' in the same way in which spending money to fund a politician's campaign — local or otherwise — allows those with the means to take an extra vote or a thousand. This method of 'voting' is also an act by which you defer to someone else to make certain life decisions for you. Thus 'participate in the design conversation' and 'product purchase' fundamentally don't belong in the same paradigm together — they are contradictory in the way in which they describe their respective contexts.

Designed objects populate every moment of your life, even your moments spent unconscious. They define your behaviors, affect your external identity, and thus play a tremendous role in defining how you spend your life. And someone else has designed every one of these object. Every last one. Someone else has designed how you will grip your toothbrush in the morning, how you will sit on the toilet seat, how you will drive your car, and how you will handle your frying pan. You haven't participated in any of these choices except by picking between marginally different models and casting your capitalist vote with the quick swipe of a card. Imagine: someone design the very action 'to sit on the toilet.' There are an infinite number of ways to dispose of what is inside you and needs to exit, and infinite permutations of objects that could help you to do so, but someone created a shiny porcelain seat, called it a toilet, and now that person's idea defines a part of every day of your life.

The issues our society is facing are caused by this kind of authoritative relationship; industrial design allows a small group of people to define the human-object relationships of a broad range of people. If we remain consumers, we risk losing our identity. And on a much broader scale, I believe that losing identity is tantamount — and inextricably linked — to losing our citizenship of this planet, of our origins. So I urge you: continue on to the next chapter. Shed your external identity as a consumer, and find a way to become a citizen; of your origins, of your internal identity, and of this planet Earth we call home.

Citizenship

Have you ever had a problem in your home that you found a way to fix without leaving your house to find a product solution in the store? What exactly was the problem, and what methods did you employ to fix it? And I'm not necessarily talking about big, serious problems; I'm talking about just about anything that requires a bit of thinking. You may have heard of the term Do It Yourself (DIY)? That's what I'm talking about.

For a while my home lacked a paper-towel dispenser. We had at one point used one of those bent-wire holders from target, but the sink is at the edge counter that is right up against the refrigerator, and the drying rack from the dishes is right on the other side of the sink. This meant that the paper towel holder would have to be located at the far end of the counter, well away from the sink. More importantly, the wire holder sat on spherical metal feet, which meant that the holder would slide every time you would go to grab a paper towel. So I decided to make my own paper towel holder.

Immediately, the problems that I had with the old one defined the criteria for the new one that I would make: it would have to be fixed, and close to the sink. In addition, the criteria for any paper towel holder would apply: it would need to allow the changing of rolls but prevent the current roll from falling out when in use, and it would have to allow the roll to spin freely

I looked around for a bit, noticing that there was a wooden shelf directly about the sink that I would screw into the bottom of. I mounted two wooden blocks on the bottom of it with screws. Then I found an extra wooden broom handle that we had laying around and took it to the little scroll saw that we keep in the back, cutting a two foot piece from it. The house came with a strange but nifty broom/mop rack, with small metal snap-brackets into which a broom handle could pop. I took off two of these metal brackets, affixed them to the wooden blocks on the shelf bottom, and popped in the cut broom handle. The handle is easy to remove to add a new roll, and is held far enough below the shelf that it allows the rolls plenty of clearance to spin. The roll is also held perfectly above the sink, allowing easy access.

For me, this was enormously satisfying. The friends that I live with love it, and use it all the time. Regardless, it performs its duty much better than the store-bought equivalent. And it certainly doesn't look store-bought, it looks like something that I made in my kitchen. That is something that gives it identity, and relates the object to its function, to its materials, and to its origin.

Adhocracy's New You; The Contextual Aesthetic

Very recently the New Museum in New York City opened an exhibition that was in many ways as revolutionary as the MoMA's *Machine Art* exhibition of 1934. Where the *Machine Art* exhibition was presenting industrially manufactured functional items, *Adhocracy* — which was previously organized at the 2012 Istanbul Design Biennial — presented personally created technologies and solutions. In both

exhibitions, the items on display were presented as aesthetic artifacts, and these aesthetic trends as motivating the future of design.

Adhocracy, though, does not just represent another step in another direction, but rather represents a progression in design thinking from that of *Machine Art*. This ideological progression presents a dichotomy that is central to *Adhocracy*'s presentation:

> … many from the industry speak of a new industrial revolution. If the last industrial revolution was about making perfect objects—millions of them, absolutely identical, produced to exactingly consistent quality standards—this one is about making just one, or a few.[20]

Thus the platonic ideals of perfect and absolute beauty are superseded in favor of a new aesthetic identity, which is that of the personal, the contextual, the individual, and the collectively progressive. In an environment where beauty is subjective ad contextual, characteristics that would have been considered flaws given Plato's ideals can be considered the very things that give an object character, and thus beauty.

In Wabi-sabi, "*the* quintessential Japanese aesthetic,"[21] this ideal of contextual, organic, individualistic identity is central. "Wabi-sabi is a beauty of things imperfect, impermanent, and incomplete."[21] In his book about the aesthetic — *Wabi-Sabi for Artists, Designers, Poets & Philosophers* —, architect Leonard Koren writes: "Wabi-sabi — deep, multi-dimensional, elusive — appeared the perfect antidote to the pervasively slick, saccharine, corporate style of beauty that I felt was desensitizing American society."[18] In describing Wabi-sabi to the English-speaking reader, Koren uses the stark contrast that Wabi-sabi makes with Western Modernism to forward his explanation of the importance of Wabi-sabi's aesthetic. While he does state that the two ideologies share qualities in that both "eschew any decoration that is not integral to structure" and that "both are abstract, nonrepresentational ideals of beauty,"[21] He lists the polar differences over the span of four short pages. Many of these differences are exemplary of the differences that *Adhocracy* and the ideals of *Origin Theory* present between themselves and the current workings of the world:

modernism	wabi-sabi
Implies a logical, rational world view	Implies an intuitive worldview
Absolute	Relative
Looks for universal, prototypical solutions	Looks for personal idiosyncratic solutions
Mass-produced/modular	One-of-a-kind/variable
Expresses faith in progress	There is no progress
Believes in control of nature	Believes in the fundamental uncontrollability of nature
Geometric organization of form (sharp, precise, definite shapes and edges)	Organic organization of form (soft, vague shapes and edges)

20 Adhocracy. (2013, May 4). New Museum. Retrieved October 14, 2013, from

http://www.newmuseum.org/exhibitions/view/adhocracy

21 Koren, L. (1994). Wabi-sabi for artists, designers, poets & philosophers. Berkeley, Calif.: Stone Bridge Press.

While Wabi-sabi does specify particular visual elements that form its overall aesthetic, it is more the point of that aesthetic not to be any one thing at any one particular moment in space-time. It accommodates the nature of matter, which is to forever either be "devolving toward, or evolving from, nothingness;"[18] that everything is right within its own 'season', it's own context. And this also has everything to do with origins: everything is constantly departing from its origin and simultaneously moving back toward it, all in its own 'season': absolute ideals don't have any means for qualification here;

  Adhocracy also represents the rise of a new aesthetic movement, one based on imperfection and the insight that imperfection provides into the process of creation and the identity of the creator and the used materials: "In the place of standardized, industrialized perfection, the exhibition embraces imperfection as evidence of an emerging force of identity, individuality, and nonlinearity in design."[17] This is because *Adhocracy* pushes forward the status of home invention — of 'ad-hoc' creations like my paper towel dispenser — to declare them as design and innovation, items that should be given as much importance in the public realm as they have for individuals in the multitudinous private realms.

  At the time of the *Machine Art* show, these items would have not fit into the category of "design" because of their imperfections, and their inability to reflect the mechanisms of industry and commerce. These were the mechanisms that once defined what "design" is; now *Adhocracy* is encouraging you to take that definition into your own hands. The criteria that I set for creating the paper towel dispenser, including the restriction that I would make it only from items in my home, are simple and somewhat intuitive, but they are the foundation of a design process. They create constraint, and direct the process through logical outputs toward a solution. Obviously my towel dispenser did not have nearly as many criteria to balance as the building of a bridge or the plumbing of a house, but it is a basic example of everyday design thinking, done on an individual level.

  The fact is, I don't need a bunch of designers from a corporate manufacturer to tell me what my towel dispenser should do for me; these criteria are most accurately and intimately fulfilled by me, not by someone in a tall building somewhere who doesn't know my name. However, there are many things that I may not know how to do in terms of the physical execution of my homemade solution. While I happen to have a scroll saw and know how to use it, I frequently have ideas for objects I would like to make without a clear image of how to go about putting those things together. In those cases, I lack a skill. This can apply to any kind of problem solving or creative output. I would like to write a song for guitar, but I have no idea how to play guitar. I would like to keep a plant in my home but my thumb is far from green.

The Global Collection

So what do I do in these kinds of situations? Fifteen years ago, I would have had to pay someone to teach me guitar or buy a book on gardening. Now I can simply open up my portable personal computer, go in the Internet, and watch a video in which someone tells me exactly how to do what I am looking to do. And there is not just one video, one method for playing the guitar. Thousands upon thousands of tutorials and videos exist on the Internet. Each has a slightly different take on the skill; this broad spectrum of possibility would allow me to shape my experience based on what resonates with me.

This is the power of open source: informational technology such as the Internet allow for me to soak up and choose from the experiences of the many, and even add my own experience to the mix. This form of organization completely abolishes the idea of a traditionally 'correct' method, or an authority from which that method comes. Instead, every new contribution is considered innovation — especially if it comes from those who are learning the skill new without a technical background. For someone completely new to the guitar, it is easy to imagine that there are infinite ways to play it. I don't know what some would consider the 'right' way, but I was born with the instinct of experimentation. Experimenting without the structure of a traditional technique could potentially allow me to find completely new ways of making sounds with the guitar. This is where prime innovation comes from; and when all of the innovation going on is aggregated on an open source network such as the Internet, all of that innovation powers the forward acceleration of newer innovation at an exponential rate. If you wanted to learn how to play guitar, an entire world is literally at your fingertips, and it is broader and more open and tolerant than ever before. The Internet is always listening, and always growing.

A New Medium

Information and technology in this age have grown to such a degree that many agree that we are in the midst of a great revolution. There are two branches of progress that we Westerners rely upon: technology and information. Throughout history, these two have been intertwined, but not nearly as much as now. Where technological developments such as the printing press allowed information to grow and broaden in its accessibility, so the spread of information via this technology allowed technologies to be spread and develop at increasing rates. The two have always motivated one another, and now design and innovation are beginning to blend the semantic differences between these two pillars or progress.

What is the difference between information and technology, would you say? It's not easy to distinguish the two. What you are reading right now is both information and technology. Even it's content. The information is comprised of the photons your eyes are receiving to read these messages, and the technology is the method by which those photons are motivated at your eyes. Technology is the medium; and in many cases the medium itself *is* the message. Such was the maxim

frequently used by author Marshall McLuhan — who prophesized a medium such as the World Wide Web in his 1962 book *The Gutenberg Galaxy*[22] — to describe the way in which the mode of popular media at a given time is more reflective of the culture in which it exists than the information that the media conveys: "

> Print is the extreme phase of alphabet culture that detribalizes or decollectivizes man in the first instance. Print raises the visual features of alphabet to highest intensity of definition. Thus print carries the individuating power of the phonetic alphabet much further than manuscript culture could ever do. Print is the technology of individualism. If men decided to modify this visual technology by an electric technology, individualism would also be modified.[22]

McLuhan argues here that Print as a medium was more influential on cultural progress and direction than anything it could have communicated because of the almost universal adaptations it caused in human cognition. While "print is the technology of individualism,"[22] McLuhan would also estimate that the coming media would transform human culture in that of a 'global village' in which identities are broadcast and shared and innovation is not attributed individually, but collectively.

Such is the directionality of *Adhocracy*, an exhibition that represents a broader trend not just in design and the creation of objects, but in global politics:

> Its birthplace is not the factory but the workshop, and its lifeline is the network. As the theater of a fast-moving debate over society's future, design is today engaged in a struggle between bureaucracy and improvisation, authority and the irrepressible force of networks, in search of a new language and a new commons. If design is no longer the domain of a select few creating products of consumption for "the many," according to the top-down model of bureaucratic industrialism, what is it? This exhibition argues that rather than the closed object, the maximum expression of design today is the process—the activation of open systems, tools that shape society by enabling self-organization, platforms of collaboration independent of the capitalist model of competition, and empowering networks of production. Design is migrating from the rigid domain of bureaucracy towards the rhizomatic realm of adhocracy. [20]

Adhocracy aims not just to provide citizens — that is, people who participate in the growth of information and technology around them — with the opportunity to define how the objects in their lives look and feel and function and to give them a hand in its creation, but it also aims to give citizens an opportunity to define the medium by which they are created in the first place. Thus it also has the potential to function as a means of democratic self-governance by compiling the identities of all of its constituents.

The terms itself, — adhocracy —is not original to the exhibition: in fact, it was "coined by the futurist Alvin Toffler, who predicted in his 1970 book, 'Future Shock,' that new forms of organization based on temporary, ad hoc groups focused on specific projects would replace more bureaucratically entrenched structures in business and government."[23] Toffler's was a theory of productivity, designed for

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22 McLuhan, M. (1962). The Gutenberg galaxy: the making of typographic man.. Toronto: University of Toronto Press.

23 Johnson, K. (2013, May 10). Creations, both cutting-edge and double-edged. New York Times. Retrieved from http://search.proquest.com/docview/1349699326?accountid=4314

implementation in a workplace. It also snowballed into a political theory, one by which small organizations could self-govern.

McLuhan's ideas of what the future would hold complemented Toffler's theory of collective self-governing, but it caused him to fear for the complete loss of individual identity within the interconnected cultural mass of what he called the 'global village':

> Instead of tending towards a vast Alexandrian library the world has become a computer, an electronic brain, exactly as an infantile piece of science fiction. And as our senses have gone outside us, Big Brother goes inside. So, unless aware of this dynamic, we shall at once move into a phase of panic terrors, exactly befitting a small world of tribal drums, total interdependence, and superimposed co-existence.[19]

And this would seem normal; letting go of individuality is not something that I may ever be ready for, and doing so to become a drone in the tremendous human colony of Earth seems like an incredible turn of events.

Adhocracy as presented via a design perspective, however, does not concede the loss of individuality; rather, individuality is what powers its progress. If the population of individuals within an adhocracy were completely homogenous, then no innovation would occur. Instead, it requires of its constituents that they become citizens rather than consumers; that they become part of the self-governing process through design of the world around them.

Democratized Information

This is something that is rapidly becoming available to you, too — no matter who you are or where you live. The resources are there: many that you may not even know of are right at your fingertips. New forms of educative media are forming within the Web, forms that are democratized so that anyone with a connection can learn from them. I'm not just referring to Youtube, and Google and the growing reliability of Wikipedia (as it goes through the process of sourcing all of its information); I'm referring to institutions such as edX, a new resource for Massive Open Online Courses (MOOCs). EdX — which can be accessed at www.edx.org — is not a single university, but an amalgam of courses taught by real instructors at real universities. And not just any universities: Harvard and MIT are the two founding partners. Classes are entirely free — a completely revolutionary idea but something that has been a long time coming — and the site offers 150+ courses to any person with the initiative to click the 'register' button.[24]

Instructables is another online resources aimed at providing users with free information, and it happened to be founded in part by Saul Griffith! It focuses on more technically oriented projects, such as building your own two-way radios, or designing your own analog synthesizer. It provides step-by-step instructions accompanied with images, and allows users to document and share their own

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24 edX. (n.d.). edX. Retrieved , from https://www.edx.org/

creations, creating an ever-growing web of creativity and innovation — one that grows exponentially as new ideas further promote new innovations.[25]

The Internet provides us not only with open sources of information, constantly being added to by thousands of users and corroborated by others, but it also provides collectively oriented marketplaces such as Kickstarter and eBay and Craigslist to make it easy for you to gain access to the newest forms of technology for your own personal use.

Making Your Imagination Manifest on Your Desk

Do you have a vague memory of when the personal printer was developed and marketed to function in tandem with your personal computer? Your desk suddenly became a personal writing and/or photography workshop, allowing you to produce two-dimensional works at the click of a button. Well, now there are hundreds of instances of a new type of printer available on crowd-sourced, grass-roots funding websites like Kickstarter. 3D printers are mechanisms that take in some form of raw material — likely plastic, but the possibilities are rapidly becoming endless — and heat it before spitting it out on a bed, allowing them to create layer after layer of the material, cross-section after cross-section to eventually produce a three dimensional object. In most cases, all you have to do is plug in your computer and send it a file. This may require some experience in a Computer-Aided Design (CAD) software such as Rhinoceros, Solidworks, AutoCAD, or Maya; but what are you waiting for? Google it and I bet you'll find out a lot more than I can tell you right here; there is a whole wealth of knowledge out there about CAD in particular, and there is even free software out there such as Google Sketch-Up, which is designed to provide a beginner's approach to the basic skills of CAD. It may seem intimidating at first, but when you watch a four-year-old dictate to you how to design auto engine parts in Sketch-Up on Youtube, I think you might change your mind (I haven't seen such a video, but I bet there is something, albeit less hyperbolic, out there. Google it!).

The ad-hoc revolution is going to hit your desk soon, just as did your personal computer and printer about a decade ago. If you don't believe me, just go on Kickstarter.com and search '3D printer.' You'll find results for $100 dollars. The cheapest of these printers might be laughably low-resolution right now (meaning that the striations of the cross-sectional layers are more clearly visible) but the technology is there, where it wasn't two years ago. And the higher you go up in price range, the larger the surface area of the beds on which you can print, and the higher the resolution. Imagine responding to, "Hey, sorry, I broke a plate" with "No worries, I'll go print a new one in the living room." Not only will that plate be expediently delivered by the technology working for you in your home, but with a little bit of CAD practice, it could be a plate of your very own design. Some 3D printers are able to print in a variety of colors, so that producing a skin for your

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25 Instructables - DIY How To Make Instructions. (n.d.). Instructables. Retrieved , from http://www.instructables.com/

object in the software would produce results in the printed model. There also many databases out there that cater to the collecting and cataloguing pre-designed CAD files. These can be used and built upon; anyone can take a simple design that resonates with them and use it as a foundation for creating a new, original idea.

Despite being new creational technologies, 3D printers also have the potential to reduce material use while creating personally oriented objects. It might seem as if Jevons paradox would function in this situation; on the contrary, Jevons paradox is based on an environment in which consumers have an unlimited desire to consume. Not only this, it is based on an environment in which 'consumers' are completely alienated from the origins of their products and are out of touch with the methods and amounts of material use. With a personal 3D printer, the responsibility for consumption of materials is placed directly on the head of the user, as are the consequences. Users are required to acquire raw materials to use with the printer, which means that information about the origins and effects of these materials will be required to be much more transparent. Additionally, users will be paying out of pocket for raw materials rather than the final product, which means that people will limit their spending because of this visibility. There is no marketing involved in personal digital fabrication; rather the user defines his or her needs for his/herself without the presiding influence of the market. This gets rid of what is in my view a major corruption within the capitalist system: that marketers get to take up your time and space with ads that attempt to appear to have your best interest in mind while really only benefiting the marketers behind the ads.

Harnessing Individual Innovation on a Global Scale

Neil Gershenfeld, a professor at MIT and the head of MIT's media lab, created a course for students that functioned as a basic intro to digital fabrication technologies, and allowed students to experiment while also learning the fundamental technological interfaces required to use the machines:

> So I started teaching a class, modestly called, "How To Make Almost Anything." [...] hundreds of people came in begging, all my life I've been waiting for this class; I'll do anything to do it. Then they'd ask, can you teach it at MIT? It seems too useful? And then the next surprising thing was they weren't there to do research. They were there because they wanted to make stuff. They had no conventional technical background. At the end of a semester they integrated their skills.[26]

Gershenfeld found that students simply had personal desires to be able to be self reliant and creative, regardless of whether they had technical backgrounds or not. His students made al sorts of inventions: a 'scream buddy' that allows you to silence a scream by screaming it into the buddy, which would save it for release at a more convenient time; a web browser that allowed parrots to surf and talk with other parrots online; a machine that builds more machines using Legos for computing.

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26 Unleash your creativity in a Fab Lab. (2006, February). Neil Gershenfeld: Unleash your creativity in a Fab Lab. Retrieved , from http://www.ted.com/talks/neil_gershenfeld_on_fab_labs#t-365682

Gershenfeld soon realized that this was not a harbor for prototypes of industrial-style manufacture:

> I finally realized the students were showing the killer app of personal fabrication is products for a market of one person. You don't need this for what you can get in Wal-Mart; you need this for what makes you unique. Ken Olsen famously said, nobody needs a computer in the home. But you don't use it for inventory and payroll; DEC is now twice bankrupt. You don't need personal fabrication in the home to buy what you can buy because you can buy it. You need it for what makes you unique, just like personalization.[26]

Personal digital fabrication, which comprises all of the methods by which CAD files can be converted into their physical manifestations through Computer Numerical Control (CNC) devices, also has a broadly ranged potential as a creative output. Gershenfeld cites "3D printers that digitally fabricate functional systems"[26] on the micro scale as well as outputting "buildings, not by having blueprints, but having the parts code for the structure of the building... So these are early examples in the lab of emerging technologies to digitize fabrication. Computers that don't control tools, but computers that *are* tools, where the output of a program rearranges atoms as well as bits."[26] If you think about it, a 3D printer is a fairly simple device in construction: in theory it is not much more than a few servomotors with a mounted variation of a glue gun. A laser cutter is similarly constructed, except it uses a laser to cut; laser cutter technologies have become so simple and easy to use that many of them use the same dialog box on the computer as a common two dimensional printer. While simple in conception, the ideology behind these kinds of devices is what is so important to Dr. Gershenfeld. And he is absolutely right, as the medium is the message. The development of "a revolutionary concrete printer [that] can reportedly build a 2,500-square-foot home layer by layer in a single day"[27] will not only make it much easier to create homes and shelter, but will fundamentally change the way in which we perceive and respond to those entities in the same way that McLuhan proposed that Print media shaped the human psyche.

But this is not the kind of technology that I could simply keep in my home for whenever I need a new giant concrete building; where on Earth would I put it? In addition to being an MIT professor and the head of MIT's media lab and Center for Bits and Atoms, Dr. Gershenfeld is also the creator of the Fab Lab phenomenon. After getting a grant from the NSF to fund digital fabrication acquisitions at MIT, Gershenfeld was required to do some kind of outreach:

> So I made a deal with my NSF program managers, that instead of talking about it I would give people the tools. This wasn't meant to be provocative or important, but we put together these Fab Labs[...] And they exploded around the world. This wasn't scheduled, but they went from inner-city Boston to Pobal in India, to Secondi-Takoradi on Ghana's coast to Soshanguve in a township in South Africa, to the far north of Norway, uncovering, or helping uncover, for all the attention to the digital divide, we would find unused computers in all these places.[26]

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27 New 3D printer can construct your house in 24 hours! (2014, Jan 17). South Asian Media Net. Retrieved from

http://search.proquest.com/docview/1477829285?accountid=4314

When I was working in Yogyakarta, Indonesia this past summer (2013) I visited the first Fab Lab to go up in the country, run by and organization called House of Natural Fibers (HONF). Living in Indonesia, I would not have expected to see such an institution; I was working with a printmaking collective there and we were feet-pressing our prints and using gasoline as our solvent — the process was devoid of technology. But lo and behold, here was this shiny new Fab Lab, with incredibly articulate technicians and a mission that would astound just about anyone: the lab is entirely free to use. They are funded by grants and by people and organizations who use the lab to make and sell products. The charge for using the equipment is first — that you are required to be trained — and second — that in return you document your work and create an information and instruction packet for how it was done. This information would then become part of the Fab Lab's database.[28]

These Labs exist in myriad countries around the globe, and have, surprisingly, thrived in developing countries. They have grown from what may have seemed like community hobby shops to institutions that promote learning in ways that may universities are incapable of and that give back to their communities and environments through a collection of individual innovations:

> these labs started doing serious problem solving -- instrumentation for agriculture in India, steam turbines for energy conversion in Ghana, high-gain antennas in thin client computers. And then, in turn, businesses started to grow, like making these antennas. And finally, the lab started doing invention. We're learning more from them than we're giving them. I was showing my kids in a Fab Lab how to use it. They invented a way to do a construction kit out of a cardboard box -- which, as you see up there, that's becoming a business -- but their design was better than Saul [Griffith]'s design at MIT, so there's now three students at MIT doing their theses on scaling the work of eight-year-old children because they had better designs. Real invention is happening in these labs.[26]

This is adhocracy in full execution. Well, almost full. Neil shares with me my own greatest hope for the future, and he believes that it will happen in the next twenty years: the advent of Star Trek-style replicators that can form matter into any organization when you just ask them nicely.[26]

Collective Individualism; Connecting to Self and the Whole

Design is about a process of decision-making by going through all of the possible options that fulfill a particular set of criteria and picking the one that best suits the given context. When done on a personal scale, innovation can occur, but it is hard to get beyond the subjective definitions and limitations of an individual mind. What the individual creates is contextually subjective; it has the potential to fulfill the individual through a connection to that individual's origins and identity. But on a broader scale, through networking, design and systems thinking are taking place. As individuals we can create innovations for ourselves, and in the network we collectively are able to decide which innovations work best for the whole.

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28 HONF. (n.d.). Honfablab. Retrieved from http://www.natural-

fiber.com/index.php?option=com_content&view=article&id=163&Itemid=85

Technically speaking, this is design at its best, wherein the most options are exhausted and the decision for what is best is checked and double checked and triple checked and so on.

Personal fabrication and networking potentially mean the downfall of high art and celebrity, as they allow individuals to make and do everything that once was reserved for an elite class of people. Already enormous forums cull of art exist online; Instructables allows anybody to upload their personal creations and share how they were made; Soundcloud hosts music made by people all over the planet whether with a record deal or without; Vimeo and Youtube and Funny or Die are all websites on which people can create their own films and upload them to the collective network, which then gets to vote on which one it collectively likes best. As technologies are democratized, so the status of "elite" is deteriorated because it no longer has the qualities that keep everything else at arm's length.

So, in the history of man, areas of faith are passed on; traditionally faith was attributed to deities — entities outside of humankind that ruled with omnipotence and immortality over the realms of the mortals. Today I believe this focus has shifted to celebrity: with the advent of modern science, which is in itself a form of faith, humans have shifted toward a more pragmatic, 'believe-it-when-I-see-it' approach to the world, and deities don't prove their presences in the physical world beyond the limits of science. This is not to say that religious faith has vanished — rather it could still be considered the greatest cultural influence on the planet — but in America religion is less often about literal faith than it was in the past. And thus, celebrity is a means by which we can have faith in something outside of ourselves; some celebrities are worshipped, and their followers in some cases actually live and die with their ups and downs. This is called celebrity worship.[29]

I believe that ultimate faith, however, lies in oneself. This is why science is so powerful as a faith for many people: it is entirely dependent on our own perceptions and likely has just as much to do with ourselves as the environment around us. In a way, it is a faith in self: it connects us to our environment and our origins in ways that are completely tangible and provable, while also acknowledging the great uncertainty of the unknown and undiscovered. Science is what has provided us with the Internet, personal fabrication technology, and Fab Labs, and it has also presented us with theories of evolution and the big bang, which relate our existences back to origins and to the state of inertia of matter. If we believe our eyes when we see, then we are believing in ourselves. This is the final step in the progression of faith. Many people predict that the next step in the evolutionary line of humans will be through the collective intelligence of adhocracy, and that people who choose to integrate technology with nature eventually gain what we might consider to be omnipotence — the ability to create, destroy, and mold worlds and galaxies with just an intention, a thought; literally at will. Just go to FutureTimeline.net and see for yourself; it's quite comprehension and endlessly fascinating. This kind of merging of the artificial (technology) and the natural

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29 Harlow, J. (2003, Aug 30). Celebrity worship syndrome: The Ottawa Citizen. Retrieved from

http://search.proquest.com/docview/240680804?accountid=4314

(biology and the environment) is discussed by Gershenfeld and is exemplified by some of his works that compute using matter configuration as well as bits as output:

> computer science is one of the worst things that ever happened to either computers or to science because the canon […] of computer science prematurely froze a model of computation based on technology that was available in 1950, and nature's a much more powerful computer than that.[23]

The merging of the artificial and the natural will thus represent a tremendous ideological shift; it will represent the merging of external and internal identities, of progress and origins. With it all individuals will have enormous power at our fingertips, both informational and creational. Information will exist in all things and we will be able to extract it with our computers as extensions of our minds. Somehow, this digital revolution has brought us back to our origins in the natural, which, as Gershenfeld, is the most powerful medium for computation.

The most important thing with this shift is that we don't lose ourselves. This is an oft-plucked thread of our popular culture: movies like *The Matrix* and *Surrogates* prophesize — or at least warn us of the danger of — a loss of identity and the destruction of natural environments as a result of technological revolutions gone too far. Without identity, people begin to live portrayals of meaningless lives (within the virtual world known as the Matrix or through robotic surrogates). A similar vein of thinking shrouds consumerism with identity-consuming connotations; all of the frivolous pursuits of status and wealth and objects tend to clutter our lives with meaning from all places and times which hard to connect to our very own origins. This clutter stretches identity in different directions and can cause identity to become so far removed that it no longer has any sentimental value, no connection to its origin and that which it is meant to identify.

Awakening

> Voluntary simplicity involves both inner and outer condition. It means singleness of purpose, sincerity and honesty within, as well as avoidance of exterior clutter, of many possessions irrelevant to the chief purpose of life. It means an ordering and guiding of our energy and our desires, a partial restraint in some directions in order to secure greater abundance of life in other directions. It involves a deliberate organization of life for a purpose.[30]

Voluntary Simplicity, a lifestyle theory created by Richard B. Gregg — the first American to foster theories of anti-violent resistance, who studied with Gandhi for a time — describes the way in which simplifying life voluntarily can benefit you. It is a theory of well-being and its subordinate elements. And Gregg urges his readers to relinquish anything that does not resonate directly with your inner character and purpose. In focusing your purpose, Gregg believes that your pursuits will better reflect your person:

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30 Gregg, R. B. (1936). The value of voluntary simplicity. : Pendle Hill.

It is often said that possessions are important because they enable the possessors thereby to enrich and enhance their personalities and characters […] Nevertheless, the greatest characters, those who have influenced the largest numbers of people for the longest time, have been people with extremely few possessions […] The reason for this is something that we usually fail to realize, namely that the essence of personality does not lie in its isolated individuality, its separateness from other people, its uniqueness, but in its basis of relationships with other personalities.[27]

Gregg's ideals reference the value of pursuits in the context of community and society; while material possessions do not give enrichment to character, those that aid in pursuits that resonate with your character and that send that character out into the world are the possessions that are truly meaningful.

Thus the identification in origins and personal character and the technological revolution seem to reconcile themselves with one another: together, they allow for us to define our own lifestyles and our own character through an identification and deep informational relationship with the natural world and each other, while also allowing us to rid ourselves of consumer excess, simplify, and find ourselves.

We must learn to reawaken and keep ourselves awake, not by mechanical aids, but by an infinite expectation of the dawn, which does not forsake us in our soundest sleep. I know of no more encouraging fact than the unquestionable ability of man to elevate his life by a conscious endeavor. It is something to be able to paint a particular picture, or to carve a statue, and so to make a few objects beautiful; but it is far more glorious to carve and paint the very atmosphere and medium through which we look, which morally we can do. To affect the quality of the day, that is the highest of arts. Every man is tasked to make his life, even in its details, worthy of the contemplation of his most elevated and critical hour. If we refuse, or rather used up, such paltry information as we get, the oracles would distinctly inform us how this might be done.

I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived. I did not wish to live what was not life, living is so dear; nor did I wish to practise resignation, unless it was quite necessary. I wanted to live deep and suck out all the marrow of life, to live so sturdily and Spartan-like as to put to rout all that was not life, to cut a broad swath and shave close, to drive life into a corner, and reduce it to its lowest terms, and, if it proved to be mean, why then to get the whole and genuine meanness of it, and publish its meanness to the world; or if it were sublime, to know it by experience, and be able to give a true account of it in my next excursion.

—Henry David Thoreau, *Walden; or, Life in the Woods*, 1854

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