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In *The Lord of the Rings*, Gollum is depicted as a miserable monster. He slinks around in the middle of the night and eats raw meat. He’s pale and basically hairless with devolved speech. His split personality paints a picture of insanity. For all of these things against him though, Gollum is still a necessary character in this fantasy. Gollum is the unsung hero of Middle-Earth because of his ability to resist the will of Sauron, his devotion to Frodo, and his critical role in destroying the Ring.

Gollum never gave in to the power of Sauron and tried to keep the Ring as far away as possible from him. In *The Lord of the Rings* Gandalf describes what happens to a person when they have the Ring for too long. “In the end [he] becomes invisible permanently, and walks in the twilight under the eye of the dark power that rules the Rings... sooner or later the dark power will devour him” (Tolkien 76). The Ring corrupts the possessor with dark power and eventually consumes them. How long it takes for them to be consumed depends on their strength of will and character. In his research David Callaway, a Tolkien scholar, states that Gollum had possessed the Ring for 478 years (16). In that time his body and mind had both degraded much from what they had originally been and Gollum became a monster. Yet even after all of this time, Gollum hadn’t completely given in to the power of the Ring. Granted, he would kill to possess the Ring and do all sorts of other evil acts to ensure that he would stay within possession of it, but one thing that Gollum didn’t do was completely succumb to the Ring or to Sauron. When Frodo got to the Black Gate and made clear his purpose to take the Ring into Mordor, Gollum exclaims: “No use that way! No use! Don’t take the Precious to Him! He’ll eat us all, if He gets it, eat all the world” (Tolkien 637). Gollum knows that bad things will happen if Sauron gets the Ring. He looks past his own selfishness to point out what would happen if Sauron did end up getting the Ring. If Gollum had been completely corrupted by the Ring, he wouldn’t have made such an effort to keep it out of the hands of Sauron, especially at that point of the journey. He would have been all the more eager to head into Mordor to deliver the Ring to Sauron himself and get rewarded for doing so. During his entire time holding the Ring, Gollum never once gave in to the urge to deliver it back to Sauron.

Though Gollum never gave the Ring to Sauron, his own greed could be the reason behind that. When Gollum first laid eyes on the Ring, he told Deagol, the one who found it, to give him the Ring. When Deagol turned him down, Gollum “caught Deagol by the throat and strangled him, because the gold looked so bright and beautiful” (Tolkien 53). This greed consumed him right from the beginning. Robin Robertson, another Tolkien scholar, points out that: “Gollum has a single flaw that destroys his entire life: He covets the Ring, his ‘Precious’” (93). Possessing the Ring changed Gollum’s life forever. This change started soon after he acquired the Ring and was kicked out of his village and his name was changed from Sméagol to Gollum. According to a historical speech expert, Gergely Nagy, this is significant because in the Old Norse language, “gollum” means gold or something precious, or in this case, the Ring (60). His name even draws parallels to his greed for the Ring. The book *Understanding The Lord of the Rings* talks about how Gollum draws a parallel with dragons due to his love for the Ring. “Dragons are traditionally associated with hoards of gold, whereas Gollum wants only the one Ring, but the difference is quantitative, not qualitative” (Zimbardo et al. 142). The book then tells a quick story
about how a man turned into a dragon to protect his gold and Gollum underwent the same type of change to protect the Ring. He went through a lot to protect the Ring and make sure that no one else would be able to have it.

Gollum’s loyalty to Frodo is stronger than his desire for the Ring. Though Gollum did have a strong desire to possess the Ring, and his greed in protecting it was a motivation to stay with Frodo and Sam, the good in Gollum, and his loyalty to Frodo, are what kept him from just outright stealing the Ring. “When Gollum swears to Frodo to be good, he is. If Gollum were completely under the dominion of Sauron, he would not lead the hobbits faithfully.... And if Gollum is entirely corrupted, he would have killed Frodo and Sam and taken the Ring easily, for he was presented with many opportunities” (Callaway 17). There were plenty of times when Frodo and Sam would sleep and Gollum would be awake, yet he didn’t steal the Ring nor did he attempt to murder them. He also faithfully led them to Mordor without setting any ambush where Sauron would catch them. This loyalty to Frodo becomes stronger than his desire for the Ring because, “Frodo has become the center of his life” (Robertson 103). This example shows that there was still good in Gollum, that neither the will of Sauron or even the draw of the Ring could tear him away from his positive feelings he had towards Frodo.

Gollum faces constant inner turmoil about whether or not to stay devoted to Frodo. Gollum was at a constant war with himself, torn between Sméagol, the old hobbit before the Ring, and Gollum, the identity that the Ring created within Sméagol. The best way to illustrate this is seen in The Lord of the Rings: “Gollum was talking to himself. Sméagol was holding a debate with some other thought that used the same voice but made it squeak and hiss” (Tolkien 632). The conversation then continues to become a debate about whether or not to take the Ring away from Frodo. Gollum had been having these thoughts for a while, but the goodness in him was strong. “He had proved tougher than even one of the Wise would have guessed – as a hobbit might. There was a little corner of his mind that was still his own, and light came through it, as through a chink in the dark” (Tolkien 55). Sméagol was fighting tooth and nail to stay true to his oath of not betraying Frodo. He kept this promise up until the very end. Brent Nelson, a researcher about mythical monsters claims: “Gollum breaks with social expectation as the climactic oath-breaker, specifically in breaking his promise to protect his master, Frodo” (477). He breaks this oath when he delivers Frodo and Sam into the clutches of Shelob and leaves them there to die. This only happened though, when the corrupted side of Gollum won out over the good. “Even the wretched Sméagol, till quite late in the story, has good impulses; and, by a tragic paradox, what finally pushes him over the brink is an unpremeditated speech by the most selfless character of all” (Zimbardo et al. 12). When they got to the Black Gate and found it shut, Sméagol offered to take them by a more secret way. Frodo then threatens him and tells him that he is being twisted by the Ring (Tolkien 640). This was said in a very stern tone and puts Gollum in a pitiful state. It’s then that he makes the decision that he will leave them to Shelob so that he can steal the Ring and not let Sauron acquire it. In the beginning, it was kindness that reignited the good in Gollum to help Frodo and Sam to Mordor. In the end, it was mistrust that influenced Gollum to betray them.

Even though Gollum was central to destroying the Ring, he was still a monster. Gollum’s descent into becoming a monster started as soon as he saw the Ring and killed Deagol for it. He continued on the path downward when he started to use the Ring against those in his village, and ultimately got kicked out. This led to the increased degradation of his body and mind to the power of the Ring. “Repetitiousness, the automatism of language, reflects Gollum’s deterioration into a state of control by corporeal drives and conditioned reflexes” (Nagy 59). His only desires were food, fleeing from the light,
and the Ring. He was deteriorating back into more of an animal. “Gollum is continually associated with filth (particularly slime) and all that is bestial, especially in his appetite” (Nelson 476). Gollum goes towards that which he feels comfortable around. He likes all the dark, dank places of Middle-Earth. He thrives off of caves and other crevices. He likes the dark so much that the light hurts him. When Frodo and Sam first capture Gollum he says to them they must travel by night because the Sun hurts his eyes and he’s not comfortable travelling under the light (Tolkien 616). Then right after he tries to escape, Sam ties an elf rope around his leg and he screams in agony because “Gollum has somehow gone so far into the dark side of things that he can’t tolerate anything connected with Elves, who are the living embodiment of light” (Robertson 102). The light burns into his very soul because of how dark and corrupt it has become. Even Gandalf said that there was no hope for the darkness inside of him to be cured. Gollum was full of evil and greed, and those traits are evident in his journey throughout Middle-Earth.

Even though Gollum was a monster, he played a critical part in the destruction of the Ring. When Frodo finally got to Mount Doom to cast the Ring into the lava, he couldn’t do it. “I have come. But I do not choose now to do what I have come to do. I will not do this deed. The Ring is mine” (Tolkien 945). Frodo was now under the influence of the Ring, and was unable to destroy it. Sauron had finally beaten the will of Frodo, and the Ring was going to live on. Middle-Earth would soon be overrun by the forces of evil, and there was nothing that could stop it. Yet “Gollum, with the good fraction in his mind finally overpowering the Ring’s evil, sees that Frodo cannot destroy the Ring, so he consciously takes it from him and destroys it” (Callaway 22). Gollum sacrificed himself to destroy the Ring. The inner turmoil that was inside of him was finally finished, with the good side triumphant. In that instant, he made the decision not to let the same fate that happened to him happen to Frodo. “His fall into the crack of Doom, glossed as an accident of his exaltation, is more, far more, than accidental. . . Gollum loved the thing which destroyed him and destroyed it in revenge” (Zimbardo et al. 89). Gollum knew that the Ring was the cause for his descent into monstrosity. He knew that the Ring was the only reason he had felt powerful. In taking away his life it also gave him power and purpose, though deep down he knew that what the Ring had offered him wasn’t worth what it had taken from him. His final act of defiance was the destruction of the thing that had enslaved him. The corruption of his soul was finally at an end. Gollum freed himself, and the rest of Middle-Earth, when he destroyed the Ring.

Gollum has a lot of flaws and is basically evil. He’s obsessed with the Ring and doesn’t want to give it up because of his greed for it. He’s a monster that’s completely selfish and will kill without a moment’s hesitation, and he broke the only binding oath he had. Though in spite of all this, he’s a hero. He brought Frodo and Sam to Mordor, defended the Ring against Sauron, and in the end, was the one that actually destroyed the Ring. Gollum overcame all of the evil in himself at the end to destroy the Ring. He is a true hero because he conquered himself.

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“Swearing constitutes a species of human behavior so little understood, even by its most devoted practitioners, that an examination of its meaning and significance is now long overdue.” (Montagu 1). Have you ever wondered how swear words came to be? Why are they depraved if they are just words? Some swear words have become a social norm while others still give off a shock factor when said. The common swear words we hear daily which are; Damn, Shit, and Fuck have changed from their original meanings due to trends and cross cultural differences. The way we use each word today mirrors these changes.

The swear word damn, wasn’t originally intended to be screamed out in vain or disappointment. Damn was originated in the 1384 B.C, in the Bible. Jews and Christianity groups first used the word damn in religious ways (Isaacs). The original use of the word damn was when someone would “Swear an oath of allegiance to God. If you broke your promise to God, you dishonored him and risked damnation” (Isaacs). Since then cultural differences has shaped the meaning of the word damn.

Since the 13th century the word damn has been revised to multiple meanings. “The English word damn is derived from the Latin damnare or dampnare, meaning to inflict damage or loss upon, to condemn, doom to punishment” (Montagu). Different countries use the word damn in different situations. In Spain, the word damn has a bigger negative impact and it is socially unacceptable compared to America. In the Spaniard culture damn almost has the same effect as the swear word fuck in the American Culture (Montagu). Damn has changed over time and has different definitions according to the specific culture. In today’s American culture, damn is hardly used for swearing an oath to God. In fact, damn, has become a common swear word that has been more acceptable to society and is used to express emotions.

The curse word shit has gone through many different stages and trends to get to where it is now. In Old English shit was spelled scite. Which then went on to be shite. Each different language has used the word, but in many different meanings and forms.

Before the 18th century shit did not have a dirtiness about it (Fleming 175). It was used as a regular word for description. The word originated in the Indo-European era. This era is as far back shit can be traced to. The spelling of shit came from the “Greek skatos, which has given us the word scatology, literally “the science of shit” (Fleming 176). Even in the early eras shit was just another word for excretement. No one thought twice about it. Shit was just a word.

During the 16th century shit picked up its grimy meaning. Montagu states that in this century the word was used as a term for feces. Dictionary defines feces as “waste matter discharged from the intestines through the anus” (feces). People started to be self-conscious when using it. Now that the word has taken on a meaning of a bodily function people don’t want to use it. Talking about bodily functions in the earlier centuries was scarce and looked down upon, people in this century kept to themselves by not sharing details. Fleming describes in writings dated back to the 18th century people started to use renditions such as “s..te,sh-t, and sh__” (Fleming 175). People used these renditions to use the word without saying the word.
Fleming states in her writing that in the 1900s the new meaning *shit* has taken on is a slang meaning for drugs. In “non-literal uses, *shit* means variously “stuff,” as in all that *shit*” (Fleming, 179). *Shit* has now taken on its new meanings. It can mean whatever it wants to mean. “We are so accustomed to thinking of the “four-letter” words as ancient and unchanged that it may come as a surprise to learn that while *shit* is indeed ancient, it has not always been a four-letter word” (Fleming, 174).

Due to *shit* going through many centuries, languages and trends the word has gone from an innocent meaning to a present day swear word. In today’s society *shit* can mean a variety of things ranging from “excrement” to “stuff.” It can mean anything you want. *Shit* will be forever changing as long as time goes on.

The swear word *fuck* is one of the foulest expressions of profanity, in America, because of the erotic meaning of the word. Due to the sacred, intimate clarity of the word, it is one of the curse words that is the worst and why people have the greatest shock when the word is spoken. The original definition of the word is “copulate” which means to have sexual intercourse. (“copulate”) It came from the Latin verb “futuo” and “futuere” which means sex and the German word “ficken” which means to strike, hence, to copulate (Montagu, 307). The combination of those words created one word, *fuck*.

Although the curse word *fuck* appeared for the first time in writing in 1503, by a Scottish poet, the English didn’t pick it up until the 17th century, and the word has developed around the world since then (Montagu, 307-308). The vulgar word initially only had one meaning which was sex, and it was only used by men to describe sensual activity towards women. But over time the word has established new meanings, and is also used by women. For example, abuse: (That fucking hurts), the resigned: (Oh, fuck it), the lost: (Where the fuck are you?), the perplexed: (I fucking know!) and the suspicious: (How the fuck did you manage that?) (Wajnryb, 46). The curse word has established a variety of meanings, and uses outside of the category of sex.

Cultures and countries around the world use the word *fuck* differently than we do here in America. With that being said, here in the USA and Southern Europe putting up your middle finger is the same as saying the actual word. In the Middle East, the gesture of showing the skin on your thigh is considered saying the swear word in English. Also, the word wasn’t used in Nigeria until the youth picked it up from American hip-hop music, and now they use it continuously (Jay, 235-241). Those are some examples of the cross-cultural differences of how the word *fuck* is used around the world.

The vulgar word *fuck* used to only have only one meaning of sexual intercourse and has prospered erotically over many years into many different meanings. Although the word still means sex, and people still use it to describe sex there are also many different ways it is used in today’s era, and many of those ways of use are not related to intercourse. Different cultures around the world use it the same as we do here in America, and many of them use it differently. Montagu states that, “Nobody really knows exactly how the curse word evolved, yet it is one of the very worst, and most offensive uses of profanity. No one seems to have been beguiled enough into undertaking the necessary research” (Montagu, 307).

“Swearing is a part of everyday language use. To date it has been infrequently studied” (McEnry, 1). *damn, shit*, and *fuck* have changed from their original meanings due to trends and cross cultural differences. Each different curse word has its own background and story. The path and evolution is intriguing and interesting. More research and understanding of swear words could be concluded.
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I can still hear my mother’s dreadful words echoing in my memory, “Carla, you are going to have to repeat the second grade!” I thought to myself, Why? What is wrong with me? Why am I being punished? Instantaneously, feelings of loss and failure overwhelmed me like a tidal wave. I didn’t understand it, all I knew was something had to be wrong, indeed there was.

Our educational experiences help mold and shape who we become in our adult life; furthermore, educators influence the way we perceive education as a whole; thereby, largely contributing to one’s educational failure or success.

Growing up in the small, rural town of Belvidere, Illinois was for the most part, a positive experience. The flat land state of Illinois is located in an agricultural part of the country, consisting primarily of farmland and crops. The little town of Belvidere, having just a few schools to choose from, would leave one to think that the education available would be more positive, since the community is smaller, especially in a private school; however, I found out firsthand, that is not always the case.

I grew up in the same house, on the outskirts of town for sixteen years, approximately ten miles from where my misery began. On a long, smoothly-paved street, next to the church we attended every Sunday, stood St. James Catholic Private School. It was a large, cathedral style building, made out of stone. I was raised in a strong Catholic family, and it was my mother’s desire to have her children attend a Catholic School, hence she enrolled me once I became of school age, unaware of the impact this school would have on my life.

I was a happy, blonde-haired, blue-eyed eight year old little girl with glasses. As a second grader, I sat at my desk tapping my toe. I could feel streaks of anticipation streaming throughout my body. I couldn’t wait for my turn to go up to the chalkboard and draw a cursive letter, using the pretty colored chalk. I anxiously raised my hand, trying to be patient, as I watched Sister Coker call on every other student, except me. Once each student drew their assigned cursive letter correctly, she gave them a piece of candy. I knew if I could just get called on, I could write my letter well and be given candy too. Determined, I raised my hand, time after time, to no avail. I started to sense Sister Coker didn’t like me very much, as I observed how she continued to bypass me, hence leaving me with a sense of sadness, that laid heavy on my chest, watching this same scenario happen every day. Although I was too young to comprehend fully what was happening, I felt a strong negative vibe from Sister Coker, possibly a personal prejudice of some sort. Forty years later, and I am still unsure of why Sister Coker had it in for me, although whatever the issue was, it definitely left a negative imprint in my memory regarding educators.

My mother noticed me coming home from school quiet and withdrawn, not myself. She suspected something was wrong, but was unable to pinpoint the cause. In my reading of the Narrative Essay, On Being 17, and Unable to Read, David Raymond states, “My family began to suspect I was having problems almost from the first day I started school.” “My father says my early years in school were the worst years of his life” (48). I found this to be quite relatable to my own experience; although, in
Raymond’s case, he was dealing with a learning disability, I, on the other hand, didn’t have a disability; therefore, I felt more confused and rejected, because I didn’t know what was wrong. Upon reflection, I can say that year of Catholic School was the worst of my educational life.

Things continued to nosedive during that school year, ripping apart my self-esteem along the way. I distinctly remember seeing my papers handed back to me with ugly, bold, red, check marks, and negative comments written on them. My papers looked like a red pen exploded across the pages. I couldn’t wrap my eight year old mind around what was transpiring, I can only recall the horrible embarrassment I felt.

I never struggled to read, write, or do math in Sister Coker’s class, which caused me to feel baffled at her attitude towards me. I cannot recall a time I couldn’t keep up with the other kids, or struggled to grasp the concepts being taught. To compound matters, I knew if my mother saw my papers with all of those hideous marks on them, I would be in a heap of trouble. The fear of my mother caused me to hide the papers under my bed. Surprisingly, it didn’t take long for her to find them.

One day I came home from school, walked in the front door, to find my mother standing in the doorway, waiting with one hand on her hip, while holding my school papers in the other hand. My mother stood tall, as a big-boned woman, who didn’t have an appetite for nonsense. Raising five children, she ran a tight ship at home, and was someone I feared. My heart sank like an anchor thrown over the side of a ship when I saw the unsightly stack of papers in her hand, along with the vexed look on her face. I literally thought I would not survive the confrontation.

I recall telling my mother that all of my papers were coming back marked wrong, stating I was too afraid to show her. She looked them over and realized my work was being graded improperly. In a perplexed voice, she read out loud the comments written on them, such as not paying attention, talking too much, disturbing the class, and not following directions. I was a very quiet kid in my second grade class, especially due to the fact that I felt such a strong dislike from Sister Coker, surely I didn’t dare talk or misbehave in class! After taking a good look at my schoolwork, my mother noticed most of the things marked wrong, were correct! As she continued to investigate the stack of papers, my mother was beginning to notice a pattern. At this point, she became concerned and asked me how things were going in the classroom. I told her the truth, that I didn’t think Sister Coker liked me very much. I explained being left out of things that the other kids got to do, like going up to the chalkboard. I went on to say Sister Coker would pull me out into the hall and yell at me when I hadn’t done anything wrong. I told my mother I was also slapped on my hand with a ruler numerous times, without a reason.

Once I explained all that was occurring in the classroom, my mother became unhinged and immediately called the school to set up a conference with Sister Coker, also with Sister Lorraine, the school Principal. I can still remember feeling terrified of Sister Lorraine. She was a big, dark, burly, woman with glasses, who walked with a gimpy leg, carrying a cane. Rumors flew around the school of Sister Lorraine whacking students with her cane when they misbehaved. The few times I saw Sister Lorraine, my heart would beat so fast, I felt like I was running a marathon.

My mother met with Sister Coker and Sister Lorraine for a conference, thankfully I wasn’t there, but I can clearly recall my mother coming home from it upset, telling my father she wanted to coldcock Sister Coker in the nose! From that point on, my mother referred to Sister Coker, as Sister Cococker. During the conference, Sister Coker stated I wasn’t up to par with the other kids academically, adding that I
misbehaved in class. My mother mentioned the mis-graded papers, along with the treatment I was receiving in the classroom. All of the allegations my mother presented were denied by Sister Coker and sadly, Sister Lorraine stood in her defense.

Of my mother’s five children, I was referred to by her, as the most compliant, never known to be a problem at home, in kindergarten, or first grade. The things Sister Coker was accusing me of were invalid and ludicrous, completely out of my character. My mother knew by the reaction of Principal, Sister Lorraine, that she wasn’t going to hold Sister Coker accountable for her actions. My mother soon realized it wasn’t a battle we could win; therefore, she had no choice, but to immediately remove me from Catholic School and place me in public school; however, the snag was the fact that too much of the school year had passed with documented poor grades; thereby, forcing me to remain either in her class, or repeat the second grade in public school, the following year. My mother, in her wisdom, didn’t hesitate to get me out of that environment. She pulled me out of school the next day, and kept me home, thus allowing me to start my second grade year over, with a fresh start in public school.

Before I knew it, fall of the following school year quickly approached. I had many apprehensions lurking in the shadows of all that occurred at St. James Catholic School, just months prior. Many questions and doubts were swirling around in my mind, such as, will this happen again? Am I incapable of succeeding at school? Will the teacher like me? Will anyone like me? It was evident my confidence was shattered, and I was definitely feeling the effects of it on that first day of public school.

Despite the unhappy events I had endured in Catholic School, my repeat of second grade in the public school couldn’t have turned out any better. I succeeded in my new class with straight A’s, and I was the teacher’s favorite. My new second grade teacher took a liking to me; therefore, I became her classroom aide, allowing me to do special things for her, like helping with special projects and running errands. I was constantly called on in class and soon, my confidence returned. Moreover, I became the most popular girl in the class. All the girls wanted to be my friend, and the boys chased me around the playground. I remember blossoming academically, socially, and personally. I was at the top of my class and thriving. I remained the teacher’s favorite for the next three years before moving on to middle school. It truly felt great to have that worthless feeling extinguished. As I traveled along my future educational journeys, I never struggled academically, or socially. Undoubtedly, that year spent at St. James Catholic Private School was a temporary setback that I was able to rise above.

I went on to successfully complete my education; Now at forty-eight years of age, I am currently a Sophomore in college, with good grades. I have homeschooled and raised five children, written an article for a local newspaper, started a blog, also presently pursuing a degree in Psychology, with a minor in English. I am working toward becoming a counselor and book author, writing any chance I get. Needless to say, things turned out well for me.

The educational storm that I endured was redeemed with the help of my wise mother, who made a decision that turned things around when I was a young girl, although maybe someone else may not have been able to bounce back as well as I did.

Educators need to consider the magnitude of the influence they have in the lives of students; they have the ability to affect a student’s past, present, and future. Teaching isn’t just an ordinary job, it carries with it an enormous responsibility that goes far and beyond an occupation. The purpose of teaching is to spur minds young, or old to gain knowledge, to achieve, and to reach for greatness, devoid of personal
prejudices. Educators cannot control all of the variables; nevertheless, it is crucial for educators to strive toward making education a positive experience, since education is the nucleus of success.
My entire life I have felt this desire to help— a desire to give to those that can no longer help themselves. So many times though, has my physical stature impeded this desire. In third grade, I saw a boy, grab my sister and start hitting her behind the school playground. I rushed to help, but when I came between them, I instantly was knocked off my feet by a fist to the head. I stopped the fight, but I wasn’t strong enough to be the help my sister really needed me to be. Through the rest of my life that desire to help manifested in other ways. I became a Certified Nursing Assistant, an Emergency Medical Responder, and eventually an Emergency Medical Technician (EMT). Giving my time for the benefit of others made me feel a sense of purpose, but even then I ran into obstacles caused by my own limitations. When extracting a man out of a damaged vehicle, the ambulance had to call for more resources, because I wasn’t capable of lifting my end of the man. I could not understand why I had been given this desire to help others in this way, yet I had been limited bodily, making tasks more challenging for me than for others. It was personal for me. Even though I weighed only a mere ninety-five pounds, I knew I was made of much more than that.

Logically, the next course of action was to throw myself into the hardest thing I could think of: I became a wildland firefighter. My parents were kind, but they insisted that I do something different. They asked me if I understood what I was getting myself into. I really hoped that I did. I trained day and night, determined to be in peak physical condition. I was bigger than I had ever been before, and by the time fire season rolled around I weighed a whopping 105 pounds. After gaining ten pounds of pure muscle, I didn’t know what could stop me. Soon I was nervous though: wildland firefighters are on their feet for sixteen hours a day all summer, hiking up steep hills with a heavy pack on their backs. My employers had never seen me before. They had only heard my voice once the time they called to give me the job. They knew they had hired an eighteen-year old girl and that was all. When I showed up to the yard on my first day of work, I knew I had made the biggest mistake of my life. Ten men all over six feet tall and with arms as big as my waist was around. None of this helped by the fact that when they gave each of us our uniforms, I received the smallest clothes they could find: a XL shirt and L bottoms. Drowning in my clothes, I looked like a child playing dress-up. The way they all looked at me was heart breaking: skeptical and annoyed that they had hired the smallest person on the planet to do some of the hardest work on the planet.

A week later we got the call to the first fire of the year. The mountain we were about to climb towered above us. Giant and proud it leered down at me, mocking and scornful, making me feel even smaller than the five-foot-four status I already occupied. A thick strip of smoke, at the peak of the mountain, billowed into the clear morning air, taunting us with the great distance between us and it. I geared up, staring up at the mountain before me, as I buttoned up my bright yellow fire gear. The extra-large, men’s fit shirt was too long for me so I rolled it up five times so my hands were no longer covered. I pulled my twenty-five-pound line gear onto my back, strapped my gloves to my pants, screwed my hard hat into place, grabbed my favorite hand tool (the rouge hoe), and got in line. The location of the wildfire was too steep to get a fire engine to, so we had to hike in our own water in the source of bladder bags. Each of us strapped one on to our backs, the 40 pounds of sloshing water made me stagger.
“Alright, who wants to carry the Dolmar up the hill too?” came the voice of my crew boss.

It was silent as the group looked down trying not to make eye contact, not wanting to add another 10 pounds to their load. I stepped forward after a pause and said, “I’ll take it boss.”

He looked at me skeptically, “Are you sure you can handle it?”

I slid my hoe’s handle through the grip on the gas can, slung both over my shoulder, said “Yes, Sir,” and got back in line. No one would make eye contact with me, guilty that they had let a small girl take the extra load and not them. My crew boss steered the way out; his long legs making easy strides over the dirt path. We all fell in behind him.

With the seventy-five pounds on my back, I started to follow. Even though when training for this job I had run miles and packed weights all day long, the problem was not a matter of how much muscle I had on my body. The problem was that my body wasn’t enough. My legs were too short to cover the ground in the same amount of time as the men in front of me. I was racked with the injustice of being not being granted a body capable of fulfilling my aspirations. Taking four steps to every one of the men around me, I began to fatigue quickly. I shook myself. This was my dream, and I was going to make it up that mountain even if I had to crawl every inch of the way. I started to jog to keep up. Each of us was lugging quite the load, but while only weighing 105 pounds, I was carrying over seventy percent of my body weight. After an hour of climbing my legs started to grow heavy, my boots were scuffing the ground as I walked, and all around me I heard the crew’s labored breathing. The steep incline was unrelenting. I forced my legs to keep trudging on. I didn’t want to be the reason everyone else slowed down. I had to prove to them that I could be not only a member of the team but a valuable member of the team.

I could do this.

I am made of more than 105 pounds of muscle and fat and bone. I am more than they know. My vison started to grow black along the edges, and my legs felt like two twigs about to collapse under the pressure of so much weight. I stared at the pair of legs in front of me. Just put one leg in front of the other. You can do this. I chanted to myself. I kept chanting and chanting till that was all that my world was: the pair of legs in front of me and the words in my head. Then abruptly everything snapped back into focus as I felt the sting of smacking into the man right in front of me. Everyone had come to a stop. We had made it to the top. I doubled over in relief and threw up that mornings breakfast onto a couple of innocent rocks.

Six miles—that was what we had hiked. Over half of it uphill and the rest of it had been flat. Like life, that ground hadn’t given a single inch and yet there I was, on top of my mountain. The obstacle before me may have been easier if I was stronger, but it would have still been an obstacle. It still would have required me to believe I could climb that mountain. I just have to know that what I am made of is enough to overcome any problem that may head my way. Six miles of hiking, and even though I had chucked up my cheerios, I felt more pride in myself for standing on top of that mountain than I ever had for anything in my life. Size matters, but I am not small. That moment of realization has transformed the way I live my life. I know I can overcome any adversity because my mind is stronger than anyone else’s size. The adrenaline that I had been running on must have fried my brains because I started laughing. I was so elated, to be there on top of that mountain, accomplishing something that no one believed I could do. I looked up and all of them were staring at me, staring at the tiny girl who carried more up the
mountain than they, and now was laughing while she threw up. We all started roaring with laughter. They were my crewmates and my brothers. They had my back, and they knew I had theirs too.
Honorable Mention: Samantha Austin, “Because of Them”
For Dr. John Belk

Withheld by student’s request
In the contemporary world, there is no work as essential, powerful, and influential, nor struggle less appreciated than mothering children. Motherhood, as critical as it is to every function of society, is evermore becoming a belittled and devalued position. Much of this stems from the patriarchal system we’ve been swimming in for centuries. In the cyclical manner of many social systems, the devaluing of motherhood has been adopted by some who believe they are fighting for egalitarianism, but in complete opposition to their goals, have only fed the beast. Traditionally feminine occupations in general, but particularly motherhood, are being belittled in an attempt to empower women, but this pattern of thought only solidifies the system of male dominance. In order to truly fight patriarchy, we need to recognize the falsehoods that it whispers in our ears, especially the lie that the work of a mother is a form of subjection and valueless in the quest for self-fulfillment. The devaluing of motherhood is a socially constructed phenomenon that is contributing to patriarchy’s tyrannical rule, and disempowering women.

Patriarchy is often misunderstood as a kind of finger-pointing, blame-finding idea built up as a wall between the genders to sow guilt in the hearts of men, and rage in the hearts of women. This understanding is entirely false, as it skews the reality of a social system. In his explanatory article on patriarchy, Allan Johnson, a notable sociologist on the subject of gender clarifies the idea. He compares patriarchy to a large corporation, saying that just as a company almost has a life of its own, our social system persists apart from the individual. A company can go bankrupt without the people who work for it going bankrupt as well, and can even disband and disappear without the people within it disappearing. “It is a system,” he says, “which means it can’t be reduced to the people who participate in it” (99). So patriarchy is not a word used to put blame on any individuals in our society, it is simply a label for the kind of ‘social air’ we breathe in and out our whole lives. Although it seems, in some ways, that patriarchy is a kind of elusive, untouchable dark matter, it has real and tangible consequences, most of which are invisible to us who have known nothing else. The system is something with which we interact and have conversations every day. While it can’t be reduced to the individuals who participate in it, it also begins and ends within our minds. Patriarchy is the way we are taught to think, and the way we will continue to think unless, one at a time, we disentangle our minds from its tentacles and train ourselves in a new way of thought.

In order to escape the abstract, it is important to note a few of the many consequences of this social system. In the same article, Johnson describes several of the products of patriarchal society. He introduces the ideas by explaining that “patriarchal culture includes ideas about the nature of things, including men, women, and humanity, with manhood and masculinity most closely associated with being human, and womanhood and femininity relegated to the marginal position of ‘other’” (101). This pattern of thought, as he explains it, emerges in much of what we do, say, and think. Of particular note, he explains that under patriarchy, the concept of power is more narrowly understood as the twin concept to subjection; the control of people, resources, and even oneself. This power is explicitly tied to masculinity and is coveted. (Johnson,101) In fact, an American historian named Gerda Lerner, who is
paraphrased in an article by Jack Stuart, actually defines patriarchy as a social construct in which men have the power in all important societal institutions, and women are deprived of that power as a product of their gender (Stuart). This is of special importance as it relates to the shunning of things marked as feminine, especially motherhood, in favor of this contrived masculine power.

As with many products of the patriarchal system we live in, the evidence of the devaluing of motherhood is hidden all around us in plain sight. Perhaps the most frightening of these evidences exist in our own thoughts. Our society’s understanding of motherhood is apparent when we examine the words we use to talk and think about mothers: “She is stuck at home with those kids”, “She is just a stay at home mom”, “You sound like my mother”, “Oh, she doesn’t work, she’s got little ones she has to take care of”, “She is really smart for a housewife”, “She’s taking a break from work because she just had a baby”, “What a waste of a great education”, “All that work and you just want to take care of babies?”, “What are you going to do when the kids are finally out of the house?”, “She is the taxi driver of the family (or cook, janitor, maid, etc.).” While contradictory in their own right, these are illustrative of the way our society has taught us to view mothers. These comments paint motherhood as not only an imposed drudgery, a task that requires no skill or intelligence, a title everyone is anxious to throw off the moment they are able, but also as not actual work. Additionally, we equate motherhood with the lowest paying unskilled labor jobs, and can somehow brush off the fact that not only are mothers doing all of that at once, but often they are also professors, scientists, inventors, chefs, early childhood development experts, behaviorists, accountants, law makers, medical nurses, and managers without the opportunity to delegate. In short, the things we are taught to believe about motherhood are simply not intrinsically true, and need to be closely reexamined.

Not only can the evidences be seen in our own thoughts, but also in the legal systems of the world, the numbers, and the movements created to change them. In an article by researcher Deborah Stacey, one such movement was described to have begun when a mother was asked to check a box on a census survey to assure her government that she had “not worked” in the past week. She then wrote a fiery letter to the chief statistician for which she was threatened with a fine and jail time. She, who works very hard as a full time home-manager and mother, found herself needing to declare her life ‘workless’ because her work was wageless. “But what if women counted?” Stacey asks. “Women constitute half the world’s population, grow half the food and labour two-thirds of the working hours. In exchange we receive one-tenth the wages and own a mere one percent of the world’s property, according to an International Labour Organization study presented at the United Nations Women’s Conference in Copenhagen, 1980.” In a 2016 study done by the same organization it was found that “Across the world, the vast majority of unpaid household and care work is performed by women. As a result, when all activities, whether paid or not, are taken into account, women’s working days become longer than men’s. In developed economies, women spend on average 6 hours and 45 minutes per day on both paid and unpaid work compared to 6 hours and 12 minutes for men” (ILO, 19). Stacey continues on in her article to say that real equality between men and women cannot be achieved until “what has historically been ‘women’s work’ [is] valued equally to what has historically been men's work.” It is crucial that what is valuable is not associated only with what is paid for. The work women do has real and monetary value for the countries in which they live, and that is not to say anything of the value it has in communities and families.

Evidence of the undervalued status of motherhood is likely most prominent in popular culture and media. A good example is the way motherhood in the popular book Fifty Shades of Grey by E. L. James is
examined in an article by Sara Upstone. One popular believe she uses to illustrate her point is the following: “To become a true woman, one must succumb not only to heteronormative desires but also to motherhood.” The word ‘succumb’ is of particular note as it seems in this understanding that motherhood is akin to slavery or being overtaken by something. In an article by Catherine Deveny for The Guardian, she writes “Is a ‘mother’ simply a term to describe an expectation to care for children without payment? Is this empty slogan used to compensate women for gouging holes from potential careers by spending years out of the workplace without recognition?” and again, “[Motherhood] could never be considered the most important job in comparison with a surgeon who saves lives, anyone running a nation, or a judge deciding on people’s destiny.” It seems this author is forgetting that each of those judges, surgeons, and leaders all had mothers before they were saving lives, running nations and deciding people’s destinies. Another writer for a blog named ‘XO Jane’ writes, “Choosing to [Mother] is a hobby. It is a time-consuming, sanity-deteriorating, life-altering hobby — a lot like a heroin addiction, but with more Thirty-One bags. Whether you call it a ‘blessing’ or a ‘privilege,’ the fact remains that having someone else foot the bill for a lifestyle that only benefits you and your close family is by no means a ‘job’” (Pardue-Schultz). Calling motherhood a hobby is treating it as an unessential valueless way to waste time. In reality, mothering children’s actual benefits reach much further than the immediate home and family. Not only are communities built on individual homes, but so are nations and countries. At its roots, the entire human social structure begins with well managed households. As a more monetary illustration, Stacey says in her article that “the value of household work in Canada was estimated to be between 31 percent and 46 percent of Gross Domestic Product (GDP) in 1992, 65.9 percent of which was done by women” (Stacey). How have such ignorant views become so interwoven into our society? Naturally, the quoted writers occupy the more extreme corners of patriarchal beliefs, but smaller samplings of the same ideas can be found everywhere in the mass media.

Unfortunately, even those with the greatest intentions have inadvertently contributed to the devaluing of motherhood. Some groups of women, many in the ranks of first and early second wave feminism, in an effort to remove gendered labels from occupations, have resorted to pushing away roles typically had by women in favor of occupations typically had by men. As a byproduct of these movements, and perhaps by the influence a patriarchy as well, there was a shift in mentality that attributed real success and power to typically male occupations, and ‘ineffective servitude’ type connotations to typically female occupations. Thus, some who most wanted to empower women, have devalued motherhood along with other traditionally feminine occupations and solidified the patriarchal idea that men’s lives and occupation were ‘better’, more fulfilling, and more valuable to society. Anne Roiphe, a prolific feminist author, is described by Robin Bromley as “angry at the way feminists have belittled motherhood, abandoned the demand for child care and, more recently, attacked women’s motives for having children in the first place.” Feminism as a whole is naturally a great force for good in achieving women’s rights, and equality for both sexes, but motherhood, in a sense, has been left in the dust in their leaps of advancement. As women are being treated more and more fairly in all areas of pursuits, we must also remember to treat women who choose to be mothers just as fairly and honorably.

Karolina Dembinska-Lemus, an active feminist, shares her story of coming to value motherhood in a magazine article entitled I’m a Happy Feminist. She explains that her first approach to feminism was one of anger. She says, “I was so angry at everything that was wrong with the world, that my reaction was to resist gender roles and to follow the opposite of what was expected of me. Instead of pursuing goals based purely on my inherent interest in them, I pursued them with ulterior motives.” She learned
through her experience in the military and receiving her doctorate that these motives were not the ones that made her efforts worthwhile in the end. She discovered that she wanted to do things for the sake of wanting to do them, not because she believed they would make her more respected in a man’s world. She resisted marriage and children because she hated the thought of being put in to those feminine roles, because patriarchy had made her believe they were less valuable and less respectable. She goes on to explain, “When I realized that no matter what I do to be less ‘feminine,’ I’ll never be treated as well as a man, I had a choice: Get angry all over again, or decide that I will simply no longer buy into patriarchy’s value system. Instead, I decided to follow my own sense of joy and make no apologies about it. Becoming a mother will empower me in a uniquely feminine way.” Karolina, along with many others, urge all to reconsider the value of motherhood.

As a whole, the devaluing of motherhood and the ideas associated with it are entirely socially constructed. If questioned, we realize that they have no basis in intrinsic truth. Take, for example, the supposed value of a career over the work of a mother. What really determines the value of a pursuit? If we examine it with the preconception that money is what determines value, then of course unpaid work would be less valuable. However, can we really consider money more valuable than young dependent lives? If we examine the issue with the notion that power, influence, or recognition determine the value of a pursuit, then we come to the issue of deciding what kind of power, whom the influence is had over, and the source of the recognition that define value. Is it power over wealth or power over lives that matters? Is it influence on strangers or coworkers, or on your own offspring that determines success? Is it recognition from strangers or recognition from the next generation of one’s family that is more commendable? The truth is that success and fulfillment come as a person does what they deem valuable work. Value is determined on a personal basis, and perhaps it’s time we broaden our definitions of success and importance to include the cultivation of young lives.

Imagine for a moment, a world in which patriarchy had not influenced our views of gender roles, or perhaps where our views were switched. In this world, traditionally male occupations are the supporting roles to the more valuable and more enriching work of raising children and running a household. The man must leave his family in order to earn money or grow food for the sake of the children which his partner has the privilege of raising. Many employed men wish they could quit their jobs and stay home with the children, as that would be much more fulfilling. Imagine children and their lives are the center of the labor all adults perform, and they who work closest with them are the most powerful and influential. The population of the world acknowledges the origin of their own lives; that each was once a child, and that no progress is made unless it is in the lives of the future generation. This world sees the beginning and end of life as being in the hands of caretakers, the most esteemed of positions. Leaders and kings are simply caretakers on a grander scale. To be human is to care for and be cared for, and all other labor is marginalized. This imagined world comes across as so foreign, and yet the only difference is where value is placed in society. This is not presented as a kind of utopia to strive for, but more as an illustration of how are views are socially contrived.

As further illustration, it must be noted that there are indeed societies in the world that operate on differently constructed placements of value. Many of these societies were documented by Heide Goettner-Abendroth, a sociologist who is considered one of the pioneers in women’s studies. She is quick to note in her book on the subject that Matriarchal societies, her label for these alternate systems, are not a reversal of patriarchy, or domination by mothers, but are instead societies built on the foundation of mothers as the beginning of life and the beginning of culture. She explicitly claims that
fathers, or men, have no natural claim to the ‘beginning’ and therefore have had to revert to domination, while mothers are the very essence of beginning. “By virtue of giving birth to the group, to the next generation, and therefore to society,” She says, “mothers clearly are the beginning. In Matriarchy they have no need to enforce it by domination” (xvi). Her book goes on to tell the stories of people whose lives, religions, marriages, and social constructs are centered around mothers and their roles. For example, one society in the islands of Melanesia is organized into four matriarchal clans. They are said to each have descended from an original ancestress who emerged from a cave with her brother. The wealth, prestige, and spiritual knowledge of each clan is maintained through female inheritance. Interestingly it is not the husband and wife partnership that is most valued in the culture, but the relationship between a sister and her brother. The role of the husband in his children’s lives is to help raise them and be their play companion throughout childhood. In their native tongue, they do not call him father, but rather “mother’s husband”. As soon as they are grown, the woman’s brother takes on a more primary role in their lives as he is responsible for bringing them into their matrilineal clan. In this culture, though the woman owns the wealth, her most valuable possessions are her children. Motherhood, for them, is not defined simply by biological fact, but is also seen as the means of perpetuating the life of the culture (177-180). In this and many other cultures like it, we see a world where motherhood is an honored and privileged position, not a required form of servitude for society.

The devaluing of motherhood, wherever it’s source, directly perpetuates some of patriarchy’s most harmful lies. Our view of motherhood, and the lives of mothers interact daily in a cyclical negative pattern. We see motherhood as drudgery, slavery, and a form of subjugation, and the lives of the mothers in our society slowly change to reflect those beliefs. Mothers are made to perform the act of raising children with steadily lessening support from their partners and the community because the value of mothering is seen as second to the value of prestige through money and careers. Consequently, this requires a greater sacrifice of selfhood on the part of those who choose motherhood, which in turn makes motherhood much more difficult a sacrifice than is actually necessary. These effects feed back into the belief that mothering is a drudgery, children are life-consuming nuisances, and raising them is to throw away personal potential. Accepting the belief that traditionally male roles are more important than traditionally female roles only serves to confirm patriarchy. Therefore we see that valuing motherhood is to do the very opposite: to fight against long held and false beliefs. There is great potential for our society to begin reversing this cycle.

A writer involved in Canadian woman studies, Siobhan Conway-Hicks, proposes the differentiating of the terms ‘motherhood’ and ‘mothering’ as a tool to fight the patriarchal demeaning of those who raise children. She explains that while motherhood, in a patriarchal society, strips a woman of her identity and instead values her only as an unpaid caretaker, mothering implies that raising children is but one aspect of who a woman is and therefore preserves her identity. This distinction, though not made in this research, highlights an important aspect of the path to placing value back in the hands of mothers. What if we were to know our own mothers, and those we know who mother, as women with distinct, vibrant, personalities and talents rather than the faceless bIRTHERS of children patriarchy has told them they must be? What if we were to approach the raising of children as a position that required an unmatched breadth and depth of expertise rather than an unpaid version of unskilled labor? What if motherhood were seen as one of many acts of feminine empowerment rather than a succumbing to prescribed gender roles? It is these kinds of distinctions that will reshape how motherhood is viewed and valued in society.
Patriarchy is simply a word to describe a collective way of thinking. As such, it is far from written in stone. The fight to change the system is won with every mindset that is shifted. As we consider motherhood and its value to society, we must not think that abandoning it will serve to equalize men and women. Equality will be achieved only when we value what all people of both genders do, not on the scale that patriarchy has set, but on the value it actually holds in society, and to the individual. To empower women is not to shun what is traditionally feminine, but to embrace it, as well as what is traditionally masculine, and value them equally. Motherhood and the choice to raise children must be seen as what it really is, a challenging and rewarding, but most importantly, intrinsically valuable pursuit.

There is an unsung woman
in all of our beginnings
Dark as the womb
Unknown as the other
side of the moon
Unseen as the roots of an ancient tree
and just as basic
She held us before we had words
She nursed us before we knew
our body from hers
Her song stirs us deep
in the cave of our dreams
Lullaby of the first cry
Lullaby of the last sigh
of our lives
She is the most loved woman
She is the most feared woman
and we name her our mother
and we name her our grandmother
and we name her the Great Mother
and we name her ourselves.
(Lowinsky).

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Works Cited


It’s a tragic paradox. Some of the most devoted and earnest members of the Church of Jesus Christ of Latter-day Saints chronically suffer from their own personal hell. In the Book of Mormon, people in Hell are described as being “…consigned to an awful view of their own guilt and abominations, which doth cause them to shrink from the presence of the Lord into a state of misery and endless torment…” (Book of Mormon, Mos. 3.25). These members are often caught in unending loops of guilt. The thing is, they don’t necessarily have any more reason to feel guilty than any other member does. Why, then, are they suffering? The answer may be a form of OCD known as Scrupulosity, a condition which Mormon culture may unintentionally be feeding (Weir, et al.).

Scrupulosity is defined as “A form of Obsessive Compulsive Disorder (OCD) involving religious or moral obsessions.” (International OCD Foundation). This means that those with Scrupulosity often get stuck on moral or religious issues that most people don’t usually worry too much about. These worries cause them a great deal of stress and anxiety. When an individual has OCD, they have obsessions, “repeated thoughts, urges, or mental images that cause anxiety”, and compulsions, repetitive behaviors that they feel necessary to do in response to the anxiety (National Institute of Mental Health). For example, someone with OCD who has anxious thoughts about germs may respond by repeatedly and meticulously washing their hands. In this instance, washing their hands temporarily relieves the anxiety, but the more they get relief through handwashing, the more urgency they feel to perform the action the next time they feel anxious. People who continually give in to their OCD urges may end up going to extremes to relieve their anxiety.

People with the Scrupulosity subtype tend to obsess over various points of religion or morality, becoming overly fixated on their own perceived shortcomings in these areas. They might have obsessive fears about blasphemy, sin, morality, purity, death, or going to Hell (International OCD Foundation). Common themes are fear of divine punishment or worry of risking Eternal Salvation (Moulton; Weir, et al.). Compulsions for people with Scrupulosity may include unnecessary confession to leaders, constantly seeking reassurance from other members, excessive cleansing or purifying rituals (repentance), or excessive praying to name a few (International OCD Foundation). There are varying levels of the condition, from unnoticeably mild to seriously damaging and debilitating (Moulton).

To illustrate, let’s take Chad (name has been changed) whose story was featured in the Salt Lake Tribune. Chad was a Mormon who had a fixation on honesty that consumed him. He would always be fretting over whether or not he was truly honest in all of his doings (a question often asked in church interviews), scouring his past for any mistakes and trying to correct all of them. This included going to great lengths to hunt down and contact old acquaintances and sending checks repeatedly to the same people. He still always wondered if it would ever be enough. Every time he went to church he would think of some new instance of dishonesty that needed to be addressed. It got to the point where he was so exhausted he was ready to leave the church. Instead, Chad’s wife urged him to seek professional help, which is how he learned he had OCD (Moulton).

The majority of Latter-day saints would easily be able to see the fault in his ways. Most understand that, yes, we make mistakes that need to be taken care of, but we still keep realistic expectations for
ourselves. I recently spoke to Dr. Nyberg, a psychiatrist who also happens to be a member of the Church. We discussed how, while the LDS Church has many high standards and ideals they want their members to strive for, even eventual perfection, most members will take this all in stride. Known as adaptive perfectionism, this is where an individual has high standards but does not become particularly distressed when they don’t meet all of them (Allen, et al.). According to an article co-authored by Kawika Allen, a doctor of Philosophy at Brigham Young University, striving for high standards is actually associated with better life satisfaction and self-esteem. The danger lies in maladaptive perfectionism, one of the defining features of which is the feeling of never being good enough. This kind of perfectionism tends to feed guilt and shame (Allen, et al.), especially in individuals with OCD. While most members don’t have this as a major problem, and in fact benefit from frequent reminders to keep improving, the strong emphasis our culture has on striving for perfection can be incredibly discouraging and damaging to people with OCD (Nyberg).

OCD is often referred to as the doubting disease (Weir, et al.). So while people with OCD may realize their fears and actions are irrational, they will constantly doubt themselves and doubt that they are doing enough. Being diagnosed with OCD myself, I used to refer to these thought patterns as “loops”, where I would spend hours or even days or weeks arguing with myself over moral questions and then doubting my conclusions. These times I spent trapped inside my head, worrying over the most trivial of questions, often made me feel like I was already in Hell. The anxiety was suffocating, and I couldn’t escape. I would try to convince myself that the matter was nothing to worry about, feel temporary relief, only to question whether I was willing to bet my afterlife on that conclusion. Thus the anxiety continued and the loop went on, often until I either sought reassurance from my mom or got distracted by some other worry. It’s hard when you think Eternal Salvation is at stake if you’re wrong (Moulton).

There are many instances in talks (sermons) when LDS Church leaders try to put members at ease about their standing with God, talking about how even though we aren’t perfect, it is enough if we just try our best. In a talk in October 2016, J. Devn Cornish, a member in one of the Church’s leadership groups, addresses the fear of falling short of God’s Salvation. He tells those who may be asking if they are enough that yes, they are enough, as long as they follow the conditions, which include really trying, repenting (changing negative behaviors), and not attempting to rationalize sin (Cornish). Again, it’s a great message for most members, but it leaves the door open for Scrupulosity sufferers to doubt themselves. How will they know that they’re really trying their absolute “best”? They may wonder if their attempts to write off their anxieties as irrational thoughts is actually just rationalizing sin.

I imagine if Chad were listening to this talk before he learned about his condition, he may have thought something along the lines of, “Like he said, I’m fine as long as I’m trying. I’m okay. I don’t really need to track down my old middle school teacher and confess that I cheated and used Sparknotes instead of reading the book... But is that really okay? Am I just rationalizing because I don’t want to do it? You’re only Saved as long as you don’t rationalize, so, I’d better go find out how to contact her. But, wouldn’t most people think it’s ridiculous for me to go this far? Then again, I shouldn’t care what man thinks; only what God thinks is important. Would God excuse this? Of course He would, He knows how hard I’m trying... But, do I really want to test Him? Or am I just overthinking? Yes, I am. Or is this just me rationalizing again? You know what, it’s not worth the stress, I’ll just contact her and get it over with. No, this is ridiculous. No, it’s the right thing to do.” This is generally what my loops used to look like anyway. People with OCD can’t handle ambiguity (Moulton) and so may go to extremes to ensure they meet the requirements for Salvation in full.
So what can we do with these tortured individuals? Do we cater to the one percent, teaching that it’s not necessary to work so hard and thereby giving the ninety nine an excuse to do nothing? Do we stop teaching about things like eternal progression and striving to make amends for our mistakes? Of course not. After all, it’s not the teachings that are damaging to people with OCD, but their own interpretations of them as distorted by OCD thinking. What’s going to help these people is what helped both Chad and myself, primarily, being aware of this condition and seeking help for it.

One thing studies suggest may help is better emphasizing the role of grace. There are these two opposing ideas of grace and legalism. Grace, understood in this sense as the unconditional love freely given from God, stands opposed to legalism, the idea that one must earn God’s love and acceptance. Studies suggest that those who emphasize grace tend to have lower levels of depression and anxiety (Allen, et al.). As Mormon culture has a tendency to put a strong focus on our own efforts as opposed to God’s grace (though this isn’t the case in our teachings), this can cause problems for those with Scrupulosity based behaviors and attitudes (Nyberg).

While there is no actual conflict in LDS theology between the ideas of good works and grace, it is quite prevalent in LDS culture. As evidenced in many LDS talks and articles, there is a history of an us-versus-them attitude toward other Christian faiths on the topic of grace. For instance, a talk from a 1981 edition of a church magazine, “Salvation: By Grace or by Works?”, refers to the divide Mormons and other Christians often have about which of the two is more important to Salvation (Lund). These disputes continually facilitate a sort of “works versus grace” mentality. We’ve come to distinguish ourselves from other religions by putting more emphasis on works so as to avoid justifying lack of effort. Even as far back as the 19th century, Brigham Young, then leader of the Church, pointed out that “we don’t often talk about Grace…” (Cardon). It seems an underemphasis on Grace has always been deeply ingrained in Latter-day Saint culture. “But,” President Young continues, “we as members of the Church of Jesus Christ of Latter-day Saints do believe in grace.” (Cardon).

The good news is there have been many in recent years trying to break down this “grace versus works” mentality. Articles such as “His Grace is Sufficient” by Brad Wilcox (a professor at BYU and prominent speaker at many Church events) and “The Gift of Grace” by President Uchtdorf (Counselor to the President of the Church), to name a few, show efforts to better emphasize grace. I know these talks (sermons) have done a lot to calm my own anxieties.

A better understanding of grace helped Haylie (name has been changed), another church member diagnosed with OCD. As I interviewed her about her struggles, she mentioned that, although she often struggled with her own fixation on honesty, it was the teachings of the church that helped her overcome her struggles. She came to believe that, while we are responsible to try to right our wrongs, God’s grace allows for us to not be perfect at fixing everything. She realized God didn’t have the unrealistic expectations for her that she had for herself.

Ultimately, OCD is a mental health issue, and not recognizing its symptoms as such can be the biggest problem. Oftentimes, sufferers will believe theirs is a religious-based issue and seek help from their religious leaders. If a leader doesn’t recognize the condition for what it is, they may mistakenly validate and reinforce the sufferer’s anxieties (Weir, et al.). For example, someone may go to see the Bishop (local congregation leader) to complain of anxiety over past mistakes (that don’t actually matter in their case). The Bishop, meaning well, might tell them that their anxiety is a sign that they still need to repent and do everything in their power to fix the mistake, thus justifying their OCD thoughts and causing them
to act on their compulsions. This is dangerous because acting on compulsions strengthens the influence OCD has over a person. That’s why it’s crucial that we raise awareness. This needs to be spoken about from the pulpits, by local leaders as well as leaders over the whole Church. We need to be talking about this in our communities and churches. We need to be trained to spot it in ourselves and others so we can stop the problem and stop the suffering.

Scrupulosity is not hopeless. Members with OCD can be treated using various medicines and therapies (Weir, et al.). They can find relief from their unnecessary guilt and anxieties, but only if they can see it for what it is. This is something Latter-day Saints need to be aware of. With approximately 1.6 percent of the U.S. adult population having OCD (NIMH), that means at least one member in every congregation could be suffering from this condition right now. These are people who exhaust themselves with unnecessary compulsions, stew endlessly over moral questions, torture themselves with self accusations and self doubts, burn themselves out, and all too often, agonize over the idea of leaving the church, all while unaware of the real problem. We need to become aware so we can give ourselves some grace and stop sending the saints to Hell.

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Works Cited


Nyberg, Brian. Personal interview. 30 Sep. 2016
VASA Fitness had set up a booth inside the campus of Southern Utah University. The salesman present was the ideal image of strength, power, and masculinity. His muscles rippled beneath his skin-tight shirt. “If you sign up now, it only costs $9.99 per month,” his lips declared beneath his bushy mustache. Not wanting to commit to paying for a gym membership, I replied, “Let me think about it.”

In one last attempt to make a sale, the VASA man’s eyes flickered as he stuck his bulky arm out and waved it slowly across the crowd of college students. He peeked over at me, as if to make sure I was looking at what he was so graciously showing.

“See all those boys out there?” he asked with a smirk and a side-glance. “You need to work out for them.”

I stood in there in horror and complete shock. A girl with a nice, fit body – is that what men want from women? Judging from this experience, it seemed as though women were expected to have a “perfect” figure. Slender build, long legs, full chest and bottom, thin waist, large hips, etc. Yet, women are supposed to work out to please men. Multiple memories raced through my mind.

“Flex!” the testosterone-charged group demanded.

With a long, drawn-out “no,” I paused, desperately trying to scrape the bottom of an empty barrel once full of excuses, an effort which was apparently futile. So, I tried the classical approach: run away. It seemed as if those two words had suddenly pinned themselves to my forehead; a bright, neon-red flashing sign. The boys grabbed me before I could escape, and relentlessly tickled me until I tossed up the white flag of surrender. Like ripping off a Band-Aid, I curled my wrist closer to my bicep and then I did it. The painful task.

I flexed.

“Wow!” the boys exclaimed. “You have huge muscles,” then they added, “for a girl!” Although, I knew they meant no harm, hearing this statement was a brutal slap to the face. All at once, numerous comments raced through my head, their pathways similar to that of a Jackson Pollock painting as they resonated with every fiber of my being. “You can feel them even when you’re not flexing!” Did I give you permission to touch me? “She can do it, she’s buff.” Thanks, but no thanks. Sliding my arms through the sleeves of my loose-fitting jacket, shielding my body from their scrutiny, I pushed all other similar thoughts away.

In this occurrence, a fit body wasn’t attractive or admired, it was demeaned. Women are expected to have nice bodies, yet not too muscular?

At the 2016 Summer Olympics, the newly-honored gold medalists Simone Biles, Aly Raisman, and Madison Kocian took a break from the world-wide competition to enjoy the beaches of Rio de Janeiro, Brazil. Stylish bikinis, sported by the athletes, uncovered what an Olympic gymnast’s body looks like underneath the sparkly leotard. The moment was captured and posted on multiple social media sites,
including Instagram and Twitter. Finely chiseled, like a marble sculpture, six-packs immediately draw the attention of the viewer’s eye. In addition, the clearly defined arms and legs of each Olympian don’t slip by unnoticed. To win an Olympic gold medal, one must put in the time and effort, and even without the medals, their bodies are hard evidence of this concept. The photos received a lot of publicity, and judgment.

On Twitter, one man commented, “Y’all find this attractive?” (Lim).

This is manly. This is how men are supposed to be. The unwritten rule that women aren’t supposed to have defined muscles, but to leave that physical appearance to the men, is absurd. Muscles, therefore, are considered a trait of masculinity in both women and men.

My brother, Robert, once dated a female body-builder. Their relationship didn’t last long. I remember him coming home one weekend, and saying, “Never again.” After seeing a picture of my brother and the body-builder, I noted that he had been overly exaggerating the appearance of this woman. She was not the exact size of my brother, but she was incredibly toned and “beefier” than most women he had dated before. Rob was a die-hard at the gym himself, and explained that when the woman’s body is bulkier than the man’s, something isn’t quite right. Likewise, there must be something wrong with a woman who has visible muscles.

When my great grandmother died, my grandmother accepted the responsibility of cleaning out her house and either giving away, or selling, the hoard of antiques that were kept inside. Since she could not move large objects or do any heavy lifting, she recruited her grandchildren to help. On one such occasion, I was moving a tool chest. No one, including myself, had removed any of the well-worn tools from the chest. Consequently, the task required a large amount of effort and strength to complete. With a great “oomph” and a few deep breaths, I heaved the chest over the lip of the tailgate. “Whew!” I sighed as the salty beads of sweat that had been cascading down my forehead flew violently as I flicked them off my hand. Then, I noticed her. The antique-store owner had been carefully watching me. “Some arms you got there,” she said with her Southern Utah accent and a raise of her eyebrows. Confused as to whether she was complimenting me or critically analyzing me, I nervously walked away. I contemplated the many times where my body type, including my muscles, had been the subject of conversation. Thoughts of, “Is it bad for a girl to have muscles? Am I more manly because of my strength?” crawled under my skin and reddened my face.

Growing up with four older brothers, I knew how much their muscles meant to them. Creating every herculean bulge and hardened curvature were the results of hard work, dedication, perseverance, sweat, and pain. Allan G. Johnson, a sociology professor at Hartford College for Women, said, “To have power over and to be prepared to use it are defined culturally as good and desirable (and characteristically ‘masculine’), and to lack such power or to be reluctant to use it is seen as weak if not contemptible (and characteristically ‘feminine’)” (Johnson). Boys are raised to be masculine. Girls are raised to be feminine. Each sex is taught to recognize these qualities in each other. Men are strong, while women are weak. If muscles are masculine and manly, it creates a contradictory situation when they are viewed on a woman’s body. To test this theory, I conducted a survey regarding the connection between masculinity and muscles.

The participants I chose to administer the survey to were men who identified themselves as straight. First, I asked them to write their definition of the word masculine. The full definition of masculine, as
defined by Merriam-Webster, is having qualities appropriate to or usually associated with a man (Merriam-Webster). The participants wrote: “someone who is muscular or tough,” “very strong and manly,” “having man-like qualities,” “to be masculine means to show strength,” “deep voice, strong physique and facial structure.”

Next, I asked a question to which they responded “yes” or “no.” Over half of the participants answered “yes” to the question, “Are men with visible muscles more masculine than those without?” The following question, “Do visible muscles make a woman appear more feminine?” received only one “yes.”

The last part of the survey showed a before and after picture of professional body builder, Jodie Marsh. In the photo on the left, Jodie’s body is thin and slender. In the picture on the right, her muscles are well-defined and bulky. Not one participant chose the picture on the right when asked which was more appealing. I asked each participant to explain their choice. Among the responses, two stood out to me. “Because the curvatures of the second picture are those similar to a man, and I’m not attracted to men,” was one reply. Another said, “I often don’t see girls who look like the picture on the right, but when I do, I feel like they can beat me up, and I don’t want that.”

Today’s society demands that women look a certain way. Men, in general, are contributors to this demand. This concept is incredibly warped. Women need to work out to be found attractive by men, but they should work out too much, lest they be deemed masculine and therefore unattractive. With muscles, or without muscles, women are still women, not property or eye-candy. Women should be judged by who they are, whether they’re flexing or not.

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Works Cited


2nd Place Winner: Elizabeth Aldred, “Breaking Out of the Box Labeled Science Education”
For Dr. Bryce Christensen

Withheld by student’s request
Honorable Mention: Abby Stephens, “Pink Polka Dot, Blue Floral, Red Lace”

For Professor Chelsea Campbell

Withheld by student’s request
Plants are an important resource for all living things. Knowing how to optimally grow plants and how to keep their ecosystem balanced is important. Many people have a common belief that earthworms (Lumbricinia) help with plant growth and plant ecosystems. Are earthworms in fact more effective than fertilizers, and are they better for the environment?

Earthworms

There are many species of earthworms, and they all have different behaviors and dynamics that put them in differing conditions and places within the soil. Some like the anecis feed at the surface and move the surface matter down to other layers of the soil. On the other hand, endogeic worms eat as they burrow from side to side near the surface (Tomlin et al., 1995). Earthworms are land and aquatic creatures that prefer to move about at night although they can be seen just under the top of their burrows at dawn, and this is thought to be for warmth (Darwin, 1982). They have no respiratory system, so to breathe they must stay moist, and they do so by secretions of their mucus glands. After heavy rain fall, worms can be seen to exit the soil, and this could be due to low oxygen levels in their burrows that are filled with water. When the rain has stopped, if they do not re-enter their burrows, they can dry out from the sun and die. Earthworms have hundreds of cylindrical rings along their bodies that are covered in retractable bristles. These bristles help them to move through the burrows that they make (Edwards & Bohlen, 1996). These burrows help with the movement of water throughout the soil. As they move through their burrows, they are also moving about the microorganisms that attach to their bodies, and they are shifting organic matter to different layers. Earthworms also eat soil and other matter, as they are omnivores, thus creating worm cast (Tomlin et al., 1995; Darwin, 1982). Worm cast holds the nutrients, such as nitrogen and phosphorus, which worms break down and make stable and usable for plants. They are able to do this because they have nitrogen fixing bacteria within their gut (Owa et al., 2003). Thus through these acts, they help with plant health and the formation and maintenance of soil structure.

Earthworms help with soil structure, soil porosity, microbial activity, and soil organic matter dynamics within their ecosystems (Doan et al., 2013; Owa et al., 2003). They do this through their burrowing activities within the soil. Through this activity, earthworms spread around microbial and fungi which can have both a good and bad effect on the soil and plants depending on where they are moving the organisms (Milleret et al., 2009). They also help with better nitrogen, phosphorus, and carbon uptake within the soil (Milleret et al., 2009). In an experiment done by Owa et al. (2003), in the rice paddy fields that were flooded with water, earthworm burrowing activity helped to aerate the submerged soil and oxygenate the water. Overall worms are seen to improve the soil environments thus improving plant growth (Owa et al., 2003). This is why earthworm heavy soil is an indicator of soil quality (Riley et al., 2008).

Earthworms help plants by changing the soil structure through their burrowing and casting activity, thus giving them better stability, oxygenation, and water uptake ability (Milleret et al., 2009). Through their
movements and carrying of organisms and shifting of nutrients, they help with plant diversity, growth, and dynamics (Doan et al., 2013). They also help in situations where nutrient uptake for plants is difficult and use of fertilizers would not be beneficial. In Nigeria, flooding is common in their agricultural fields in the lowlands, so having means to best get nutrients to the plants is important (Owa et al., 2003). Owa et al. (2003) did an experiment in Nigeria to best see how to answer this question. One of their designs looked at the problem of getting proper crop yield in water submerged rice fields. They used earthworms to see if their casting activity would help in this kind of agricultural situation. They saw that earthworm casting at the base of the plants improved the growth of the rice plants, especially in the flooded design. This suggested that earthworms are helpful in situations that are not ideal for other means of nutrient uptake.

**Fertilizer**

Fertilizers are split into two categories: organic and inorganic. Some of the organic fertilizers are animal manure, compost, and vermicompost. It was found by Doan et al. (2013) that organic fertilizers like, vermicompost and compost, have higher levels of carbon, nitrogen, pH, and cationic exchange capacity. They also have lower levels of phosphorus, ammonium, phosphate, and nitrate than the mineral treatment used. Savci (2012) found that inorganic fertilizers contain phosphate, nitrate, ammonium, potassium salt, and that some even contain heavy metals (Savci, 2012). A common fertilizer that is used is nitrogen based fertilizers. The types of nitrogen fertilizers are urea, ammonium nitrate, and ammonium sulfate (Geisseler & Scow, 2014).

Fertilizers do not affect the soil structure as much as they affect the chemical makeup of the soil. When adding fertilizer to soil, there is a change taking place in the natural balance of the nutrients that are already available. Overtime, nitrogen can lead to the soil becoming nutrient imbalanced, which can lead to soil breakdown. Fertilizers with high levels of sodium and potassium can affect the pH of the soil (Savci, 2012). It was seen in a study done by Sebilo et al. (2013) that the nitrogen not used by the plants, from nitrogen fertilizers, is left in the soil to become part of the soil organic matter and microbial biomass. They saw that 12-15% of the original nitrogen added to the soil was still there after 28 years. They predicted that it would take about 100 years for the soil would go back to the original nitrogen levels that it had before the experiment. Adding fertilizer to the soil thus has long term effects, and these are added to as most agricultural fields add fertilizer to the soil each year. This will of course be different between agricultural fields and unmanaged fields where fertilizer is added less often, if at all (Geisseler & Scow, 2014).

Fertilizers are used to increase plant yield. Geisseler and Scow (2014) found that over long periods of time that fertilizer increased the yield of crops unless the fertilizer caused the pH of the soil to drop too low, in which case it was harmful to crop yield. It was also seen in a study done by Doan et al. (2013) that using a mineral treatment had better plant yield than that of the organic fertilizers used. However, when using inorganic fertilizers, compounds are left in the soil and taken up into the plants. There are heavy metals in some inorganic fertilizers, and when they are used, they can become part of the soil nutrients that the plants can absorb along with other nutrients. This in turn can be ingested by animals and humans through their food source (Savci, 2012). When nitrogen fertilizers are used, 40-60% of the nitrogen is taken into the plant (Sebilo et al., 2013).

As stated earlier, only a margin of the nitrogen put into the soil via inorganic fertilizers is used, thus leaving the other percentage in the soil. This can lead to parts of the nitrogen being moved from the soil
to other sources such as water. Not all the nitrogen is absorbed into the plant, and in an experiment done by Sebilo et al. (2013) it was seen that 8-12% of the nitrogen through the time period was sent into the hydrosphere and some was even released into the atmosphere. High nitrate levels in water can be toxic, and when such water is consumed by humans, it can lead to inflammation of the digestive and urinary systems in adults and methemoglobinemia, a blood disease, in infants. This will also kill fish and other species that live in the toxic nitrogen water. Also, if ammonia from fertilizer builds up in the atmosphere from the use of fertilizer on land, it can lead to acid rain (Savci, 2012). This suggests that fertilizer’s impact is far more reaching then just affecting the soil. The chemicals that are being added to the soil via fertilizers are affecting the environment as a whole. These chemicals are leeching into the atmosphere, hydrosphere, plants, and animals, thus affecting far more than fertilizers were meant to.

Earthworms and Fertilizer

Fertilizers provide more plant yield, but they have an impact on the environment and earthworm population. Fertilizers also need to have proper conditions for them to be of use. Earthworms are an environmentally friendly fertilizer that help plants. Earthworms need an ideal soil treatment to keep their population from falling, and when fertilizer is added to the soil, it changes the composition of the soil. Mineral fertilizer and agrochemicals have even been seen to throw off the balance of the soil’s organic matter (Doan et al., 2013). Many fertilizers are even harmful to earthworms that reside in fields, as the compost worms they test the fertilizers on are a hardier species (Riley et al., 2008). Organic fertilizers such as manure, compost, and vermicompost all have differing effects on earthworms and their interactions with plants. Doan et al. (2013) found that earthworms did best with soil that was fertilized with compost over vermicompost, though the most plant growth and yield was seen in the plants that had the mineral treatment. On the other hand, no earthworms survived in the mineral treatment. In an experiment done by Timmerman et al., (2006), they were testing whether slurry manure, farmyard manure, or no fertilizer helped the increase of earthworm populations most. They found that slurry manure increased the population the least and that farmyard manure and no fertilizer increased the earthworm population at about the same rate. This shows that fertilizer is not needed to keep the environment livable. Some planting environments and systems are not even benefited by fertilizer. In wet planting, such as water-filled fields, fertilizer would not be able to penetrate the soil to help give the plants nutrients (Owa et al., 2003). They would need a differing method to have proper nutrients given to them.

More research is needed to know the true interaction of fertilizer and earthworms. Fertilizer is seen to provide more plant yield, but how much more does it provide than a field that has only earthworms? What are the health and environmental effects overall of using either condition? We will be testing the plant yield of festuca grass (Festuca valesiaca) with three experimental groups of earthworms, fertilizer, and fertilizer with earthworms. It was hypothesized that plants in soil containing earthworms (Lumbricus terrestris) would have a significantly greater growth rate than soil with no earthworms.

Methods & Materials

Experimental groups. There were three experimental groups and a control. Festuca (Festuca valesiaca) was the plant used in the experimental groups. The first experimental group was set up with earthworms (Lumbricus terrestris), of varying size, that came from Carolina L408 batch. The second experimental group used Whitney Farms Natural Blood Meal fertilizer that contained 12% nitrogen. The third experimental design used both fertilizer and earthworms (L. terrestris) together. The control
consisted of only the festuca (*F. valesiaca*) seeds and potting soil. There were three replicates for each design. They were labeled Control 1-3, Worm 1-3, Fertilizer 1-3, and Both 1-3.

**Treatment.** The experiment took place in Southern Utah University’s Greenhouse over a nine week period. All of the experimental designs used general potting soil in pots that were 8.5 cm tall, 6.7 cm bottom diameter, and 9.7 cm top diameter. Four festuca (*F. valesiaca*) seeds were placed one inch below the surface of the soil. In the first and third experimental design, mesh of 1x1 mm squares was cut in one inch ribbon and put around the top of the pots, and secured in place with rubber bands to keep the earthworms (*L. terrestris*) in. Circles of mesh, with a 6.7 cm diameter, were also cut and placed at the bottom of the pots. About a quarter inch of soil was placed inside the pots and the earthworms (*L. terrestris*) were placed within. The earthworms (*L. terrestris*) were then covered with soil until one inch below the inner rim, then four festuca (*F. valesiaca*) seeds were placed on the soil. The last inch of soil was placed over the seeds. In experimental group three the last inch of soil was mixed with an eighth teaspoon of fertilizer before being placed over the seeds. In experimental group two, potting soil was placed in the pots until one inch below the inner rim and then the four festuca (*F. valesiaca*) seeds were planted. The last inch of soil was mixed with an eighth teaspoon of fertilizer and placed over the seeds. All the experimental designs were placed in a plastic trough, and one inch of water was placed within. The plants were watered based on need.

**Measurements.** Measurements were taken once a week. Wooden dowels were placed in each experimental design and taped in place and the original soil height was marked on the dowel. The height of the plants growth was taken in centimeters from the soil to the tip of the tallest blade. This was then marked on the dowel. The number of blades that grew were also counted.

**Results**

Only three of the 12 plants showed any growth over the nine week period. Control 3 and Worm 1 grew for seven weeks, and Control 1 grew for three of the weeks. As shown in Figure 1, Control 1 grew more than Worm 1 over the time period. No earthworms (*L. terrestris*) were seen in experimental designs Worm 1, 2, and 3 and Both 2 and 3. Both 1 had an earthworm (*L. terrestris*) that was still living at the
end of the experiment. One dead earthworm (*L. terrestris*) was found the second week of the experiment. There was a seed found in Fertilizer 3, and in Fertilizer 2 the seed had started to germinate. In the second week, mold was seen in all pots that contained fertilizer, and by the third week, the mold appeared to dissipate. An unknown green matter was seen on top of all the experimental designs.

**Discussion**

The hypothesis of earthworms (*L. terrestris*) providing more growth than plants without them present was not supported or rejected. More experimentation will need to be done. Experimental error needs to be taken into account. It was unknown that the greenhouse sprinkler system was in use, thus overwatering of the plants was taking place causing the plants to grow mold. This could have also caused the festuca (*F. valeiaca*) seeds to die. Also, earthworms do not have a respiratory system. They instead secrete mucus through their skin, and the air sticks to the mucus and is absorbed through the skin into the circulatory system (Darwin, 1892). With all the extra water in the plant system, the earthworms were surrounded by water and thus could not get air into their systems and drowned. There was a dead earthworm (*L. terrestris*) found in the trough during the second week, and it is unknown which of the experimental designs it came from. With only finding two earthworms (*L. terrestris*), one dead and one alive, it is unknown whether the other four earthworms (*L. terrestris*) escaped from the pots or they died and decomposed with in the soil although no carcasses were seen.

This could have been helped if larger pots were used. The pots in use were not big enough for the earthworms (*L. terrestris*) to fit in properly, so no true burrowing activity would be able to take place, thus worm cast would be hard to come by. The placement of mesh on the pots also needs to be secured and placed on the pots in a better manner. The mesh is what helps to keep the earthworms (*L. terrestris*) in, and the fact that an earthworm (*L. terrestris*) was seen to escape either over the top or through the bottom points to needing better mesh placement. There was a small amount of dirt mixed with the fertilizer for each pot, but the amount was not consistent, and this could cause the amount of

![Figure 1. The height in centimeters of the festuca (*F. valeiaca*). The height of the plants were taken once a week. The data shown gives the growth of the plants over a nine week period.](image-url)
fertilizer for each pot to be inconsistent. This could cause there to be differing effects on the plants and for there to be over fertilization of the soil.

Also, the festuca (*F. valeiaca*) seeds were not germinated before planting. As there was no growth seen in 9 of the 12 potted plants, it is unknown whether the seeds could grow at all or if it was effected by the fertilizer or if they were eaten by the earthworms (*L. terrestris*). There were seeds found in Fertilizer 2 and 3 and it was seen in Fertilizer 2 that the seed found had started to germinate, but had died at some point. The cause is unknown, but it could be due to over watering and mold growth. There could be other extraneous causes due to human error.

Further experimentation is needed to know how earthworms and fertilizers interact and their differing results. To test this differing earthworms should be used to see what species have the best results. They should be used separately, together, and with fertilizers. Differing kinds of fertilizers must also be looked into, both organic and inorganic, and the effect that they will have on the different earthworms, plants, and soil. To clearly see this, the soil needs to be analyzed before, during, and after the test. Knowing the chemical makeup of the soil will help to see how the fertilizer and earthworms are changing the soil. To better understand what then is being passed into the plants, a chemical analysis should be done on them to see the amount of nutrients moving into the plants and thus into those that eat the plants. Also, using edible plants vs. grass type plants should be considered to see if the fertilizers and earthworms help with yield on one type more than the other. Using larger pots or even troughs will help with earthworm movement, allowing them to better create burrows and worm cast. This will help with further experimentation in a greenhouse setting. To best see the overall results of the interactions, a period longer than 9 weeks should be used, such as a period of 6 months to a year. If at all possible, this should be done in an outdoor agricultural setting to best see the implications for agricultural use.

Through this experiment, it was unseen whether earthworms provided more plant yield than fertilizers. Further experimentation will need to take place to find the answer to this question. Having optimal plant yield is important as the world survives on crops and animals that need to be fed from these crops. More and more chemicals are being added to the environment each year whether through fertilizers or other human interactions. This is slowly changing the chemical makeup of the soil and atmosphere as Sebilo et al. (2013) showed in their experiment. With all the laying down of new fertilizer each year, the chemicals are building up and bleeding into other parts of the environment besides the soil such as, plants, animals, the atmosphere, and the hydrosphere. Having the option to use earthworms instead of adding chemicals is a natural and environmentally friendly way to look at the problem. Chemical fertilizers have been shown to improve plant yield, but for much of human history farmers relied on organic means of fertilization such as manure and earthworms. Thus, finding the difference between using earthworms and fertilizers on plant or crop yield is beneficial to the agricultural community today. Also, looking at how much the soil is being changed by these added chemicals and how this is than effecting the plants that are being grown and consumed by humans and animals is important. Getting too many of these chemicals can easily lead to harmful consequences in humans and the ecosystem at large. The environment produces the amount of nitrogen that it needs to survive, and adding to that is now tipping the balance in a direction that has a cost. That is why using natural means to grow plants is something that needs to be looked into more heavily.
Works Cited

Darwin, C. (1892). The formation of vegetable mould, through the action of worms, with observations on their habits. J. Murray.


