Product 1: 670 Thinking, Learning and Computers, Fall 2015

This product is very important for my start in the Critical and Creative Thinking Program. I came into CCT having been in science and recently trying my hand at science communication via blogging. In this midterm reflection, I talk about my relationship with the Internet and social media, and how I am trying to resolve differences I have with it. The use of social media plays a large role in my synthesis and this course really helped me understand how people use it. I also reflect on the ages of who uses the Internet in what ways, helping me to understand what types of audiences I could reach through different methods on the Internet. Without the work done in this course, I don't think I would have realized the potential that the Internet has as far as it's reach. This becomes a common theme throughout my work in the CCT program.

Product 2: 601 Critical Thinking, Final Paper, Fall 2015

I chose this product because it shows me starting to dip my toes in the water of the science literacy problem in our country. Having working in science communication coming into the Critical and Creative Thinking program, I had a lot of these ideas floating around in my head already. But this paper was one of the first times I was able to sit down and write about it in a manner that forced my thinking on this subject to grow. Not only do I talk about what information literacy is, I related it to science and fake news (before Trump took over what fake news actually is). I like this paper a lot because I talk a little bit about making information accessible through entertainment and fun ways, and over my time in CCT that has become my focus. This course was pivotal in my life. I was able to explore ideas I had and ultimately come to the conclusion that I wanted to find a way to boost critical thinking in the United States.

Product 3: 688 Reflective Practice, Plan for Practice, Spring 2016

This course was very significant for my journey through CCT because it showed me to reflect on how I think, how I conduct my time and how I work. At the time, and currently, I am self-employed, so finding out how to be productive when working from home in incredibly difficult. I dived into my childhood and was able to look at how and why I developed both the good and bad habits I have. This project also expanded to my partner who also works from home, allowing us to create a schedule for our days to use our time better. Overall, what I got from this course the most was the ability to be introspective in many aspects of my life and not get down on myself for doing something wrong, but instead find a way to do it right.

Product 4: 649L Scientific and Political Change, Case 1, Spring 2016

I was very excited to take this course. It had everything to do with why I was in the CCT program. I wanted to help the nation understand science. But this course ended up being very difficult for me, but this paper is the first time I was given a

more rigid assignment in CCT and was able to really find a way to write about something that was important to me, and to why I was in CCT. The case study was to write about something surrounding climate change and/or natural disasters (if I remember correctly). A friend of mine was in Japan when the Tohoku Earthquake hit, and I remember her telling me how important social media was for her to get in contact with family. So in this case study, I highlighted just how useful social media can be during natural disasters, one of the more recent and more relatable at the time being Hurricane Sandy. This exhibits once again me exploring how social media can reach people and be a really important tool.

Product 5: 618 Collaboration and Organizational Change, Plan for Practice, Fall 2016

This course afforded me the opportunity to really evaluate how I work with others and how I view my own work. I came to the realization, highlighted in this plan, that I often have quit things in the past. I explore why that happened and how to avoid it in the future. I also explore how I work with others and how to improve on that. This was an important plan for me to make since I was heading into the courses that help me to build my synthesis.

Product 6: 603L Philosophical Thought, Final Paper, Fall 2016

This is one of my favorite products I ever produced in CCT. It screams me and my personality, but also my hard work and thinking done in this course. The paper relates a lot of the philosophical ideas talked about during the semester to The Muppets. It includes thoughts on feminism and Miss Piggy, the idea of self-identity is related to Gonzo and puppetry as a whole and Kermit as an unlikely leader is discussed. I love this paper so much because it shows my ability to make a topic that many roll their eyes at, like philosophy, into something really fun and interesting. This reinforced the idea that science and critical thinking can be communicated in a fun way, leading me into the heavier work for my synthesis.

Product 7: 602 Creative Thinking, Final Paper, Spring 2017

This paper comes off the back of the large project we had done in Creative Thinking where we had to write to someone as either a person or object in their life. I chose to write to Jim Henson as Kermit the Frog because I deeply admire Jim Henson for his creative, and his critical, thinking. This paper sums up why I chose Jim Henson as my topic, and relates back to my final paper for Philosophical Thought. This paper is small, but shows my admiration for someone who changed the world by doing things that no one had thought about doing before, encouraging me to keep going with my ideas, despite any criticisms I may be receiving due to their non-traditional nature. This is later discussed in my synthesis, but not with reference to Jim Henson in particular.

Product 8: 693 Action Research For Change, Final Process Report, Spring 2017

This report focused on my small business, The Science Boutique, and how to grow it via the Internet and use it at a catalyst for change in science literacy. I explored more ways to use the Internet, and even experimented with different ways to use social media to see who sees different types of postings on the internet. This course was a good experiment in how to use social media and also helped me grow my business. The end of this course marked a significant change in my business, bringing it from something that I was just doing on the side to my full time job.

Product 9: 651L Advanced Cognitive Psychology, Final Paper, Fall 2017

Having done a lot of research on the use of social media, I focused more on how people absorb information during this course. My final explores the idea of cults, specifically Scientology. This was important in helping me understand why people believe certain things and don't think critically about what information they are receiving. This was an important step for me because I realized that sometimes people just believe what they are told because it is easier than learning the truth. Ignorance is bliss.

Product 10: 692 Research and Engagement Process, Final Self Assessment, Fall 2018

The significance of this is that it is my final course taken before embarking on the synthesis course. This is one last self-assessment for me to look at and take in. It allowed me to look at my strengths and weaknesses before heading into the synthesis course.

Product 11: 615 Transformative and Holistic Teaching, Final Project, Spring 2019

This project is titled "A Self-Guided Learning Plan for Personal Betterment" and is a great way for me to leave the CCT program. I took a look at places in my learning where I felt I was lacking and came up with a plan to fill those voids. It incorporated many aspects I have learned through CCT, such as collaboration and reflective thinking. This is a truly important project for me to continue learning after I leave the program and to accomplish what I highlighted in my synthesis.

Product 12: 694 Synthesis Theory and Practice Seminar, Synthesis Excerpt, Spring 2019

In this excerpt from my synthesis, I talk about the current state of science communication, which going back to my first few products. I then talk about the use of creativity within science communication and social media, incorporating the products you see throughout my CCT career. Finally, I use an example of a piece of science information that had recently gone viral and show a way to add to it using web comics, incorporating creative thinking into critical thinking. All of this excerpt includes things I have written about extensively in all of these products: social media, science literacy and communication, incorporating art and entertainment into science communication, etc.

Product 13 – Exit Self-Assessment, Spring 2019

This is the final self-assessment of my CCT career and felt it should be included.

Bonus Product – Biology 352 Evolution – Final Paper, Spring 2018

I wanted to include this product because I took a semester off from CCT to take a science course as a graduate student. I excelled in it, and really needed to have that renewed love for science after doing so much research in CCT. This is my final product, talking about the event that we believe caused the dinosaurs extinct. It is important because even though it is a science paper, I incorporate social media and pop culture into it, talking about how they have had an affect on the current state of paleontology.

Charity Southworth
Midterm Reflection
November 12th, 2015

I came into this course with a very pessimistic attitude towards this internet. This does not mean that I completely ignored the good the internet can do and the ways that I can use it to better society. But growing up in a time where technology grew with me, I saw negative effects of the internet and computers first hand. However, if it were not for the internet I know that I would probably be stuck as a bible thumping Midwesterner. It's strengths definitely outweigh its faults and I believe that it can be used to do good within many societies.

At the beginning of the semester we discussed whether we consider ourselves to be a digital native or a digital immigrant. Digital natives grew up in a time where technology always had a strong presence in their lives. Digital immigrants are people who did not have a strong technological presence growing up or in the majority of their adulthood. But not everyone fits into those categories. I was growing up right as technology started to take hold of our lives. A perfect example is the infamous Y2K scare. Many people were worried that when the year 2000 came around, the computers would malfunction because instead of have a "1" in the first number of the year, it was a "2." This happened right as I entered middle school, and I remember being extremely confused as to why this was a big deal. Now that computers are understood better and by more people, I doubt a scare like this would be possible today. Needless to say, the year 2000 came and all the computers in the world didn't shut down. And it seems as if the trust of the public in computers and technology became stronger.

This was the year my family could finally afford a computer in our home. This was great, because it meant I did not have to hand write my papers anymore, just in time for middle school! Then when I started high school, blogs like LiveJournal and social media like MySpace started to have a strong presence online, making my awful social years all the more layered and terrible! I have experienced the wonderful things that computers and the internet can do, as well as the unfortunate effects of these technologies such as lack of privacy. In the past 10 years, technology has had a strong presence in my life but I clearly remember a time without computers and the internet. Growing up in a generation that cannot identify as a digital native nor a digital immigrant has given me an unique perspective to a lot of topics that we have discussed in class.

Since I started studying science, I had to learn to think differently. I had grown up very religious, which taught me that what I think is the absolute truth and there is one book with all of the answers. In the real world, I needed to be able to think critically and skeptically. Skeptical inquiry is a necessity in the sciences – in both working in the sciences, or just reading and understanding science. However, the general public has stopped using critical thinking and more or less believes what one reads or sees, without knowing the credibility of the source. This has led to debilitating science illiteracy within our society, which can, and to a point has already, led to terrible consequences. Science illiteracy includes understanding the process of science and its results in particular, as well as understanding that information is constantly changing as our curiosity causes us to explore and learn more about the world around us. Teaching the

process of science is something that is best done throughout a longer period of time, particularly in a classroom of some sorts. However, there is a way to report science news in a way that engages the public and encourages one to seek the truth over any bias opinions, and the internet is a great way to do it.

One of the most pressing issues that science illiteracy can jeopardize is climate change. Politically speaking, there are a lot of people who want to keep the public from believing or accepting what is happening to the Earth's environment. But in the science world, there is no denying climate change, and there is a growing sense of urgency to communicate the facts of the situation to the public. Politicians and businessmen have more control over the media and the headlines than scientists, so in the past few decades climate change has been kept rather quiet. However, since the rise of the internet, it has become harder and harder for information to be kept away from the public. While there are still many naysayers out there, more and more people are becoming aware of the hazards that climate change brings and solutions to the problem are starting to be formed, such as electric cars.

I want to use the wonderful accessibility of the Internet to help combat science illiteracy. The internet has the ability to bring important social issues to light, and present them from perspectives that many people would not be able to see before. There are many mediums to bring science to someone's attention on the internet. Some people love reading and may already be attracted to sites that specialize in science writing, such as National Geographic or Discover. Others may take to Twitter or Facebook and follow agencies that are known for their

work in science, or a website that gathers information from these resources into a daily bulletin. These are great ways to get science news if you know where to look, and want to look there. But that about the people who don't care about science? What about people who like click bait? Creating a website that provides science news and promotes science understanding can be formatted in a way to catch attention and be entertaining. By having a resource like that online, people can replace their 20 minutes of clicking through Buzzfeed or UpWorthy for clicking through an informative website (while not necessarily thinking this) that will ultimately help society come to better decisions within a democratic system.

My personal ideas and propositions for websites like this are very informal and lack the structure that a traditional educator may desire. I feel like this is because I come from a very different past than most people who have the same opinions as me. I graduated high school as someone who could not care less about science. My friends have been and still are largely artists, as am I. When I started college I lucked out by having a really great professor for my general education science requirement. This caused me to want to start studying science. But if I had never had that professor, it makes me sad to think that I would not know about all the exciting things I have learned throughout my studies in the sciences. So when I think of how to combat science illiteracy, I think of how to make science appeal to people like me, minus the science degree. What would appeal to my friends, who are engrossed in social media and the arts?

This course has given me a lot of tools to go out and pursue many of my ideas. Our discussion about information literacy has helped me form more solid ideas about how the internet can benefit social issues. The discussion about digital communities has also helped me think of how different approaches to posting content online effect individuals. Coming from a generation that both appreciates and ridicules the internet and computers, I have come to a better understanding of the effects that technology has on an individual and a society. I have seen a lot more positive outcomes thanks to my classmates and have a renewed hope in the ability of the internet to educate the public.

Charity Southworth
Critical Thinking
Fall 2015
Final Paper

Information Literacy in a Digital Age

The idea of information literacy has been around for years. Libraries first proposed it when the seeds of the Internet were planted and it became clear that there was an overwhelming amount of information available to the public. (Wilder) Since then, there has been much debate over whether or not information literacy skills should be taught, and who should teach them. Should librarians take on the burden? Or should school teachers? This argument no longer seems valid since most people (yes, people not just students) get their information from the web and practically never talk to a librarian and aren't always in school. With so much information at our fingertips, it is easy to assume that we would have a wildly knowledgeable public. Unfortunately, the teaching of information literacy has seemed to fade away since it seems not one party should hold the responsibility to teach it, and with that the mass populous has absorbed false information like a sponge does water.

Information literacy is a critical thinking skill that should be, and sometimes is, taught from elementary school and throughout the rest of one's schooling. One example is using references in papers, something often introduced in middle school. Before the days of the Internet, if it was in a book, it was fair game as a source. But now teachers and professors have to put caveats on the resources that may be used.

Some restrict to .gov or .edu sources only (government and educational institutions respectively). Others ban open source websites such as Wikipedia as anyone can contribute to these pages. Sometimes instructors have lifted their hands up and given the student the responsibility on deciding whether or not a resource is credible. This is a great way for a student to learn information literacy through practice, if they have been taught critical thinking skills throughout their educational career.

We have established the importance of information literacy – it is important to know your sources and facts well. But why is it that the Internet has challenged information literacy? The Internet is filled with accurate information and is a wonderful tool for students and non-students alike. So how is it causing information illiteracy? Simple – false information. This false information has a few different roots – satirical news, pseudoscience and religion.

Satire uses humor or irony as a form of entertainment. Satirical news, also referred to as fake news, has been around for hundreds of years. It first appeared in a New York publication, The Sun in 1835. (History Channel) The articles, often referred to as the Great Moon Hoax, claimed that life had been discovered on the Moon. These articles grabbed the publics' attention and sales of The Sun skyrocketed. Scientists at prestigious universities such as Yale were even fooled and believed the information presented in the satirical articles. This is perhaps a perfect example of how damaging satire can be today. Back in the 1800s, it was more than understandable that someone would believe what he or she read in a newspaper,

making it hard to blame information illiteracy for the Great Moon Hoax. There weren't accessible libraries everywhere at that time, and there definitely was not the Internet, so if you read a series of 6 articles in The Sun, you believed it. But now that is not true. The public has to be skeptical of everything they read – to make sure there are multiple sources making the same claims.

While the Great Moon Hoax ended up being rather damaging, satirical news does have a positive place in society today. There are political shows with a satirical theme that entertain while also informing. There are also websites and publications such as The Onion and Clickhole that are outrageously satirical to the point of extreme comedic entertainment. But satirical news on the Internet has been tainted. More and more websites appear, ones that use the model of the Great Moon Hoax, trying to fool instead of entertain and the sole purpose of this is to make money on advertising. In 1835, The Sun benefitted from a spike in sales, while today sites like World News Daily Report (who creates fake but believable news) benefit from advertising.

The key piece of motivation behind those that distribute this sensationalized false information is money. Take one look at the history of industrialization and one can see that there is very little mankind won't do for the sake of money and the power it buys. So one does not balk at the prospect that some in the world seek to profit at the expense of the truth. We could consider these agents to be, for academic purposes, the enemies of information literacy. Their profit margins depend on the ineptitude of the average person in the ability to discern fact from fiction. This

information illiteracy is an important part of our current day online ecosystem, as we can find new predators in the form of advertisers themselves. Companies have begun to pay mainstream news sources to run what is called sponsored content, which may take the form of an op-ed covering a new product, or the reporting of a specific concert. These pieces will run mingled within the standard content readers assume to be factual news, although with some small indication pointing out that they are reading sponsored content rather than news. Other companies go a step further and create the fake news sites themselves. These sites will look like a typical news website but the goal here is to steer an unknowing reader into buying a product or service. In the pursuit of that end, articles will often highlight a "new scientific study" about the food we eat, the effects of everyday behaviors or exposure to long-term climate trends, posed as a problem where the solution is some product. These are the modern day iteration of misleading infomercials staged to appear as news bulletins to target the especially vulnerable geriatric segment of the population. From fake news sites come headlines that convince the gullible and steer them away from the truth; pseudoscience does this as well.

Many of the fake news stories that get passed around throughout social media are science related. One of the better-known headlines of late reference the Super Moon. The Super Moon is a real thing – it is the closest full Moon to the Earth in the year. However, satirical or fake news sites will say it will appear five times larger than usual, which would obviously be untrue to anyone who took a second to think about it. But the problem is people are not questioning these headlines, nor do

they question pseudoscience. Even my friends who should know better, because the word and ideas of astrology are so popular, often refer me to as an "astrologer."

Religion is always a sore topic. I grew up extremely religious and am now the complete opposite. I don't often dive into talk of religion, but I do have a few words to say about it in an information literacy context. There are many religions throughout our world – many types of Christianity, Islam, Judaism, among others – so there cannot be one correct religion. They are faiths, and should be treated as such. Holy scripture and myths that may come from said writings should not be taken literally, since one religion can contradict the others and there is no way to determine which is correct. Religion provides a moral code to some, but should not be the architect by which we build our society. I am a woman of science and believe that religion and science can and should be separated. This is important because I grew up honestly believing the world was only six thousand years old and that Noah's Ark was real. Even once I started studying archaeology in college I still believed in creationism. It took a vast shift in the way I thought for me to be able to separate faith from fact, and eventually I rejected that faith due to my own interests. We could be losing the next Nobel Laureates to religious brain washing (yes, I said it). If children are not taught that religion is faith and science is fact, then we may miss out on raising a child that becomes a doctor that cures cancer or a scientist that aids in environmental efforts.

Information illiteracy, in our society here in the U.S. is rooted in these three concepts. Overseas, this is not so much the case. Fake news has not become as

popular in Europe and Asia, and I can only assume that is because advertisers may not be as keen to pay into such sites. Pseudoscience is still present, but not as hyped as within our society (we had the hippies). Most importantly, religion is separated from education even within religious schools. The Vatacan itself often disregards the notion that "what the Bible says, goes." Pope Francis said "The Evolution in nature is not opposed to the notion of Creation, because evolution presupposes the creation of beings that evolve" (ARTICLE) This is the attitude that many religious Europeans take towards science, and I know of numerous people from Asia who do not mix their beliefs with science one bit, which is a stark contrast to what happens in our society. What can we do about these three ideas in our society?

In the case of fake news, the solution comes from the same medium as the problem – the Internet. There are sites that have been created to specifically point out what articles are fake news, as well as what websites are fake as well. Going even further there are websites that provide information on folklore as well as stories passed around on the Internet. A well known website, Snopes provides an in depth investigation into many topics, from myths such as the Loch Ness Monster to pictures of Einstein with misappropriated quotes superimposed on them. The website provides sources and gives a true or false rating to each story. This is a great resource for anyone who wants to become information literate. Snopes provides a great example on how to do research by simply showing what the end result looks like.

But how to combat pseudoscience? So many people subscribe to it without even thinking, especially with astrology. The horoscopes are in the newspaper, so why question it? Well, more scientists need to talk about the pseudosciences and bring it to the attention of the public. Write more op-eds in The New York Times, bring these issues to light over and over and over again so that people are reminded to be skeptical and question what they read. As the wonderful Carl Sagan said, "I believe that scientists should spend more time in discussing these issues…. There are many cases where the belief system is so absurd that scientists dismiss it instantly but never commit their arguments to print. I believe this is a mistake." (Loxton) And with religion, I think it is best to encourage a separation of church and state and leave religion in your home, for everyone has different beliefs.

Fear mongers love to spread news, even if it is fake, which promotes their own agenda. This includes morphing information in the name of science (pseucodscience) or hijacking a religion to accomplish their own goals. This can be incredibly damaging to the general public and lead to an incredible amount of misinformation. It can lead voters astray, which can cripple any democratic society. Critical thinking skills can help stop the spread of this harmful information. The creation of more online resources that check the credibility of websites can help any rightfully skeptic individual make sure that what they are reading on Facebook or Twitter is real. Hearing about a pseudoscience from an actual scientist who has higher order knowledge in a specific field can educate

the public on the dangers of claims make by the pseudosciences. And finally, somehow we all have to respect each other's right to freedom of religion, and stop judging, shunning, ridiculing and dehumanizing others for believing in something different. Critical thinking can, and has, combatted a lot of these behaviors, and I believe that if we continue to make resources that address these issues and teach critical thinking skills in schools then we can secure a better future for our society where less and less misinformation is absorbed by the masses.

Resources

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Charity Southworth
CRCRTH 688
Plan for Practice

Creating a Routine when Working from Home

Working from home, full time, as a self-employed individual is something I never planned for. It requires a strict routine and the ability to self regulate. I have always had a problem with sticking to or even creating a routine, so in order to grow my business I need to learn how to change. Adhering to a schedule is my number one concern, but other issues do come up that are related to that. I also want to become healthier mentally and physically by incorporating new, positive habits into a daily routine and slowly taking out bad habits. I will use various aspects of reflective practice to do this, such as journaling.

I was raised in a very loose environment where there were no meals made every night and no parent around to tell me to do my homework. I never picked up basic time management skills that most kids learned growing up, nor was I taught how to eat and live a healthy lifestyle. This definitely put me at a disadvantage when I went to college, especially because I never got to live in a dorm. In a way I feel like I was thrown out into the real world abruptly and have been stumbling around for most of my adult life. In the last years of my undergraduate career, I was able to pick up some basic life skills and adapt to the college life. However, running a small business requires a different schedule than I had in college. Currently, I operate a small jewelry business, I work one day a week at the Museum of Science, and I am in graduate school, so my plate is pretty full with a variety of tasks, most of which I do from home. In my apartment, what would be my living room has been turned into a

shared space for my husband and I to both work (he also works from home as an illustrator). Working in the same space can be difficult, and thankfully he is on board with my plan for practice since he also struggles with some of the same issues that I do.

One of the most difficult aspects of working from home is not having a forced structure. I don't have to be up at a certain time because the only person I answer to is myself. I can take a break whenever I want to, for however long I want! This has created too much freedom in my schedule, especially because I am not a good self-enforcer. Since my husband is also in the same position we often enable each other to spend our time unwisely. If I am feeling even the slightest bit tired, he will encourage me to go rest or nap, and I will do the same. We both definitely lack self-discipline. Another problem that arises is that we regularly don't get started on work until halfway through the day. That means that we are up until 4 or 5 am working, which is easy to do with art-based projects. However, this is not conducive to a productive lifestyle and makes it difficult to interact with the rest of the world. Another factor that contribute to my inability to maintain a routine is oversleeping. We repeatedly oversleep since our bedroom has no windows. It seems like something so small, but because our apartment does not get a lot of light, keeping track of time and staying on a circadian rhythm is difficult.

The most obvious part of my plan for practice is to create and stick to a schedule. Creating a schedule has never been difficult for me, but having the self-discipline to adhere to it can be a problem. I have always been great at organizing, so I can look at what I have to do that day and create a plan very easily. However,

since I am at home working, and my husband is as well, we often watch a movie or play a video game instead, or just simply drag our feet because no one is there to judge us. We also have the habit of rewarding ourselves before we get our work done. I need to learn to hold back on the fun stuff until my work is done. In order to do that I have created a schedule that is really flexible. The schedule is written on a white board that is divided up into the 7 days of the week. Instead of specifying what tasks to do when, I specify what category of tasks to do. The current categories are Work on Shop, Personal Time, MoS (Museum of Science), Schoolwork and Market (selling goods at an arts market). By blocking out times of the day for a specific type of work, I am able to go into each block with a clear mind and focus on the work I am doing. I found in the past that if I went to work on my shop, I would be stressed out about some other work I had to do for school. I write the schedule out about a two or three days in advance and will always review the next day the night before and make changes if needed.

However, the real planning is how to keep myself on schedule. I have come up with some small rewards I can earn on a weekly basis. I will be evaluating my performance each day and record how I think I did in a journal. It can be a simple reflection on the day, or an in depth entry on what is currently on my mind. At the end of each entry, I write down how much of the day was on schedule. If I am on schedule for 70% of the day, I count that day as a success and put a sticker on my master calendar. At this point in time, if I achieve 3 successful days in a week, I get to go to a movie, a museum or some sort of outing. If I have 5 successful days in a week, I will put a designated sum of money towards a vacation in the future. I have

also decided that these days can be averaged over a month to account for things such as sickness or time away from work. This creates a reward system similar to a sticker reward system that many parents use with their kids, in a way that makes me feel juvenile, but it has seemed to work out fairly well in the past couple of months. I do need to continue being diligent with it in the future, and hopefully over time the act of doing work then rewarding myself will become second nature so that stickers and self-evaluation daily are no longer necessary.

Another key component to my practice in the future is journaling. I mentioned above that I plan on journaling each day to reflect on how I have done with the schedule, but there are many other reasons to journal. In order for me to work on a routine and utilize my time, I need to work on my mental health. I have anxiety and that often keeps my mind full of thoughts when I am trying to fall asleep. If I spend some time journaling every night, I can get out what is on my mind so that I can sleep better. This does not always work, but it can definitely help me move on from the mindset of working to actually relaxing. I believe that journaling may be the most important aspect of my plan for practice. Without it, I do not think I will be as introspective as I need to be in order to evaluate my progress. It will help me be more mentally healthy and hopefully work through some of the issues that I have when it comes to self-discipline.

None of this plan will work if I cannot wake up at a decent time. My husband and I both struggle with this. We often try to go to bed early in order to wake up at a decent time, but we will end up sleeping in anyway, sleeping for a total of 10 to 12 hours. This may not sound like a problem to some people, but it is a problem when it

happens on a regular basis. I will feel sluggish when I have had too much sleep, making my day completely unproductive. We have tried a few different things over the past couple of months, such as an alarm clock that makes you solve a math problem before it turns off. That didn't keep us from falling back asleep. We have also tried putting an alarm clock in a different room, but that does not keep us from going back to sleep either. We just purchased and started using an alarm clock that simulates a sunrise 30 minutes before the alarm goes off. I think this may help up get into the circadian rhythm that we are missing since we have no windows in our bedroom. I also think that being woken up in a gentle, non-startling manner may make us want to stay awake more. The alarm also simulates a sunset, which I will be using when we go to bed while I journal and decompress from the day.

I have currently made great strides with the schedule and journaling, but I am nowhere near where I want to be. At this point I have one or two days where I feel like I succeeded and adhered to the schedule. Throughout the summer I want to boost that number to 4 or 5 days per week. My schedule for the summer will be very different from the past few months since I will not be taking classes, but I will be completely busy doing work outside of the house on both Saturdays and Sundays. This leaves Monday through Friday completely open, which means I will really need to rely on this schedule and routine in order to get work done over the summer. This is vital because the work I do in the summer is my preparation for the holiday season, which is incredibly busy for my business.

Because I will not be in classes over the summer, I want to add more into my plan for the next few months. When I think of a daily routine, I think of healthy

habits. I have very few healthy habits, but I do have a wealth of bad habits! Throughout this summer I hope to incorporate healthy habits into my life, as well as take away bad ones. There are two types of habits I want to work on: physical health and mental health. For my physical health, I have been in contact with a friend who is going to help me incorporate healthy eating habits. I have a whole plan set up for the summer to cook healthy, correctly portioned meals. This is something that I will be incorporating into my schedule and since I like to cook, there is no real down side to this task. Another task I hope to incorporate into my routine is taking a daily walk, which I think is helpful both mentally and physically. The exercise is good for my body, while being in fresh air and sunlight is good for my mind. Every month I will be incorporating one healthy task (for example, June is the diet) and taking away one bad habit (June is reducing sugar intake.)

Lastly, I hope to find a friend whom I can confide in. I often have trouble talking about my issues with working from home with my friends. Most of my friends don't understand what I do or the difficulties of working from home, so they tend to build me up and offer me praise, not constructive criticism. I hope to reach out to people who I know work from home. This could be an artist friend that I know, or someone I meet at the open market where I sell my jewelry. It of course would be ideal if this person became a good friend and does not run a similar business to mine. Having someone I could find encouragement in, and encourage them myself, would be great. But in such a competitive market, it might be hard to find.

There is much more that I wish I could include in this plan for practice, but I believe I have given myself enough to tackle. Adding too much will overwhelm me and make me unable to make any progress. There is something I would really like to do that I can't at the moment, and that is change my environment. I would love to live in an apartment that had enough space so that my husband and I could have separate offices, but if we want to live in New England, that is going to be quite difficult at the moment. However, I think that with this plan I can make the best out of our situation. I plan to work hard throughout the summer and hopefully many of the things I want to work on, such as establishing healthy habits and a routine will become second nature.

Charity Southworth
CRCRTH 649
Case 1

Social Media and Its Use in Natural Disasters

There is no doubt within the scientific community that climate change is happening – and at an alarming rate. In the past 20 years we have seen more and more natural disasters, particularly in places not commonly prone to these disasters. We have seen hurricanes hit New Orleans and New York with deadly force. Floods, tornadoes and snowstorms are also on the rise – with many areas being hit with blizzards that don't usually get much snow, such as Baltimore. While the physical climate of our planet is changing at a rapid rate, so is our society. We can now communicate in a variety of ways through technology. With these new technologies comes opportunity to prevent these natural disasters from being as deadly as they are. The accessibility of the internet also affords the opportunity to scientists and politicians to reach out to the public and educate them on the dangers of climate change and what they can do to help.

Cell phones have a variety of uses. Making a call on your cell phone is easy, but there are so many other ways to communicate through our cellular devices. We can text message, video call, message through social media, or update our social media status to reach a larger crowd all at once. These ways of communication are vital to preparing the public for disasters, carrying our relief efforts and alerting the public on where to find resources and shelter after a disaster comes through their area. While Facebook and Twitter are mentioned constantly on mainstream media, it is important to go over how the most popular social media platforms work.

Facebook is a free social networking website where users can create profiles, upload photos and video, send messages and post to their wall. Each user can then send friend requests to people, which then have to be approved by said person. The wall is the main feature of Facebook; it essentially acts as a bulletin board. Users can post to their own wall, as well as the wall of others. Posts can be text, links, photos or videos. All of

the users friends can usually see these posts unless the privacy is set differently. Each user has a news feed, which acts as the home screen for the regular and mobile sites. The news feed shows what the users' friends have posted recently. Facebook offers a range of privacy options for each user's profile, as well as each post they make. You can choose to make everything public, friends only, or customize the privacy. Facebook is available in most countries, as well as most languages. It averages at over a billion active users daily, most of which is done on a mobile device and over 75% of those are outside the U.S. and Canada.

Twitter is the bite size version of Facebook. Like Facebook you have a profile picture, but you are only allowed a very short bio. Not many people use their real name on Twitter. You pick a username, which is used as your "handle." This is your username with "@" in front of it. Each "tweet" is similar to a Facebook status, except it is limited to 140 characters. You can tweet at people by using "@" followed by their username, and they will be notified of your tweet. People who use Twitter tend to have their profile and tweets public and often tweet at celebrities or organizations. Hash tags, which originated on Twitter, are terms or words that you put "#" in front of. When someone searches for a word or phrase on Twitter, all of the tweets that used that hash tag show up. For instance, during Hurricane Irene in NYC, a government identity may tweet something like "@NYCMayorsOffice is updating its feed with the latest news and evacuation information #Irene."

Instagram is the picture version of Twitter. Once again, you are allowed a profile picture and a short bio. You then create a username which can also be tagged by other users using "@" followed by your username. Users post images (confined to a square shape) and apply various photo filters over them. They can then caption the photo, with no character limit, but a limit of 30 hash tags. During Hurricane Irene many people would post photos of what was going on in the city with the hash tag "#Irene" making their photos searchable, unless their profile is set to private.

One of the first natural disasters where we saw social media playing a large roll was during the Joplin Tornado that struck Joplin, Missouri on May 22, 2011. The tornado was classified as an EF5 tornado with a width of nearly one mile. 158 deaths were reported, with over 1,100 injuries ("2011 Joplin Tornado"). The total damage is estimated to total $2.8 billion. Immediately after the tornado hit in the late afternoon, civilians took initiative to launch a public Facebook page. During those crucial first hours after the storm, the page provided information on where the tornado hit and where to go for emergency care (Smith). It also helped people connect with their loved ones, as well as any pets that may have been misplaced during the storm. The page was accessible through mobile devices as well as computers – making it extremely useful for people who had nothing on them but their cell phone and wallet. The page continued to be extremely helpful to the community in the weeks after the tornado. It provided information on where to find water, shelter, clothing and charging stations for people affected by the disaster. People looking to help the community could find information on where and how to volunteer on the page. This Facebook page became the go-to source for information on the disaster. News outlets would get much of their information from this page – giving the managers of the page an unique opportunity to dispel rumors before they had time to spread.

About one month before the Joplin tornado, the Tohoku Earthquake and Tsunami really proved the importance of the need of Social Media Emergency Management. On March 11th, 2011, a 9.1 magnitude earthquake struck off the coast of Japan near Tohoku. The earthquake triggered a tsunami with waves as high as 39 meters that reached as far as 6 miles inland. Over 15,000 people died in this disaster and the economic damage is estimated to be well over $300 billion (USD) (Science, Live and Planet Earth). While this economic cost makes it the most costly disaster in history, the death toll would have been a lot higher without cell phones and the Internet. Social media became a vital form of communication during rescue efforts. Cell phone lines and land lines often failed during

both the earthquake and tsunami, but social media sites like Twitter and Facebook were still up and enabled a way to communicate. A hashtag on Twitter was created as a way for emergency personnel to identify people who needed rescue (Wallop). The Google Person Finder tool was retweeted about 9,000 times in the wake of the disaster, allowing many to find their loved ones, particularly from families that were overseas (Wallop). The internet was also an important news source for any foreigners. They were able to stay up to date through their home countries news sites and through the use of translators, such as Google Translate. Many electronic stores, such as Apple, provided free phone charging stations where they could so people could stay connected. While social media played a great role in connecting victims with rescuers as well as their families, it also played a huge role in the global impact in the following weeks. News of what was happening in Japan and heartbreaking first hand accounts were spread throughout social media prompting many people to make donations to relief efforts. The US based organization Japan Center for International Exchange estimates that Americans donated about $730 million to various relief organizations working in Japan after the earthquake and tsunami (Wallop). People who saw posts on social media gave many of these donations, showing the importance of its use during and after such disasters.

Social media can also play an important role during the preparation of disasters such as hurricanes. This type of disaster can be broken down into three phases: the preparedness phase (before the storm), response phase (during the storm) and recover phase (after the storm). The use of social media was vital in all three of these phases during Hurricane Sandy, which hit the East Coast of the US in late October, 2012. It is estimated that the cost of the destruction from Sandy is around $75 million, making it the second most destructive hurricane in US history. However, the total fatalities is reported to be 147, a number that would be much larger if it weren’t for the heavy use of social media platforms in the preparedness phase (Library, CNN).

Many government entities took part in the use of social media to help the populous prepare for the storm, such as FEMA, FDNY, Red Cross, the NYC Office of Emergency Management, Mayor Bloomberg's office and many more (Maron). FEMA used numerous social media platforms to educate citizens on how to prepare for the storm and also recommended that people use social media to contact loved ones so that phone lines were kept clear. Evacuation routes and orders, videos and info graphics on how to prepare for the storm, and real time updates on the location of the storm were shared heavily on Facebook and Twitter. This allowed many people to promptly and correctly prepare for what was ahead, or to even leave town and travel more inland to be safe from the hurricane.

During hurricane Sandy, there were over 2,000 tweets from official New York City accounts and the NYC Twitter gained over 180 thousand followers (Maron). Twitter promoted many official tweets at no cost and even translated many of them into Spanish. Facebook also saw a rise in followers of the NYC page. Official entities communicated to the public where to find shelter and medical attention, as well as food and water. The information is invaluable during a natural disaster. Twitter was used to communicate to emergency personnel when the 911 lines were overwhelmed, allowing people to get medical attention when they needed it. During the peak of the storm, 10 photos a second were uploaded from the NYC area to Instagram. Between Twitter and Instagram, "#sandy" was used in half a million posts ("Sandy Marked.."). However, one of the most invaluable ways to use social media during these disasters is for rumor control. FEMA created a web page dedicated solely to rumor control. FEMA and other entities used hash tags to shoot down any rumors via twitter, cutting the misinformation off before it had a chance to spread far.

Just like in previous disasters, like the Tohoku earthquake and tsunami, social media aided in the recovery after hurricane Sandy. Volunteers connected through the internet and organizations set up donation funds where people could donate through the

internet. Once again, people are easily connected after the disaster through social media platforms. FEMA has now created a social media training course for all of its workers and volunteers. FEMA regularly participates in social media campaigns during natural disasters and has hundreds of official accounts (a new one is created for each significant disaster) (Maron). Facebook has created its Safety Check feature. If Facebook detects that you could be near a disaster (whether it is your home city, or if your current location) FB will ask you to check in if you are safe. All of your friends will be notified of your check in. Recently this has also been used after terrorist attacks.

Social media is a reliable form of communication during natural disasters as well as terrorist attacks and shootings. The use of social media during natural disasters related to climate change does have an extra advantage, which is the opportunity to communicate the science of climate change and the importance of fighting it. More and more hurricanes, tornadoes and other extreme climatic events affect areas not accustomed to such events. The more the world hears about these events, the more obvious climate change will be which can hopefully lead to more action. Social media can then be used to communicate what communities can do to help the environment and fight against climate change.

During disasters, social media allows a message to reach a wide audience through direct communication, and also invites the public to participate in said communication. Organizations can work together through social media to deliver news instantaneously. Of course there are limitations. Not everyone uses social media and has devices able to connect to these platforms. During disasters, electricity can be hard to come by making the internet inaccessible. There is also an assumption of literacy or English speaking that can be overlooked, isolating certain communities from information, which can lead them to not being informed of an impending disaster. And of course there is rumor control. How do we keep fake news and misinformation from spreading? Social media platforms

are working hard to defeat these issues, especially when it comes to fake news. Organizations such as FEMA and the cities being affected by the current disaster often work together to bring their message to the forefront of information to “stomp out” any fake news that may be out there. Of course, social media should not become the only source of communication. Alarms in the areas, such as tornado sirens, should be used as needed and people should be reminded that they exist. People should still be deployed to disaster zones by organizations such as FEMA and the National Guard to educate people pre and post disaster, as well as help find those who need rescuing. Not everyone who needs help will be able to get on social media, or even access a phone, so it is imperative to rely on the old methods while also developing new methods via social media.

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Charity Southworth
CRCRTH 618
Plan for Practice

My key concern started with trying to address why I had a tendency to quit projects in the past. I thought for a while that it was solely because I didn't like not being in charge. But throughout this course I have realized that it has to do with whether or not the team that I am a part of is a good, productive team. I believe I was associating being listened to and valued with being the leader of a team, when that shouldn't be the case. Every member of the team should have a voice and be appreciated, and this is something that I have not seen much in the teams I have worked with. A team should also be productive and motivated. This course has provided me with the opportunity to take my bad experiences and develop a way to evaluate teams I may work with in the future.

My plan for action includes creating an evaluation of potential teams for me to do on my own, whenever I start a new project with a group of people. What types of things do I want to look for on a team? In the past things that I would have thought were important were opportunities to gain leadership or advantageous connections made through the group. Now I know that that is not what I need to look for. I don't need to be the leader to be part of a great team. I don't need to gain anything extra from the group (aside from the project's objective) such as social connections for personal gain.

The first step in my evaluation is to look deeply at the project and see if it is something that is important to me. A lot of projects I spend my free time on tend to involve my passion for science education, but more recently I have involved myself in some purely fun projects. While I believe that it is essential for me to do something that is fun and cathartic, I don't want to spend what little free time I have on something completely aimless that may not bring me any happiness. For instance, the project I worked on in the late summer was supposed to be for pure fun, it was a comedy program. However, I recently examined what I was doing on the project and realized that it was not actually fun for me therefore there was no gain.

Once I feel like a project is really worth my time and will bring positivity to my life, I need to spend the first couple weeks evaluating how the team functions and if I can fit into the way they work. I have narrowed down my evaluation to four key points. The commitment of individuals to the team and the project, motivation of the individuals, diversity in the team, and general set up of the team. A lot of things that West suggest as criteria for effective teams fall under these categories. However, I have adapted them to fit myself as well as the type of groups I tend to be a part of. I am working off of the idea that problems I see in these categories are red flags and once a certain amount of red flags is reached, it may not be a good fit for me.

Commitment of individuals to the project is pretty easy to evaluate. If people miss meetings often, their level of commitment is fairly low. However, one or two people on the team missing the meetings does not mean I should write off the team. I have come to the conclusion that if less than 85% of the team is at the meetings regularly, then the commitment level is fairly low and I would count this as a red flag. Another form of commitment that I would need to evaluate is if people follow through on their own aspects of the project. I have been on teams in the past where people will say they will have something finished the next week (i.e. writing a script) and don't finish it for two

months. If this happens often with at least one or two individuals, and it is not acknowledged and corrected over the period of a few weeks, I would count it as a red flag.

Motivation is something that I can judge pretty quickly. What I will be looking for in future projects is passion within an individual for the project. If it seems like someone is doing the project for superficial reasons, like to put it on their resume, I would not count that person as passionately motivated. I want to work with a team that truly care about whatever we are working on. With that passion, there is more reason to put positive energy into a project and that can make it so much more productive. I do not think that everyone has to be overly effusive with enthusiasm for the project in order to make the team productive. However, if more than half of the team seems rather indifferent to the outcome of a project, I would count this as a red flag.

After working on numerous science research projects in academia as the only woman in a group, I have decided that diversity within a team is very important to me. I spent years being ignored and disregarded until I started to work more with women. Being the only woman on a team in the future is something I don't want to happen. Generally, if the team is comprised of over 80% men, I will count that as a red flag.

The last part of the team I would like to evaluate is the general set up. This includes defined roles as well as the togetherness of the team. There are certain projects where I could see a team not needing defined roles. However, I have worked on enough teams that did not have a defined leader, or at least someone to bring concerns to, that I want to avoid that in a future. So I expect any team I work on in the future to have at least one leader/manager, and preferably more formally defined roles. If that is not existent then I would count that as a red flag. Togetherness of the team refers to if the team communicates well with each other, or if it is fractured. Ways it could be fractured is having two teams working on separate parts of the project that never communicate and therefore the work doesn't meld together.

If I have evaluated a team, and after three to four team meetings there are 4 or more red flags, I have decided that I should not be part of that team. However, 3 or less is reasonable as long as I think the red flags can be worked on in the future. For this, I would use the force field diagram that we used in class to see if there is the potential for the 3 (or less) red flags to be dissipated in the future. If they seem like concrete, immoveable things, then I would still consider leaving the project.

Charity Southworth
CRCRTH 603
Final Paper

The Great Muppet Paper

The Muppets have been a staple of pop culture since their premiere in the 1970s. They were created by Jim Henson gradually through the 1950s and '60s until they were refined into the format that is recognized around the world. They all work together creating a variety show, called *The Muppet Show*, which is hosted by Kermit the Frog with a celebrity guest star. Throughout the past few decades, they have starred in movies as well as appeared in live events, such as presenting at The Academy Awards and as guests on talk shows. So the Muppets exist in both fiction and non-fiction works, making them the Schrodinger's cat of pop culture. On *The Muppet Show*, the characters are actors putting on a show, but they also star in movies. The events in the movies are sometimes described to have been fictional and never to have actually happened. *The Muppet Movie* opens with the Muppet characters gathering to watch *The Muppet Movie* itself, whose plot, described to be a dramatization of true events, revolves around the Muppets meeting and traveling to Hollywood and ends with the filming of *The Muppet Movie*. Many Muppets have made appearances on real world television programs, including *The Colbert Report* and *Good Morning America*, to promote various Muppet projects. During these appearances they behave like typical actors making rounds on press tours. To pull things back one final layer, the Muppet characters themselves are depictions by talented actors, the puppeteers who control their movements and provide their

voices. Often times Muppets are brought to life by multiple performers over time in the event of retirement or death, and there are many Muppets that must be operated with three arms and therefore require two individuals to make them act. How do we know who or what Muppets are or on which plane of reality they exist?

Even though the Muppets have been around for 40 years, their characters have the same personalities and traits now as they did in the 70s. Their relationships are diverse and bring up, as well as answer, a lot of philosophical questions. Miss Piggy challenges female character tropes of the 20th century and shows that you should love yourself no matter your size. Kermit, the group's assumed leader, somehow brings together many freethinking artists who are unmotivated and not fond of authority. Together they all work towards the goal of bringing more laughter to the world and Kermit leads them in many unique ways. Gonzo, who has no idea where he came from, often questions his identity. Examining the question of identity through Gonzo only leads to more questions about self-identity and the identity of those who work with the Muppets.

The Beautiful Miss Piggy

Third Wave Feminist From a Second Wave World

Miss Piggy is the only main female Muppet, which is no surprise since The Muppet Show premiered in 1976. However, what is a surprise is how much of a feminist she was and still is. She is a fat, feminist, femme role model at a time when politics around body size were practically non-existent. A lot of people tend to not like her character because she can often seem fairly bossy. She is over the top

feminine, always wearing heels, fancy hats, pearls, lipstick and often feather boas and loves everything pink. Some women did not connect to Miss Piggy at the time when they first saw her, but learned to appreciate her values later on. She was (and still is) a showbiz career woman at a time where women's roles in society, especially in the workplace and relationships, were changing fast (think 1980s). She is a beacon of bright, outspoken femininity in a cast of mostly males. She is also the dominant personality in her relationship with Kermit the frog, which can definitely rub some people the wrong way.

What is really interesting about Miss Piggy is that her version of feminism was not around when she premiered. Miss Piggy loves diamonds and her body, which would make her a perfect fit for the third wave feminism of the 21st century, but she had to wait 20 years for that to come around. She was way ahead of her time when it comes to fat politics. The academic field of "fat studies" had yet to be born when she first came onto the stage. The first fat studies conference wasn't held until the early 2000s and now fat studies classes are held across North America. But Miss Piggy came first! She stood out as a role model in fat positivity in an era of enforced female thinness. She was larger than life and no less beautiful for it, and as a child in the '90s that was very important to have. I only wish there was more of it. Miss Piggy is often shown eating a lot of sweets and a lot of food in general, but it is important to note that she was never shamed for that. She is also physically fit and that is often demonstrated in the movies and television series. She performs her signature karate chop on (deserving) characters, showing that you can be fat and

still be fit. I understand that this might not reflect much on the philosophy we discussed this semester, but it is important to note the significance of Miss Piggy.

Kermit the Frog
An Unlikely and Unique Leader

Imagine a community of individuals who do not share a common geographic history, ancestry or even the same language. They possess a broad range of talent and interests, are very ideologically diverse and have a wide range of individual needs. You can say that they are mostly unresponsive to authority and unmotivated by power and unstructured by any hierarchy. They are the Muppets - a group of diverse, free and artistic individuals. This group represents both the anarchist ideal and the liberal challenge. Since the writings of John Stuart Mill, liberal political theory has tried to find a way to accommodate diverse ideological views while avoiding enforcing a particular way of life. How can we achieve collective goals and avoid hierarchy? How can such a diverse group be motivated without force or illusion? I believe that the Muppets (Kermit the Frog in particular) have answered these questions nicely.

Kermit is clearly the voice of the Muppets, but is he the leader? There was no system that enacted him as leader - no Muppet elections. He also has no real power over any of the Muppets, aside from himself. Anytime he attempts to give a motivating, rousing speech, he almost always fails (which makes space for some jokes from Henson). However, Kermit is the one that the others turn to when deciding what to do and is usually the one who offers solutions to problems. Some

would say that the Muppets are more of a group of friends and that Kermit is simply the most liked of them. But that ignores the fact that they are all working together as actors on a variety show. The Muppets all believe in the show and the idea that laughter is a gift and they want to share that gift with the world. The fact that this group is able to produce many shows without a hierarchy is impressive, and a lot of it is due to Kermit. His position as leader is not because he possesses any special skills, but because his leadership is derived from having a dream and his openness to share that dream with others.

It is important to address how Kermit acquired his leadership. Kermit was born in a swamp in Leland, Mississippi (with approximately 2,353 siblings) and dreamed of being a performer in Hollywood. So in *The Muppet Movie* (1979) he traveled to California and along the way met various Muppet characters with a similar longing and they joined forces. Following a series of setbacks, the Muppets end up stuck on the side of the road in the desert, wondering if they will find a way to make their Hollywood audition the next day. It is here that Kermit has a conversation with his conscience where he blames himself for the situation. However, his conscience reminds him that if he hadn't left the swamp, he would be just as miserable and it is worth pursuing the dream. This shows just how important the dream is; it is the driving force behind Kermit's decisions and brings the group together in the first place. Kermit invited the others to join him in the dream, making the dream bigger than just Kermit.

Another important feature of Kermit's leadership is his reluctance to actually lead. There are many instances throughout the Muppets' filmography where

everyone turns to Kermit for solutions and he often ends up blowing up at the others because he cannot take the pressure of making the decisions for them. This happens in *Muppets Take Manhattan* (1984) when Kermit can't secure a venue to put on their Broadway show, and they're out of money. So the others decide to give Kermit a break by telling him they all found job offers and don't have to worry about how they will survive, but that they are still interested in the show. During their time apart, Kermit is hit by a car and temporarily loses his memory (and falls in with a group of Madison Avenue advertising frogs), and the other Muppets rally to put on the show in his honor, before his memory is restored with a well-placed karate chop from Miss Piggy. In this case, it is interesting to note that Kermit temporarily abdicating from the role, as leader, does not break up the group. When he could not shoulder all the responsibility, some of the others took the reins. This shows a great team when someone who is able to leave a group and it can still function. In this example, it is also made clear that Kermit needs the group just as much as they need him. He needs them in order to be able to believe as much as they need him to, and their action to take other jobs helps Kermit do what he needs to. His absence helped to empower the group to pursue their collective needs. He led without leading.

What is a Gonzo?
Muppets and Identity

While all the Muppets are different from the norm, Gonzo has always been extremely different. Most of the main Muppets have a familiar physical identity; Kermit is a frog, Miss Piggy is a pig, Animal is, well, an animal. In the movie *The*

Great Muppet Caper, the Muppets are shipped in crates. Kermit's crate is labeled "Frog" while Gonzo's is labeled "Whatever." He is blue, three-fingered, bug-eyed, has a nose shaped like an umbrella handle, and is romantically interested only in chickens. Gonzo has no idea what he is, and that is the basis for the movie *Muppets From Space*. He wants to know where he came from, and it turns out he came from an alien race! A lot of our identity lies within our origins and our families, and Gonzo was finally able to fill in that piece of the puzzle. But many questions about identity remain unanswered. What makes Gonzo from *Muppets Most Wanted* (2015) the same as Gonzo from *The Muppet Movie* (1979)?

There are two philosophical theories that I want to mention here. First, we will relate with Locke's theory of memory. Gonzo is unique in that he has been around for almost 40 years but not aged one bit. If you are not aging, how does memory theory work? Gonzo has not aged physically, but he has appeared in sequential movies for decades, so he has experienced all those intervening years. Can we then say that he has aged because he has experienced the passing of time? Technically every second that goes by counts as aging, but there are no physiological changes. Because Gonzo's experiences are on paper in script form, does he have a stronger identity because he can relive his memories more truly than we can? This is of course ignoring the fact that he is a character created by Jim Henson. But either way, because he has his memory on films, does he have a stronger sense of self? These are questions that seem to remain forever unanswered.

We can also relate Muppet identities to the paradox of the ship of Theseus. For every episode or movie, dozens of puppets are made for each character and

destroyed after production. So the current puppets we see are not the originals – an extreme in the paradox of Theseus. Does every Gonzo puppet have the Gonzo identity? Does the identity lie within the puppet that is being animated by Gonzo's puppeteer, at a certain point in time? Or perhaps Gonzo's identity lies within the puppeteer himself. Does Gonzo exist in the ether of the collective unconscious that can be accessed by another subsequent performer, as is the case with Kermit after the death of Jim Henson and the ascension to the role of Steve Whitmire? I believe that the identity lies within the ether as well as the puppeteer. However, when the puppeteer dies, that part of the Muppet's identity still lives on in the new puppeteer. It is as if the Muppets have some sort of mythic identity that can be accessed by performers of a certain level.

You can see how puppeteers' identities meld with the Muppets' in the case of Dave Goelz who has been performing Gonzo since Gonzo's debut! Dave Goelz has said that a lot of himself has been reflected into Gonzo's storyline, "When I came to *The Muppet Show*, I found myself suddenly with a different and enormous star every week, and I had absolutely no credentials. I felt so out of place. So that came into the character, and for the first season, he was very self-effacing and he felt like a misfit. Over the years, he sort of evolved along with me... I was an impostor in show business." Many of the puppeteers that work with the Muppets have been assigned to specific characters and worked as those characters from the 1970s until now. How much of the puppeteers own identities involve the characters they play? I am sure that as a performer, Dave Goelz has a hard time drawing a line between his memories and the memories of Gonzo.

The Rainbow Connection

Philosophy is the Rainbow That Connects Henson's Work

There are numerous ways to explore the Muppets philosophically, but these three points are ones that I find to be rather interesting. In addition to the Muppets, the entirety of Jim Henson's work is rich in material with each production connected through its philosophical significance. His film *Labyrinth* explores ideas of overconsumption as well as fairness and justice. *Dark Crystal* delves into the idea of introspection and social consciousness. *Sesame Street* is a wealth of philosophical concepts, ranging from the role of community in personal identity to the importance of cultural diversity. The television series *Fraggle Rock* demonstrates complex social structures and explores the idea of symbiotic societies. Each television program or film that is produced by the Jim Henson Company is full of theories and ideas to make you think and evaluate your own life.

Charity Southworth
CRCRTH 602
Final Essay

I have always enjoyed the work of Jim Henson, but until this semester, I did not know just how amazing a person he was. When we learned about the midterm project, I immediately wanted to do it on Jim Henson. I had just picked up his biography and bought all of his filmography and I really wanted to immerse myself in his works. Learning so much about his life was fantastic. The biography was chock full of information, but I think I learned more about Jim Henson by watching his movies and shows. I believe that you can learn a lot about a creative individual from the products they produce.

With that said, I really wanted to highlight Jim Henson's creativity. I wanted people to know that he was a problem solver, an innovator, a creative genius! He had so many characteristics that we see in creative individuals. I wanted to highlight those, as well as how they affected his career. I have to say, I learned a lot from doing this project. I watched all his films the past few weeks, and they taught me a lot. Not only did I get into Jim Henson's mind a little more, but I also learned a lot about puppeteering and set design. The set and special effects in Labyrinth just get my mind rolling. It inspires me to work on my own projects.

I have to say that the latter part of this semester presented concepts that were a little hard for me to grasp. It was when we got into the nitty-gritty of what creativity is from an academic perspective. That was hard for me to swallow and absorb into my mind. I feel like my understanding of creativity won't ever be

completely defined. I do not feel like it is something that I can put into words and put onto paper.

When it comes to my projects capturing my understanding of creativity. I think that did well. I may not be able to tell you what I think creativity is, but I can tell you where I see creativity. I can talk about why a certain person is creative, but I do not feel comfortable saying a person needs certain characteristics to be defined as a creative person. It is a tricky thing for me.

I really liked listening to certain people in the course. They helped me expand my mind and think of things differently. They approached their projects in a way that I may not have. For instance, the midterm on Kurt Cobain, I would have gone for something obvious like writing as his guitar, or his gun. But to pick his stomach? What a great point of view. It was a great way to really know more about his life and how he felt throughout his life.

Overall I really enjoyed this course. I really liked turning the midterm and final into a sort of case study of Jim Henson's creativity. I definitely struggle with the academic study of creativity. I have always been a creative person and make my living off of my artistic endeavors, but I am also an academic. So merging those two world and looking at creativity from an academic standpoint was difficult for me. However, I think this course was an overwhelmingly positive experience for me!

Charity Southworth
CRCRTH 693
Final Process Report

The Science Boutique and Marketing via Social Media

In May 2012 I started a small jewelry business called The Science Boutique. All of the items sold through this business are science themed, such as necklaces with molecule pendants or hair clips in the shape of constellations. I did not intentionally create this business; it sprouted from my need for a catharsis to take away from the stress I was currently dealing with. I had been taking a ceramics class to help me cope with the burden of three high level physics courses. However, I was going to be doing intense research throughout the summer and did not have time to take such an involved course such as advanced ceramics. Instead, I started playing around with jewelry, making pieces that I enjoyed and that represented what I love – science! It started as a project for myself, but my friends and peers were interested in the pieces I was making, so I opened The Science Boutique as an Etsy shop online expecting to make very little money, maybe just enough to treat myself to a nice dinner once in a while. My first piece sold within a day. A few more items sold before I left on a research trip to the Sierra Nevada to study volcanoes. While I was away, I sold my entire inventory, and that fast success made me reevaluate what I wanted to do in my life. Throughout the summer the thing I looked forward to the most was making more jewelry, not going to campus and crunching data. This was a pivotal moment for me. I did not necessarily decide to switch my focus to jewelry making, but I did decide that academic research was not for me as I did not enjoy it as much as other pursuits.

After I graduated with my undergraduate degree in physics I took classes on various jewelry making techniques to expand my craft. Over the years since I started this business many

people suggested that I sell my products at craft fairs or open markets. Up until that point all my sales had been made online through Etsy. I did my first craft show in the summer of 2015. It was such a success that I decided to move into the open market scene in Boston in 2016, which was even more successful. With that success came demand for new products so I expanded my stock from about 50 items to almost 200 for the 2017 market season.

The business has become fairly successful without me putting too much work into it. In the past year I have treated it as a part time job. However, I am at the point where the business is growing so much that I need to commit to it fully, or step away from it. I cannot continue to run it haphazardly as an Etsy shop that goes to a few markets a year. I do not need to put more time into making jewelry, but I do need to start to focus on marketing. My business has lucked out with how successful it is since I have not spent much time marketing my shop. It only makes sense that the business will have more success if time is put into marketing. The best way to market at this point of time is via social media. It is (sometimes) free and can also help target a specific audience really well. However, there are some challenges when it comes to marketing on social media platforms. How does The Science Boutique stand out amongst the crowd? Five years ago the business was one of the only online shops selling science jewelry, but now there are hundreds of Etsy shops doing the same. The uniqueness of The Science Boutique needs to be communicated through social media and there are a few ways to approach this.

I went to a terrible high school. There were stabbings, guns were brought to school, we weren't allowed to have any assemblies because of fights that would break out. It wasn't just terrible socially, it was also awful as far as academics go. When I graduated from high school I did not understand algebra and had no desire to study science. Instead, I wanted to pursue the arts. I signed up for a bunch of art classes at the local college and had to science up for a science

course to fulfill the “general education” requirements. I chose astronomy because I thought it would be easy, as many people do. The course was definitely not easy and I barely passed it. However, throughout the course of the semester something clicked in my brain. My critical thinking skills started to wake up after years of hibernation in a hostile school setting. I started to wonder about the world and the universe more. I wanted to learn about the universe, so I decided to knuckle down and try to study astronomy. I first had to tackle algebra, which was difficult but once I understood it I felt so triumphant that I tattooed a famous algebra equation over my heart to commemorate my victory. I retook astronomy to see if it was something I could excel at now that I understood the basic math - and I did. I aced that course. So, I started looking at schools that offer astronomy degrees and landed myself in San Francisco.

I spent a year in San Francisco studying astronomy. It was there that I was able to lay down a good mathematical foundation for me to move into the world of physics and astronomy. I had trouble adapting to San Francisco (high living expenses) so I then moved to Indiana where my mother was moving. There I took my first in-depth physics courses and did very well. I remember my physics professor at the community college I attended in Indianapolis. She was so lovely and encouraging. She would always say I was so smart that she expected me to get a nobel prize one day (an obvious overstatement, but the encouragement I needed at the time). I was in classes with all guys at this time and I was the only one getting full marks on the exams. It felt lonely - I had no study buddies, no guys in the classes wanted to pair up with me in labs. I had no idea why at the time, I was a good student - it would be advantageous to pair with me on a lab. I often ended up doing partner work by myself, something my professor allowed. Looking back at it now, she probably saw the sexism in the class I was experiencing and made herself available to me in the role that a female colleague might take.

After a year in Indianapolis, I was accepted to Indiana University in Bloomington to study Astronomy and Astrophysics, Physics and Mathematics. It had taken me four years to get to a university. I had to make up for everything I had missed in high school, but I was finally at a real institution with resources for me to become a bonafide scientist. I immediately joined the skeptics' society, astronomy and physics clubs, and played a large role in outreach within those groups. I wrote a play that included physics demos and was performed around the state. I was a judge for the state science olympiad. I did research at the National Radio Astronomy Observatory. I found an advisor in the department to do research under. I was doing everything everyone else was doing, and getting the grades everyone else was. But something was different for me - I wasn't 19 years old. I was 4 or 5 years everyone's senior. I had spent a large amount of my time in high school growing social skills and unfortunately experiencing trauma that my classmates couldn't comprehend. I was super feminine - wearing heels, dresses and makeup to class. I was the only one like that. Despite these differences, I tried to connect with my classmates. It never happened. Even though I held an officer position in the astronomy club, I was excluded from communications and essentially bullied out of the club. I found out that the head of the astronomy department did not like the way I looked and said that I should not be wearing heels to class. I tried to fit in as much as I could without sacrificing who I was, and I was never successful.

This experience as a woman in STEM almost pushed me out of my field. Not only did I feel sexism from men, but I felt it from women too. Women who did not feel like they could wear bright colors. Women who had to make an excuse to dress up. After doing some more research in academia, I decided to leave. I was not accepted as myself and I was uncomfortable not being myself. So I decided to use the social skills I have developed and become a science

communicator. Hopefully by being my ultra-feminine self and a science communicator, I will show women and little girls that they do not have to suppress their femininity in the lab. I want women to feel confident when they wear heels, and dresses and jewelry. They should be proud of their unique style.

In order to do this, I need to start sharing who I am in connection to my shop. I have often hidden behind the camera and not posted pictures of myself, despite me having a look that would promote my shop. I need to fill in the chip on my shoulder from my negative experience at Indiana University and show my geek-fashioned self and be proud. By blending my love of art and science, I can communicate to women in science that it is okay to be feminine in academia.

Proposed Actions

Currently, the best way to market is via social media. Over the past two years, the use of Facebook has declined. The platforms I will be focusing on are Twitter and Instagram. They both use hashtags, which is a good way for your posts to become searchable. Facebook does not really use these. Instagram is a platform to post photos or videos with captions, while Twitter is more text focused. In order to target my audience, I will be using tags in my Instagram captions and Twitter “tweets”. People who have interests in certain things can search for tags, for instance I can tag “astronomy” on a picture of my moon phase bracelet and people who search for “astronomy” can see it.

One of the trickier sides to social media is finding out when is best to post. What time of day do I post and what day of the week? My target audience isn’t exclusively in my time zone, so I may need to post things late at night to reach people on the West Coast. I have made the

following plan to evaluate during the summer, which is a good time to evaluate since I have the markets every week. I plan to post the following on these days weekly:

Sunday - A picture from the market

Monday - A new item

Tuesday - An item from the past

Wednesday - A process picture with me in it

Thursday - Science in the news

Friday - An outfit photo

Saturday - A photo reminding of the market on Sunday

I can write my posts weeks ahead of time and have a program publish them at a set time. This can be helpful, especially for any posts that I want to make late at night. I don't have to be awake to post it!

Throughout the summer I will also be building up my website. I am going to add a blog portion to incorporate science in the news and anything that I do in my own life that I feel is related to science. I will also add an about me section. I have been pretty humble about myself, but I don't think that is the best business plan. Being honest about who I am, what I have done and where I have been is a good way to get people to relate to me and want to buy my products.

Social Media Epicycle and Evaluation

I plan to evaluate my progress on social media every Friday (which is kind of like the Sunday of my business week). I will be tracking the tags I use and how many likes and followers I get using certain tags. This will be evaluated on a post by post basis. I will also be comparing

Instagram to Twitter to see how they differ. Through these platforms I am able to see the demographics of who I am reaching - particularly their location. I want to reach younger women, so I can see if I am doing that.

This past winter, from November into December, I made one post a day about an item in my shop. I wrote about 50 posts and was able to just pick one and post it each day. I did not have to sit down and write anything out - I was even able to post while on vacation. While my sales were comparable to last year's sales for that time period, I believe they would have dropped had I not been posting on social media.

Building a Constituency

After leaving academia, I tended to avoid creating relationships with scientists. I felt betrayed by my own dream to become a PhD in astrophysics. It wasn't for me, but I had spent 8 years trying. But as a science communicator, and someone whose business caters to science lovers, I need to form more relationships with academics and other science communicators. I haven't done this yet because I am scared, to be honest. I felt rejected from academia in the past, what if they reject me now? I have recently found confidence in this area. At one of my markets this year, Sasha Sagan, the daughter of Carl Sagan and Ann Druyan, came to my booth and bought a few items. She applauded me for my artistic interpretation of her parent's work on Cosmos and even emailed me to reiterate that what I am doing is unique and appreciated. If I have the daughter of one of the most influential scientists and science communicators in history as a fan, I think I can build up the confidence to get over my fear of academia.

Another fear I have with trying to build a constituency with scientists is that they may feel that I am making money off of science. This is a ridiculous fear, because scientists make money off of science. But then I tell myself that they are at least doing research. But I am communicating science through my art, and it is okay to make money doing that! I need to branch out to scientists more and stop being so self-conscious that they will judge me for possibly profiting off of science. Scientists get paid to "do" science, what is wrong with getting paid to make art about science?

Not only do I want scientists to support me and my work, I would love to support them as well. I hope to build more of an alliance with various scientific societies and perhaps start selling my items at conferences. I already have a relationship with the Geological Society of America and I can hopefully build off of that.

Reflection

How will I keep myself on the path to growth? How will I keep track of how my shop has grown? Because this business is so much a part of me and I am so much a part of the business, I will be journaling weekly about how I think the business went and about how I feel. This is an important step because often when I journal about my feelings, I see things clearer. I can often get upset when I am in the academic world too much, so if I get frustrated when interacting too much with academia, writing about it will help me clear my mind and once again focus on communicating science with the public. In the past I have gotten overwhelmed when around scientists and at that point I distance myself and don't build on the relationships that I should.

Having a weekly reflection to see what actions helped the business and what didn't will also be helpful. If I have a particularly bad week and can trace it back to one type of social media post or a specific market I did, it is good to have a record of that.

Conclusion and Growth

I had to work really hard to get my degree in science. More importantly, I had to work really hard to get back and gain skills I lost during my high school years. My experiences at Indiana University made me upset with academia and its sexism and exclusivity. But through something that started as a catharsis, I am able to make other people feel comfortable being themselves in academia. My business has grown a lot just in the past year. This summer I plan on focusing on marketing more. I will also start introducing new types of items such as hand printed t-shirts. I will be doing another market, this one in Kendall Square in Cambridge (a great place for science). I will be putting more of myself into social media and my website instead of shying away from putting myself on display. In a way, it seems hypocritical for me to be so shy when I want other women in science to feel confident.

There are other ways I plan to grow the business outside of marketing. I hope to connect with other vendors so that I can learn about other markets in the area and gain any tips for how to conduct my business. I also plan to find brick and mortar shops to carry some of my items. I hope to one day take a business class and eventually find a business partner so that I can expand the business further. I hope to one day be able to get one of a kind clothing manufactured. That will be the next big step for my business after I master the art of marketing via social media.

Charity Southworth
CRCRTH 651
Final Paper

Cults have been around for centuries and often involve religion. In the current day, there are numerous well-known cults such as The Order in Salt Lake City, UT or the FLDS church also in Utah. Both of these cults are religion-based and practice polygamy. But there are more widespread cults across our country, one of which is fairly infamous – the Church of Scientology. The negative effects of being part of a cult are clear as day to the people outside of said cult. The Jonestown tragedy is just one example of what can happen in these situations. But the question I really want to ask is what makes a person join a cult? I am sure this is not a simple answer. There are probably economic reasons, social problems, self-confidence issues, dependency issues, etc. But how does the cult lure these people in? How do cult leaders frame the benefits to the member?

Before I get to some of the answers to my question, I want to briefly review one of the most horrifying ends to a cult that was originally based in the United States. Formally called The People's Temple Agricultural Project, Jonestown originally formed in Indiana in 1955 before moving to the Bay Area in California. Jim Jones, its founder, received criticism in Indiana and left. The same thing eventually happened in California so he moved his operation down to Guyana. Before moving to Guyana, Jones was friendly with many politicians who admired his spiritualism (which was based in Christianity). Over time, members approached the media about wrongdoings and the media started to build up news articles about the Temple. This is what caused the move out of country. Families of members who had moved out of country became concerned and involved politicians in checking in on their safety. Jim Jones became increasingly paranoid and upon a visit from some news reporters and politicians, he decided it was time for "revolutionary suicide." On November 18, 1978, after killing most of the reporters and politicians, Jim Jones instructed all of its members to drink a juice laced with cyanide. Over 900 people (see figure 1), including Jim Jones, died of cyanide poisoning that day. This is the most extreme end to a cult in modern history.

To prevent this from ever happening again, psychologists have started to study ex cult members. But there are many problems that arise in these studies. One is that there is a small sample size against the general population since not many people leave a cult. There is also a lack of access to current members since cults are notoriously secretive. When cult members can be accessed, such as during hospitalization, that data is unreliable since the cause of the accessibility usually involves some injury or dire need of mainstream medical help. Finally, studying former cult members is not the same as studying a current cult member who chooses to stay in the cult. Researches are forced to use suggestive evidence in these cases. However, the studies that have been done to show that dependent people are more likely to join a cult while autonomous people are more likely to have problems inside and get kicked out.

One of the most well known cults (which doesn't like to call itself a cult) is the Church of Scientology. Scientology is a pseudoreligious cult established in the 1950s by mediocre science-fiction author Lafayette Ronald Hubbard, who is widely accepted as being a narcissistic fraud, charlatan, and pathological liar. The doctrine of the church claims that each human soul is actually a thetan, the ghost of an alien that was killed 75 million years ago on Earth, known then as Teegeeack, by volcanic eruptions triggered with hydrogen bombs after being transported from across the galaxy in spacecraft that precisely resemble modern jetliners, for the express purpose of being exterminated in this fashion by order of the despotic ruler of the Galactic Confederacy, Xenu, and his psychiatrists. Xenu, thankfully, did not just get away with such a terrible crime, and is still imprisoned within an electronic mountain in the Pyrenees to this day. The thetans, despite having been killed, continued to live on eternally and reside within each one of us

until it abandons us, causing our death, and travels to Venus where it is reprogrammed with lies, shot into the Pacific Ocean, and wanders around until it finds a baby to live inside. All of a person's troubles in life can be, according to Scientology, traced back to engrams, harmful memories of past lives experienced by the thetan, and the only way to be rid of them was discovered by Hubbard.

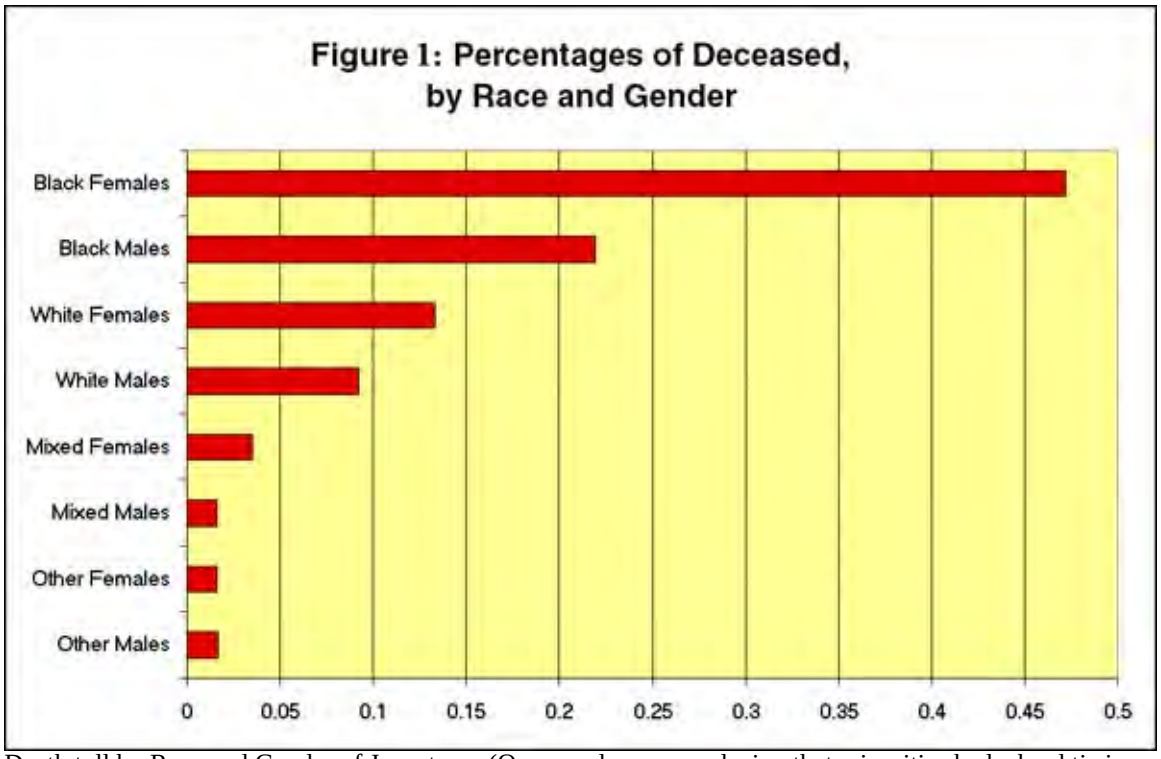
Most of this information is kept secret from members who have not reached a certain level in the organization. The face that Scientology presents to the common person is innocuous yet seems designed specifically to prey on vulnerable people. A key practice in Scientology is called auditing, where a church representative will administer a test using a Hubbard Electropsychometer. While it simply measures the conductivity of the subject's skin, the church claims it is an accurate measure of engrams that are besetting the subject's thetan. Audits are typically made available in public spaces, advertised as free personality tests, or free stress tests. Invariably the test will end with the subject being advised to read Dianetics, Hubbard's first book of Scientology writing. The reader will find a book that is typical of all self-help literature with simple answers to complicated problems, dressed up in sophisticated-sounding pseudoscientific terminology. Most importantly, it is important to identify the member's ruin – the one thing in their life they would pay anything to correct. This obviously gives them financial control over this person by making them believe that money can buy them happiness, but only through Scientology. This framing can be detrimental and lead to a lifetime of hopefulness that is never fulfilled.

Like many cults, Scientology cuts its members off from their family in order to keep them in the church. The same happens in the polygamous groups if the family members rebel, as well as with Jonestown. Information is routinely kept from members, brainwashing them and eventually re-wiring their brain to believe the cult more than they would believe their family. The cult reframes the member's life to keep hold of them, and it works. We have seen this time after time.

The Church of Scientology has been very prosperous and touts many celebrity members. While it can seem to be just as oppressive psychologically as cults such as FLDS, it is more widely accepted by the mainstream world. Maybe this has to do with its celebrity members, or perhaps the practice of polygamy and the secrecy of the FLDS church makes people more wary. But we should be wary of any organization that makes grandiose promises and ultimately does not deliver on them. Making promises to individuals in order to join their group (cult) is not a genius move. What seems to keep people in the cult is the promise of more if they work harder or stay longer, the reframing of the experiences within the cult into something positive or the use of fear.

I feel as if I would never be part of a cult. I would say that because I am a very independent person and would have to have something terrible happen to me to want the dependency of a group that has rules. I also do not have an addictive personality. In cults, people can sometimes get a euphoric feeling when interacting or listening to the cult leader. Often times the cult leader is god-like to them. So anyone with an addictive personality could become latched to this feeling and never want to leave. Even if they do leave, they may come back or find some other vices to fill the vacuum left by the support of the cult's "community." It is also common for those with dependent personalities to leave then come back because they do not feel they can make it in the world on their own.

Appendix



Death toll by Race and Gender of Jonestown (One can draw a conclusion that minorities had a hard tie in the 1970s and joining the Temple was appealing to them) *(The Demographics of Jonestown)*

Figure 2:

Noteable Celebrity Scientologists

Tom Cruise
Elizabeth Moss
Kirstie Alley
John Travolta
Laura Prepon
Jason Lee
Kelly Preston
Beck Henson
Erika Christensen
Giovanni Ribisi
Sonny Bono
Juliette Lewis
Bijou Phillips
Isaac Hayes
Priscilla Presley
Jeff Conaway
Anne Archer
Jenna Elfman
Billy Sheehan
Danny Masterson
Edgar Winter
Marissa Ribisi
Peaches Geldof
Ethan Suplee
Greta Van Susteren
Chick Corea
Doug E. Fresh
Nancy Cartwright
Leah Remini (Ex-member)

Leah Remini has spoken out against the Church of Scientology and has devoted her life to save those who are being wronged within the church.

Annotated Bibliography

Atlas, D., Dodd, J., Lang, A., Bane, V., & Levy, D. S. (2008). LIFE IN THE CULT. (Cover story). *People*, *69*(16), 62-67.

Explores the FLDS church and Warren Jeffs. Mentions the sexual abuse of women and underage girls as well as polygamy. Specifically talks about the brainwashing that occurs. The members have no access to the outside world.

Dubrow-Marshall, R., & Dubrow-Marshall, L. (2016). Cults and Mental Health. *Encyclopedia of Mental Health*,393-401. doi:10.1016/b978-0-12-397045-9.00153-1

Explores the history of cults which they also refer to as high demand groups. Hints on the affects it has on the mental health of the group and individual.

Hall, J. R. (2004). JONESTOWN IN THE TWENTY-FIRST CENTURY. *Society*, *41*(2), 9-11.

This just gives a general idea about what Jonestown meant at the time and what it means now. Cites things such as the Cold War and Vietnam and how good people were attracted to the cult. Mentions that they tried to create a Utopia – seems like good intentions run by a psychotic man.

Kliger, R. (1994). Somatization: Social control and illness production in a religious cult. *Culture, Medicine and Psychiatry*, *18*(2), 215-245. doi:10.1007/bf01379450

Somatization is when you feel physical symptoms with no physiological source that are caused by emotional or mental problems. This study talks about how the extremely controlling and repressive environment of the cult could cause physical symptoms in cult members.

The Demographics of Jonestown. (n.d.). Retrieved December 20, 2017, from http://jonestown.sdsu.edu/?page_id=35666

A website exploring the statistics of the Jonestown Massacre. Demographic information is given.

Rousselet, M., Duretete, O., Hardouin, J., & Grall-Bronnec, M. (2017). Cult membership: What factors contribute to joining or leaving? *Psychiatry Research*, *257*, 27-33. doi:10.1016/j.psychres.2017.07.018

A study trying to see if there are similarities between cult joiners and addictive disorders. There are connecting factors, bad home or family life, attachment insecurity, other social difficulties. But the study is broad and vague and doesn't make strong conclusions.

Walsh, Y., Russell, R. J., & Wells, P. A. (1995). The personality of ex-cult members. *Personality and Individual Differences, 19*(3), 339-344. doi:10.1016/0191-8869(95)00074-g

Covers the problems that we face studying ex cult members. They are the ones who left – either by choice or by force. We want to learn more about the ones who are still in the cult and when we do access them they are usually incapacitated (like in the hospital.)

CRCRTH 692: Final Self-Assessment

Self-assessment with respect to two sets of goals:

- Phases of Research and Engagement; and
- Developing as a reflective practitioner, including taking initiative in or through relationships

Instructions: In the +Δ ("plus-delta") mode, you should describe two things for each goal:

- **one that reflects what you have achieved well related to this goal, and**
- **one you have struggled with or need more help on or want to work further on.**

(Even though you may have many examples for some items, one is enough.)

Phases of Research and Engagement Goals

Phase A. Overall vision Goal:I can convey who I want to influence or affect concerning what (Subject, Audience, Purpose).	
Plus:	I am really good at identifying my subject and purpose because I am so passionate.
Delta:	I have a hard time with the audience because I often get confused who I want to communicate to versus who I want to learn how to communicate better.

Phase B. Background information Goal: I know what others have done before, either in the form of writing or action, that informs and connects with my project, and I know what others are doing now.	
Plus:	I am really tuned in to current trends and pop culture, so I would know if there was successful science communication within non academic fields (ie mythbusters, adam ruins everything).

Delta:	I get really frustrated looking at academic papers on science communication and need to not write those off. There can be good material from academia as well. My goal is to bond academia and the arts, not throw academia out the window.

Phase C. Possible directions and priorities Goal: I have teased out my vision, so as to expand my view of issues associated with the project, expose possible new directions, clarify direction or scope within the larger set of issues, and decide the most important direction.	
Plus:	My project has taken on many different paths and I believe I have followed each path and given it a fair chance.
Delta:	I definitely need to refine my goals and stick to one thing, because I do have so many ideas. Even just within myself I have a lot of points of view because I have so many roles in my life, it is hard to chose which role to be when researching.

Phase D. Component Propositions Goal: I have identified the premises and propositions that my project depends on, and can state counter-propositions. I have taken stock of the thinking and research I need to do to counter those counter-propositions or to revise my own propositions.	
Plus:	I can argue with myself all day long, so this isn't a huge problem.
Delta:	The difficulty with this is when to stop, and to not let a counter-proposition defeat me or make me feel less passionate about said topic.

Phase E. Design of further research and engagement Goal: I have clear objectives with respect to product, both written and practice, and process, including personal development as a reflective practitioner. I have arranged my work in a sequence (with realistic deadlines) to realize these objectives.	
Plus:	I definitely know what I want my product to be.

Delta:	I find myself looking at the end product more than the process and can get ahead of myself, missing steps along the way.

Phase F. Direct information, models & experience Goal: I have gained direct information, models, and experience not readily available from other sources.	
Plus:	I have reached out to people I would never have reached out to before!
Delta:	I need to invite more academic minded people into my interviews/research because I tend to push them away.

Phase G. Clarification through communication Goal: I have clarified the overall progression or argument underlying my research and the written reports.	
Plus:	I feel like my whole time in CCT has led up to this issue so my argument is fairly clear.
Delta:	I can work on my wording and vernacular when explaining my arguments.

Phase H. Compelling communication Goal: My writing and other products Grab the attention of the readers or audience, Orient them, move them along in Steps, so they appreciate the Position I've led them to.	
Plus:	I write from the heart.
Delta:	I write from the heart. My style of writing is very informal and non-academic. I write in my speaker voice and suffer from lack of education in writing. I need to work on my writing skills, but also acknowledge that my informality is what has made me so relatable and successful in science communication.

Phase I. Engagement with others Goal: I have facilitated new avenues of classroom, workplace, and public participation.	
Plus:	I brought some of what I researched into my live presentations at the museum.
Delta:	I want to find time to engage with the public more.

Phase J. Taking stock Goal: To feed into my future learning and other work, I have taken stock of what has been working well and what needs changing.	
Plus:	Definitely. I do this almost weekly at work with my live presentations.
Delta:	I need to incorporate this into my online presence.

Developing as a Reflective Practitioner Goals

Including Taking Initiatives in and Through Relationships

1. I have integrated knowledge and perspectives from my current and past courses into my own inquiry and engagement in social or educational change.	
Plus:	I have brought up many topics from CCT at work and have even used some concepts we learned when writing and producing a new show as a team.
Delta:	I want to incorporate it into my own personal business, which I will have more time for soon.

2. I have also integrated into my own inquiry and engagement the processes, experiences, and struggles of previous courses.	
Plus:	Yes, I have learned a lot from previous courses on how I work and I definitely was aware of that this semester.
Delta:	I can always be learning – it never stops.

3. I have developed efficient ways to organize my time, research materials, computer access, bibliographies, etc.	
Plus:	I thought I had with Google Docs.
Delta:	I still feel like I need to have things physically in my hands.

4. I have experimented with new tools and experiences, even if not every one became part of my toolkit as a learner, teacher/facilitator of others, and reflective practitioner.	
Plus:	I have reached out to people whom I have not seen in years, and was so surprised that they remembered me and were willing to help.
Delta:	I need to get over insecurities I have about using all the resources I have gained throughout my career in the sciences.

5. I have paid attention to the emotional dimensions of undertaking my own project but have found ways to clear away distractions from other sources (present & past) and not get blocked, turning apparent obstacles into opportunities to move into unfamiliar or uncomfortable territory.	
Plus:	I am always paying attention to my emotions.

Delta:	I have a hard time clearing away emotional distractions because they usually involve family. I am also a highly emotional individual, which can lead to some great things, but means that I can also get extremely stressed.

6. I have developed peer and other horizontal relationships. I have sought support and advice from peers, and have given support and advice to them when asked for.	
Plus:	Yes! This course was so great for this! I love my peers and going into the synthesis I am so happy to have them to lean on.
Delta:	I need to not be shy to ask for help, and to make sure I offer help as well.

7. I have taken the lead, not dragged my feet, in dialogue with my advisor and other readers. I didn't wait for the them to tell me how to solve an expository problem, what must be read and covered in a literature review, or what was meant by some comment I didn't understand. I didn't put off giving my writing to my advisor and other readers or avoid talking to them because I thought that they didn't see things the same way as I do.	
Plus:	At the beginning of the semester I was really good with dialogue, especially with my buddy partner. We made sure we both knew what was going on in the course and gave each other emotional support.
Delta:	I definitely had a problem keeping up the dialogue and the assignments towards the end of the semester. I need to stay on my feet and not let distractions knock me down.

8. I have revised seriously, which involved responding to the comments of others. I came to see this not as bowing down to the views of others, but taking them in and working them into my own reflective inquiry until I could convey more powerfully to others what I'm about (which may have changed as a result of the reflective inquiry).	
Plus:	My first buddy partner gave me comments I was able to absorb really well.
Delta:	I often have a hard time understanding the meaning of comments and my mind views them as negative. I need to make sure I come at comments and revisions from a positive angle in the future.

9. I have inquired and negotiated about formal standards, but gone on to develop and internalize my own criteria for doing work—criteria other than jumping through hoops set by the professor so I get a good grade.	
Plus:	I don't think I ever really think of "Getting a good grade" I think of "getting the work done well"
Delta:	I definitely can push myself towards the standards more. It is almost in my nature to go against the norm, but sometimes I need to do what is asked, or closer to it.

10. I have approached this course and the program as works-in-progress, which means that, instead of harboring criticisms to submit after the fact, I have found opportunities to affirm what is working well in the course or program and to suggest directions for their further development.	
Plus:	Yes, during my time in CCT I have learned that mistakes are good. I have learned so much about myself and how I think, how I take criticism, how I write, and I am excited to learn more in the program and in life.
Delta:	I still just gotta wrangle in my emotions when I get criticisms that I cannot understand clearly.

A Self-Guided Learning Plan for Personal Betterment

Charity Southworth

Abstract

This self-guided learning plan aims to fill in areas of one's education that may be lacking. These areas are completely chosen by the user and can range from anything like learning trigonometry to learning how to play the violin. The goal of the plan is to continue in one's education throughout life while also helping them explore hobbies or other interests. The benefits of this plan are numerous. Because it is self-guided, there is an element of accountability that can be advantageous in one's professional work life.

The plan contains different types of activities and the frequency of the activities is solely up to the individual. The main aspects include social activities, reading activities and reflective activities. The social activity can be hard for some, causing them to push themselves out of their comfort zone, but that is sometimes needed for growth. Reading activities can come in many forms, and in some cases may not even involve reading but instead absorbing knowledge by listening to a podcast or watching a documentary. The most important aspect of this plan is the reflective aspect. It is where self-accountability comes in, as well as being introspective on your progress within the learning plan.

The reflective activity allows the plan to evolve. One might plan to do two social activities, three readings activities and one reflective journal a week. If that ends up being too much or too little, the individual can re-asses how they want to go about the plan. The subjects they focus on can also change. Maybe this person now hates the violin, or feels that they achieved their goal and wish to take on a new task. This plan shows one how to be introspective while following the path of life-long learning.

Self-Evaluation

When presented with this project, I thought of doing something involving what I do for work. But when I really thought about what holistic and transformative teaching is, I realized that I might have missed out on a few things and I want to fill in those gaps. This semester is my last semester in CCT, and that is going to bring about a huge change in my life. On top of that, I stopped working full-time and will be investing more in my business and science communication endeavors. But I do not want to stop learning! A self-guided learning plan was a great solution for me because it gave me something to continue as soon as I am done with CCT, providing me with great methods for life-long learning. It is also good for me to have some sort of routine to stick to.

When I first designed the project, I centered it around areas that I felt lacking in knowledge and often-self conscious of that. It was difficult to face the fact that I did not feel up to par in those areas, but as I thought more about the project I became hopeful and proud. I can still learn these things, and the fact that I chose to learn them is something I should be proud of.

I wanted to incorporate activities in this plan that I enjoy, as well as ones that I tend to avoid. I think this is an important lesson in life. In order to learn and grow, we need to do things we don't like, but that does not mean we should deny ourselves things we enjoy. This also helps with the self-accountability part of the project. If I feel it is too heavy with things I dislike doing, I can add in more enjoyable things to make sure that the plan is still working for me. Overall, I am excited about this plan and feel like the process of making it helped me overcome some insecurities that I may have had about my education and find pride in myself for wanting to learn more about the world.

A Self-Guided Learning Plan for Personal Betterment

Charity Southworth

A self-guided learning plan focuses on one or more aspects of education using various self-administered activities to increase knowledge in these areas. These activities can occur in various frequencies, such as daily, weekly, semimonthly, etc. A large piece of the self-guided learning plan is keeping oneself on track with said activities. Self-accountability is one of the largest pieces of this plan and when achieved it can have wonderful impacts on one's life.

I have built my own self-guided learning plan for personal betterment. In order to start building this plan, I reflected on my past education and what I feel like I missed out in in formal education. This included things like history, reading and writing. I then looked at my current work and where I wish I could improve there, and a lot of insecurities arose. I have always felt that I have a limited vocabulary, a symptom of the school systems I attended. This has made me feel shame, especially in graduate school. There have been many situations where I have felt dumb for not knowing a word and had to secretly look it up on my phone while no one was looking.

Another insecurity I have has to do with reading. I notice that a lot of people in my social circle, and honestly the whole world, enjoy reading. I hate it. I have read Harry Potter, but I do not tend to voluntarily read literature. Maybe it is just not my "thing" but I started to wonder if I should give it a try. It might even help me with my limited vocabulary since we often learn words through context! Going back to where I feel I lack in my current work, I feel that I need to be more well spoken. I have a hard time speaking eloquently, and often speak very informally. While I like my method of informal communication, there are times where communicating complex ideas in an articulate manner will help my career.

With these ideas in mind, I came up with three things that I want to improve on. Three adjectives I want to eventually be able to describe me. These are well spoken, well read, and well versed. I chose these three because they embody aspects of various forms of education that I feel I have been missing. These include formal education, social experience and being cultured.

The most formal, and perhaps the most rigorous of the three is going to be well spoken. The parts that this category embodies are vocabulary and speech. There are quite a few activities involved in this, some to be done on my own, while other include a social aspect. The first, and perhaps easiest, is having a daily vocabulary word. This can be done easily through an app on my iPhone that gives me a daily vocabulary word at a certain time each day. I will then try to use that word throughout the day, with absolutely no penalty (i.e. guilt) if I am unable to. The next activity is to be done twice weekly, and can be fairly fun. I will do one of the following twice a week; watch a documentary on a new topic, watch interviews on topics I know well or listen to a podcast. Watching a documentary is visually stimulating to me, allowing me to absorb what I am hearing more. I will be able to learn about new topics and hear how they are described and perhaps adopt some of that language myself. Watching or listening to interviews on subjects I know well, such as physics and astronomy, will show me different ways to explain topics. This will help me not get stuck in a rut in my own science

communications. Lastly, podcasts can be fun and once again I can learn how different people communicate, allowing myself to create my own, unique and efficient way of communicating. The last task is to be done once a week. I will make an effort to go to dinner, or simply “hang out” with well-respected friends. This is important, because as a self-employed person, I need to get out of the house and speak with people! This will help me practice any skills I hope to develop through these activities.

The next component of the self-guided learning plan is to become well read. This is perhaps the most daunting component for me because I truly hate reading, but I have found ways to make it exciting. First and foremost, I will need to read at least one book a month. I will be asking friends who are well versed in literature for recommendations on what books to read. Secondly, because my husband and many friends are comic book writers and illustrators, I will be reading 3-6 comic books per week. I am excited about doing this because every time I am at a convention with him, I never know what is being talked about! So immersing myself in his world will make me more comfortable in those situations. I also want to continue my education in the sciences and will commit to be taking one open course at any given point in time. I have decided that I will not be giving myself a hard timeline on this so I can go at my own pace, but I want to learn about more areas of science so that I can be an effective communicator in all fields of science.

Becoming more well versed is the most broad component. It involves all fun activities, but I need to make sure I absorb knowledge from each activity. It is also the most freely structured. This component aims to develop my knowledge on the current state of pop culture, and maybe even learn more about pop culture that I missed out on as a sheltered child. Another goal is to expand my ability within the arts and learn new techniques. One of the more strict activities is that I need to spend 2-3 hours a week honing my artistic skills, or learning new ones. This is to be completely separate from my work as an artist. During this time, I am not allowed to work on anything that I am currently developing. The time is to dedicate to learning new skills or improving on skills I already possess. To increase my knowledge of pop culture, I will be dedicating one evening a week (3-4 hours) to getting lost in the Internet. Maybe I go on YouTube and watch a video followed by a suggested video and so on to see what is trending. Or go on Instagram, or Wikipedia. Essentially surfing the web and seeing what is popular and trending. I can apply this knowledge to conversations with others, but more importantly to my small business when I am doing marketing on social media. Lastly, there is a social activity here that directly connects to the first component of becoming well spoken. I need to go out and be social once a week, not just to talk with others and practice

speaking, but to learn what others are doing and hear their take on current events in the world.

There are definite problems that can arise from each of these activities. The social aspect is one of the larger ones. I need to rely on others to spend time with me once a week, and to be willing to have discussions, not just goof around or see a movie. I also need to rely on others for recommendations for books and comics to read, which has the potential to be overwhelming. To solve this, I will ask only one person for two book recommendations at a time. Once those books are read, I will move on to a different person and ask for two more. The same process will be used for comic books. This will provide variety in what I am reading, so I do not adopt a single person's taste, but instead am allowing myself to decide what I like.

The largest problem that can, and will, arise is self- accountability. I always have a hard time keeping myself on track. In the past month I have realized that I often take on too much, not for myself, but for others. So to achieve my goals I need to do a few things. Firstly, I need to pull back on how much I do for others. I do not need to deny help, but I need to put myself first in certain situations so that life distractions are minimized. Then, in order to stay on track with the various daily, weekly and monthly tasks I will be doing a weekly journal. The journal will be a reflection of how I feel I have been doing, what I missed and what I succeeded in. I will then look at the journal every two or three months and evaluate the plan as a whole. I will be able to add or subtract activities, or perhaps change their frequencies. Over time I will also be changing the plan based on how my learning is coming and if I feel like I am happy with where I am at in one component and may have found another area in which I wish to improve.

This plan is going to help me continue learning past graduate school, and provide me with some grounding so that I don't get lost as a self-employed individual. I am excited that the plan has the ability to evolve, and I have decided that if I need to put a pause on the plan because of life events, I can do so. Taking a week or two off is not going to make me feel guilty. The thought process and creation of this has been very empowering. This is a self-guided plan, which means that I created it, I administer it, I benefit from it and I can change it.

Current Climate of Science Communication

There are many forms of science communication. There are articles online and in newspapers, magazines, news clips, television series, documentaries, blogs, podcasts—the list just goes on. There are so many ways to consume science content, and with the invention of smart phones there is now so much at our fingertips. But who seeks out these materials? Is it the 19-year-old who works at H&M, or the graduate student at MIT? How do we get this material into the hands of people who would not look for it? I conducted a survey among 100 young adults (19-42 years old) from various backgrounds. When asked what type of internet content they consume online throughout the day, only 25% responded traditional articles (*New York Times*, Huffington Post, magazines, etc.), while 34% said they watch videos on social media or YouTube, and 40% said they scroll through social media looking at memes, web comics or pictures (2% said other). I was not shocked at all at how prevalent social media based content is, but I was impressed that 25 people still spend a lot of time on more traditional forms of communication. This shows to me that these traditional forms have a place in this world, but we definitely need to add to the current state of science communication. I believe it is time to really take advantage of social media and the new forms of entertainment that have become prevalent in the past decade.

Every now and then, some science story makes it into mainstream news. It usually has to do with medical science or astronomy (because people love space, and who can blame them?). When science does make mainstream news, it is often miscommunicated and misunderstood. It is almost like the telephone game where information gets passed between so many people that it morphs into something else. Unfortunately, this starts with scientists talking to science communicators as if they are talking to a colleague. Often scientists do not understand that the words they use are over the heads of the general public and will sound sensationalistic. It is up to science communicators to translate this science for the layman, but many science communicators cannot do that because they themselves want to sound just as smart as the scientists, or don't want to miscommunicate what they have been told by scientists and do not have the scientific

knowledge to translate it for the general public. So when a newscaster is given this piece of information from the science communicator, all they can do is say what they are told, which is then often followed by a comment from the reporter such as “whatever that means.” It is a very unproductive system that needs to be changed.

When science does not make the mainstream news, people have to seek it out in order to hear about it. Who seeks it out? Students of science, scientists, people who work in the field of science. People who already care. But not the people that lack science literacy skills. These are the people that need to be the focus of modern science communication.

In April 2019, a big science story broke that made it outside the reach of people already interested in science, and in my own opinion it had some negative effects. As a radio astronomer, I knew for a while that this news was coming. I was prepared to explain it when the news broke, but unfortunately it broke 30 minutes before I boarded a transatlantic flight, leaving my hands tied. When I landed, I was pretty disappointed in what I saw. The story I am talking about has to do with the first ever image of a black hole. Notice I say image, not photo of a black hole. Every headline called it a photo, which is incredibly frustrating as a radio astronomer. We do not take photographs. We collect data in the radio wavelengths that is then run through intense programs to create an image that allows us to understand the structure of what we are looking at. It is an incredibly difficult process. Radio astronomers have an unbelievable amount of patience and study some of the most interesting objects in our universe, like black holes. The term “photo” is not the only thing that bothered me.

Image Source: PBS.org April 10, 2019

The above photo is one article of many misleading the public with regard to the news of this black hole. The first problem is it is cited as a photo, and specifically as a photo of the black hole, when in reality it is a picture of material around the black hole. (You cannot see black holes – light cannot escape them!) I believe there were many missed opportunities here, not just for responsible science communication, but for exciting science communication because there is so much more to this story than was told. This is just one example of an article mislabeling this image as a photo. Thankfully, many publications did correct the error the following day.

However, that same day, a very unfortunate thing happened. A former graduate student from MIT, now PhD, who helped develop the computer algorithm that processed the data posted a misleading post on Facebook that instantly went viral.

Image Source: Katie Bouman's Facebook

This is misleading and unfortunate because she is not solely responsible for the image. She helped a group of people to develop the algorithm as a graduate student, which is one part of the massive amount of work that went into creating the image. I myself could say I have a part in this image, having helped develop a telescope used to capture the data. However, posting that she made the image caused the internet to go crazy and credit her solely with the discovery, ignoring hundreds of people (men, women, people of color) that helped just as much in this scientific endeavor. However, it is clear that her intentions were never malicious. She is young and excited about her work, and who could blame her! But this is a good example of how scientists need to be careful with the words they chose, as do science communicators. Thankfully she later clarified herself and credited everyone involved in the project and a new, more accurate image was circulated around the internet.

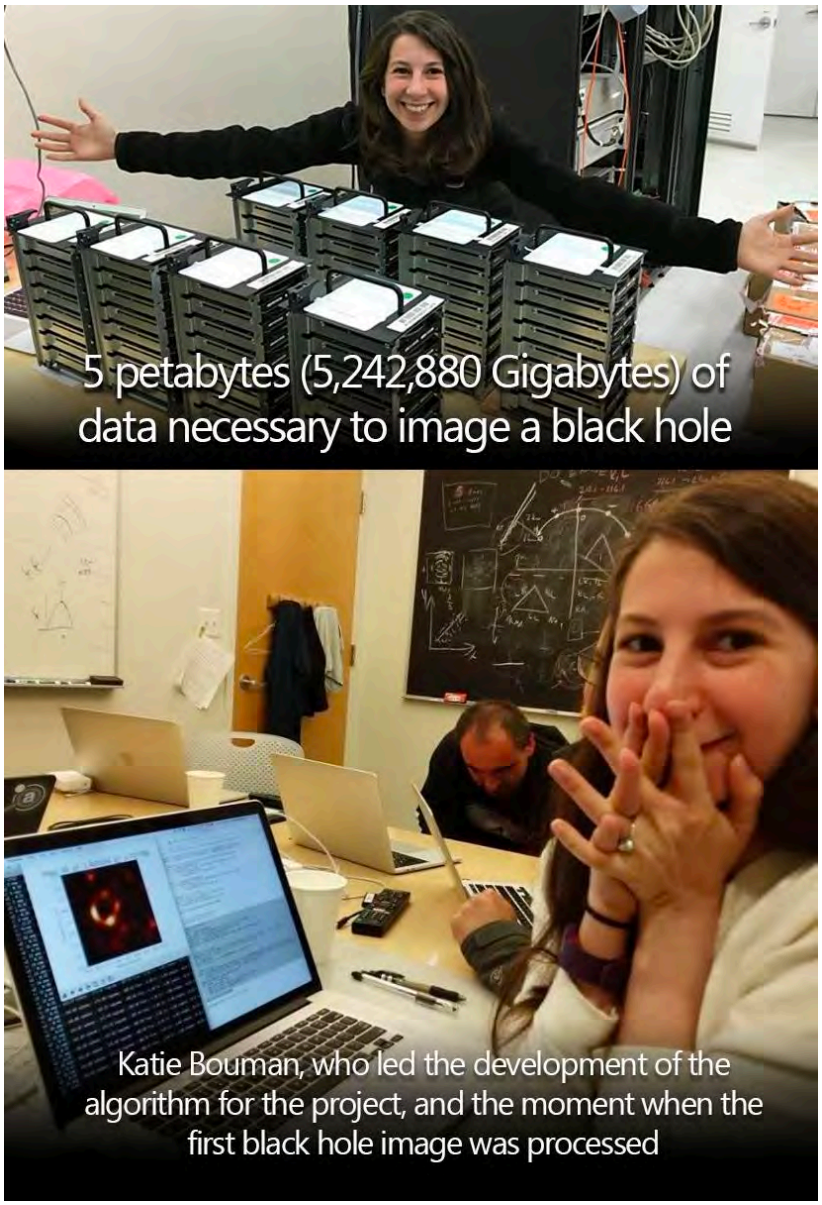


Image Source Unkown

This image shows how much data it took to image the black hole, which is great science communication. It shows the excitement of someone who worked very hard in her part in this project, and it also highlights the excitement behind the discovery. This image went viral, overshadowing the blunder of claiming credit, showing that women are prevalent and indispensable in science. Without reading more than two sentences, accompanied by pictures, many people were able to understand the importance of this endeavor.

Another way laypeople are exposed to science is in science fiction. This is a massive problem because it is simply fiction. For instance, so many people are scared of black holes and have no idea what they really are thanks to sci-fi films and movies. They are not vacuums in space that suck everything up! (The above black hole news unfortunately did not change this.) I have even seen this in planetarium shows for children. Science fiction is great and does not necessarily need to represent real science, but there is a way to reach these people to educate them on the proper science of what they are watching, and I believe social media and the internet can help aid in this.

How can we teach critical thinking through science communication in a fun way?

This is not an impossible feat. In fact, it has been done before! In the past, before social media, there was an amazing television series that communicated science without being overt about it. *Mythbusters* aired during the aughts, and the show's premise was taking an urban myth or commonplace assumption, like if a tomato juice bath gets rid of the smell of skunk or if you waste more gas with the AC on in your car or the windows down, and applies the scientific method to the myth. Experiments are done and controls are used, showing the general public how science is done, while also answering questions that many people are curious about. It was a huge success, not just for the network that aired it but for the people who watched it. Its viewers ranged from your average low-income worker, to college students, to adults (my own mother loved it). Many people across the country watched it and were inspired to become scientists themselves, or at least become better critical thinkers. Of the 5 main people on the show, one was a woman, encouraging many women (like myself) to be involved in the sciences. The success of *Mythbusters* will probably never be recreated. Television is not the same, there is too much to consume on television and the internet that people may gravitate to more mindless things. Nevertheless, the people who starred in *Mythbusters* still do what they can to continue what they started. Adam Savage currently has a strong role on social media reaching out to the comic convention community highlighting ways to engineer elaborate costumes and challenging people to think outside the box. While the show no longer airs, their work is not done.

Another great program, currently airing, is *Adam Ruins Everything*. It is a series starring comedian Adam Conover that premiered in 2015. The main premise first appeared on CollegeHumor (a website that makes hilarious short videos with prominent actors or comedians, usually highlighting a social problem like sexism). The purpose of the show is to enlighten the audience about common misconceptions. The show starts with showing a regular person using something we are all familiar with, then Adam comes in, breaking the fourth wall, and starts to delve into the history of the object. The episode explores these misconceptions, often using sketches and animations to keep the audience entertained, while also promoting their curiosity and critical thinking skills about objects that we use every day. This show is unique because it does cite academic articles and invites experts onto the show to add more information to the topic. He always includes a positive takeaway, explaining how helpful it is to know these things and that with knowledge we can all do our part to improve society and our own lives. A huge advantage of *Adam Ruins Everything* is that there are many 2- or 3-minute segments that can be easily shared on social media. This brings information in a short, humorous format right to one's fingertips.

Videos are a great way to engage people, but we can also use images, such as memes, web comics, fashion photos, and other things that you would see on social media to educate. Referring to the black hole image mentioned above, I have made a rough draft of something that could be posted in reference to it to clarify some misconceptions, but also provide humor. The misconception that this web comic comments on is one that I have heard a lot working in the planetarium, that black holes are "the most powerful force in the universe."

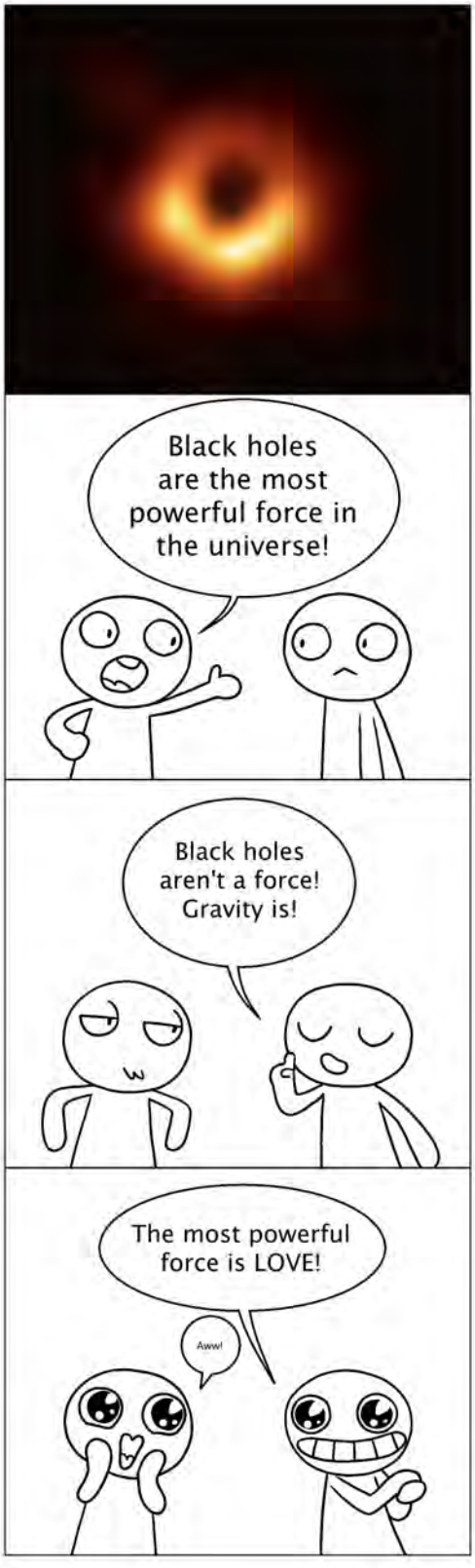


Image Source: Nate Bellegarde and Charity Southworth

Exit Self-Assessment
Charity Southworth
Critical and Creative Thinking

I. "MY SYNTHESIS PRODUCT SHOWS THAT..."
(adapted from the "Phases of research and engagement" in the Practicum course in the expectation that these are also relevant goals for students' work in moving towards the synthesis product)

A. I can convey who I want to influence/affect concerning what (Subject, Audience, Purpose).

My synthesis focused on projects aimed at young adults, but the synthesis itself was for science communicators and scientists to understand that there are ways to improve on what we are doing and reach larger audiences. This was a struggle for me because of some bad experiences I had in academia. I did not want to write a paper for academics, but in the end I realized that is what was needed. I will always need to continue to resolve my differences with traditional academia and work with it, not in spite of it.

B. I know what others have done before, either in the form of writing or action, that informs and connects with my project, and I know what others are doing now.

I spent a long time looking through the Internet and journals to see what the current state of science communication is. I looked at who is popular in the field of science communication, and I talked with people who don't know much about science to see what more indie like approaches are out there. I feel comfortable that I know what is being done in a traditional sense and what new things are being made that are truly unique. However, I struggled with accepting some of the more nuanced science communication approaches because it wasn't exactly what I would do, but I need to continue to remember that my ideas are always going to be different than other people's ideas and the fact that other people are out there trying is incredible

C. I have teased out my vision, so as to expand my view of issues associated with the project, expose possible new directions, clarify direction/scope within the larger set of issues, and decide the most important direction.

This was a very large aspect of my synthesis. I spent a lot of time understanding that I cannot exile traditional methods, but instead work with them. That is an issue I struggled with but eventually overcame. My synthesis focuses on new directions we can take science communication and why it is important in the current political climate. I will need to constantly be attentive to what is happening in politics and pop culture to keep my ideas and endeavors up to date, as well as be in contact with scientists and science communicators.

D. I have identified the premises and propositions that my project depends on, and can state counter-propositions. I have taken stock of the thinking and research I need to do to counter those counter-propositions or to revise my own propositions.

Propositions and counter propositions are my jam! It is like the scientific method. You have an hypothesis (or a proposition), experiment (or do research) and come to a counter proposition and do it all over again. This really helped me gain focus in my synthesis. I think with every idea or project I have around science communication, I should use this method.

E. I have clear objectives with respect to product, both written and practice, and process, including personal development as a reflective practitioner. I have arranged my work in a sequence (with realistic deadlines) to realize these objectives.

I believe that one of my strongest attributes in CCT is my instrospective nature. I am able to reflect well on where I am at and on my thinking. However, moving forward I will definitely make sure I stay on my own deadlines better.

F. I have gained direct information, models, and experience not readily available from other sources.

I talked with so many different types of people and got lost in so many internet rabbit holes that I cannot believe the information that I learned surrounding my synthesis. Everyone I talked to had another scientists, website or program for me to check out. I will continue these conversations in order to stay up to date with what is new in the science communication field.

G. I have clarified the overall progression or argument underlying my research and the written reports.

Yes. I have shown the need for a scientifically literate public within the United States and why we need to expand the why we communicate science. I want to work further on how to reach certain groups such as minorities.

H. My writing and other products Grab the attention of the readers/audience, Orient them, move them along in Steps, so they appreciate the Position I've led them to.

Yes. I start with the problem, talk about what is being done but then move on to my ideas on what can be done through art and humor. I will continue developing these ideas and new ones, and start more collaboration with scientists and science communicators.

I. I have facilitated new avenues of classroom, workplace, and public participation.

I have definitely facilitated new avenues of public participation. Science communication is for the public, and by using social media we are inviting them to participate in the information scientists has. I do want to find a way to make it not solely on the internet though.

J. To feed into my future learning and other work, I have taken stock of what has been working well and what needs changing.

I have listened to my peers in CCT, as well as in the field of science, and will take all their advice. I have learned that I need to not scoff at people who do things in a traditional manner and instead congratulate people for continuing to communicate science to the public, even if I am not a fan of their method.

II. DEVELOPING AS A REFLECTIVE PRACTITIONER, INCLUDING TAKING INITIATIVE IN AND THROUGH RELATIONSHIPS

1. I have integrated knowledge and perspectives from CCT and other courses into my own inquiry and engagement in social and/or educational change.

Absolutely! I have always been an introspective thinker, and I have started journaling because of CCT to understand my thinking even better. This is also something I have brought into my own marriage that has really helped my introverted husband.

2. I have also integrated into my own inquiry and engagement the processes, experiences, and struggles of previous courses.

I have used a lot of activities from Creative Thinking such as scamper for my ideas. Also mapping, first with sticky notes, then with bubbles (and glitter pens for fun). I will continue to use these activities for my small business when I develop new ideas and products.

3. I have developed efficient ways to organize my time, research materials, computer access, bibliographies, etc.

This has always been a struggle for me. With the chaotic life I lead, time management has always been a struggle, but I have learned a lot about bibliographies throughout my time in CCT. I hope to take a lot of time management skills that I learned in Reflective Practice with my into my life.

4. I have experimented with new tools and experiences, even if not every one became part of my toolkit as a learner, teacher/facilitator of others, and reflective practitioner.

I have definitely experimented with a lot of the activities we learned. As mentioned earlier, journaling has become a big part of how I organize thoughts and become focused. I hope to incorporate more activities as I move on from CCT and encounter new obstacles.

5. I have paid attention to the emotional dimensions of undertaking my own project but have found ways to clear away distractions from other sources (present & past) and not get blocked, turning apparent obstacles into opportunities to move into unfamiliar or uncomfortable territory.

I am an expert at paying attention to emotional dimensions and that can be seen clearly in my synthesis and the process it took to write it. I however struggle in keeping life distractions out of the way because I tend to want to help everyone. The experiences I have had with life getting in the way in the CCT program has shown me that I need to focus on myself more, and realize I cannot help everyone around me.

6. I have developed peer and other horizontal relationships. I have sought support and advice from peers, and have given support and advice to them when asked for.

I have developed such a close bond with many of my peers, I will truly miss speaking with them (forcefully) every week. I listen to their advice and will definitely be seeking it out after CCT.

7. I have taken the lead, not dragged my feet, in dialogue with my advisor and other readers. I didn't wait for the them to tell me how to solve an expository problem, what must be read and covered in a literature review, or what was meant by some comment I didn't understand. I didn't put off giving my writing to my advisor and other readers or avoid talking to them because I thought that they didn't see things the same way as I do.

My writing was incredibly slow this semester. Because my project took a lot of thinking, I did not develop much writing until late in the semester and I know I should have started earlier. However, I feel the

discussions I had with my instructor and peers were so helpful and really helped guide me. From here on out, I will no longer be afraid to write. Completing the synthesis made me proud and gave my confidence in my ability to write.

8. I have revised seriously, which involved responding to the comments of others. I came to see this not as bowing down to the views of others, but taking them in and working them into my own reflective inquiry until I could convey more powerfully to others what I'm about (which may have changed as a result of the reflective inquiry).

Most of the semester was spent listening to others and really changing my thinking, particularly with my wonderful instructor. I was able to take what was said, absorb it, and combine it with my own thinking. This is a skill I will take forward. Listening to others, truly listening, and thinking about what you hear can help you grow as an individual.

9. I have inquired and negotiated about formal standards, but gone on to develop and internalize my own criteria for doing work—criteria other than jumping through hoops set by the professor so I get a good grade.

I was very scared about writing the synthesis because I had done formal academic writing before and hated it. But after talking with the instructor and peers, I felt more comfortable because I was able to write as myself, in a more formal voice, but not in a dry tone. The idea of writing in a way that many people can understand is part of my synthesis and I will bring this idea into some of my projects such as blogging.

10. I have approached the CCT synthesis course and the CCT program as works-in-progress, which means that, instead of harboring criticisms to submit after the fact, I have found opportunities to affirm what is working well and to suggest directions for further development.

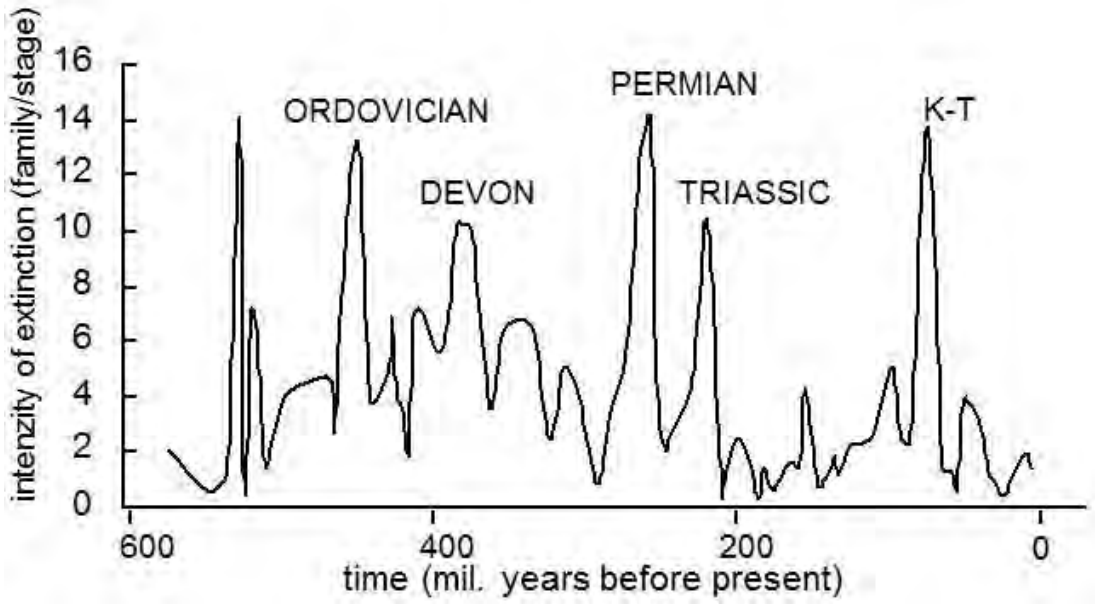
I am leaving CCT with such a great tool box. I am excited to take these tools, create wonderful things in the world, and even learn more tools as I go along. I believe that I will never be done learning and CCT has definitely instilled that in me.

Charity Southworth
Biology 552

The K-T Event

More than 90% of all species to have ever lived on Earth are now extinct. Species become extinct in various ways and on different time scales. Throughout geological time, extinctions are constantly occurring in the background due to various processes; this is referred to as the normal extinction rate. The normal extinction rate has changed since humans have been around, particularly in the past few centuries. Humans have caused a staggering number of species to become extinct due to hunting, habitat degradation, disease and climate change. However, the normal extinction rate and extinctions caused by humans pale in comparison to mass extinctions.

A mass extinction is a widespread loss of biodiversity in a relatively short period of time. In Earth's history there have been several mass extinctions. To qualify as a mass extinction, extinctions across the whole planet must occur (not a localized extinction event) and a large number of species must become extinct. In Earth's history, there are some impressive mass extinctions that are referred to as "The Big Five." This includes the Permian mass extinction where 96% of the species living on Earth went extinct. That is a staggering number and the largest mass extinction Earth has experienced to date. As you can see in the graph below, the Big Five includes the Ordovician extinction (86% species lost), the Devonian extinction (75% of species lost), the Permian extinction, the Triassic extinction (80% species lost) and the K-T event.



(Source: Frozen Evolution)

Mass extinctions vary dramatically from background extinctions. With the normal extinction rate, populations of organisms are subject to many natural selection pressures. Mass extinctions affect species across the whole planet, both terrestrial and aquatic. In every Big Five extinction event, sea level regression occurs, affecting both terrestrial and aquatic life. These extinctions are not a random killing of organisms; the traits favored during mass extinctions vary from those favored in background extinctions. Mass extinctions drastically affect the history of life through dramatic shifts in the biosphere and the exploitation of niches that have become vacant after populations have gone extinct.

The Permian extinction is the largest recorded loss of biodiversity on Earth, but perhaps the most popular and most studied mass extinction is referred to as the Cretaceous-Tertiary event, or the K-T event. This extinction event occurred 66 million years ago and is responsible for the loss of the dinosaurs, along with 76% of all plant and

animal species on Earth. There are two leading theories as to why this extinction event occurred. One is referred to as the impact theory while the other is referred to as the volcano theory. Both of these theories share common ground in their evidence, but their time scales vary as do the causes of the evidence.

One of the first pieces of evidence to be attributed to an impact event is the presence of a layer of iridium in the strata of the K-T boundary. Iridium is a rare metal that is not often seen in such concentrations in Earth's strata. Its presence suggests an extraterrestrial source since iridium is a rare metal on Earth. In 1980 Luis Walter, a physicist who had worked on the Manhattan project, along with his geologist son were the first to suggest that the KT event may have been caused by an extraterrestrial impact. Their claim was that iridium is much more abundant in extraterrestrial rocks than on Earth and the iridium layer dates to the KT mass extinction event. This evidence is extremely compelling and only one piece of the puzzle to support the impact theory.

Another piece of evidence is shocked quartz. Quartz crystals can be cracked when exposed to a large amount of pressure. A significant amount of shocked quartz was found in North America and the Caribbean that dates to the KT event. This location is important because micro tektites were also found in the same area, dating to the KT event. Micro tektites are formed during impact events when metals in the soil and rock at the impact site are melted. The shocked quartz and micro tektites show evidence of a large impact in the area of North America and the Caribbean during the time of the KT mass extinction event. This led paleontologists and geologists to search for an impact crater in the vicinity. The impact crater would have to be extremely large. In order for the biosphere to

change dramatically enough to cause this global mass extinction, a large extraterrestrial body would have had to hit Earth.

In 1986, the Chicxulub crater was found near the Yucatan peninsula in Mexico. The crater is mostly underwater and about 180 kilometers wide. This crater is often referred to as the “smoking gun” for the impact theory because it dates to 66 million years ago, the time period of the KT mass extinction. It is estimated that the asteroid that created it was 7 miles wide. This is a piece of evidence that is not shared with the Volcano theory for the KT mass extinction. Some scientists believe that this mass extinction was caused by increased volcanic activity, particularly in an area in India called the Deccan Traps. The Deccan Traps are the world’s second largest flood basalts and date to the KT event mass extinction. The increased volcanic activity could also explain shock quartz (volcanoes can release large amounts of pressure) and micro tektites. Some scientists also claim that volcanoes that erupted 66 million years ago could have ejected magma high in iridium, accounting for the iridium layer. These eruptions would occur over a long period of time to cause enough climate change for the mass extinction to occur. However, the impact crater found in Mexico does put the impact theory ahead of the volcano theory because of one other piece of evidence: there was severe plant extinction in North America, which is close to where the impact occurred. This plant extinction in the asteroid “splash zone” is more compelling evidence for the impact theory.

The effects on the biosphere of an impact event would have been horrendous and would definitely account for a mass extinction. The compression of the impact would cause a heat wave to travel hundreds of miles, killing almost everything in its path. The

surface of Earth would have been as hot as 5,000 degrees Fahrenheit. It is possible that earthquakes and tsunamis were triggered, as well as volcanic activity. The debris from the impact would be so thick that it would block sunlight and create noxious gases in the atmosphere, leading to acid rain. So how could any species survive this?

The organisms that went extinct during the KT event were the dinosaurs, pterosaurs, ichthyosaurs, plesiosaurs and ammonites. Gymnosperms also dropped in dominance. Species that were unaffected include amphibians, crocodiles, lizards, snakes and mammals, among others. Even though the surface of Earth would have had a high, seemingly unlivable temperature, below the soil, just a few inches below the surface, the temperature would have been around 100 degrees Fahrenheit. Species that burrow or live in water may be able to survive these temperatures. Species that hibernate or have resting stages such as amphibians could use that to their advantage to survive. Many plants that were destroyed with the initial impact could survive because they were able to disperse their seeds. In mass extinctions, big things are more sensitive to changes, as well as species that live exclusively above ground. Most mammals at the time were small and able to burrow, allowing them to survive over larger, terrestrial creatures such as the dinosaurs. Dinosaurs and other species that went extinct left a niche open for mammals to exploit. This allowed the mammals to flourish and evolve. Without that niche opening, it is possible that mammals may have never evolved to the point that they have today.

Regardless of which theory is correct, the impact theory or volcano theory, niches were opened that were then exploited by other species. This mass extinction was important to the evolution of our species and the mystery surrounding it has found a special place in the hearts of the general public. The KT event largely impacted

dinosaurs, and in the past 25 years, the population's love for dinosaurs has only grown thanks to pop culture. The film Jurassic Park was released in 1993 and is considered a classic film, one that may exacerbate some sciences due to its implausibility. However, without Jurassic Park and stories like it, public interest in dinosaurs and how they went extinct wouldn't be so high. Without public interest, funding is lower in academia and new generations of scientists aren't as large. The success of this movie inspired many people to become paleontologists or biologists, everyone from young children to adults who already had successful careers and made the switch to the sciences. In the field of paleontology, scientists are discovering a new species of dinosaur about once a week. That is 50 new species a year! This is an incredible increase compared to the discoveries of the 1990s - about 15 times as many species are found now than in the '90s. This increase cannot be completely attributed to pop culture and its dinosaur obsession, but part of it definitely must be. Without Hollywood's fascination with dinosaurs, we may not have made new discoveries about the KT event and therefore we would understand less about the nature of mass extinctions. Knowledge of mass extinctions is important to not only have a good historical record, but to also know what may be heading our way. With five mass extinctions occurring in the almost 5 billion years Earth has been around, there are sure to be more in the future. With as much as we now understand about extinction events, there is still more we do not know and that makes predicting the next extinction event nearly impossible. When and how it will occur is a great question that will only be answered when it happens.

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