“We are very pleased to present these fine examples of student work from Duke’s Academic Writing classes. You will see that our Academic Writing courses permit a wide range of work by students in a variety of disciplines. This work is both creative and scholarly, and thus introduces first-year students to the kind of rigorous and innovative thinking that distinguishes an academic community such as Duke.”

J. Clare Woods, Ph.D., Director
Thompson Writing Program
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Please Note: The “Yelling Scholar” has been selected to represent the scholarly writing of Duke first-year students, and henceforth will be the cover image for Deliberations. The gargoyle, “Yelling Scholar,” was named by a Duke photographer and sits atop Kilgo, a residence hall on Duke’s West Campus. The “Yelling Scholar” serves as a visual reminder for scholars to express and share their scholarship with others.
**Foreword**

Sheryl Welte Emch

True to the name of the journal, *Deliberations*, this collection of outstanding essays, written by first-year students in Writing 101—Duke’s one-semester, first-year course in academic writing—-are indeed deliberations. That is, each essay was written, and rewritten, with careful and reflective consideration. The process of generating ideas, exploring and reflecting on their significance, writing and revising and editing, was without a doubt an extremely deliberate process, done consciously, thoughtfully, slowly, (sometimes joyfully and sometimes painfully), with the utmost concern for the process and the product. In other words, these essays are deliberations of the highest quality, and have the potential to touch many lives.

I have been teaching first-year writing at Duke for over a decade (and loving every minute of it!), so I am no stranger to the fascinating and vast array of topics being offered to introduce first-year students to university-level writing. All Writing 101 classes share the goals of helping students to engage with the work of others, articulate a position, situate their writing within specific contexts, and transfer their writing knowledge beyond Writing 101. That said, each instructor, inspired by their academic discipline and personal interests, puts these goals into practice in different ways, creating very distinct classes with an array of unique final papers and projects.

These papers and projects foster the development of strategies for generating, supporting, and sharing their ideas within a community of scholars. While all Writing 101 students are encouraged to write as though they are writing for a broad audience, for most students their immediate community is comprised of another eleven first-year students and the professor. For students whose work is published in *Deliberations* (or elsewhere), however, their community expands infinitely. Their work is no longer being read just by their classmates, their professor, or anyone else with whom they decide to share their work. These students have chosen, and been chosen, to share their work with the entire Duke community and beyond. They have put their ideas out for public consumption, as well as public scrutiny, deliberately and bravely expanding their audience and community of scholars. This is no simple task, but rather an act of strength and courage, an ability and willingness to engage openly and honestly about their own and others’ ideas.

Our editorial board, consisting of an extraordinary group of Writing 101 instructors and previously published *Deliberations*’ student authors, selected eight remarkable essays that reflect the diversity of academic disciplines of the TWP faculty, and in turn, the impressive range of beliefs about and approaches to academic writing. Each of the published essays touched, inspired, moved, provoked, and/or resonated with several readers in some way.

This issue of *Deliberations* opens with the co-authored essay, *Understanding the Pleasure Gap: Sexual Motivation and Pleasure Prioritization in Cisgender Heterosexual Women and Men*, by Miranda Gershoni and Dani Yan. In an attempt to better understand the sexual pleasure gap, Miranda and Dani examine the way pleasure is disproportionally prioritized between men and women in cisgender, heterosexual relationships. They investigate the motivations behind why women engage sexually, whether it be to fulfill a social or interpersonal obligation, as a victim of coercion, or as an intentional act to achieve personal pleasure. Miranda and Dani posit that the pleasure gap encourages passive and performative sexual behaviors in women as a way to cope and enhance their sexual experience, and that these behaviors further perpetuate the pleasure gap, causing a positive feedback loop that ultimately results in inequity. After performing research on existing literature in the field, the authors propose that further research be conducted to better understand the nuances of the pleasure gap, particularly the imbalanced prioritization of female sexual pleasure, whether implicitly or explicitly, and whether between a woman and her sexual partner, or between a woman and herself.

In the next essay, *The Foster Care-to-Juvenile Justice Pipeline: The Practices Turning Foster Children into Juvenile Delinquents*, Carlee Goldberg investigates the methods by which foster children can be both raised and prosecuted under state care. Carlee’s purpose is to expose the direct role of foster care practices in creating a delinquent population while under state protection. Externally, these practices include the failure to coordinate amongst the education, health, and welfare systems, leading to inadequate addressing of a child’s needs. Internally, these practices centralize on placement crimes, or the criminalization of behavior referred to law enforcement that would otherwise be dealt with in the home. Through a combination of multiple housing placements, lack of proper training, and failure of coordination, these practices serve not only to harm the child, but directly introduce them to the criminal system. Carlee concludes with suggestions on dismantling this pipeline, including comprehensive changes ranging from standardized coordination practices to specialized training given to both foster families and law enforcement. Ultimately, Carlee demonstrates the need for attention and action to be focused on ending the path in which the child welfare system aimed at protecting children results in incarcerating them.
Caroline Avery, in her essay, *How Far We'll Go: Deconstructing Disney's Progress with Cultural Authenticity in Moana*, examines race and Polynesian stereotypes in Disney's 2016 film *Moana*. Caroline argues that, despite the company's efforts and inclusion of Polynesian voices in the production process, Disney fails to offer the world an authentic and accurate representation of the Pacific Islands. She reaches her conclusion through examining the presence of stereotypes about Polynesians' weight, the tropes of paradise and coconuts, and the incorporation of Polynesian music styles in *Moana*.

In the co-authored essay *The Characteristics, Narratives, and History of Vaccine-Hesitant Populations*, Anne Crabill, Abbey List, and Caroline Salzman present an interdisciplinary approach to tackling the growing problem of vaccine hesitancy and exemptions in the United States. The authors argue that one-dimensional, narrow strategies for reducing vaccine hesitancy have been proven unsuccessful and even inflammatory, and efforts that consider many aspects of target audiences will be much more effective. They begin by investigating demographic attributes of vaccine-hesitant groups, including education level, socioeconomic status, and race, to identify target populations for pro-vaccine campaigns. The anthropological perspective then provides insight into the cultural themes and reasoning around anti-vaccination narratives, examining how personal anecdotes and misinterpreted scientific data play a large role in swaying public opinion on vaccines. Finally, significant historical developments, such as the release of the study claiming vaccines cause autism and dubious behavior from vaccine manufacturers, are discussed in a broad exploration of influences behind vaccine hesitancy over time. By presenting thorough research on multiple facets of vaccine-hesitant populations, Anne, Abbey, and Caroline encourage scientific communicators to utilize abundant information on the demographics, culture, and history of these groups, thereby allowing for the creation of more effective campaigns to combat vaccine hesitancy.

Nicholas Doak, in his essay, *The Deadly Dough Debacle*, explores the use of bacteriophages as a potential solution for removing disease-causing biofilms in food production settings. Nick opens his piece by presenting the relatable issue of consuming raw cookie dough and how such foodstuffs are at risk of harboring bacteria like E. coli. The source of much of the bacteria, biofilms, is described genetically and structurally to address why common solutions like antibiotics are not a feasible means of dealing with the issue. After addressing current cleaning methods used in the industry, Nick introduces the two types of bacteriophages, lytic and lysogenic, and the life cycles of each. Evaluation of experimental evidence from a variety of sources offers insight into the practicality and efficiency of each phase type in destroying biofilms. Building on this evidence, Nick suggests a combined approach to fighting biofilms through the use of genetically engineered phages and natural antimicrobial chemicals. By making the science accessible to the widest audience possible, Nick does an excellent job of presenting phages as a viable and understandable solution to the biofilm dilemma.

In *Erica Langan's essay, A Religion of Refuse: Framing the American Waste Disposal System in the Context of Lived Religion*, Erica examines the materials economy and linear waste disposal system of the United States and explore how they together constitute a pervasive religion. By considering the role of ritual, the influence of big business, and the socialized distinction between sacred and profane, humans' position in this thriving, though environmentally threatening, materials economy can be better understood. With this in mind, Erica suggests that the newest wave of socially-conscious environmentalists would be wise to approach the challenge of changing the American mindset on material waste not as a matter of winning a logical argument but rather of achieving a large-scale religious reformation. After analyzing the socio-religious factors that underscore the systemization and rationalization of current waste disposal practices, Erica argues that religion can be understood as both the problem and the solution to the pressing environmental issue of waste accumulation and management.

Matthew Griffin, in his very personal essay, *Choosing My Prophets: How I Found a Religious Canon and a New Personal Faith*, reflects on his spiritual journey and what it says about spirituality in the absence of organized religion. Matthew describes the impact that three books have had on his life: Thomas Jefferson's *The Life and Morals of Jesus of Nazareth*, William James's *The Varieties of Religious Experience*, and Henry David Thoreau's *Walden*. He recounts the way that each book helped guide him as he drifted away from organized religion and later found a more personal form of spirituality. At the end of the essay, Matthew explores the connection between all three books, the way that they form a personal "religious canon" that gives him spiritual and moral guidance in a similar way to a set of traditional religious texts.

In the final piece, *A Picture of the Real Me*, Joy Reeves uses the style of a comic-book memoir to explore the relationship between "Author Joy" and "Character Joy" in her life. "Character Joy" is the name she's given to the alter-ego she's developed through cartooning, playing make-believe, writing college applications, and interacting with people throughout her life. This alter-ego always knows what to say, confidently and charismatically reading from a script that's been authored for her in advance. The question arises: Is it normal to feel like playing a character is easier than playing oneself? As Joy strives to answer this question, she tells a story of reconciliation: coming to terms more with her true self, the Author, and bringing her out of Character Joy's shadow. The combination of illustrations and texts guides the reader through the sociological principles of identity, self-presentation, socialization, and idealization, culminating in a raw and humorous metaphysical adventure into the world of a cartoonist.

Individually and collectively, these essays have pushed my thinking, my emotions, and my teaching, informing my ideas about their various topics, as well as about writing, revising, and collaborating. Each author possesses a distinct voice that comes across loudly and honestly, identifying and sharing with others what the authors think is important, and why, and thus, who they are and/or want to be. By reading these essays you will become part of an ongoing conversation about important and diverse ideas, about how to communicate those ideas in compelling and engaging ways, and ultimately, about how to find and make meaning. I hope that you, too, will be touched or provoked by, resonate or empathize with, and perhaps even be moved to take action as a result of reading the following essays. I invite you to experience these essays both personally and academically, or however you see these two dimensions intertwine.

Cheers! sheryl
Understanding the Pleasure Gap:

Sexual Motivation and Pleasure Prioritization in Cisgender Heterosexual Women and Men

Miranda Gershoni and Dani Yan

Writing 101: Origins in Human Sexuality
Instructor: Kerry Ossi-Lupo

Authors’ Note: This paper was originally written as a research proposal, formatted for practical purposes in the form of a proposed study, but has been modified to instead act as a review paper of previous scholarship, as well as a call to action for future research. Work with such weight must be further explored beyond the scope of our capabilities as full-time undergraduate students. One of the authors, freshman Miranda Gershoni, extended the paper through a podcast episode, where she interviewed experts in the field to better understand the day-to-day implications of the pleasure gap. The episode can be viewed online. The authors acknowledge the importance of sex and gender differences, including the distinction between “females” and “women,” both scientifically and culturally. These terms are used interchangeably in the paper because the authors make it clear that they are addressing cisgender heterosexual women.

From consent to the pleasure gap

The social and political energy generated by the #MeToo movement has sparked unprecedented national conversations regarding sexual violence. In the wake of the movement, gender equality advocates continue to push for greater emphasis on teaching and practicing consent. But as Peggy Orenstein elucidated in her book Girls and Sex (2016), consent is a low expectation. She argues that conversations must extend beyond the bare minimum to address less-discussed gender gaps that occur after consent is met, namely disparities in sexual pleasure.

Studies have noted the disparities in sexual satisfaction between men and women — or the “pleasure gap” — as measured by frequency of orgasm and reported levels of pain during sex (Herbenick et al., 2010). The results of the National Survey of Sexual Health and Behavior found that men mostly use the presence of their own orgasm as a metric for “good sex,” while women usually use the absence of pain as the basis for defining “good sex.” The study also found that about 30% of women reported experiencing pain during sex, while only 5% of men did (Herbenick et al., 2010). A similar study found that young women are more likely to measure sexual satisfaction through their partner’s level of satisfaction rather than

Miranda Gershoni
Growing up in a large public school system in Texas, my health class consisted of the classic birthing video that is framed as grotesque but inevitable, taking home a crying baby doll, and being subjected to powerpoints of extranged genitalia with words like “syphilis” in dark red, all-caps. There were no mature conversations about consent, or even beyond that, healthy decision-making in sexual relationships and beyond. This jarring, gap-filled sexual education of mine scared me since. It also made me think about how unsettling it is that we’ve come so far in many areas of gender equality have yet to address the foundation of our very being, sex.

Coming to college, I realized that an entire generation’s lack of sexual education has contributed to a culture that in some ways retrogrades the very feminist movement that so many young people proudly support. I decided to enroll in Dr. Ossi-Lupo’s Origins of Human Sexuality Writing 101 course because I wanted to take a deeper, more nuanced look into sexuality, particularly the pleasure gap. I teamed up with my classmate Dani Yan to better understand this all-too-common gap by examining the way pleasure is disproportionally prioritized between men and women in cisgender, heterosexual relationships.

I am optimistic that our research will contribute to a more accurate understanding of the different ways in which women and men experience sexual pleasure, and will encourage young people to engage in healthier, more reciprocal sex. I also hope that our paper will encourage the development of comprehensive sex ed, an approach that seeks to educate young people on how to understand and respect their own and others’ bodies.

I am incredibly grateful to Dr. Ossi-Lupo for all of her support and helpful oversight during our process, along with all those I talked with, from students to sex therapists like Dr. Laurie Mintz, author of Becoming Cliterate. I would also like to thank Dr. Sheryl Weite Emch and the Deliberations editorial team for their helpful feedback and encouragement in our paper.

Dani Yan
Like Miranda, I went to high school in Texas. And while I attended an expensive, well-regarded private school, my sexual education was even more lacking than hers. In fact, I did not undergo any sort of sexual education before college—that is, my school’s sexual education program was not abstinence-based or incomplete, but rather entirely nonexistent. In April of 2017, my high school newspaper published an article titled “Let’s Talk About Sex (Education): Senior Advocates for Reproductive Health Program.” The story detailed a student’s push for sexual education at my school and painted a tentatively optimistic picture of the situation, suggesting that many students and teachers were in support of the program. During my senior year, I served as Editor-in-Chief of the paper and tried to follow up on the story. I soon came to find that the program had been quashed by the Board of Directors and my school would continue without any sort of sexual education at any grade level.

In college, then, I sought to improve my personal understanding of sexuality and gender issues. Upon enrolling in Dr. Kerry Ossi-Lupo’s Writing 101 course—Origins of Human Sexuality—I was unsure what to expect, but I was prepared to confront unfamiliar topics in the classroom. While I certainly learned from course materials, it was actually this research proposal project that taught me the most. Miranda introduced me to the concept of the pleasure gap as well as to the book Girls & Sex: Navigating the Complicated New Landscape by Peggy Orenstein. After reading parts of Orenstein’s book, I was able to fill in some of the gaps left by my deficient sexual education. But I was only able to delve into more nuanced issues of sexuality and gender—specifically the pleasure gap—through more thorough research and writing.

I was able to learn so much from my experience creating this research proposal and I hope others can benefit similarly from reading it. I want to thank Dr. Ossi-Lupo for her support and tutelage, Dr. Sheryl Weite Emch and the Deliberations team for their feedback, and Miranda Gershoni for introducing me to new perspectives and leading this project.
their own (McClelland, 2010). In a study on sexual enjoyment in heterosexual college women, researchers found that both men and women question women's, but not men's, right to pleasure in hookups (Armstrong et al., 2012). In her highly-acclaimed book, Becoming Cliterate (2017), sex therapist and University of Florida professor Dr. Laurie Mintz revealed that, on average, 55% of men orgasm during first-time hookup sex, while only 4% of women do. While some may argue that this disparity is caused by men's disinterest in their partners' pleasure, Mintz contends that it has more to do with a larger cultural script on sexuality.

In a conversation with co-author Miranda Gershoni for the podcast “Beyond Consent,” Mintz explained that at the deepest level, the pleasure gap can be attributed to “an overvaluing of male sexual pleasure,” which can be seen in nearly every aspect of media and everyday language. The widely-held cultural definition of “sex” as synonymous with intercourse — penile-vaginal penetration alone — puts women at a disadvantage, because 95% of women require clitoral stimulation to orgasm (Mintz, 2017). In addition, Mintz says that we are “linguistically erasing the clitoris” by referring to female genitalia as a “vagina.” In her experience with clients and students, Mintz has found that women generally receive less oral sex than men and consider asking for clitoral stimulation to be pushy. These behaviors suggest that there is a fundamental misunderstanding between sexually active cisgender heterosexual men and women, and between women and themselves. Both the quantitative statistics and the qualitative lived experiences of cisgender heterosexual women prove that this phenomenon has myriad biological, evolutionary, and sociocultural explanations which must be further explored.

If heterosexual women are clearly receiving less sexual pleasure, the question still remains of why they do not demand more “intimate justice” in the bedroom (McClelland, 2010). One reason why women may feel uncomfortable asking for pleasure is that there remains little scientific support to back them up in their sexual assertiveness. A lack of research into female sexuality can partially be explained by a bias in the scientific field; as cultural critic Lili Loofbourow pointed out in a 2018 article published in The Week, “The Female Price of Male Pleasure,” the scientific community tends to prioritize the study of male sexuality over female sexuality. While erectile dysfunction has been granted 1,954 clinical trials, the pain women experience during sex, termed female dyspareunia, only appears in PubMed 393 times. Loofbourow argues that the reason why “PubMed has almost five times as many clinical trials on male sexual pleasure as it has on female sexual pain” is because “we live in a culture that sees female pain as normal and male pleasure as a right.” While this may seem like a sweeping statement, its truth may very well be sound as an underlying cultural norm — just less malicious in its origins. The subtlety and silence on this striking inequity perpetuates the status quo and must be carefully unpacked.

While substantial research has been dedicated to understanding male sexuality, there have been fewer academic efforts to understand the complicated relationship women have with their sexuality, which seems to be one of the most crucial elements in eliminating the pleasure gap. In order to better understand why many women are not getting what they want in the bedroom, as well as why
they are not more sexually assertive, it is necessary to carry out a nuanced analysis of female sexual motivations. Only then can we begin to understand why women continue to engage in sex if they are not getting as much pleasure as they deserve.

**Existing scholarship**

Most research on female sexuality rests on a traditional view of the sexes: that men are sexually promiscuous and seek frequent, short-term partners, while women are inherently less sexual and pursue sex to achieve long-term monogamous relationships (Symons, 1979). This idea was born and has been perpetuated mostly through evolutionary theories communicated in works such as Donald Symons’ book, *The Evolution of Human Sexuality*, which argues that male and female human nature are inherently different — specifically, that men are naturally more sexual, and that sex is essentially a service given to men by women. Symons’ thinking can be traced back to Darwin’s sexual selection theory; for humans and other mammals, mothers must invest more time and energy in each offspring than fathers (Trivers, 1972). This creates a behavioral dichotomy wherein males have an incentive to increase their reproductive success by mating with as many females as possible, while females choose mates more carefully to ensure a higher quality reproductive partner (Andersson et al., 1996). Bateman’s principle holds that males have higher reproductive variance than females and therefore must compete for females, a limited resource, because females invest more energy into each offspring than males (Brown et al., 2009).

Other evolutionary perspectives contend that female sexuality is used as a means of garnering male assistance in order to heighten their chances of survival (Rodríguez-Gironés & Enquist, 2001). One study details a model where males have no direct cues for female fertility and can therefore interpret female behavior as an indirect cue. Under this model, females exhibit sexual behavior to ensure that males stay longer and provide physical protection and assistance (Rodríguez-Gironés & Enquist). The study shows that female sexual behavior significantly impacts social behavior, which can be understood as a transactional tool to increase chances of survival.

Traditional understandings of sexual selection theory in mammals reinforce gender stereotypes related to sexual motivation and desire, mostly because such theories contend that female mammals are more invested — through both time and resources — than males, and therefore can afford to sacrifice their sexual pleasure to achieve the larger goal of reproductive success. However, especially in an age where both men and women have sex as a means of pleasure rather than reproduction alone, researchers have questioned the universality of Bateman’s principle and Trivers’ paternal investment hypothesis. Newer research emphasizes just how much variation exists in both human and nonhuman sexual behavior, highlighting how rigid and misrepresenting long-held gender stereotypes can be. Primatologists and anthropologists have observed sexually promiscuous, assertive female primate behavior, whether it be to confuse the paternity of their offspring or heighten their reproductive success (Saini et al., 2018).

While research proves that females have comparable libidos to males, it is less likely to surface and dissipate. As Saini highlights in her book *Inferior* (2018) historically male-dominated scientific fields have resulted in biased understandings of female sexuality, along with resistance to new research that contradicts traditional beliefs. Saini quotes primatologist Sarah Hrdy, who argues that Darwin and subsequent scholarship on sexual selection was “brilliantly insightful” but “too narrow” (Saini, 128). While evolutionary theories provide a helpful foundation, such explanations can only go so far to explain the complexities of human sexuality in the
modern age, where culture develops rapidly under a highly advanced information and media economy. Thus, without negating the evolutionary scholarship which may still hold true today, sociocultural analysis should be critically considered to understand the nuances of today’s sexual issues.

**Sociocultural implications**

Social scientists have challenged the notion that women experience less pleasure during sex because they naturally have a lower sex drive. Several studies have found that sexual desire in men and women is generally equal, and the differences between them can usually be explained by social factors that result from the specific gender conditioning that girls experience starting in adolescence, rather than a naturally lower sex drive (Dawson et al., 2014). Most commonly, young girls are raised to accommodate others’ needs rather than their own, and to refrain from expressing their sexuality to avoid being stigmatized (Conley et al., 2011). Female sexual behavior has been shown to be motivated by an expectation to maintain social cohesion, proving that sexual behavior is often determined by social rather than purely physiological factors (Wallen et al., 2004). One biopsychosocial study shows that during sexual interactions, males are generally concerned with sexual fulfillment while females tend to be more concerned with limit-setting and conflict management. The female task of facilitating a harmonious sexual experience regardless of her own sexual fulfillment makes sense biologically and evolutionarily as females must attempt to find a suitable partner to bear a child (Hiller, 2005). However, while this model helps understand why female sexuality has historically been more passive, it is less robust for modeling healthy contemporary sexual motivations of women engaging in more casual, premarital sex without the intention of reproduction (Techasrivichien et al., 2014).

In addition to gender conditioning, which encourages sexual purity and conflict moderation, studies on female objectification posit that women and girls disproportionately measure their own views of themselves by what others think of them. Sexual objectification is defined as “the experience of being treated as a body (or collection of body parts) valued predominantly for its use to (or consumption by) others” (Fredrickson et al., 1997, p. 174). Internalized objectification — the phenomenon where women objectify themselves — correlates with higher levels of external body monitoring and lower levels of recognizing internal bodily states, along with shame and anxiety about themselves and their sexuality. That is, women tend to be hyper-aware of how they are being perceived but lack awareness of their own physical processes and needs. This context factors into young women's tendency to measure their sexual satisfaction through their partner's level of satisfaction rather than their own (McClelland, 2010).

Social expectations from pornography and other forms media, as well as sexual partners, which equate intercourse with “sex” and portray women reaching orgasm through vaginal penetration alone could help explain the pressure women feel to engage in these kinds of sexual acts regardless of whether they experience pleasure. Such pressure may lead women to exhibit performative behavior — the misrepresentation of one's sexual experience to fulfill certain societal or interpersonal expectations (e.g. faking orgasm) — as well as passive behavior, or a less frequent tendency to initiate sexual acts, protest unwanted sexual acts, and

Courtesy of Dr. Laurie Mintz
(Becoming Cliterate).
communicate sexual desires. In fact, roughly 70% of women report faking orgasm during sex (Mintz, 2017). These behaviors may develop as a way to cope with imbalanced sexual interactions and fulfill social and interpersonal expectations but are likely to diminish female sexual pleasure. For example, a woman may fake orgasm rather than voice her lack of pleasure in order to maintain certain relationships or social standings.

A study on the sexual behavior of 481 heterosexual undergraduate females found that women most commonly fake orgasm to avoid hurting their partner’s feelings, to protect against feelings of shame or insecurity, to increase arousal, to end the sexual act, and to appear “normal” to their sexual partner (Cooper et al., 2013). The article explores possible explanations for these feelings and behaviors, including acting on the pressure to fulfill a “social obligation” or following the aforementioned evolutionary female pattern of avoiding conflict.

These passive and performative behaviors may have implications for sexual pleasure, as studies have shown that a woman’s sexual pleasure is increasingly impeded when her motivation for sex becomes more utilitarian (Armstrong et al., 2012). That is, if women are motivated to engage sexually in order to fulfill a preconceived role that will allow them to receive social or even physical (if they exude passive/performative behaviors to get through a painful or uncomfortable experience) benefits, they are less likely to focus on prioritizing their own pleasure. A study exploring the effects of perceived partner-directed sexual perfectionism, i.e., how feeling pressured to perform a certain way sexually to please their partner and adhere to sexual expectations, may also hinder women’s ability to assert themselves. The researchers found that higher levels of sexual perfectionism are directly correlated with lower levels of assertiveness in its female subjects, and that the higher the level of perceived sexual perfectionism in one’s partner, the less likely they were to reject unwanted sexual activity (Kluck et al., 2018). In contrast, another study found that a higher number of cunnilingus partners correlated to higher levels of assertiveness, showing that the prioritization of female sexual pleasure can not only lead to more equal sexual pleasure dynamics, but can be a crucial element in ensuring true consent (Bay-Cheng et al., 2011). Women’s, and especially young girls’, lack of sexual assertiveness makes more sense when considered as part of this larger gendered culture, where women are typically rewarded for their passive behavior and adherence to broader cultural scripts.

Gaps in research

While research has examined varying evolutionary and sociocultural motivations for sexuality, and separate studies have noted disproportionate sexual pleasure between men and women, less work has been done to examine how motivations for sex correlate with lower levels of female sexual pleasure. It is crucial to better understand why women continue to engage in sexual behaviors that are unsatisfying and even painful. We postulate that this behavior can be explained by women’s lack of prioritizing their own pleasure, which has been encouraged by
gender conditioning, rather than an innate lack of sex drive. More specifically, we contend that when women and girls are primarily motivated to engage in a sexual encounter to satisfy their partner’s desires rather than their own, they will develop passive and performative behaviors to endure the experience, which will result in less assertive behavior, and therefore less pleasure.

Based on a body of previous research, we operationally define female-specific “gender conditioning” as a pressure to maintain social cohesion, avoid conflict, and provide a reassuring, nurturing role; “passive behavior” as a less frequent tendency to initiate sexual acts, protest unwanted sexual acts, and communicate sexual desires; and “performative behavior” as the misrepresentation of one’s sexual experience to fulfill certain societal or interpersonal expectations (e.g. faking orgasm). We hypothesize that the contradiction between the mutual de-prioritization of female sexual pleasure and the expectation for females to perform a pleasurable experience follows the traditional schema of heterosexual sex, wherein “sex” begins with vaginal penetration and ends with the male orgasm, a performative structure that both parties are expected to not only accept, but enjoy (Mintz, 2017).

Call for Future Research

Recognizing the aforementioned gaps in scholarship, we contend that future research is necessary to better understand the nuances of female sexual motivation in order to advance equality in and out of the bedroom. Additional research should be carried out to better understand how female motivations for sexual behavior affect their sexual pleasure, and thus contribute to scholarly and public discourse on imbalanced heterosexual male-female sexual relations. Studying the contradictions between male and female sexual pleasure prioritization may contribute to a stronger understanding of decreased female assertiveness in both sexual and non-sexual contexts. The lower levels of sexual assertiveness and refusal of unwanted sexual behavior seen in relationships with less female pleasure prioritization have much relevance in conversations on dismantling rape culture and sexual violence. If research can better understand the motivations that precede less pleasurable or even painful sexual experiences for women, we can hopefully progress towards ending such harmful sexual practices. Specifically, we could eliminate the causes for imbalanced pleasure prioritization and thus inhibit the damaging sexual culture it perpetuates.

Additional investigation and more public dialogue about positive, mutually pleasurable sexual practices beyond consent could also contribute to the development of more comprehensive sexual education. Studies shows that models of more comprehensive and accurate sex education that is not solely abstinence-based leads to healthier sexual practices with less sexually transmitted diseases and unplanned pregnancies (Stanger-Hall et al., 2011). In turn, this improvement in sex education could facilitate healthier, more reciprocal sexual relations. In addition, gaining a better understanding of female sexual motivations and pleasure could advance efforts to address the mental health effects of female objectification. Higher levels of objectification have been proven to lead to mental health issues like depression, anxiety, eating disorders, and sexual dysfunction (Fredrickson et al., 1997; Sáez et al., 2016).
deeper understanding of female motivation could help address these disproportionate mental health risks, along with the deep-seated sexual discrepancies which prevail beyond gaining consent.

The pleasure gap is both a result and cause of gender inequalities. That is, this disparity in pleasure — which is largely caused by societal dynamics that prioritize male fulfillment over that of females — exacerbates the imbalance between men and women both within and beyond sexual relationships. Predominantly through mass media and other cultural outlets, society has created pre-defined sexual roles for men and women and thus pushes women towards more performative and less satisfying sexual practices. We hypothesize that when women are more motivated to please their partners than themselves during sex, they tend towards passivity rather than assertiveness. This behavior has repercussions that extend beyond the bedroom, as women are again conditioned to avoid conflict and maintain social cohesion, as well as increase internal objectification.

Much of the existing scholarship on human sexuality is male-centric in that it is conducted under the conventional assumption that men are inherently more sexual than women, consequently failing to navigate the complexities of female sexuality. Future research should explore how female motivations for sex impact their pleasure, specifically whether prioritizing their partner’s pleasure rather than their own impedes, or at least diminishes, their sexual pleasure, and whether female pleasure prioritization could diminish the pleasure gap. A deeper understanding of why women experience less pleasure during sex could guide the development of a more nuanced sexual education system that addresses these issues directly. Ultimately, such improved sex education could not only lead to more reciprocal sexual relationships, but also address broader gender inequalities.

REFERENCES


The Foster Care-to-Juvenile Justice Pipeline: Parallels of Risk-Factors in Foster Care and Criminal Justice

Carlee Goldberg
Writing 101: Mass Incarceration and Democracy
Instructor: Matthew Whitt

“If the nation had deliberately designed a system that would frustrate the professionals who staff it, anger the public who finance it, and abandon the children who depend on it, it could not have done a better job than the present child-welfare system.”
-National Commission on Children

Ideologically, the foster care and juvenile justice systems operate on opposite ends of the social services spectrum. The foster care system aims to provide for the general welfare of its dependents, affording these children the greatest opportunities for a better future. Conversely, the juvenile justice system focuses on the punitive restrictions that must be enforced on youth to safeguard the welfare of the public. According to their guiding principles, these two systems cannot concurrently act on a child. Yet despite this ideological dissonance, a foster-care-to-prison pipeline is a reality for tens of thousands of America’s most vulnerable youth. Of those who enter the custody of the state as foster children, approximately 29% will become “crossover youth,” coming under the dual jurisdiction of the child welfare and juvenile justice systems.


Rather than attempt to understand this contradiction, academic research on foster care concentrates on the impacts when a child ages out of the child welfare system, when the youth the child welfare system defends are no longer youth. The criminal outcomes of these former foster children are specifically emphasized, with 54% of men and 25% of women incarcerated within eighteen months of exiting the system. This paper aims to address the gap of research that exists when foster care practices cause children to enter the justice system while in state care. By studying these practices, society can work to prevent these criminal outcomes for the children residing within the foster care system.

In this paper, I argue that though the intentions of the foster care system are to provide the best possible care for already at-risk populations, its damaging practices result in foster children further encountering the juvenile justice system. To do so, I will begin by demonstrating the parallels that exist in the risk factors and outcomes of foster children and juvenile delinquents. I will then discuss two categories of foster care practices, those external and internal, to demonstrate the existence of a foster care to juvenile justice pipeline. Finally, I will propose revisions to foster care practices with the aim of reducing the criminal outcome for foster youth.

The Parallels of Risk-Factors in Foster Care and Criminal Justice

By virtue of residing within the child welfare system, children are predisposed to higher-risk factors of criminal justice than their non-foster care counterparts. Out-of-home placements are the last resort of the child welfare system who will only remove children due to chronic neglect or sexual, physical, or emotional abuse. Many of these youth also come from poor, single-parent, or minority households, which itself carries a set of biases and discriminatory factors resulting in development, educational, and social deficits. By virtue of the forceful termination of parental rights and the subsequent placement into a non-kin household, foster children have little to no familial support and experienced a childhood already immersed in trauma. Entering the foster care system based on these factors, these youth will have developed coping mechanisms, often taking the form of violent behavior and an avoidance of relationships. All of these factors combine to create a background in which contact with the juvenile justice system is a distinct possibility.

The greater likelihood of contact with the juvenile justice system is due to the parallel factors that cause youth to enter both the child protective services system and to become juvenile offenders. A lack of stability, poor role models, and maltreatment characterize both the childhoods of the juvenile-aged incarcerated population and foster children. Due to these similarities, the foster care system is often viewed as one stop along the path to the juvenile criminal system, and the crossover between the two systems becomes much more likely due to their shared causes. Foster youth also experience compounding issues with unstable housing, guardianship, and exposure to a crime committed against them that ends in their placement in foster care. Yet, unlike when non-foster youth encounter the juvenile justice system, foster children

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3 Krinsky, Miriam Aroni, Disrupting The Pathway From Foster Care To The Justice System-A Former Prosecutors Perspectives On Reform, (Family Court Review 48, no. 2, 2010), 330.
4 Osgood, D. W., E. M. Foster, and Mark E. Courtney, Vulnerable Populations and the Transition to Adulthood (The Future of Children 20, no. 1), 212.
begin their interaction with the prison pipeline while under the state's protection. This demonstrates a strong responsibility by the state to eradicate this pipeline for those it is charged with raising. To ignore the unique circumstances foster children have within the overall justice system is to ignore the unique accountability the state has in influencing foster children's future opportunities.

**Parallels in Foster Care and Criminal Justice Outcomes**

The outcomes of this pipeline also merit a discussion on the negative consequences of entering the juvenile justice system as a foster child. Foster children experience far higher encounters with the criminal justice system than children not in the system, with conservative estimates placing one-fourth of all former foster youth behind bars at some point in their adult life. Foster children may also receive poor educational attainment, with only 54% of foster children completing high school and less than 20% receiving a college degree. Poverty, housing insecurity, and unemployment remain high among foster children, as does out-of-wedlock parenting, continuing the struggle for these former dependents to provide for themselves and their children.

Though the struggles of foster children involved in the juvenile justice system resemble the reactions faced by any child who encounters the criminal justice system, foster children face additional and unique repercussions due to their status as wards of the state. These children are often perceived to be early stage adult criminals, with many believing their traumatic pasts predispose them to crime and violence. These youth not only face higher rates of contact with the justice system due to greater incidents of delinquency, but also higher rates of incarceration in general. Once apprehended, foster youth “have been found less likely to receive community-based sanctions... and more likely to receive delinquency dispositions... than youth not involved in the child welfare system.” This study estimates foster children are nine times more likely to be detained compared to non-foster youth who commit a similar level of crime. Research also suggests foster children are twice as likely to reoffend following their initial arrest, demonstrating a struggle facing this population that is not shared to the same extent by the general juvenile population. These findings highlight the importance of understanding the eventual results of contact with the juvenile justice system for youth who exist within the child welfare system.

**Practices in Foster Care**

The biggest obstacle to investigating the practices connecting child welfare to juvenile justice resides in the nature of foster care: there is no standard model. The foster care system is run at the municipal level, with courts, bureaucratic departments, and organizations all working together to orchestrate the placement and progression of a foster child's case. This decentralization of control results in varying practices and policies for each youth encountering the system. The few federal regulations placed on these foster care actors exists within the Adoption and Safe Families Act of 1997 (ASFA), stipulating "agencies to place foster children in the least restrictive, most family-like setting appropriate to the child's special needs, to periodically review children's

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6 Osgood, Foster, & Courtney, *Vulnerable Populations*, 216.
care, and make ‘reasonable efforts’ to reunify children with their families.” This translates into a system aimed at a permanent residency option for the child in the form of reunification or adoption and to act in the best interest of the child. With the exception of these principles, federal funding is provided to states with little instruction. Therefore, this paper will expand on practices influenced by external systems and internal factors within the child welfare system, both of which are present in all forms of foster care, though their prevalence may vary.

**External Factors**

External factors are the disputes that occur when the child welfare system works with other social service systems to ensure the welfare of the child. The struggle begins when the welfare system attempts to secure the child a housing placement at a foster home or facility. In addition to shelter, child protective services must navigate the child through the education and healthcare systems, traditionally the role of a parent. Without this confirmed and stable parent, the child welfare, education, and health care systems all attempt to take control. Having multiple players involved can result in the needs of the child being missed, which, in turn, increases the probability of interaction with one more system: juvenile justice.

The need to deal with both the education and health care systems already pose a difficulty in a stable, non-foster family environment. Barring that designated family guardian, custody is transferred to a social worker and a foster parent or institutional staff member. These appointed custodians often struggle in this role, balancing numerous cases and working with limited information and underdeveloped personal relationships. The systems themselves then attempt to exert authority over the various needs of a foster child. Consequently, these attempted solutions often lead to contradiction, repetition, or inconsistent methods, causing problems to be exacerbated or lost in bureaucratic red tape. One such demonstration of this occurs in the interaction between mental and education systems. It is estimated that between 40-85% of all current foster children suffer from some form of emotional trauma and related mental illness. Based on current estimates, however, a significant portion of that population is receiving inadequate mental health care due to a failure to correctly identify the illness and settle on a course of treatment. Left untreated, behavioral problems often emerge within an educational or home setting, manifesting as altercations and difficulty adapting to new situations.

Without coordination between the school system and health care system, a challenge due to the often short-time period a foster child resides within one location, the health concern will remain unnoticed and the behavior will be written off as a reflection of the child. This can result when a foster child is introduced to another unintentional but often coinciding path: the school-to-prison pipeline. This pathway begins in the absence of a diagnosis or consistent guardian, causing school officials to resort to law enforcement as an intervention in cases of misbehavior.

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This action further introduces foster children to the juvenile justice system with a criminal charge.\textsuperscript{11} This charge will further conceal health or learning difficulties by providing the child with a record without the reason for the allegation being addressed. A charge may also result in the removal of a child from a foster home and placement into an institution, which further harms educational attainment, mental health, and relationship development. Once these encounters occur, the justice system may continue to target these children, both in and out of schools. This results in a growing juvenile record, decreased access to educational benefits, and ultimately increasing the possibility of entering prison when they enter adulthood. The school-to-prison pipeline can work alongside or begin the foster care-to-prison pipeline, supporting the conclusion of a harsher sentence during a child’s youth or immediately following it. This harsher sentence will take the form of a prison or institutional stint.

A similar phenomenon occurs when the child welfare and education systems overlap. The education system relies on children fulfilling the requirements of their designated school in order to receive a degree. With multiple movements to different schools, however, the varying requirements add an additional level of difficulty in qualifying for graduation. In addition, this often leads to a change of extracurriculars, teachers, and classmates, potentially resulting in further deteriorating relationships. Given the lack of consistent guidance and participation from an overworked social worker or new foster parent, the education system can struggle to communicate the necessary problems and solutions that need to be addressed. Without this exchange of information, the school may over or under compensate for certain learning services and referrals. Furthermore, the schools themselves may contribute to the disadvantages faced by foster children, compounding mental health issues through stress induced by competitive academics and peer pressure. Punitive practices may also further entangle foster children with the criminal justice system. With this loss of a support system in the form of a stable school environment, as well as the struggle in achieving educational success at numerous schools with varied standards and criteria, foster youth are further at risk for encountering the juvenile justice system.

The failure of these external institutions to coordinate their practices and services has detrimental effects on foster children. Without one central guardian able to navigate the varying systems, the resulting confusion may lead to missing educational or mental health diagnoses. In missing these connections, mental health illnesses continue to worsen, causing further violence, destructive behaviors, and substance abuse, all of which can lead foster children into the criminal justice system. Due to a deficit in information shared between these systems, combined with the transferring of a child from one system to another, foster children’s challenges are compounded into areas missed by all, addressed by too many, or without long-term solutions.

### Internal Factors

In addition to the external factors creating negative practices, so too are internal practices leading many foster children further down the path to juvenile delinquency. The most often cited practice is the multiple placements children experience during their time in the foster care system.\textsuperscript{14} Studies connect higher numbers of placement with a higher chance of involvement in the juvenile justice system, with one study finding 90\% of children with five or more placements will enter into the juvenile justice system.\textsuperscript{15} The cause of this phenomenon is two-fold. First, consistent re-homing repeatedly traumatizes a child, who is expected to sever existing ties and develop new ones with the knowledge they may be forced to move again. Second, five home placements in the span of two years involves a change of residency every five months, which in turn may create or compound existing behavioral or mental health concerns, resulting in the child developing criminal tendencies.

Higher numbers of placements are also positively associated with the length a child is in child protective services, with the older a child becomes correlating with a greater number of changes in foster families.\textsuperscript{16} This practice results in worsening challenges for foster children, preventing strong role model and relationship development, severing connections with community and educational systems, and further increasing anxiety and trauma due to constantly changing environments. All of these factors contribute to a foster child’s trajectory toward a juvenile justice sentence.

This practice is often written off as inevitable due to the high number of foster children and low number of foster families able to provide for them. While this may be true to a certain extent, especially in the immediate time following the removal of a child from a home, studies show that 76\% of placement disruptions are due to a foster parents’ inability or unwillingness to continue fostering.\textsuperscript{17} The most commonly cited reason was an inability to tolerate a child’s behavior or

\textsuperscript{14} Osgood, Foster, and Courtney, Vulnerable Populations, 216.
\textsuperscript{15} Krinsky, Disrupting The Pathway, 325.
\textsuperscript{16} Osgood, Foster, and Courtney, Vulnerable Populations, 216.
\textsuperscript{18} Ibid, 1088-099.
emotional problems. This suggests that numerous placements may, in fact, stem from voluntary causes rather than involuntary logistical ones. These voluntary causes may stem from the foster parents receiving inadequate training or fearing that the use of discipline may result in backlash against them.

Group homes, or congregate care facilities, serve as another internal practice linking foster youth to the juvenile justice systems. This option harbors the same shortcomings as multiple placements in foster homes, but with worse results. With operating costs six to ten times higher than the cost of a single foster family home, children in these group homes are four times more likely to come into contact with the criminal justice system. This stems from a social setting in which children with criminal backgrounds or disruptive tendencies are concentrated in one facility, leading to worsening behavior. This combined with the more impersonal, institutional setting of a group home drastically reduces the opportunity for healthy relationships for the children that reside within it. Group homes also serve as a target for criminals, with gangs, sex traffickers, and other forms of organized crime recognizing the vulnerability of children relegated to these facilities and recruiting these youth as participants.

Both of these internal problems, which often result in criminal punishment, are caused by the same deficit: inadequate training of foster care providers. This is especially apparent in the high occurrence of “placement crimes” committed by foster children. Placement crimes occur in instances where care providers use law enforcement to address misbehavior, having the child arrested for fighting, acting out, verbal arguments, running away, or smoking marijuana. These acts would have normally been dealt with in the context of familial punishment, but for a child in a group home or foster family, these behaviors are turned over to the police. This often becomes the foster child’s first introduction to the juvenile justice system, with one-third of all crossover youth introduced to the system in this way.

After this first occurrence, the placement crime incident becomes attached to the record of the foster child, and the stigma of a “troubled youth” impacts their future opportunities. Once a foster child has a criminal record, they face further bias from law enforcement, foster providers, and educators that leave them more likely to be searched, detained, arrested, and charged, further pushing them into the juvenile justice system. Furthermore, with foster parents able to determine who to accept in their home, foster children with records remain more likely to be placed in congregate care facilities or undergo frequent placements. The label follows them, impacting their future beyond the foster care system, often permanently tying them to the juvenile justice system. It is this practice of placement crimes and multiple placements that move children from the protective welfare system to the punitive criminal justice system.

Solutions for Breaking the Foster Care to Juvenile Justice Pipeline

In terms of the external and internal factors creating the foster care-to-juvenile justice pipeline, the uniting factor across each of these practices is the lack of standardization around demonstrated best practices. Foster care operates at local
levels, a necessary feature when dealing with the specificities that apply to each case; however, this should not prevent the system from establishing national standards. Children entering foster care must be screened for physical, emotional, and mental trauma and provided appropriate services. National procedures must exist for children within the foster care system, and stricter guidelines need to exist so that many of these de-facto practices, developed from the gaps in policy or in contradiction, are prevented.

To work toward reducing the external practices of foster care, concentrated effort needs to be placed on collaboration among the systems impacting youth. Currently, navigating these systems is divided between social workers and foster families. Both face complications in doing so, with the foster family unfamiliar and often unequipped to handle the child's complexities and the social worker balancing multiple cases. Though ideally more social workers and fewer cases would allow for better collaboration, that solution remains difficult to feasibly achieve. Perhaps a more attainable solution would be in requiring the systems themselves to collaborate together, combining family and juvenile justice court and a mental health and educational office to ensure the child is receiving guidance and support from one source.

For internal foster care practices, specific efforts should focus on the dissolution of group homes and the reduction of placement crimes. Terminating group homes is warranted both by their appalling outcomes and inefficiency. By closing these types of facilities, the funding can be transferred to programs aimed at increasing the number of foster families available, as well as to services aimed at preventing cases of neglect or abuse. Decreasing cases of placement crimes can be done through better foster care training, including how to avoid the use of law enforcement, or the creation of provisions within law enforcement that allow for exceptions in cases of foster children. This solution does not recommend pardoning disruptive and violent behavior, but rather creating alternative diversionary programs focused on rehabilitative consequences and community service. These programs follow the restorative justice model, aimed at incorporating victims and community members in the development of a reformative sentence other than jail time. The implementation of these programs has already been found to demonstrate not only significant financial and resource success, but also decreases in long-term recidivism rates.24

Finally, the most apparent solutions are measures aimed at prevention. A child cannot become a crossover youth if they never enter the foster care system to begin with. Efforts should continue to focus on early family interventions, attempting to provide resources and aid for cases in which the inability to provide for a child warrants concern for the child's safety.

The state cannot control the traumas of a child's past that led them to foster care, nor can they predict the future of these children. However, society can play a role in the experience this child has while in foster care. The foster care practices are the only aspects of a child's life able to be directly influenced, and this power must be carefully exercised to provide the best opportunity for each child the state is tasked with raising. The current practices used today are a mockery of the promise to ensure for their welfare, further exposing a child's path to crime by serving to introduce them to juvenile justice while in the care of the state. The foster care-to-juvenile justice pipeline exists as a symbol of failure to those most vulnerable in the nation, and a symbol of hypocrisy for those who claim to protect them. Further reform must be dedicated to investigating the various practices within foster care in order to break the cycle causing wards of the state to become wards of incarceration.

IF INTERESTED IN JUVENILE JUSTICE REFORM, CHECK OUT THESE ORGANIZATIONS:
- Teen Court, Juvenile Diversionary Program - durhamteencourt.org
- Juvenile Justice Programs in NC - youthjusticenc.org
- Juvenile Law Center - jlc.org
- Guardian ad Litem Program for children in child welfare systems - VolunteerforGAL.com

AND PLEASE FOLLOW NC bills regarding Juvenile Justice:
- NC H 347, aimed at raising the minimum juvenile age to 10
- Senate Bill 257, allowing 16 and 17 year-olds to be tried as minors as opposed to adults for certain offences.


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How Far We’ll Go: Deconstructing Disney’s Progress with Cultural Authenticity in *Moana*

Caroline Avery
Writing 101: *The Disney Version*
Instructor: Lisa Andres

For Auli’i Cravalho, the Native Hawaiian voice actress behind the titular protagonist in Disney’s *Moana* (2016), her character “is especially close to [her] heart because she’s Polynesian” (“Auli’i”). Like Cravalho, many Polynesian Americans celebrate the movie for its representation of Polynesian peoples and society in mainstream media and entertainment. When *Buzzfeed*, for example, questioned individuals of Polynesian descent about their reactions to *Moana*, it received responses that commended Disney for “putting Polynesians front and center” and “representing [their] people” (Varner). From the use of Polynesian voice actors to Moana’s special relationship with her grandmother even after death, Pacific Islanders applauded Disney for seemingly incorporating every aspect of Polynesian cultures into the movie.

Disney aimed to receive such praise for its representation of the South Pacific. With CEO Bob Iger calling diversity “a core strategy for the company,” Disney markets *Moana* and similar movies with strong female protagonists and characters of color as socially progressive (Desta). In *Moana* specifically, Disney wanted to share a culturally accurate depiction of Polynesia. The company seeks to monetize diversity, recognizing cultural mindfulness and representation allows them to reach a wider audience. Inspired loosely by the Polynesian legends of Maui, the story told in *Moana* is one of Walt Disney Animation Studios’ few films to feature a protagonist of color and a non-Western setting. It tells the fictional story of an ancient Polynesian chief’s daughter who is chosen by the sea to save her island and others like it from decay. She must retrieve the demigod Maui and guide him to the island of the goddess Te Fiti to restore her heart (a stone stolen by Maui one thousand years earlier). To ensure the cultural authenticity Disney sought, directors John Musker and Ron Clements created the Oceanic Story Trust, a group of Polynesian experts, to advise them and their team – an effort which may not have been as successful as Disney intended.

Despite widespread popular praise for the social progress made by Disney in *Moana*, the details of the movie’s story and production contradict the megacorporation’s claims of prioritizing cultural accuracy and sensitivity. Shaping a monolithic Polynesian culture framed through a Western understanding of the region, Disney markets *Moana* as culturally sensitive because of the inclusion of Polynesian voices in the movie’s production. In turn, this choice allows Disney to profit from misrepresenting the South Pacific and reproducing degrading stereotypes under the pretense of authenticity. Because of Disney’s position as an American company that ultimately prioritizes profit over accuracy and sensitivity, *Moana* perpetuates structural racism toward Pacific Islanders and harmfully...

Caroline Avery
I loved Disney princess movies growing up. My mother taught me to think critically about the movies I enjoyed, making sure I knew to recognize things like historical inaccuracies and patriarchal gender roles. In high school, I revisited my favorite childhood movies after years of not watching them when writing a speech on sexism in Disney. Through that project, I observed how even some of Disney’s more contemporary movies like *Beauty and the Beast* and *Aladdin* were saturated with sexism and racism. I struggled to digest the problematic messages of movies that I believe helped define my childhood.

I wanted to take Professor Andres’ Writing 101 class the moment I learned about its focus on thinking critically about Disney. Professor Andres showed me how to balance both loving and criticizing Disney as we discussed its missteps in storytelling. For my final project, I wanted to write about a movie we generally consider progressive or unproblematic like *Frozen* or *Mulan*. Ultimately, I decided to write about *Moana*, Disney’s newest princess, because I suspected that, despite well-publicized efforts to ensure cultural accuracy, the company projected a racist understanding of Polynesia onto Pacific Islanders.

I would like to thank Professor Andres for her support in writing and researching this essay and for encouraging me to submit it to *Deliberations*. I also thank Professor Emch for helping me ready my paper for publication through editing and advising. Finally, I want to thank my mother for her own edits and constantly asking me to think critically about the world around me.
appropriates Polynesian cultures. The physical appearances of characters, clichéd portrayals of paradise and coconut tropes, and the Westernization of Polynesian music reveal that Disney’s appropriation of a Polynesian narrative falls short of increasing our understanding and appreciation of an underrepresented people and their cultures.

Oceanic Story Trust in Depth

Before discussing specific examples of how Disney ultimately produced another Western story about Polynesia with *Moana* rather than giving Polynesians authentic representation, it is imperative to understand the role of Pacific Islanders themselves in making the movie. At the directive of Disney Animation chief John Lasseter, Musker and Clements wanted to create a culturally authentic story (Robinson). They assembled the Oceanic Story Trust to improve upon Disney’s past controversial attempts of telling stories about non-Western cultures and people of color, such as *Aladdin* (1992) and *Pocahontas* (1995). The Trust consisted of historians, linguists, anthropologists, and cultural advisors from all over Polynesia (Robinson). Disney selected Trust members at its discretion, assuming they would accurately represent all Polynesians. According to Disney, the group vetted and counseled on every aspect of the movie, from the names of characters to Moana’s clothing (Sciretta). Disney’s status as a megacorporation with a global reach, however, creates a dynamic between it and the Trust that allowed it to ultimately decide the degree to which Polynesian voices were included in the production of *Moana*.

While the Trust ensured accuracy in some of the most minute and superficial details, its presence did not prevent Disney from co-opting a Polynesian story and presenting a Westernized version of Polynesia riddled with stereotypes. Movie critics like Caitlin Moore of *The Washington Post* consider *Moana* Disney’s “most culturally sensitive film ever,” and in many ways, they are not wrong. When it comes to subtle yet culturally important details, Disney adhered to the Trust’s input. Samoan master tattooist Su’a Sulu’ape Peter, for example, oversaw the composition and placement of Chief Tui’s (Moana’s father) and the demigod Maui’s tattoos (Tamaira and Fonoti 316). And, in the scene where Moana’s ancestors practice the art of wayfinding, the Trust stopped animators from dressing the sailors in traditional Papa New Guinean face paint and ornamental headdresses, explaining that “those would be hilariously impractical outfits to wear to sea” (Robinson). Such examples are just two of the many details influenced by the Trust’s involvement in the movie.

In its attempt to be authentic, however, the Trust unintentionally helped Disney create a monolithic Polynesian culture. From the Maori of New Zealand to indigenous Hawaiians, the Polynesian identity encompasses peoples and cultures across the Pacific Islands. In *Moana*, Disney, informed by its Polynesian experts, blended these distinct cultures into a single Polynesian. In the song “Where You Are,” villagers mix Hawaiian and Samoan dance traditions (Tamaira and Fonoti 302). Fishermen from Fiji guided the design of the boats and ropes (Ito). Songs with non-English lyrics feature multiple Polynesian languages like Samoan and Tokelauan (Chapman). While drawing inspirations from different cultures provides inclusivity of Polynesians, it inaccurately depicts the diverse region as homogeneous to Western audiences.

Despite its creation of a single Polynesian culture, Disney still markets *Moana* as culturally authentic because of the Trust’s role. Critics who recognize the inaccuracies, and stereotyping of Polynesia discussed later, contend that Disney owns the narrative despite the Trust’s extensive involvement. As New Zealand educator Tina Ngata remarks “having brown advisers doesn’t make it a brown story. It’s still very much a white person’s story” (Herman). For all their efforts to
tell a Polynesian story authentically, Disney and the Trust fail to exclude Western perceptions of the region. In fact, in her 2018 Social Sciences article “Mulan and Moana: Embedded Coloniality and the Search for Authenticity in Disney Animated Film,” Michelle Anjirbag argues that Disney’s attempt at multiculturalism only reinforces the Western media conglomerate’s hegemonic nature. Anjirbag explains that the Polynesian story in Moana becomes “defined as [a] Disney [story], with the corporation leaving its distinct footprint” (3). Because of its power and authority, Disney takes ownership of the narratives it decides to tell. The Trust, therefore, contributed to making Moana first and foremost a Disney story, not a Polynesian one.

**Disney’s Stereotyping of Polynesians as Overweight**

The physical appearance of Moana’s main characters is, perhaps, the most obvious aspect of the movie where Disney misrepresents Pacific Islanders. While some viewers take offense at Disney’s depiction of the Polynesian demigod Maui for his enormous body, others celebrate Moana’s “realistic figure” (Moss). Viewing Moana in comparison to Native Hawaiian protagonists Nani and Lilo from Disney’s Lilo & Stitch (2002), however, complicates one’s ability to view her “realistic figure” as progress. As critics of Maui’s character point out, the West often stereotypes Polynesians as overweight. A closer examination of both Maui and Moana confirms that Disney subscribes to and promotes these harmful stereotypes of Polynesians, countering their claims of practicing cultural sensitivity when producing the movie.

Overlooked by critics concerned with weight-related stereotypes in the film is Moana. With a thicker waist and set of limbs than her predecessors, Moana offers young girls a positive and strong role model that defies defining beauty by dress size. She is the only Disney Princess to diverge from the standard slim hourglass figure. While such body positivity should appear in Disney Princess movies, the megacorporation’s decision to break that mold with Moana is unsettling considering stereotypes about Polynesians’ weight. In 2002, fourteen years before Moana’s release, Disney offered audiences female protagonists with similarly “realistic figures” in Lilo & Stitch, an animated movie about a Native Hawaiian girl who encounters an alien she adopts as a pet. Both the girl, Lilo, and her older sister, Nani, look more like Moana than the other – slimmer – females of Disney. This pattern of creating only Polynesian female protagonists who are body positive suggests that Disney disproportionately animates “realistic” women whose ethnicity is typically considered overweight. Frozen (2014), after all, preceded Moana by only two years and gave us not one, but two white female leading ladies with tiny waists.

More obviously so than Moana, Maui’s character was clearly influenced by weight-related stereotypes about Polynesians. Legends of Maui and his trials are found across the South Pacific, from Hawaii to New Zealand. Despite thousands of miles between some island groups, these legends remain strikingly similar (Westervelt vi). Among Polynesians, Maui is a hero, often depicted as a clever teenager (Anjirbag 7). In his 2016 New York Times article How (and Why) Maui Got So Big in ‘Moana’, Robert Ito notes that in previously made texts, “Maui often resembles a lithe teenager on the verge of manhood,” giving examples of past depictions as “a typical beach boy” and as “slim and impish.” Such consensus on Maui’s physical appearance suggests that to most Polynesians, the demigod is small and skinny – not overweight.

In Moana, however, animators drew the demigod as an enormously muscular and pudgy man who defies realistic human proportions. David Pinmental, the head of story on Moana, explains the discrepancy between the legends and movie, claiming that the Oceanic Story Trust “pushed filmmakers for a bigger Maui” to capture his heroic status (Ito). While Polynesians consulting with Disney encouraged a big Maui, others from the South Pacific consider his large size offensive. According to Will Ilolahia from the Pacific Island Media Association, for example, “this depiction of Maui being obese is typical American stereotyping” (Robinson). Former Samoan professional rugby player Eliota Fuimaono-Sapolu echoed Ilolahia’s frustration on Facebook, posting Maui “looked like after he fished up the Islands, he deep fried em and ate em” (Jones). Their critiques capture the danger of allowing a handful of representatives speak for all Polynesians. Given the widely accepted view of Maui as small and lean, Disney should have adhered to Polynesian myths rather than follow the advice of its selected Polynesian voices. Instead, wanting to give Maui a physical body that matches his immense power, the Trust and Disney discounted the importance of upholding the traditional depiction.

This use of weight-related stereotypes in creating both characters in Moana suggests that, despite attempts to tell a Polynesian story authentically through meticulous...
research, Disney could not, or at least would not, remove itself and Western perceptions from the filmmaking process. While audiences are rightly excited to see a body positive Disney Princess, they overlook the racist stereotyping that likely influenced Moana being the first. And with Maui specifically, Disney not only opted to draw him large and pudgy, but did so despite a widely accepted depiction of the demigod as small and skinny. As Anjirbag notes, “this reshaping [of Maui] becomes sanctioned because of the specter of the cultural authority board that was meant to have authenticated this film” (7). The Trust’s advisory role in the film, and specifically in creating Maui, allows Disney to both justify their depiction and blame their hand-selected Polynesian advisors for any cultural missteps. Thus, misguided perceptions of Pacific Islanders being overweight are reinforced for Western audiences while Polynesians themselves are offended and subjected to degrading stereotypes.

**Problematic Images: Coconuts & Paradise**

More pervasive than the perpetuation of weight-related stereotypes, the trope of paradise drives the plot of *Moana*. When Hollywood seeks to depict Polynesia, it tends to reproduce a common image of lush green islands with carefree natives in identical grass skirts drinking from coconuts. This trope paints the South Pacific as tranquil and idyllic, erasing the complexities of Polynesian societies. In *Moana*, the plot revolves around this image that Moana must save her paradisiacal island and her people’s way of life – happily sung about by all the dancing and cheery villagers in “Where You Are” – from environmental destruction. The song, appearing early in the film, celebrates the simplicity of island life and denounces the need for anything more. Disney simplifies Polynesian cultures by framing island living through this trope of paradise, purposefully employing it to maximize its profits through tourism ventures.

As common tourist destinations, the islands of Polynesia are hurt by travelers seeking to encounter paradise. In her 2017 article in *The Guardian*, Hawaii-born writer Tina Grandinetti argues that *Moana* aids Disney in its tourism venture in Hawaii, which threatens Native Hawaiians culturally and environmentally. She writes that “its release not only helps drive the expansion of Disney’s carbon-intensive global tourism empire but also fuels a mass market of plastic merchandise that epitomizes the very culture of consumption responsible for our planet’s environmental crisis” (Grandinetti). Because *Moana* gets audiences excited about the idea of visiting paradise, it encourages people to stay at environmentally unfriendly resorts like Disney’s Aulani in Hawaii. Thus, Disney simultaneously profits from its resort and movie, both attempting to provide consumers with authentic Polynesian experiences by violating the home of Pacific Islanders.

While using some paradisiacal imagery of white sandy beaches and green jungle-covered mountains in movies with Polynesian settings is not entirely inaccurate, Disney and mainstream Hollywood present it as a holistic and complete representation of the South Pacific. Erasing realities of poverty and human-caused environmental degradation, Disney appropriates Polynesians’ paradise for profit, ultimately contributing to its ruin. And, as Tamaira and Fonoti point out, many Pacific Islanders include paradise in their cultural identity. Thus, Disney’s environmental destruction threatens Polynesians culturally. While paradise and the Islanders’ way of life in *Moana* is attacked by a lava monster, companies like Disney seeking to imitate this paradise are the real world’s culprits to blame.

Like the trope of paradise, Westerners often associate coconuts with the Pacific Islands. A staple across the South Pacific, the coconut plays an important role in Polynesian culture because of its utility (Roosman). As a result, like paradise, Hollywood often incorporates coconuts into its portrayals of Polynesia, usually misrepresenting their value to indigenous peoples. With constant images of coconuts throughout the movie, Disney both emphasizes their utility to Polynesians and trivializes their significance, contributing to misunderstandings and stereotypes about the South Pacific. Inconsistency in their attempts at cultural authenticity and sensitivity provides yet another example of how it tells a Western narrative about the region rather than a Polynesian one.

Disney demonstrates its trivial attitude toward coconuts when Moana and Maui encounter the coconut-clad pirates called the Kakamora. In his 2016 *Smithsonian Magazine* article, *How the Story of “Moana” and Maui Holds Up Against Cultural Truths*, Doug Herman contends that Disney’s depiction of the Kakamora pirates as “coconut people” affronts Polynesian people. “Disney’s Kakamora,” he
explains, “are mean, relentless...utterly silly...the Kakamora have actual cultural roots: they are legendary, short-statured people of the Solomon Islands” (Herman). Like Maui’s physical appearance, Disney dressing the Kakamora as coconuts demonstrates a disregard for representing Polynesian legends accurately and respectfully. Criticizing Disney for portraying an imaginary race of people as coconuts, Herman goes on to add that “‘Coconut’ is also used as a racial slur against Pacific Islanders.” Given that Disney marketed Moana as an authentic Polynesian story sensitive to Pacific Islanders’ cultures and traditions, the depiction of the Kakamora is especially offensive.

Trust member Dionne Fonoti reveals that Disney at least initially sought advising on the Kakamora, noting that they asked her about the Kakamora and she referred them to someone who knew more (Tamaira and Fonoti 315). The final product suggests that this reference either led Disney astray or was ultimately ignored. Anjirbag argues that “when considering the...ridiculous coconut-armor-wearing pirate opponents, the coloniality embedded in the narrative despite the alleged attempt at being cultural accurate...becomes much more noticeable” (6-7). Through its treatment of coconuts, Disney unavoidably subjects audiences to Western stereotypes about coconuts in Polynesia, but also keeps them alive by introducing them to young viewers.

Disney’s Westernization of Polynesian Music

For Disney, the soundtrack is an essential component of its animated movies. A mechanism for storytelling, the songs can provide Disney a lucrative means to maximize a film’s popularity. Alongside Broadway star Lin-Manuel Miranda, Disney hired veteran Disney composer Mark Mancina and award-winning Polynesian singer-songwriter Opetaia Foa’i to write Moana’s soundtrack. Like the Oceanic Story Trust advising on other aspects of the movie, Disney employed Foa’i to bring a Polynesian voice to the movie’s music. Despite Foa’i’s presence on the soundtrack, Western musical styles dominate and frame the Polynesian elements throughout the film. Disney appropriates Polynesian music to conform to Western styles, which contributes to the corporation’s ownership of the narrative.

While Disney intended a balanced blend of Polynesian and traditional Disney-Broadway music styles in Moana, a closer examination of the music suggests that Miranda and Mancina, exercised far more influence than Foa’i. In her 2018 Social Sciences article “Time to Face the Music: Musical Colonization and Appropriation in Disney’s Moana,” Robin Armstrong argues that this imbalance in musical styles aided in creating a “Disneyfied” version of Polynesian cultures. Armstrong explains that “Western musical traits open and close each song, framing and containing the Polynesian sounds. This musical containment of unfamiliar sounds by familiar ones limits the audience’s access to the unfamiliar” (2). Disney frames the Polynesian influences through Western styles thereby controlling how audiences consume the blend of music styles. Because Western listeners are unfamiliar with Polynesian styles, this framing results in an appropriation of Polynesian music that Disney misrepresents as authentic.

The song “We Know the Way” serves as a perfect example of this phenomenon that Armstrong calls “musical colonization”. A homage to ancient wayfaring traditions of Polynesians, Disney uses this song to teach Moana about her ancestors and history. One of the few songs Foa’i took the lead on, it includes the low-pitched chanting and percussion characteristic of traditional Polynesian music. Armstrong points out that although “these Polynesian sounds are framed by a low, bass pitch,” the song “is lightly accompanied throughout by a typical [Western] film/symphony orchestra” (6). Given the song’s subject of wayfinding – an ancient tradition of great pride in Polynesian society – it’s disturbing that Disney didn’t minimize the presence of these Western traits. Mancina and Miranda overpower Foa’i’s influence. Foa’i himself sings the first verse in Samoan and Tokelauan (Chapman), but Miranda’s distinct voice soon takes over in English. While Moana elsewise lacks non-Polynesian voices throughout the movie, Miranda’s non-Polynesian voice comes to dominate a song meant to tell the story of a revered ancient Polynesian tradition.

Like other elements of Moana, music contributes to how Western audiences perceive Polynesians. Attempting to replicate Polynesian music styles while adapting them to fit Disney’s traditional approach to soundtracks prevents audiences from consuming an authentic narrative. Foa’i only exercised influence when Disney allowed it. In an interview, for example, he revealed that he wanted to use the Tuvaluan words “Omai fakamafanahanaga” in the song “An Innocent Warrior,” but Disney made him “‘amend those words for English ears’” (Chapman). When cultural authenticity conflicts with what Disney considers enjoyable and palatable for the audience, they will choose to make Polynesian cultures fit their “Disneyfied” representation rather than adapt their process to accommodate accurate and sensitive storytelling.
Conclusion

Allowing, and even seeking out, Polynesian voices to advise on the production of Moana did not prevent Disney from Westernizing the cultures of the South Pacific. As is evident in the soundtrack and use of racist stereotypes throughout the movie, Disney fails to tell an authentic Polynesian narrative despite its creation of the Trust. Rather, it produces the latest Western account of the Pacific Islands, weaving in misleading and even harmful and degrading misconceptions about the region and its diverse population. Moana reveals that Disney, and perhaps Western media in general, cannot share stories of non-Western cultures without misrepresenting them. The corporation’s primary motive in making Moana culturally accurate and respectful was to profit – not to tell a genuine Polynesian story, and thus Moana cannot be both authentically Polynesian and authentically Disney.

In some ways, Moana merits the praise it received. Children need to see girls and women who look like Moana – and boys and men who look like Maui – as strong and beautiful. The movie tells a touching story about ancestry and heritage. An original story, it breaks from Disney’s latest fads of sequels and remakes. Miranda, Mancina, and Foa’i gave it a fantastic musical soundtrack despite its cultural inauthenticity. Clements and Musker create an inspiring heroine who revolutionizes the Disney Princess.

An all-Polynesian cast and conducting conscientious research demonstrates growth on Disney’s part regardless of its motives. Pacific Islanders should be represented in Hollywood for Polynesian and non-Polynesian audiences alike to see. And, it is precisely this last reason why we cannot blindly applaud Moana for its progress while ignoring its shortcomings.

Polynesians not only deserve representation in mainstream media and entertainment; they also deserve to tell and control the story. Right now, Western corporations like Disney act as cultural colonizers. Dictating how the story in Moana was told, how often and loud Polynesian voices spoke, Disney traveled to the Pacific Islands and appropriated which cultural entities it visually wanted to commodify. It then reproduced its chosen images and presented them as “Polynesia” to its global audience, reaping the lucrative reward of releasing a supposedly culturally sensitive film for consumers that celebrate representation and diversity. Authenticity, as demonstrated with Moana, requires a storyteller to share narratives with the intent of spreading knowledge and understanding – not the goal to earn millions of dollars off of other cultures’ practices and traditions. Rather than seek cultural consultation, Disney should turn future projects with non-Western narratives over to the people it wants to depict. With Moana, for example, the Trust should have been given creative license to write and direct the movie.

Works Cited:


The Characteristics, Narratives, and History of Vaccine Hesitant Populations

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Writing 101: Communicating Science
Instructor: Miranda Welsh

“If there is a RISK, there must be a CHOICE” -- written boldly on anti-vaccine protest signs

“I do not consent to handing over my God-given children to the government of the United States of America!” -- antivaxxer at a meeting of the Advisory Committee on Immunization at the Center for Disease Control and Prevention (CDC)

Introduction

Since vaccines were first introduced in the 18th century, they have prevented and even eradicated many life-threatening diseases. Vaccines are considered one of the greatest public health achievements in modern history and have prevented millions of deaths worldwide. However, a growing population of people do not accept the scientific consensus that vaccines are safe, as evidenced by the rise of the anti-vaccine movement. The World Health Organization declared vaccine hesitancy as one of the top ten threats to human health in 2019, placing great urgency on the need to investigate and address its causes with accurate information about vaccines and successful pro-vaccination campaigns (Akbar, 2019). Some claim that vaccines are unsafe and can cause autism and other diseases. While these claims may sway public opinion in troubling ways, they are not grounded in trustworthy scientific evidence, which makes their prevalence even more concerning. We believe that a closer examination into vaccine-hesitant communities and their misconceptions will allow for more informed, productive efforts to reduce opposition to vaccines.

Robust scientific data indicate that vaccines are safe, rarely resulting in adverse effects, and those that do occur are usually mild. The benefits of vaccinations far outweigh the miniscule possibility of any adverse effects (Maglione et al., 2014). Furthermore, an evidenced based meta-analysis found that neither vaccines nor their components are associated with the development of autism (Taylor, 2014).

Despite the scientific consensus that vaccines are safe, some people still believe that they are harmful and choose not to vaccinate themselves or their children. This population can be found in vaccine-hesitant communities, which are characterized by narratives that provide a different account of scientific evidence. This narrative explains how scientific ideas are communicated, and how the audience may be influenced. These narratives allowmistaken ideas to become popular, and our audiences may have a strong belief in these ideas.

Caroline Salzman, Anne Crabill, Abbey List

Although we each came into the course with strong interests in different areas of STEM, we found that Writing 101: Communicating Science was the perfect way to synthesize our wide-range of interests and to address the important issue of effectively communicating scientific ideas to the public. We were all eager to take this first-year writing course with Dr. Miranda Welsh to learn how successful communication campaigns are designed and implemented – especially when the need to disseminate information is urgent, such as in disease outbreaks.

Throughout the course, we studied many examples of both effective and ineffective science communication in disease crises from Ebola, to STDs, to cholera. We realized the importance of fully understanding and respecting the target audiences of science campaigns, as the failure to do so results in misunderstanding, communication breakdown, and even violent revolt. At the end of the course, we were asked to research and analyze a current issue in science communication. The increasingly prevalent problem of vaccine hesitancy appeared in countless recent news stories about measles outbreaks, spikes in whooping cough cases, and more, piquing our interest and presenting a perfect topic for our paper. From examining unsuccessful pro-vaccine efforts, we discovered that many problems seemed to arise from the same issues we had studied in the course, such as one-dimensional approaches and incorrect assumptions about target audiences. We believe that, just as in effective communication campaigns of the past, a thorough understanding of the target audience and a multi-faceted approach will lead to greater success in combating vaccine hesitancy.

We would like to thank Dr. Miranda Welsh for her wisdom and guidance throughout the planning, writing, and revising processes of our essay. We would also like to thank Dr. Sheryl Welte Emch for her assistance in our final revisions and for sharing her expertise with us throughout the publication process.
children. Often, this vaccine hesitancy stems from the belief that the measles, mumps, and rubella (MMR) vaccine as well as thimerosal, a mercury-based preservative in vaccines, can cause autism. In fact, a 2009 survey found that one in four parents in the United States believed that vaccines caused autism (Kolodziejski, 2014). The anti-vaccine movement is on the rise and has become prevalent enough to cause the reemergence of diseases. For example, in the United States from January 1, 2019 to June 6, 2019 there have been 1,022 confirmed cases of measles, a disease that vaccination had previously eliminated from the United States (Centers for Disease Control [CDC], n.d., “Measles cases…”). Such a startling rise demonstrates that vaccine hesitancy threatens herd immunity, which describes how a population is protected from a disease when a sufficient amount of people is immune; it is extremely important because it protects young children and immunocompromised persons who are unable to be vaccinated. The rise of the anti-vaccination movement needs to be addressed because it is causing the re-emergence of life threatening diseases.

While the majority of Americans still choose to vaccinate their children, there has been an alarming rise in vaccine hesitancy and exemptions in specific areas of the country, perhaps due to the failure of past campaigns to promote vaccines. In regions such as California and its surrounding states, there are growing clusters of unimmunized children, indicating that previous efforts to communicate the benefits of vaccination have not been entirely successful. This may be because prior efforts to inform the public of the benefits of vaccination often focused on presenting biomedical and epidemiological evidence, and often assumed that this evidence alone would be enough to persuade a hesitant public.

Here, we suggest that an interdisciplinary approach to communicating the benefits of vaccination, one that incorporates more than just the biomedical perspective, could increase the success of vaccine communication campaigns. Interdisciplinary approaches have been shown to improve public communication in times of crisis, such as during outbreaks of infectious disease (Nations, 1996; Smout, 2015), but they have not yet been applied to the challenge of communicating the benefits of vaccination. Our work aims to improve the success of vaccine communication campaigns by investigating who is vaccine hesitant, why they are hesitant, and the roots of their hesitancy. This could allow future communication campaigns to identify target audiences and effectively convey their messages.

Specifically, we review and synthesize evidence of potential relevance to communicating about vaccines from three disciplinary perspectives: 1) a demographic perspective, in which we consider the demographic composition of vaccine hesitant groups, 2) an anthropological and cultural perspective, in which we identify the main themes of anti-vaccination narratives, and 3) a historical perspective, in which we consider the roots of contemporary vaccine hesitancy. In considering these perspectives, our goal is to help communicators identify target audiences, understand their specific perspectives, and consider the context of these perspectives. As such, we conclude by applying our findings to the design of vaccine communication campaigns and identifying priorities for future work.

Throughout, we use the terms “vaccine hesitancy” and “vaccine concern” interchangeably to describe feelings of general uncertainty or apprehension towards vaccines. We use the term “vaccine exemption” to define the actual act of refusing vaccines, which often but not always results from vaccine hesitancy.
Demographic Approach

**Education Level and Socioeconomic Status**

As with many public communication efforts, scientific and otherwise, knowledge of the target audience is crucial to the campaign’s success. Enhanced understanding of how vaccine hesitancy varies across key demographics (e.g., education level, socioeconomic status, and race) will allow vaccine campaigns to properly select their audience, begin to study its specific attributes and opinions, and avoid the erroneous yet common one-size-fits-all approach, resulting in a more efficient use of time and resources.

Across studies, education level is a determining factor for both vaccine use and hesitancy. Curiously, vaccine exemptions have been shown to increase with education, but vaccine concern decreases with education. A relatively focused survey of expectant mothers in an obstetrics clinic concluded that women were more likely to be vaccine hesitant if they had not obtained a college degree than if they had a four-year degree or higher, suggesting that individuals with lower education levels are more likely to be vaccine hesitant (Cunningham et al., 2018). This pattern was confirmed by a nationwide survey that found vaccine hesitancy to be strongly associated with less education (Shui et al., 2006). However, an opposite correlation seems to be supported for vaccine exemptions, as those with higher education levels often obtain more vaccine exemptions for their children than those with lower education levels. Large-scale studies by Wang et al. (2014) and Tomeny et al. (2017) discovered that parents who were college-educated were more inclined to exempt, delay, or refuse vaccinations for their children.

As it is closely correlated with education level, socioeconomic status unsurprisingly presents similar trends. Wang et al. (2014) found that, overall, clusters of the population in California with high vaccine exemption rates were associated with higher socioeconomic status. Parents who exempted or refused vaccines were likely to have higher incomes than parents who did not (Wang et al., 2014; Tomeny et al., 2017). In contrast, in an earlier study, Shui et al. (2006) found that lower income was associated with high levels of concern about vaccine safety. Several older studies cited in the comprehensive review paper Wang et al. (2014) also supported this conclusion. This research suggests a discrepancy between past and present trends, signaling a possible shift between 2006 and circa 2015 where higher socioeconomic status became more closely correlated with vaccine concern than lower socioeconomic status.

While these sources appear to be in conflict, there are several explanations for their opposing conclusions. Cunningham et al. (2018) studied only a small group of 648 expectant parents selected by convenience sampling in Houston, Texas, and the findings of Shui et al. (2006), gathered thirteen years ago, lack recency, possibly calling into question the present applicability of these results. Even so, a more satisfactory explanation for the apparent contradictions may lie in the difference between vaccine hesitancy and vaccine refusal or exemption. Specifically, institutional barriers may prevent less educated or low-income vaccine-hesitant parents from obtaining exemptions. For example, school immunization laws influence decisions to immunize (Shui et al., 2006), and exemption rates are increasing faster among private schools than public schools (Wang et al., 2014). Thus, it may be the case that while groups with lower education and socioeconomic status are more commonly concerned about vaccines, they lack the means and opportunity to avoid them, while more educated, higher income groups have a wider array of choices for schools (and therefore vaccination status) for their children. Disadvantaged groups have less agency to make unconventional decisions regarding their children’s vaccines, thereby explaining why the great representation of lower socioeconomic and education sectors in vaccine hesitancy is not mirrored in vaccine exemptions.

**Race**

Compared to education level and socioeconomic status, relationships between race and vaccine hesitancy have received less attention. While some notable relationships exist, they appear to change over time and across locations. For example, Shui et al. (2006) found that, nationwide, African Americans and Hispanics were more likely to be significantly concerned about vaccines than white parents. Given the mistreatment and abuse many minorities have suffered at the hands of medical establishments, this apprehension comes as no surprise. Unethical, exploitative studies like the Tuskegee Syphilis experiment, which targeted black men who were poorly informed about the study and denied effective syphilis treatment to ill subjects, likely formed a strong historical basis for minorities’ distrust in medical institutions (CDC, n.d., “U.S. Public Health…”). In contrast, Wang et al. (2014) discovered that, in California, vaccine exemption clusters were geographically associated with populations that had higher proportions of whites than minorities. This is consistent with Tomeny et al. (2017), which found that Caucasian mothers were more inclined to be hesitant and exempt their children, at least according to their
analysis of anti-vaccination attitudes on Twitter. The older age and unclear methodology of the Shui et al. (2006) could explain why it seems to contradict the more recent studies of Wang et al. (2014) and Tomeny et al. (2017). In addition, the study from Wang et al. (2014) is based on a smaller geographic area than that of Shui et al. (2006). In the absence of further evidence, these findings suggest that the racial makeup of vaccine-hesitant individuals may shift over time or fluctuate across geographic regions.

Overall, most studies agree that vaccine exemptions increase with education level and socioeconomic status, while vaccine hesitancy decreases with these demographic characteristics. Studies of racial patterns in vaccine hesitancy are relatively rare and somewhat contradictory, and future work should investigate these contradictions. Additionally, some nationwide patterns, such as the relationship between race and vaccine hesitancy, tend to break down or reverse when investigated in smaller regions. Likely due to the recent rise in vaccine exemptions in these areas, studies of smaller regions tended to focus on California or its surrounding states, but future research into the demographics of vaccine hesitancy should investigate racial patterns across various geographic locations and scales, especially if the goal is to improve our ability to tailor vaccine communication campaigns to specific target populations and regions.

**Anthropological/Cultural Approach**

To fully understand anti-vaccine positions and thus design pro-vaccine messages that will resonate with this audience, it is important to understand how vaccine-hesitant people are communicating their ideas about vaccines. Across anti-vaccination narratives, three commonalities emerge. The first is that they tend to use personal anecdotes as evidence. The second is that they often blend this first-hand evidence with seemingly scientific sources to legitimize their viewpoint. Third, they tend to express distrust in the healthcare system.

While the scientific evidence is clear that vaccines are safe, many anti-vaccine narratives use single data points, in the form of personal stories, to spread misinformation. Anecdotal evidence can have a powerful effect on public opinion. In the 21st century, anti-vaccine conversations and storytelling tend to happen in online discussion forums and communities, which allow misinformation to disseminate quickly. Edy and Risley-Baird (2016) analyzed 2,000 user-generated comments about the supposed link between vaccines and autism and found that the members of these online networks, or rumor-communities, often counter scientific evidence with personal experience. When they analyzed Facebook discourses to understand how people are discussing vaccines, Vulpe and Stoin (2018) also found that personal narratives are a key component of communication within the anti-vaccine community. They explain that many anti-vaccine posts utilized the “storytelling” technique, where authors use anecdotes as conclusive proof that vaccines, or vaccine components such as the mercury-based preservative thimerosal, cause autism. Many of these emotionally charged narratives take the form of a parent explaining that their child developed the symptoms of autism after being vaccinated. The authors of anti-vaccine content often legitimize their anecdotes by blending them with seemingly scientific evidence. However, these scientific sources are sometimes used inappropriately and out of context. For example, Ginger Taylor, the mother of a “vaccine injured child” diagnosed with autism after being vaccinated, submitted a personal story to a publication urging parents to avoid vaccines for their children (Taylor, 2016). She takes issue with the CDC vaccine safety claims and links to several sources of “mainstream research” that supposedly finds a connection between vaccines and a lengthy list of conditions (Taylor, 2016). Taylor does not explain her contentions with the CDC clearly or provide a robust explanation of the evidence that she cites. Furthermore, Taylor only presents the rare evidence that supports her viewpoint and ignores the overwhelming evidence to the contrary. Although her argument may not be scientifically sound, the long list of sources could convince a reader that her views are legitimate.

Taylor is not alone in blending personal experience with scientific sources. In “Mercury, Vaccines, and Autism,” Baker (2008) writes about a parent group that extensively researched studies on mercury and eventually compiled their efforts into a published study in Medical Hypotheses, a publication focused on bringing new ideas into the spotlight. Their research was rejected by most conventional, peer-reviewed journals. In this study, they compared the features of autism to the documented symptoms of mercury poisoning. This study inappropriately concluded causation from correlation by suggesting that overlap between the symptoms of autism and mercury poisoning was conclusive proof that vaccines
were the source of their children's autism. These examples show how personal stories mixed with cherry-picked or misrepresented scientific data can be used to effectively challenge the scientific consensus on vaccine safety and add an air of legitimacy to anti-vaccine narratives.

In these narratives, personal anecdotes and references to scientific sources are often underscored by a general distrust in the healthcare system. For example, an analysis of Romanian anti-vaccine Facebook pages highlights the need for science communicators to effectively understand the history that informs the attitudes and narratives about vaccines. In the 1980s and 1990s, the HIV epidemic was thought to be connected to unsterile equipment. Many Romanians distrusted the government (and vaccines and vaccine programs by the transitive property) and their distrust for health care grew as a result of this context (CDC, 1998). This context is important for understanding the roots of today’s anti-vaccination movement in Romania. In one of these influential posts, an edited version of a CDC video posted on a popular anti-vaccination page, the authors claimed that a vaccine was actually a governmental attempt to see how many people would die from myocardial infarction as a side effect (Vulpe and Stoian, 2018). The distrust evident in this post is an important component of many vaccine-hesitant narratives, one which often goes unacknowledged in analyses of these narratives.

To more completely understand anti-vaccine narratives, future work could investigate other, less common narrative strategies. Furthermore, understanding which combinations of narrative strategies are most common in different demographic segments could increase the efficacy of communication campaigns. Tracking the relative frequency of each narrative type in online discourse could also serve to produce a better understanding of its overall influence on public opinion.

**Historical Approach**

By understanding the historical background behind vaccine safety, we can identify some of reasons why vaccine-hesitant people distrust academic medical institutions, the government, and vaccine manufacturers. With this knowledge, we can work to rebuild trust and communicate vaccine safety more effectively and from trusted sources.

Contemporarily, questions regarding the legitimacy of scientific institutions arose in response to the publication of Andrew Wakefield’s article in 1998 in the British medical journal *The Lancet*, media coverage of this publication, and the publication of subsequent studies that disproved its results. Wakefield’s article suggested a connection between the MMR vaccine and autism. Despite the fact that the Wakefield article was published in a peer-reviewed journal, it contained many errors and was put on the *Times* list of Great Scientific Frauds and was later retracted (Krishna, 2018). Wakefield claimed he co-authored the article with 12 other people, but when the British General Medical council investigated it discovered that Wakefield was the sole author. Several additional errors in Wakefield’s study have been revealed, and numerous scientific studies have concluded that there is no connection between the MMR vaccine and autism (Kolodziejski, 2014). Despite all of this information and Wakefield’s own confession of no provable connection, people are still convinced that autism is linked to the MMR vaccine. This is due, in part, to the immense media coverage that Wakefield’s article received. Even though there were many studies disproving the connection, the media became obsessed with this one article and its radical conclusion. The level of coverage was totally
disproportionate to its medical or scientific significance. Because the article was not based in scientific fact and was disproved so many times, it called into question the entire peer review process and led to the distrust of academic medical institutions.

Distrust in two branches of the government, the courts and the CDC, may have arisen in response to their actions in the past, which made them appear to be influenced by the interests of vaccine manufacturers. Within the United States’ legal system, there is a federal vaccine injury compensation court which shields vaccine manufacturers from any liability for adverse reactions to their vaccines, out of concern for the national vaccine supply. Because the court has ruled that there is no connection between vaccines and autism, vaccine manufacturers do not have to compensate for any cases of autism that develop post vaccination. To some members of the public, this system appears to favor manufacturers over parents (Kirkland, 2012). There are also concerns surrounding the regulation of vaccine safety and how much influence the vaccine manufacturers hold over the CDC. In 1999, the Public Health Service recommended that thimerosal be phased out of child vaccinations, with the disclaimer that there was no data or evidence of any harm connected to thimerosal. In June of 2000, Robert Kennedy Jr. wrote an article in Rolling Stones which asserted that the government was covering up of the harms of thimerosal based on a closed meeting between the CDC and vaccine manufacturers that June. During the meeting, Thomas Verstraeten, a researcher for the CDC, claimed that his study might show a connection between thimerosal and autism, but when the study was published three years later, it rejected such a link. Through a Freedom of Information request, the transcripts of the closed meeting were eventually released. The claims in these transcripts, while disproven, have engendered distrust in the government and vaccine manufacturers (Schulman, 2005). The anti-vaccination movement often questions the validity of the government’s conclusions about vaccine safety because they seem to prioritize the interests of vaccine manufacturers.

Over the past 20 years, several events may have encouraged distrust in academic medical institutions, the government, and vaccine manufacturers. While the effects of these events seem logical, we cannot say for certain that they are the root of public distrust and vaccine hesitancy. Future work should aim to determine which institutions and which events have had the largest effect on public perceptions of vaccine safety. This would allow us to assess whether there is one specific source of public distrust or if it is a cumulative effect. If it was the former, efforts could be taken to address this source of distrust and correct it if necessary.

**Conclusion**

In summary, we found that vaccine hesitancy is more common in populations with low socioeconomic status and low education levels, while vaccine exemptions are prevalent in populations with high socioeconomic status and high education levels. Primarily, these groups are concerned about the safety of vaccines and the supposed link between vaccines and autism, despite a strong corpus of scientific evidence that undermines the validity of such claims. These views are often communicated and shared through potent personal narratives, dubious scientific
evidence, and combinations of narrative and scientific sources. Furthermore, vaccine-hesitant people who struggle to sift through the hordes of information available online latch on to easily accessible and emotionally compelling accounts, regardless of what dense scientific literature may claim about vaccines. Andrew Wakefield's article that linked vaccines to autism has done more harm than good. The conflict between Wakefield's work and numerous other scientific perspectives called into question the ability of science to establish facts and made the public distrustful of scientific institutions. Additionally, the release of transcripts from a closed meeting between the CDC and vaccine manufacturers led to distrust of both parties.

Given this information, science communicators can focus on properly selecting a target audience for vaccination communication campaigns in order to have the biggest impact. Current, accurate knowledge of the demographic correlates of vaccine hesitancy and use can be used to identify target audiences and to tailor messages to these audiences. Our results suggest that the most urgent target audience is individuals with high socioeconomic status and high education. This audience is the most likely to request vaccine exemptions, which are detrimental to the collective protective benefits of vaccines. While groups with lower socioeconomic status and low education are also highly vaccine hesitant, there seem to be institutional barriers such as public school policies or travel restrictions that prevent them from obtaining exemptions. However, in the future, these barriers may diminish, and thus the current level of vaccine hesitancy among these groups should not be completely ignored by vaccine campaigns. Once public health communicators have effectively identified and segmented their target population, it is critical to use understandings of persuasive narrative structures to craft effective messages. For example, public health communicators could use personal narratives to explain the dangers of not getting vaccinated in addition to statistical data from an established authority. It is also key to make this type of information easy to understand and widely accessible. Understanding which institutions are trusted and which are not will allow science communicators to choose effective sources of information. For now, sources other than scientific institutions, government agencies, and vaccine manufacturers might be more effective such as daycare centers, school programs, and community centers.

Previous efforts to communicate about vaccines have mostly looked at this complex issue from a single disciplinary perspective. These efforts have not been effective in addressing the troubling anti-vaccination movement. Our review and synthesis demonstrate the potential for interdisciplinary approaches to improve science communication in general, in contexts other than during outbreaks of infectious disease. Despite the potential for interdisciplinary approaches to improve communication about vaccines, there are some remaining knowledge gaps that, if addressed, would allow the disciplinary perspectives we considered to contribute even more to communication efforts. For example, future work could investigate people who were previously vaccine hesitant and later decided to get vaccinated or vaccinate their children to learn about what prompted their changed mindset and to see if that strategy could be applied to other demographic groups.

Also, while several vaccine-hesitant demographics are well-documented, geographic patterns of vaccine hesitancy are incomplete. Knowledge of the regions in which hesitant groups tend to cluster would inform vaccine campaigns of where to focus their efforts. Furthermore, patterns of vaccine hesitancy or use across racial demographics appear somewhat contradictory, and given the historical background of the United States, it is no surprise that race has come to play a significant role in healthcare decisions. Closer attention to this factor may provide another specific criterion for audience segmentation. Understanding the impact of historical events and which institutions are most trusted would allow communicators to decide who should be responsible for delivering information to the public. By utilizing demographic, anthropological, and historical information on vaccine beliefs, science communicators should be able to craft interdisciplinary communication campaigns that better convey their messages and ideally reduce vaccine hesitancy.

Authorship Contributions

Abbey List researched, drafted, and revised Demographic section. Anne Crabill researched, drafted, and revised Anthropological/Cultural section. Caroline Salzman researched, drafted, and revised Historical section. All authors contributed equally to researching, drafting and revising the introduction and conclusion.


The Deadly Dough Debacle

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The start of the evening was utterly serene. Clumps of crisp, sparkling snow drifted down in the fading light while the calming aroma of crackling hickory filled your lungs. Entering your quaint family cabin, the joyous sound of children's laughter filled your ears, intermingled with the sweet singing of Michael Bublé. As you made your way to the kitchen, you cast your eyes around the lovely holiday scene: Junior sat under the tree shaking the presents, Grandpa dozed off in his ancient recliner after a few glasses of eggnog, and Grandma hovered near the oven eyeing a batch of cookies intently. Everything at the time seemed like a perfect scene from Hallmark, even little Susie munching on her spoonful of cookie dough.

No one could have guessed that just hours later, the family would be huddled around a small hospital bed listening to a disturbing prognosis: Susie was suffering from a dire case of food poisoning. As the girl laid convulsing and retching, you remember the doctor droning on about the dangers of eating raw cookie dough; bacteria can grow on a variety of the ingredients used. Though, something she said surprised you: raw eggs were not to blame.

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In the early months of 2016, a tragic outbreak of *E. coli* emerged, spanning 23 states (Hamers, 2017). Of the multitude of people infected, seventeen were hospitalized, with one child even developing hemolytic-uremic syndrome (Food and Drug Administration, 2017). This crippling disease has the potential to bring about anemia and kidney failure, reducing the quality and span of one's life (National Institute of Diabetes and Digestive and Kidney Diseases, 2015). When the Center for Disease Control (CDC) investigated the outbreak, they found something very peculiar: most patients remembered indulging in some diabolically delicious cookie dough before their hospitalization (Food and Drug Administration, 2017).

Unusual as this may seem, the story becomes even more bizarre. While *E. coli* can easily grow on eggs and infect those who eat them raw or uncleaned, the CDC found it unlikely that a group of isolated patients all spontaneously developed food poisoning from the same strain of *E. coli* in different types of eggs. Further investigations revealed that all of the patients had one thing in common: the use of General Mills flour in their dough (Food and Drug Administration, 2017). Although many may not consider it so, flour is technically a ‘raw’ ingredient, subject to bacterial growth.

One may assume that the moral of this story is to avoid raw cookie dough at all costs; yet, one cannot help but wonder: how could something as basic as flour be the harbinger of deadly plague? Fortunately, that's an easily answered question: unclean food processing facilities.
What Causes Killer Cookie Dough?

As is to be expected, food processing facilities are rife with machinery of all types. Whether it be for canning, pasteurization, packaging, or otherwise, all machines are composed of hundreds of stainless steel and plastic surfaces. When combined with the bits and scraps of food strewn about during processing, these surfaces become the perfect breeding grounds for bacteria. Naturally, if the company does not enforce strict cleanliness standards, it is very easy for bacteria to slip into the food and be shipped out to unassuming customers worldwide, just as what happened to those who consumed the tainted flour. However, even health-conscious facilities can still encounter nasty bacteria problems after extensive cleanings. This concerning issue usually arises when the deadly bacteria has formed into unique structures called biofilms.

In essence, a biofilm may be thought of as a small fortified city. These cities have special walls and roadways called the extracellular polymeric substances (EPS) matrix that serve to protect and connect the bacteria ‘houses’ within (Dufour et al., 2012). In reality, these microscopic walls and roadways are just a collection of proteins which serve to link all of the bacteria cells in the colony together while also protecting them from potential harm. ‘Potential harm’ in this case refers to the chemicals, likely antibiotics, that humans throw at the bacterial fortresses in a futile attempt to kill them. Interestingly, the security of this tiny city is only made possible through a complex process of cell birth and maturation.

The Birth of Evil

Biofilms, like all other bacterial colonies, originate from just a small cluster of cells (See Figure 1). These cells, known as planktonic cells, are merely normal bacteria cells that have not yet settled down somewhere, similar to the nomadic settlers of a soon-to-be city. Once these cells clump up and adhere to a surface, they form a monolayer. This monolayer is the very first collection of ramshackle houses of the bacteria fortress. As the cells proceed to split and divide further, the population grows until a microcolony is formed. During this process of firmly establishing a bacteria town, the cells strengthen themselves by exchanging protective genes and using them to their advantage to stave off threats (Hoiby et al., 2010). After a lengthy process of repeated cell proliferation, development, and maturation, a mature biofilm, complete with a complex EPS matrix, is formed. The presence of these EPS matrix fortifications, in addition to the bacteria’s ability to communicate with surrounding cells, allows the bacteria a wonderful means of survival.

While this process certainly sounds delicately structured and extraordinarily involved, researchers from the Department of Food Science at the University of Massachusetts and at Cornell University have found that formation can occur in as little as 20 hours (Djordjevic et al., 2002). Part of their experimentation involved combining the nomadic, planktonic...
cells of L. monocytogenes, a bacteria capable of causing listeriosis in humans, with either PVC microtiter wells or stainless steel. After 20 hours, the bacteria colonies underwent testing to see how much light they absorbed. In essence, greater light absorption means that more bacteria are present. In the end, the scientists found significant light absorption on both surfaces after the twenty-hour period, although more so on the PVC, indicating that the bacteria were able to grow at an alarming speed. With such a quick rate of growth, the food industry has had to examine many different methods of sanitation.

The Strength of the Menace

When considering the issue of bacterial growth and infection, most people's first instinct is to solve the problem with antibiotics. After all, the name literally says they are good at killing bacteria, right? However, there is a flaw with this approach that few really consider: antibiotic resistance. The premise behind this phenomenon is that repeated exposure to a particular antibiotic gradually allows bacteria to better defend itself against that antibiotic, which means that instead of killing the bacteria, the antibiotic ends up fortifying the cities even more (CDCP, 2018).

The reason this is able to occur is based on natural selection. When the bacteria are exposed to the antibiotic, any cell which does not have a natural immunity to the medicine will die (See Figure 2). Usually, this can amount to 99.9% of the bacteria being attacked. However, it is entirely possible that the small 0.1% of bacteria remains completely unaffected and continues to breed. A colony can become antibiotic resistant overall if this surviving 0.1% reproduces extensively, reforming the colony. When this happens, every bacteria cell ultimately has the ability to resist the antibiotic, rendering it useless.

Furthermore, the fact that the bacteria maintain resistant phenotypes can also be a serious issue (See Figure 3). Basically, the idea of maintaining a resistant phenotype means that the bacteria 'houses' can just board themselves up when faced with an antibiotic. By becoming hermits and covering all of their entrances, antibiotic intruders cannot burst inside regardless of outside factors. Because of this, the bacteria houses can just open back up at a later time and repopulate the colony, much to the dismay of the scientists. While both issues hold true for the vast majority of bacterial colonies, antibiotic resistance in biofilms specifically can become even more complex.

Dr. Philip S. Stewart and Dr. William Costerton from the Center for Biofilm Engineering and Department of Chemical Engineering at Montana State University have explored antibiotic resistance in biofilms and assert that much of their defense stems from their multicellular nature rather than just their inherent genetic defenses (Stewart and Costerton, 2001). According to the scientists, the fact that biofilms promote the slow penetration of medicine and create altered microenvironments allows them to resist many human attacks.
Antibiotics may very well have a difficult time penetrating the entirety of a biofilm since, if the bacterial cells are not already genetically resistant, they may become deactivated at the surface layers more rapidly than it is able to diffuse. As a result of this, bacterial death may be seen at the upper layers of the biofilm, but the lower layers may live and divide to produce daughter cells to replace the eliminated cells.

Additionally, according to Stewart and Costerton (2001), the antibiotics may not be able to reach the bottom of biofilms because of differences in molecular charges. If the antibiotic in question is positively charged, and the fortifications of the bacterial biofilm city are also positively charged, the antibiotics will have a hard time 'climbing over the walls.' This is actually very easy to model yourself: if you hold two positive magnets next to each other, you will see that they repel.

The fact that bacteria inside the biofilm can maintain an environment not suitable for antibiotics is equally troublesome. Oftentimes, this may mean that although the area surrounding the biofilm is rich in nutrients and not too acidic or basic, the inside of the biofilm may be too extreme for an antibiotic to exist. In the context of the fortified bacteria city, even if the antibiotic invaders break inside, the bacteria may have their home set up so that there is no oxygen to breath. Even though the bacteria can live perfectly fine without the oxygen, the invaders suffocate inside the walls, preventing them from doing any damage. As a consequence of all of these reasons, in addition to the aforementioned concept of antibiotic resistance, antibiotics are not a reasonable way to make sure biofilms do not contaminate our cookie dough. This leaves us wondering, what is?

The Food Industry: Close, but Not Perfect

The food industry has already concluded that antibiotics are by no means a practical way of cleaning equipment (Gibson et al., 2001). As such, it is vastly more common to see workers employ a multi-step process of spraying down machines with high-pressure water and scrubbing parts vigorously, and then disinfecting components with various detergents to kill the biofilms. In order to explore the effectiveness of these methods, Dr. H. Gibson from the school of Applied Sciences in the University of Wolverhampton directed a series of experiments.

In these experiments, Gibson and his colleagues grew *S. aureus* and *Ps. aeruginosa*, both of which are dangerous bacteria common in food production facilities, on sections of stainless steel and exposed them to each cleaning method in a factory setting. Afterwards, his team swabbed the steel and examined samples under a special microscope while also performing various chemical tests. They found that traditional, high-pressure spraying with untreated water resulted in 98% coverage of the affected area. In contrast, using a gel detergent followed by a lower pressure rinse showed a decrease in coverage and little effect on the biofilms themselves. The most effective strategy was mechanical scrubbing, which reduced...
the area coverage to less than 1%. After one of each of these cleaning methods, the area was exposed to a disinfectant to help kill the agitated biofilms.

Despite the overall effectiveness of this multi-step process, Gibson et al. (2001) found that the first physical cleaning step dictated the success of the disinfectants. In other words, if coverage was not 100%, disinfectants could not kill 100% of the biofilm present. Furthermore, Gibson et al. found that traditional cleaning methods also had a tendency to spread the biofilms around the workplace, since high-pressure water jets are not particularly controlled. As a result of these findings, it is clear that the methods used by food companies today are not necessarily fool-proof, allowing for the slip-ups seen in the General Mills flour incident. With this being the case, there is a blatant need for another form of bactericide.

The Savior of Cookie Dough

At last, we arrive at our solution, the savior of cookie dough. Surely to kill these mutant, bacterial beasts we must need very, very powerful chemicals, no? Actually, we do not need any chemicals at all. As it turns out, nature provided humans with a means of eradicating deadly bacteria millions of years ago: bacteriophages. Practically speaking, bacteriophages, also known as phages, are highly-trained bacteria hunters. By recognizing what a specific bacteria cell ‘wears’ on its membrane, bacteriophages can locate and latch onto their targets (García et al., 2010). Once attached, the phages will usually inject their DNA into the bacteria, reproduce inside, and cause it to burst from the inside out. Other times, the phages may prolong the process and wait until the bacteria reproduces before killing it, along with its children.

Since phages are not technically living creatures and require a host to survive and reproduce, they are considered viral pathogens of bacteria. In spite of this, they are pretty much harmless to humans, making them a perfect ally (García et al., 2010). Not only this, but bacteriophages co-evolve with bacteria, allowing them to overcome bacterial defenses as they arise. Furthermore, while phages can vary greatly in size and shape, they are usually depicted as little alien spaceships (See Figure 4). These ‘spaceships’, like other viruses, have a large bulbous head where the DNA, or passengers, are kept. Slightly below this is the ‘dock’ of the ship, or the long tube that DNA passengers can pass through. At the very bottom of the phage ship are its unique tails, which enable it to firmly grab hold of bacteria, as if with grappling hooks. Using these unique features, phages make short work of bacteria.

As has been described, one of the primary ways phages destroy bacteria is by immediately bursting them. This process, known as the Lytic Cycle, is one of the more widely recognized phage mechanisms (García et al., 2010). Within this method of attack, the phages begin their assault by first identifying their targets, the bacteria. This can be done by scoping out the bacteria’s ‘uniform’, or specialized proteins on its surface. If the uniform matches the phage’s specifications, it will latch on to the bacteria with its tails. Shortly afterwards, the phage will breach the bacteria’s armor and inject the enemy with its own DNA. By hijacking the inner workings of the bacteria, the phage can force the bacteria to make many more copies of itself, like any other virus that exists. At a certain point, the bacteria will swell up so much from the accumulating phages that it will burst, expelling more phages and dying in the process.

The Lysogenic Cycle, another way phages might go about attacking bacteria, works in a similar way. After the phage has gotten to the point where it has injected the bacteria with its DNA, things differ. Instead of forcing the bacteria to

Figure 4. The lytic and lysogenic lifecycles of bacteriophages. The above image describes the two possible lifecycles of a bacteriophage. In the lytic cycle, bacteriophages first identify their target. The phages will then latch on to and penetrate their victim. The DNA of the phage is injected into the target and copies of the phage are produced inside the cell. Finally, the cell bursts, releasing the phages. The lysogenic cycle functions similarly, however the DNA of the phage will embed itself into the DNA of the target first and will not begin coding for phage production until the target has reproduced and certain conditions are met. Reprinted from (García et al., 2010).
make phage babies, the phage's DNA will lie in wait, sort of like a sleeper agent. More often than not, the bacteria might last days without even knowing it has been infected, making its own babies in the process. However, by making bacteria babies while infected, the original ‘infected prime’ bacteria exposes its children to the sleeper agent. Due to this, when the sleeper agent activates and begins to force the bacteria to make phage babies, it will also activate in the bacteria's own children (García et al., 2010). As a result, all of the bacteria infected as well as their offspring will be killed. While this method may take longer than the Lytic Cycle, it can easily be just as deadly. As vicious as both of these combat plans may be, the true value lies in how they may be applied to hinder food contamination.

**A Classic Siege**

Naturally, the first way to use these marvelous creatures to kill biofilms is to simply bombard the biofilms with them. Promising results have been observed using this very direct method. One particular experiment, performed by researchers from Mississippi State University, explored how well *L. monocytogenes* biofilms, the bacteria that can cause listeriosis, fared against phages (Soni and Nannapaneni, 2010). In a particular portion of their study, the researchers pitted the microscopic viruses against 21 different types of *L. monocytogenes* in well plates filled with a nutritious growth gel to see how much plaque would form. This plaque, made up of exploded bacteria cells, formed in every instance in varying amounts, indicating that even the ‘indestructible’ bacterial fortresses were susceptible. Further tests included applying phages to biofilms grown on pieces of stainless steel that simulated common surfaces found in food factories. When examining what remained of the colonies, researchers found that the phages were merciless. Biofilms grown on the stainless steel for two days suffered a 5.4-log CFU/cm reduction in size from 7 log CFU/cm while biofilms allowed to grow for seven days suffered a 3.5 log CFU/cm reduction. The fact that these miniature hunters killed a large portion of the bacteria present certainly marks them as a potential follow up to the lack-luster cleaning methods currently used by food companies.

**An Inside Job**

As opposed to the previous method of cookie dough defense which directly kills bacteria cells by bursting them in a lytic fashion, this mode of attack stealthily uses some properties of the lysogenic cycle. Instead of assaulting the biofilm fortress head-on with ballistae and catapults, bacteriophages in this method act like little spies. By sneaking into the enemy bacteria cells, the bacteriophages can set off a series of lethal events using special protein ‘self-destruct codes’ (Westwater et al., 2003). In other words, the phages penetrate the bacteria cells and force them to kill themselves. The beauty behind this method is that no matter how immune the bacteria is to medicine, the phage spies can sneak in so long as they have on the correct ‘uniforms’, or protein markers. Once in, the phages inject their protein ‘self-destruct codes’ and its mission accomplished.

In order to test just how effective this method is, the researchers from the University of South Carolina prepared three groups of *E. coli*. One group was treated with a harmless solution while the other two groups were treated with phages that had been specially modified to carry one of two self-destruct proteins (Westwater et al., 2003). After exposing the *E. coli* groups to one treatment for 30 minutes, researchers found that the groups exposed to either type of phage dropped in bacteria cell count by 275 to 370-fold. Results from living mouse tests were similar. When mice infected with *E. coli* faced the same three treatments, it was discovered that administration of either phage caused *E. coli* bacteria levels in the blood to drop by 94% to 98%. Both tests showed that using phages carrying the self-destruct proteins is an effective way to kill resistant *E. coli*. Once again, these results have promising implications for the food industry.

**The Two-Pronged Approach**

As effective as these natural bacteria predators have been proven to be, it is no surprise that sometimes even they can be stumped by a particularly strong biofilm. In this instance, it may be necessary to first bombard the walls of the biofilm fortress, lowering its defenses, and allowing the bacteriophage hunters a way to access the bacteria within. In order to test this sort of approach, Dr. Timothy K. Lu and Dr. Collins from Boston University had to get creative. They decided that by genetically modifying the already-powerful bacteriophages to carry a special gene coding for the enzyme disperin B (aka the “barbaric enzyme”), it may be possible to disrupt the protective EPS matrix of the biofilm (See Figure 5).

In practice, the barbaric enzyme produced during the siege on the biofilm should attack the EPS matrix while the
bacteriophages themselves attack the bacteria, destabilizing and killing the biofilm at the same time. To see how effective this approach really was, researchers pitted common T7 phages against the infamous E. coli. When these phages were given the gene to create the “barbaric enzymes” and sent to attack E. coli biofilm, they performed much better than normal phages without the gene (Lu and Collins, 2007). The scientists could tell this was the case by conducting a crystal violet assay. After the biofilm had been washed repeatedly and stained, the modified phages were shown to have killed many more bacteria than the normal ones. As wonderfully as this ‘two-pronged’ approach works with a little genetic engineering, it is surprisingly effective with natural ingredients as well.

In order to destroy biofilms without the complexity of having to modify phage DNA but still seeking to somehow avoid the defenses of the colony, Dr. Oliveira and her team decided to create a sort of honey-phage slurry (2018). Honey is naturally filled with bacteria-fighting enzymes, which allows it to destabilize the EPS matrix walls of the bacteria fortress and thoroughly weaken it. During experimentation involving this honey slurry, biofilms were grown on well plates and pig’s skin. The biofilms were then treated with one of four conditions: 1) nothing (a control), 2) only bacteriophages, 3) only honey, or 4) a mixture of the two.

Unsurprisingly, biofilms treated with bacteriophages or honey, showed reductions in size. However, biofilms exposed to the combined treatment of phages and honey were oftentimes found to be impacted further, with more bacterial cell death. Oliveira et al. hypothesize that the success is due to honey seeping past the biofilm defenses, allowing bacteriophages to penetrate the biofilm and attack individual cells more easily. While honey may not necessarily be the best choice for cleaning machinery in a food factory, this is a perfect example of how natural ingredients can have antibacterial properties and can be highly effective when combined with the explosive power of phages.

### Will Phages End the Deadly Dough Debacle?

In an age where superbugs are prevalent and pre-packaged food consumption is very common, food production facility cleanliness must keep up. Otherwise, those delicious holiday treats might have some nasty, sickening ingredients inside. The menace behind ruining these times of family merriment, those loathed biofilms, are certainly a difficult enemy to overcome. Their brilliantly structured colonies complete with densely packed cells, EPS matrices and unique internal environments as well as their ability to adapt quickly renders antibiotics useless. As such, bacteriophages are needed more than ever. Lytic phages offer a swift, basic solution to an aspiring colony of deadly bacteria. Lysogenic phages, although slower in their attack, ensure mass destruction of bacteria and its entire offspring.

Phages alone, however, may not offer enough resistance to completely destroy a biofilm. As such, combining these

![Diagram](image)

**Figure 5.** The use of bacteriophages and "barbaric enzyme" DspB to eliminate biofilms. The picture shown above shows how the 'two pronged approach' of using bacteriophages and enzymes together can destabilize and kill a biofilm. First, the phage infects the target bacteria as normal. However, the phage DNA also codes for the "barbaric enzyme" DspB. Because of this, when the bacteria bursts, it throws forth phages and the enzyme. This enzyme then degrades the the EPS matrix walls of the biofilm fortress while the phages themselves continue to infect and burst bacteria with greater access than before. Adapted from (Lu and Collins, 2007).
bacteria hunters with other chemicals, whether produced themselves through genetic modification or added in, may be necessary. For this reason, future research should hinge on exploring the best possible chemicals to combine with phages that not only combat biofilm defenses but remain safe to use on food surfaces. It is equally important that work is continued on analyzing the most common food bacteria to be able to produce the most relevant combination of phages possible for a cleaning solution.

One can only hope that when this research comes to fruition and the food industry is purged of the biofilm menace, we can plop ourselves down by the crackling fireplace and fearlessly enjoy spoonful after spoonful of that sweet, doughy goodness.

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A Religion of Refuse: Framing the American Waste Disposal System in the Context of Lived Religion

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Introduction

One-a-day contact lenses. Single-use shipping boxes. Disposable plates and napkins. In a society that exalts ease of use and idolizes big industry, Americans generate approximately 250 million tons of solid waste each year (Leahy, 2018). Through their patterns of consumption and disposal, Americans collectively participate in a thriving, though environmentally threatening, materials economy. But beyond economics, they have become indoctrinated into a throwaway culture in which their responsibility for the waste they produce ends as soon as that waste leaves their hands. They dispose, and they are absolved. The materials economy and linear waste disposal system of the United States together constitute a pervasive religion that is grounded in a discreet distinction between sacred and profane, substantiated through the regular practice of rituals, and powerfully presided over by big business. Given this characterization, the newest wave of socially-conscious environmentalists would be wise to approach the challenge of changing the American mindset on material waste not as a matter of winning a logical argument but rather of achieving a large-scale religious reformation. In other words, by recognizing the socio-religious factors that underscore the systemization and rationalization of current waste disposal practices, religion can be understood as both the problem and the solution to the pressing environmental issue of waste accumulation and management.

Methodology

To better understand how the American materials economy and linear waste disposal system constitute a religion, as well as how Americans practice this religion, I interviewed six undergraduate students at Duke University in Durham, North Carolina. All interviews were conducted in person, and all conversations were recorded for future reference with interviewees’ consent. Interview questions covered a wide range of topics, from personal knowledge about the waste disposal process to everyday actions and participation in traditional and alternative forms of trash disposal to perceived implications of specific waste disposal practices. (See Appendix A for complete list of questions.) A mix of quantitative or multiple-choice and open-ended questions facilitated the collection of multiple types of data; standardized answers could be directly compared among respondents, while broader questions facilitated variation and flexibility of answers. The objective in asking these questions was to understand more than just the what, when, and
where of waste disposal, but to dig deeper into the underlying motivations for and consequences of these action patterns.

According to the EPA, the United States’ national recycling rate is a meager 34.7%. Given this small fraction, and given the indisputable evidence favoring recycling over traditional waste disposal in terms of environmental impacts, I was led to conclude that most Americans can be grouped into an ignorant majority—a group of people for whom learning about and executing sustainable behaviors is a low priority. Phrased another way, this is a group of people who do not actively seek to enhance their knowledge about the environmental implications of their actions, and therefore do not view many environmental consequences as carrying a weight quite big enough to justify radical—or in some cases even marginal—behavioral changes.

Initially, the purpose of conducting these interviews was to obtain representation of this ignorant majority. Without a formal education in environmental sciences, and with hours upon hours of classes, extracurriculars, and social obligations to occupy their time, these students could not be expected to dedicate substantial consideration to the environmental impacts of their day-to-day actions. And where conscious consideration was absent, I expected years of socialization to preponderate and the characteristic signs of indoctrination to be readily apparent. What I found instead was a distinct subset of the general population arguably at the vanguard of what could be considered a largescale religious reform. Progressive in both their actions (e.g., recycling, composting, utilizing public transportation, prioritizing green technologies) and their thought processes, these interviewees presented as fledgling converts to a reactionary religion rife with its own sustainability-focused practices and principles. Their responses provided a window into the current nature and anticipated future of a nascent overhaul of the way Americans approach waste disposal and garbage as a whole—all through the lens of lived religion.

Analysis

The classification of the American materials economy and waste disposal system as a religion rests on the understanding that religious experience and adherence can extend far beyond a church or temple. A key tenet of this inclusive definition of religion as described by Emile Durkheim in his work, The Elementary Forms of Religious Life, is the division of the universe into two mutually exclusive strata: the sacred and the profane. According to Durkheim, this sacred-profane binary generates “two heterogenous and incomparable worlds” (1915, 43), and it is through the practice of religion that people collectively define the boundaries of and interact with these two worlds. By Durkheim’s definition, the designation of sacred is specific to that which is set apart and designated as superior in some way, and profane is used as a broad term to describe all things which are not sacred (1915, 42). These profane things are then subject to prohibitions in order to keep them safely apart from the sacred. In many ways, Americans’ interactions with trash conform to this idea. However, given my observations, I would challenge Durkheim’s strict binary and divide his “profane” into two distinct realms, the ordinary and the vile. The ordinary encompasses the majority of man’s everyday world and can be considered generally innocuous, whereas the vile is that which is emphatically dispossessed and is perhaps even more apparently set apart than the sacred. Garbage falls into this third category, as it evokes a viscerally negative reaction in humans, who then participate in elaborate rituals to isolate it.
In many ways, the religion of waste disposal parallels many traditional religious schools of thought in that it acknowledges the inevitability of the vile and permits it to exist so long as it can be confined to one or another established repository. While Christians accept Hell and Satan as the sanctioned locations for all things evil, Americans passively accept landfills as the designated sink for their waste, and it is widely believed that, so long as waste is effectively sequestered here, the world is in balance. To illustrate, when given the options of “good,” “bad,” or “neutral,” seven of seven interviewees asserted that littering was bad. Explanations for this choice were wide ranging, from negative environmental impacts, to adverse effects on crime rates and property values, to poor aesthetic appeal. One interviewee responded simply, “I guess people just say it’s not good.” In contrast, when asked the same question with regard to landfills, the reactions were split: three interviewees claimed that landfills were bad, three said they were neutral, and one asserted that they were good. It’s important to qualify these results with the fact that all respondents who classified landfills as bad nevertheless considered them a “necessary evil,” and admitted that they could not see a better alternative. Clearly, respondents were unsettled by seeing trash in their daily lives—and thus were uncomfortable with the idea of littering—but yet they could not bring themselves to condemn publicly validated collection sites.

Consistent linguistic patterns in responses when asked to describe the path they believe their trash takes after leaving their hands reflect interviewees’ almost unconscious desire to detach themselves—and humans in general—from the profane nature of the waste-handling process. Passive phrases regarding the movement of trash such as “it’s taken to the dump” or “it heads to a trash management system” eliminate human agency from the process of waste disposal, making it seem as though the profane—once leaving the interviewee’s hands—already exists in a world apart. Likewise, popular euphemisms for processes and people involved in the handling of garbage, such as “waste management” and “sanitation department,” are further evidence of Americans’ desire to separate themselves from the profane.

While the juxtaposition of sacred and profane is an important aspect of the belief system inherent in a religion of waste disposal, Durkheim divides religion into two categories: beliefs and rites (1915, 40), both of which need to be considered in equal measure when classifying the American waste disposal system as such. Placing trash in the trash can is perhaps the most obvious, but along with this are a host of other ritualistic action patterns to which Americans have become socialized—from wheeling garbage cans down to the curb on designated days of the week for pickup, to purchasing bags to line trash cans, to designating specific areas of rooms to hold this key receptacle. Consistent with Geertz, a leading twentieth-century figure in symbolic anthropology, systems of symbols guide the carrying out of these repetitive actions—literal and icon-based labels help identify proper receptacles and people responsible for maintaining the garbage-can-to-landfill pipeline (Geertz cited in Asad 2002, 120). But the most compelling argument comes when analyzing waste disposal in terms of Humphrey and Laidlaw’s concept of a “performance ritual,” whereby the participant carries out a sequence of actions for the benefit of others (1994, 8). Humphrey and Laidlaw affirm that “in this kind of ritual it matters far more that the audience is convinced, or consents to be convinced, than that a stipulated sequence of ritual acts be
enacted” (1994, 10). In this way, people who throw their trash in the garbage can may be internally aware that they are not really negating the trash’s existence, and that in some ways throwing their trash in the garbage can is no less detrimental to the environment than simply throwing it on the floor. However, these people complete the ritual for the benefit of a perceived audience of their peers who, through some collective consciousness, consent to be convinced that these people are doing good. In this way, disposing of trash represents much more than a logical series of events. Instead, it is the material product of a rather precarious accord between audience and performer whereby putting waste in its “proper containment unit,” as one interviewee described it, is more acceptable than any other alternative.

If the waste disposal system of the United States is to be understood as a religion, one must question: How are these elaborate rituals upheld and belief systems maintained? In Asad’s work, *The Construction of Religion as an Anthropological Category*, he relies on a number of religious and anthropological scholars to illustrate the ways in which power structures play a distinct role in instructing and enforcing religious participation. Not unlike the institution of the Catholic Church praised by St. Augustine for governing strong-handedly the practice of the faith (Augustine cited in Asad 2002, 119), presiding over the religion of the American materials economy are big businesses, producers that rely on consumerism to maintain their power and profits. Beginning in the United States as early as the 1930s, makers of all types of products, from refrigerators to automobiles, began incorporating the concept of “artificial obsolescence” into product development, intentionally designing their merchandise to be in style only so that it could go out of fashion a few years later and need replacement (Whiteley 1987, 3). To facilitate such rapid turnover of goods in the following decades, utilization of consumer credit skyrocketed—from $8.4 billion in 1946 to $45 billion in 1958—spring-boarded by the introduction of the first credit card in 1950 (5).

By implanting this fast-paced, fashion-driven mindset in consumers, big businesses planted the seeds of a throwaway culture which has blossomed into a full-fledged religion in the new millennium. To maintain this mindset in the modern day, large corporations employ billion-dollar advertising campaigns that market consumption as a pleasurable experience, credit card companies bombard consumers with newfangled ways to augment their purchasing power, designers sustain a rapid turnover of product styles, and stores are filled to the brim with overpackaged, single-use, disposable items. Through these means and more, big business succeeds in perpetuating the prevailing perceptions of the sacred, the profane, and the means by which one should interact with each. And so long as Americans continue to worship novelty, they will abhor its antithesis—refuse—all while generating it at an increasing rate.

Is this now the unalterable reality? Will Americans be forever bound by blind adherence to a toxic religion of waste production and disposal overseen by big business, to the dismay of environmental activists everywhere? When interviewing students, I expected to find corroborating evidence of such an idea. However, to my surprise, these students proved not to be as thoroughly indoctrinated as I had anticipated. Seven of seven interviewees recycled regularly and multiple respondents expressed a desire to begin composting in the near future. Many respondents expressed concern for the state of the environment, a desire to reduce the waste generated by themselves and others, weariness of large corporations and
their impact on consumption habits, and other similarly progressive sentiments. Through their actions and their mindsets, these students distinguished themselves from the majority, marking themselves as fledgling members of a largescale environmental reform. Through conversations with each of these dynamic young adults, it became clear that the very same qualities that characterize the American waste disposal system as a religion could be—in fact, were being—used to incite change.

To begin with, the tri-fold sacred-ordinary-vile classification system that aligns the waste disposal system with a quasi-Durkheimian definition of religion is a social construct that can therefore be manipulated to encourage more sustainable practices. If, as Durkheim asserts, the exercise of religion is an expression of social cohesion (1915, 38), then society can collectively decide to redefine these three categories. Both explicit and implicit social pressures play a key role in shaping one's religion, which can be seen as it relates to traditional waste disposal and the adoption of alternative methods of waste disposal by young adults. For all interviewees, familial socialization was influential in shaping their current waste disposal practices. All seven of the interviewees, who currently recycle, remembered recycling in childhood. One student, when asked why he recycles, responded simply, “That's what I grew up doing so I just continue to do that.” In contrast, zero of the seven respondents—none of whom currently compost—could recall composting with any success during their childhoods. It appears that the early implementation of environmentally friendly waste disposal processes plays a key role in the shaping of habits down the road.

The most potent source of social pressure for most students was their peers. One student explained, “When I see people recycling more, I feel bad that I’m not.” In this case, the guilt this student experienced prompted her to recycle more when around others doing the same. Another student owned that he happily put social pressure on others to engage in sustainable behaviors such as recycling and limiting use of to-go containers in dining halls. Yet a third student openly recognized the negative social stigma put on individuals who don’t “believe in green energy.” The very use of the word “believe” in this instance indicates that support for environmentally-friendly practices is perceived to stem not from reasoned analysis of facts but from adherence to an accepted moral or ethical value system. Consistent with Durkheim’s writings on the social origins of religion, this value system is what binds the social group, and deviance from such progressive beliefs has been established as grounds for exclusion. For others, simply the presence of labeled composting and recycling bins on campus was enough to motivate them to engage in environmentally-conscious behaviors. An unspoken expectation to utilize alternatives to traditional waste disposal helped these students reconfigure their relationship with trash to align with the value system already in place around them. By redefining both the material things and the action patterns that are considered acceptable, social influences have the power to majorly reform conceptions of waste disposal.

Likewise, by utilizing a comparable force of social pressure, the role of ritual in the religion of waste disposal can be reconfigured to encompass sustainable behaviors. The idea behind Humphrey and Laidlaw’s performance ritual can be applied perhaps even more readily to alternatives to trash disposal. Due to the social pressures outlined above, disposing of waste now requires more than individuals proving to their peers that they believe garbage belongs in a can and not on the ground. Now, they must also distinguish between recycling and composting in order to demonstrate an acceptable level of progressivism in thought and commitment in action. Likewise, the symbol associations and repeated maxims that Geertz cites as being a guiding force in the carrying out of religious rituals can be redefined to serve more environmentally friendly ends. For example, the familiar epithet of the three R’s (reduce, reuse, recycle) is heralded as the holy trinity of the environmental movement, a mantra that helps unite adherents around a new series of rituals with more positive consequences.

In the end, however, a true reform of religion necessitates a weakening of the power structures that promote it. Much the same as Martin Luther’s 95 Theses exposed the inequities of the Catholic Church, compelling narratives that challenge big business and make distant, impersonal environmental problems distinctly personal can be used to alter Americans’ beliefs about waste generation and disposal. One interviewee cited the animated movies, Toy Story 3, Wall-E, and Happy Feet as influential in making him rethink his relationship with trash and question the rituals of waste disposal to which he had become indoctrinated. Another respondent, when asked what could be done to change people’s beliefs and accompanying actions regarding waste disposal, stressed the value of storytelling in making...
people understand the consequences of their actions and connecting with individuals on a level powerful enough to undermine the belief systems imposed on them by large corporations. In reality, most traditional religious texts are not strictly expository, and it is this humanization of abstract moral and ethical principles through narrative that makes such texts effective in shaping adherents’ beliefs. By framing environmental issues and sustainability goals in accessible ways, activists can incorporate the masses into a sustainable narrative of responsibility and hope. This narrative can then, through invocation of pathos, embolden participants to challenge the status quo established by big business, sowing the seeds of systemic change.

Conclusion

It is evident that the very same principles that govern the American religion of waste disposal can be used to reform it. In a religion shaped by social perceptions of the sacred, ordinary, and vile, the transient nature of these definitions can be taken advantage of to redefine good and evil and their respective domains through formal education, familial socialization, and both positive and negative peer pressure. The very same forces at play in the performance of traditional waste disposal rituals can be employed to favor alternative, more sustainable waste management methods. Lastly, distinctly personal narratives and resonant storytelling—through popular media, personal conversations, or any other communication mode—can serve as bonafide gospel, undermining the power and influence of big institutions that toil to maintain their self-serving status quo. So perhaps environmental activists of the twenty-first century should take their cues from Protestant reformers of the 1500s, recognizing that habits not founded on logic cannot be broken by such. Instead, their focus should be on threading concepts like “green” and “clean” into the religious vocabulary of a society indoctrinated in a creed of consumerism, capitalizing on the tenets of religion already in place to change not only how people think, but also what they believe and how they act on those beliefs.

Appendix A

Interview Questions

1. How and where do you personally dispose of trash?
2. Describe what you believe to be the path that your trash takes after it leaves your hands.
3. As a child, how did your family approach waste disposal?
4. Growing up, what parts of the waste disposal process were a consistent or significant part of your life (ex. taking out the trash as a chore, watching for the garbage truck, separating recyclables, doing litter cleanups, etc.)?
5. Do you participate in alternatives to trash disposal (ex. composting, recycling, etc.)? If so, what motivates you to do so? What do you believe are the implications of your actions?
6. What issues, if any, do you see with the current waste disposal system? What changes, if any, do you believe need to be made?
7. Have you made any conscious efforts to reduce waste production? How do you feel that you fall short and why?
8. How do you think your current occupation has shaped your perception of the American waste disposal system? Are there any specific events/experiences that have been critical in shaping your views?
9. How often do you think about the implications of our waste disposal system?
10. On a scale from 1 to 10, how urgent do you believe the issue of waste disposal is?
11. How much waste do you estimate a Durham County resident produces in a single year? In a single day?
12. Do you feel social pressure to adhere to one or another waste disposal method?
13. Do you believe littering is good, bad, or neutral? Why?
14. Do you believe landfills are good, bad, or neutral? Why?

References


Choosing My Prophets: How I Found a Religious Canon and a New Personal Faith

Matthew Griffin
Writing 101: The Creativity Lab
Instructor: Nan Mullenneaux

If there is a heaven and I am invited, it will not be Saint Peter who ushers me through the pearly gates. Instead of white robes, my prophets will wear the suits and hats that befit gentlemen of the nineteenth century. Thomas Jefferson and William James might greet me with a stately handshake; Henry Thoreau might offer a respectful nod.

This may seem an odd group of religious figures, and yet the writings of all three helped bring me back to belief after years of doubt. The Jefferson Bible, James’s The Varieties of Religious Experience, and Thoreau’s Walden push me to be kinder, to recognize the role of faith in the human experience, to appreciate the wonder of a summer morning in the Appalachians. Taken together, they are my personal religious canon. My own journey reveals that assembling such a canon, even out of a set of seemingly-disparate texts, can be a practical form of pluralistic spirituality in a world where many have moved away from organized religion.¹

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My relationship with religion has always been complicated. My family belonged to a progressive church, where I sometimes went to Sunday school, and my parents chose to send my sister and me to an Episcopal school after we were shut out of a magnet school lottery. Religion was never a big part of day-to-day family life, however. My parents wanted us to choose our own beliefs, and church was less about theology than about having a community and a spiritual center.

Despite years of church and twice-a-week school chapel services, religion never spoke to me personally. I believed in God because everyone I knew did. I recited the Lord’s Prayer and took communion as a matter of routine, thinking that these things made me a Christian even though I was unmoved by the spiritual significance of either. When I was in the seventh grade, my best friend declared himself an atheist and opened my mind to the possibility of nonbelief. I flung away my flimsy faith and swore I would never believe again.

In the following years, I rejected the idea that religion could have any value. My friends and I made fun of Christianity and watched YouTube videos that railed against belief. The Bible became a symbol for all that was backwards and outdated in the world; religion was metonymic with those who used it to spread hate and

¹ I use the the term “spirituality” here to refer to any kind of belief in a higher power. “Religion” refers to an organized community or set of practices that center around shared spiritual beliefs, e.g. Christianity or Buddhism. The exception is when I refer to a personal “religious canon” even though I do not subscribe to an organized religion. I do this because it is a common term, and I want to emphasize the similarity of the books that I discuss to a set of religious texts.
bigotry. The destiny of mankind was crafted by the cold logic of science and math, not by a magic man in the sky. Yet through these years of rejection there was a remnant of religion to which I clung: *The Life and Morals of Jesus of Nazareth*.

More commonly called the Jefferson Bible, the book is Frankenstein's monster wearing a cross necklace, an amalgam of the pieces of the Gospels that Thomas Jefferson found attractive. No more does Jesus walk on water or heal the sick; even the Resurrection is omitted. The statesman kept only Jesus’s life and moral teachings, cutting passages out of Bibles in Greek, Latin, French, and English and gluing them into a book that he assembled himself.

My mother gave me a copy for Christmas when I was fourteen; I had asked for Richard Dawkins’ *The God Delusion* or something similar, and she wisely decided to give me something less caustic instead. I was struck by the work from the moment I unwrapped my copy, a facsimile of the original with beautiful red-and-gold binding. The Jefferson Bible demonstrates that Jesus does not have to be the son of God to espouse a simple, humanistic philosophy of loving one’s neighbor as oneself. The Sermon on the Mount is as impactful delivered by a human as by a divine being.

During my years of nonbelief, the Jefferson's book reminded me of the value of religion. It reminded me that chapel services at school had been about more than chanting the Lord's Prayer—the sermons there spoke of acceptance, resilience, love. It made me realize that my Sunday School teachers had been interested not in making sure I believe a certain way, but in introducing me to a set of stories that would help make me a kind, moral person. In the same way that the Bible serves as a moral guide for a devout Christian, Jefferson’s version invites me to be kinder, to think more about others, to give money to charity or hand a dollar to a homeless person. And yet it did not itself make me religious; with the theology stripped out, it has been more of a moral guide than a religious text for me. It would take another book to shatter my rejection of faith.

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Attending a public high school let me take a much-needed step back from organized religion. Gone were chapel services, faith studies classes, peers who almost all believed in God. With some room to breathe, my atheism began to soften. There was no need to define myself in opposition to something that was a part of my past.

I took a philosophy class during my junior and senior years, and our studies of Lao Tzu, Kierkegaard, and other nontraditional religious thinkers further chipped away at my condemnation of faith. However, the real challenge to my atheism came when our study of William James inspired a friend to gift me *The Varieties of Religious Experience*—a transcription of James’s Gifford Lectures, delivered between 1901 and 1902—for my 18th birthday.

According to James, there is no way to determine the truth of a religious claim—and we should stop trying to do so. “If you have a God already,” he says, the arguments for his existence will convince you; “if you are atheistic, they fail to set you right.” Instead of requiring proof, James argues that religion should be evaluated based on how it shapes the life of the believer. It is valid if it helps explain the sense that there is something more to the world—the sense that there is “a PLUS, a THISNESS, which feeling alone can answer for.” It is valid if it saves us from the “wrongness” that we feel deep within us. It is valid if it makes us feel a “new zest” for life, a sensation of safety and peace, and “a preponderance of loving affections” towards others. “God is real,” James concludes, “since he produces real effects.”

This argument washed over my disbelief as a wave smooths the sand where a child has labored for hours. My atheism was founded on the assumption that faith had to be provable to be valid, and therefore that believers were deluding...
themselves. If spirituality could stand apart from proof, then this argument was baseless. Everything had changed. *Varieties of Religious Experience* was the key that opened the prison where my spirituality languished so that it could escape science and logic, those cruel jailers, and stumble blinking into the sunlight.

Among many descriptions of religious belief, James quotes people who underwent conversion experiences. They describe feelings of deliverance and "sweet peace," of "God's taking care of those who put their trust in him," of an "ecstasy of joy". It was after reading accounts like these that I started to feel that my life was missing something. I wanted to feel that same pure joy. I wanted to feel that there was more to this world than the mundane. I wanted to feel that I could off-load some of the responsibility for my life onto someone or something else.

While I no longer see all organized religion as backwards or bigoted, I do not think its rote ceremony and prayer will ever be the heart of spirituality for me. James himself condemns religious orthodoxy, writing that it serves to transform religion into dry dogma and "stop all later bubblings of the fountain from which in purer days it drew its own supply of inspiration." Nevertheless, reading James showed me that a secular worldview, defined purely by science, could not tell me how to live a meaningful life. I was ready to begin the search for a new kind of spirituality.

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Two months after reading *Varieties*, I climbed into a beat-up Honda Accord with my two best friends and set off for the North Carolina mountains. We were newly-minted high school graduates, headed to spend a week on the Appalachian trail as a kind of last hurrah together. The mood was bittersweet as we set out, our enthusiasm tempered by the knowledge that in six weeks we would be at separate colleges, hundreds of miles apart.

After thirty minutes of hiking, however, we lost ourselves in the serene splendor of the Appalachian summer. The sun was shining, the wind tickled the trees, and the mountains cast their shadows over it all. It was near the end of this trip, at a place called Overmountain Shelter, that my atheism would receive another blow.

We arrived at the shelter after a day of rain and wind, our clothes wet, our legs sore. The storm had ended, and I stopped short as we stepped out of the trees into an unfallen world. Before us was a meadow, its vibrant green splashed with the colors of clover and wildflowers. To the right, the mountains towered over us. To the left, the ground fell away into a long valley where green and gold ran together as the sunset hit the trees. Across the field stood the shelter itself, an old barn painted deep red.

I felt as if we were the last survivors of a cataclysm that had wiped out humanity, as if in the distance we might see the smoke from a fire that had purged the world of spite and sorrow and sin. Here everything was new and would never grow old. Here the weight of adulthood would never touch us.

Several other travelers were at the shelter, and we talked late into the night around a campfire. Crickets chimed in to the conversation from the cool darkness, and the sky overhead was strewn with stars in the way that is only possible far from the artificial light of civilization. The talk turned to religion. An old man had been guided by Christ his entire life, while a young woman believed, *à la* Descartes, that

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II René Descartes, the famous French philosopher, wrote that “the part of the body in which the soul directly exercises its functions…is a certain very small gland situated in the middle of the brain’s substance.” This is what we today call the pineal gland, which actually produces the hormone melatonin.13
the pineal gland connects the soul to the body. When it was my turn to speak, I could not find the words I wanted to say. In this place, the world erupting with life, it felt wrong to admit that I believed in nothing.

I awoke the next morning to a world of light and air. The sun wriggled between the peeling planks of the barn and cast dappled shadows on the floor. Outside a low fog hung over the mountains, mirrored by my breath in the cool air. The forest became a sea in the blue distance. There was a flying feeling in my stomach, and I knew what James had meant when he said that there are some things that only feeling can make sense of. The world was alive and I was alive to see it: a miracle for the twenty-first century.

Six months later, I read Walden for a course in American literature. I found in Henry David Thoreau someone who could put into words what I had felt on that summer day. Here was someone who knew that “in a pleasant spring morning all men’s sins are forgiven.” Here was someone whose churches were “pine groves, standing like temples” and cedar woods where “the creeping juniper covers the ground with wreaths full of fruit.” Here was someone whose God was “dawning Nature, in whom all creatures live, looking in at [his] broad windows with serene and satisfied face.” Thoreau’s writing captured that ineffable spiritual part of nature, which in its strongest form can approach the experience of traditional religious worship.

Thoreau’s Transcendentalist philosophy espouses the power of humanity as well; he writes that “a tide rises and falls behind every man which can float the British Empire like a chip.” In line with this celebration of the individual, he preaches a simple, refined lifestyle and warns against the temptations of society. This part of his writing spoke to me as well. There is something deeply moving about seeing a city skyline and knowing that it was built by human hands, about watching the raw skill of a professional athlete or a gifted musician. There is something spiritually cleansing about living a healthy and principled life.

I found in Walden the thing that I had been looking for since reading James: a god without a capital G. My god is the force that I feel when I sit and watch the sunset in the Duke Gardens with children running barefoot on the grass and the trees arrayed in the white and pink and purple of spring. My god is the power that lets mere humans build cathedrals and send men to the moon.

In recent months I have found myself in Duke Chapel from time to time, or simply on the floor of my room, praying again after more than five years of spiritual silence. Sometimes I ask for advice; sometimes I just think through something that is troubling me. I also returned to the Jefferson Bible while I was reading Walden, studying a few verses a night until I had read it front-to-back for the first time. I saw in Jefferson’s Jesus a Transcendentalist figure—a man whose self-sacrifice on the cross has shaped the destiny of the world for two thousand years. And in the past few months I have realized the way in which all three books that I have described fit together, forming the core of a new personal faith.

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The philosopher Gregory Bassham has written about what he calls “cafeteria pluralism:” the idea that we can find religious truth by picking and choosing aspects of different faiths as if loading a plate at a buffet. I have become an accidental disciple of this idea, compiling not just ideas but texts into my own personal faith.

III Although I must admit that Thoreau goes a bit too far for me here. I think there is also something spiritual about the connection between people that he largely overlooks.

IV See, for example, David Foster Wallace’s essay “Roger Federer as Religious Experience.”

V Interestingly, while the cafeteria metaphor appears in various places on the Internet, the best definition of cafeteria pluralism is provided by Bassham in an essay about the film The Matrix, of all things.
For me, this sort of canon creation has been a practicable form of cafeteria pluralism. Bassham warns that the pluralist may end up with incoherent beliefs as he or she draws from the ideas of different religious groups; for example, reincarnation and the Christian idea of the Last Judgement seem mutually exclusive. Basing my newfound spirituality on books instead of single ideas has helped me avoid this problem. There are contradictions within my canon, sure—compare Thoreau’s claim that philanthropy is “greatly overrated” with Jesus’s command to “sell that thou hast, and give to the poor”—but this is unimportant because each book stands on its own. Each serves as a spiritual guide in its own way, meeting a particular personal need, and it is beside the point to demand that their details create a consistent theology.

It may seem questionable that spiritual belief can be this personal. Craig Duncan, a professor of the philosophy of religion at Ithaca College, has pushed back on James by proposing that happiness may be “inauthentic” when it is based on false beliefs, especially when they are “willfully self-induced” to make the believer happier. He compares someone who agrees with James to “Twenty-first Century Al,” a hypothetical man whose happiness comes from the unfounded belief that he is a descendant of Alfred the Great. Duncan thus explores the idea that people like me are as delusional as Al, choosing to buy into a pleasurable fantasy. If one takes this view, then only a verifiable and widely-accepted set of spiritual beliefs can be valid. There is no place for a pluralistic conception of spirituality.

Duncan’s argument does not trouble me, however, because my spirituality does not rely on an epistemological claim about the existence of God. I do not know if the power to which I sometimes pray is real; perhaps it is just a personal sense of awe. What I cannot deny is the feeling of looking out on the Appalachians on a sunny morning. What I cannot deny is the fact that works like Walden and the Jefferson Bible have something meaningful to say about how to live a good life. What I cannot deny is the deep, unshakeable sense that there is more to the world than logic can explain, that I am fundamentally connected to the universe and to my fellow human beings. I have chosen James’s view of spirituality because these things have the “real effects” on my life that he describes, regardless of their source, and I am willing to take the risk that they do not stem from a literal higher power.

I am not the first person to draw from texts in the creation of a personal spirituality. Fittingly, each of the three authors who influenced me serves as an example. Jefferson crafted an enduring moral guide by selecting sections of the Bible. James’s religious theory relies on the examples set by a multitude of thinkers; in one instance, he references Thoreau’s writings to illustrate the wonder of the natural world. Thoreau drew from Hinduism, referring in Walden to the “stupendous and cosmogonal philosophy of the Bhagvat-Geeta” and reproducing “substantial extracts” from the text in his journals. Each of these three thinkers crafted his own belief system out of the writings of others.

And I do not think that I will be the last person to find spirituality in this way. A recent article in Scientific American reported that nearly a third of self-identified atheists and agnostics in America believe in some form of life after death. Organized religion may be falling by the wayside as a way to answer spiritual questions—the article describes a rise in the number of Americans with no religious affiliation—but the answers that science and secular philosophy provide are often no more
fulfilling. Scientific truth is important, but, when it comes to questions that empirical or logical inquiry cannot answer, it may be time to move past the idea that there is a capital-t Truth at all—just as the belief in a capital-g God is falling out of vogue.\textsuperscript{VI} For some, the answers might instead come from a kind of New Age spirituality, as Michael Shermer, the author of the Scientific American article discusses. For others, they may come from a general form of cafeteria pluralism, a pastiche of different ideas. Perhaps some can find spirituality in the same way that I did, creating a personal religious canon out of the texts that influenced them.

I do not know where my spiritual journey go from here. I do not know if anyone is listening when I pray. I do not know if my newfound spirituality will remain personal, or if I will ever seek out a community of like-minded people and thus something that resembles organized religion. What I do know is that I have found a canon to guide me, to which I can add other works that inspire me in the future. I have found a model for modern spirituality: one that works for me, that worked for the authors who inspired me, that has the potential to work for others who are not content with popular conceptions of religious truth. I am ready to embark on a new stage in the journey of faith, and I have chosen the prophets who will guide me.

\textsuperscript{VI} This is not an argument for a kind of postmodern moral relativism. I do not think that morality is personal in the same way that spirituality is, because society cannot function if we all just pick our own moral beliefs. In contrast, a group of open-minded people can hold different spiritual beliefs and get along just fine.

Some might suggest that spiritual pluralism leads naturally to conflicting moral beliefs. I do not think this is necessarily the case, as the moral truths espoused by different religions and spiritualities are often similar; James alludes to this when he argues that true religious experiences cause the believer to feel love towards others. Personally, I do not think that spirituality is the source of morality—after all, there are plenty of atheists who are good people—although belief in a higher power can give moral truths meaning for an individual or guide someone towards a moral life. However, a full discussion of the relationship between morality and spirituality, or of where moral truths come from, could easily be an essay of its own.
3 Jefferson, *The Life and Morals of Jesus of Nazareth*, 38. Note that page numbers for sections of the text refer to Jefferson's own numbering, which is separate from that of the introductory material.
7 James, *The Varieties of Religious Experience*, 334-335.
8 James, *The Varieties of Religious Experience*, 371.
11 James, *The Varieties of Religious Experience*, 189.
12 James, *The Varieties of Religious Experience*, 251.
15 Thoreau, *Walden and Other Writings*, 190.
16 Thoreau, *Walden and Other Writings*, 266.

**Works Cited**


Do you ever just reread your old writing pieces, trying to step back into the person you were when you first wrote them? I was lying in my dorm room two months into spring semester, rereading my college essay and doing exactly this, when the idea behind A Picture of the Real Me came to me. Realizing my college essay had only scratched the surface in describing myself, I wanted to try again from a darker and more authentic angle.

A Picture of the Real Me is a final project I created in response to the prompt 'write a case study exploring some part of your coming of age.' In college, we don't get a lot of time for self-reflection unless it's in an academic context. Taking the class Writing 101: Coming of Age and Happiness reinforces the importance of growth and reflection in any undergraduate's career.

I was raised in the rural countryside of Frederick, Maryland. With no towns or developments nearby, I grew up enjoying the company of my parents and twin brother rather than neighbors, reading comics rather than watching cable, and falling asleep to the wail of coyotes rather than police sirens. As I aged, I grew more insecure about my ability to relate to others. Girls at school chatted on flip-phones about shows I didn't watch and biked through suburbs I couldn't navigate. I liked making friends but found it difficult to fully relax with people other than my family. What if they saw right through me? What if they judged me for my shyness, my love of silence and simplicity, or my unfamiliarity with their worlds?

It was drawing that always calmed my mind. As an artist, I could come home after school and at least control the pencil in my hand. For me, drawing felt like a limitless conversation between my fingertips and the paper.

Our instructor, Professor Sheryl Welte Emch, recommended we write about a specific and integral piece of our lives, so I settled on the role of drawing and authorship in mine. Thanks to my professor's support, along with the support of the Deliberations team, my classmates, and my family, I am delighted to share A Picture of the Real Me.
“...Henceforth, so long as we continue under the spell of this self-knowledge, we do not merely live but act; we compose and play our chosen character, we wear the buskin of deliberation, we defend and idealize our passions, we encourage ourselves eloquently to be what we are, devoted or scornful or careless or austere; we soliloquize (before an imaginary audience) and we wrap ourselves gracefully in the mantle of our inalienable part. So draped, we solicit applause and expect to die amid a universal hush.”

-George Santayana
A COMIC PERSPECTIVE

On my way back out to the science convention center, I steal a quick glance at myself in the bathroom mirror. I hardly recognize the girl who stoically returns my gaze. I take a deep breath. She is wearing a homemade super-suit: a white surf top from Walmart paired with white leggings, thrift store go-go boots, ski goggles turned sci-fi, and a set of armor consisting of blue spray-painted shin guards and shoulder pads. Her regal shoulders are adorned with navy My Little Pony wings ordered from a strange corner of Etsy. She looks futuristic, mesmerizing, and very out-of-place.

Before I have the chance to duck back into a bathroom stall in embarrassment, a convention staff woman walks in, and her eyes widen. “Ooh, a superhero! Girl, you are lookin’ good!” she exclaims. I am too stunned to speak, so my heroic alter ego responds for me: “Why, thank you! Check me out at the NSF booth!” And, before I know it, I’m strolling out into the vast, bustling aisles of the convention center, passing a Lego metropolis on my left and a stuttering robot on my right, until I reach the National Science Foundation booth and sit down. Just talk to people, Joy. My heart races. It’s easy. It’s no big deal. Be yourself. But I can’t be myself – I have become the witty, charming superhero Heliora. I collapse in both relief and annoyance now that my alter ego has taken control. A small swarm of kids already crowds around my display, squealing out questions about my comic, the inconspicuous six-foot solar panel I mounted next to it, and my costume itself. Superheroes don’t get social anxiety… I lean
in to answer their questions and smile. The 2018 Science and Engineering Festival rages around me.

I am dressed as Heliora, a solar-powered character from a science fiction comic strip I had created two months earlier. After a chance decision to submit my work in an online contest, I ended up presenting my comic to other science nerds for three days (one of which was my prom night) in Washington, DC. The trip solidified a particular realization I’ve carried since third grade: cartooning is my magic. At age eight, I started drawing comics and have not stopped since then, using them as a medium to express my impossible stream of consciousness.

It all started with Blossom Girl. I drew her wearing a floral cape and a plaid—yes, plaid—jumpsuit, wielding fire and poison as her superpowers. While cringeworthy in retrospect, I now understand that she embodied what I wanted to see in my elementary-school self: spontaneity, curiosity, glamor, adventure. A true Mary Jane. In middle school my go-to character was Neptune, an edgier protagonist exploring his underwater world. Neptune, an aquatic humanoid, posed the questions I lacked the audience to ask and told the jokes I lacked the confidence to tell.
Still, my cartoon characters evolved. By high school, my characters had adopted a certain realism, and tended to live in short three-panel comic strips rather than the lengthy, dream-like graphic novels I drew as a child. My comics lost their mythic spark and evolved into a more authentic and humorous commentary on today’s world (my main series entitled Introvert Adventures). I strove to capture my surroundings from a relatable, “adult” perspective, and often times the main character – if there was one – was simply me. Or maybe not. Was I being more authentic to myself, Author Joy, or to my cartoon counterpart? Could Character Joy harbor my flaws as well as my ideals?

I remember the first time Character Joy and I got in trouble. It is a clear afternoon in the spring of my sophomore year. I am sitting in Trigonometry class, trying to figure out what arcsin means, when the classroom door slides open and two administrators peek their head in. (We affectionately call them “Randy and Ginger,” and they are the school’s notoriously strict rule-enforcing duo.) As I make nonchalant eye contact with Randy and Ginger, it dawns upon me that
I am the one being called into their office. Oh, god. In front of the entire class. I shuffle out to their office, racking my brain for what I could have said wrong over the past week. Suddenly, I remember. It’s not something I said, but something that Character Joy expressed in a comic published in our high school newspaper...a comic called “Chapel Bingo.”

Every week, my entire school is required to attend Chapel in the auditorium, a ceremony which developed its own awkward idiosyncrasies over time: Student drops phone. Really self-conscious about stomach growling. Construction noise interrupts a poignant moment. A devoted Christian, I perceived these moments to be harmless, so I drew a BINGO card out of them. Within minutes, the comic delighted both the school newspaper team and the student body, even becoming a meme for some teachers. Randy and Ginger seem to have a different reaction.

I squirm in my seat. Ginger barks in a stern voice: “So, I’m sure you know why you’re here. Why did you print out Chapel Bingo and play it during chapel?” I am stunned. I did not print anything. In fact, the cards she showed me were not mine but had been plagiarized from my online comic by other students, modified to be caustic and somewhat sacrilegious. It feels like my classmates have betrayed me. I treat ideas like currency, and in this moment, I feel slandered and robbed of something that was once mine. Yet, as horrified as I am to be getting in trouble for ideas, a small, greedy piece of me is also delighted to have gained a taste of popularity. I realize in this moment that Character Joy had a dark side. As a straight-A student constantly following orders, I am playing a character as I author Chapel Bingo: the nameless, shameless class clown. In playing that role, I have failed to recognize the dangerous influence of my uncensored ideas and perhaps my subconscious desire to rebel against my institution. Flooded with this mix of
emotions and a resurgence of my characteristic social anxiety, all I can do is sit across from Randy and Ginger and fidget.

Wracking my brain for a plan to reverse the damage, I find nothing. But Valedictorian Joy has my back. An improvised speech flows out of my mouth like dialogue from a speech bubble, complete with profuse apologies for the “misunderstanding,” reaffirmation of my love for the school and its enlightening religious offerings, and a verbose description of how I feel about plagiarism.

I end up successfully explaining the misunderstanding, and the real culprits were soon identified, but as the inspiring artist I was still dealt a mild “punishment” of sorts: serving on the Student Chapel Board for two years. The Bingo meme resurfaced several times during my senior year...hilarious, yet haunting.
It is one week before I move out to college. I sit on my basement floor, basking in the afternoon light and the smell of Sharpie fumes. Once again, I am in a sentimental mood. The floor is littered with binders, notebooks, and stray sheets of printer paper; I am swimming in my own personal sea of nostalgia in the space I’ve used as a drawing studio for ten years. I look down at each homemade comic book in front of me. *When did I find the time to make all of these characters?* It feels like I’m saying goodbye to each one of them…and to the memories tied to them. I flip through the book “Warrior Cats” and remember the days I spent blissfully running around with other fifth graders at recess, pretending we were cats, while all the normal kids played soccer. I grab another binder. The comic “Witchcraft High” reminds me of middle school summers spent with my best friend Gretchen, drawing our mature selves as witches and elves in some distant, magical place called high school. Another strip of paper falls from the binder: a comic I drew with my Spanish exchange host about getting lost and sunburned in the Spanish wilderness. I reshuffle it between my sketches of *Helitora* and Chapel Bingo.
Everything from the glory of Heliora to the mishap of Chapel Bingo reminds me that I feel the most fulfilled when I am playing characters. But here comes the dark side again: I worry that I get lost in them. I played a flawless version of myself in my college applications, for instance, as I uncomfortably embellished each of my achievements. I put my binders away, yet I do not feel a sense of closure.

Am I hiding behind pens and panels and paper? Can I accept the unembellished version of myself who doesn’t have time to plan out my thoughts in a script? These questions creep into the back of my mind.

Yes, I am currently happy as an artist. Yes, my story is still “to be continued,” as we say in comics.

But now I must come to terms with the fact that I am a cartoonist who is, ironically, able to draw everything except the line between Author and Character.
WHO IS AUTHOR JOY?

Describing myself, Author Joy, is harder than I realize.

I am a bit of a paradox...

I relish the validation I receive from other people, but I hate the feeling of having a singular spotlight on me.

I consider myself an intuitive, go-by-my-gut thinker, yet I firmly believe there is a set “Right” and “Wrong” in the world.
I am someone who thrives living in the moment... but I find I often commit those tranquil moments to overthinking.

I am a serial flirt who values romance and intimacy, but I am also fiercely independent at my core, which has caused me to deeply and inadvertently hurt those who rely on me.

I believe that science is a powerful force and tool that will help us save the world, but when I sit down to grind out chemistry or calculus problems, my mind wanders to the humanities.
I am creative, but not expressive.

I have a rehearsed spiel of all my accomplishments at the ready if anyone asks, but as an overworked college student with a chronic illness, at the end of the day I just want to rest, not accomplish. I want to “be” and not “do…”

...but I live in a doer’s world.
Even my current age, nineteen, is contradictory: I am just old enough to technically be a ‘90s kid, but just young enough to be yelled at when I try referring to myself as a ‘90s kid.

This year at Duke, I’ve been trying to make sense of my own contradictions… and why, until now, I’ve been unable to display them openly in my cartoons to help me work through them.

But it’s difficult to capture a paradox on paper. Characters are consistent,
I’m also realizing that none of these nuanced qualities show up in Character Joy because I’m not comfortable being a paradox – having uncertainties about myself.

THE
HONEST
RESUME

Joy E.M. Reeves
Duke University
joyr@emily.com

Work Experience:
1. Research in high school sort of
2. Lots of volunteer stuff but I guess that’s not what you’re looking for
3. I really need a job

Skills:
1. Putting stuff on paper
2. Reading people
3. NOT COOKING lol
4. Eager to learn and take a little too long to do so
5. ???TBD

Qualifications:
* pls

I am addicted to having an audience while I am also painfully insecure.
COPING WITH INSECURITY...

I am insecure.
I am insecure.

I feel a certain sense of security in finally saying it on paper. No matter how many people I may have met dressed up as Heliora or how many underwater friends I draw alongside Neptune, the reality is that Author Joy gets very nervous in face-to-face social interactions.

When I walk into a room, all I can think about is the weight of everyone’s eyes on me all at once. When I have a conversation with someone, all I can focus on is my own fidgeting and wonder if I’ve held eye contact a second too long or conveyed my own nervousness in some other unforgivable way. That’s why my whole life feels like a performance, or a masquerade.

Perhaps my inconsistencies and insecurities have grown exhausting to me, and that’s why I step comfortably into character instead. Is such the nature of cartooning? Am I the only artist who feels this way? I find some solace in a line by French philosopher Henri Bergson:
It is comic to wander out of one's own self. It is comic to fall into a ready-made category. And what is most comic of all is to become a category oneself into which others will fall, as into a ready-made frame; it is to crystallise into a stock character.¹

'Stock character.' I love that phrase. I picture a character – quite literally flat – traced and cut out of cardstock. The self-categorization Bergson describes seems to be the essence of my comedy itself... and I like that Bergson makes it sound normal to do so. However, even if I'm just being "comic," Bergson makes me wonder what the implications of frequent self-categorization actually are. As I've "wandered" or "fallen" into character one too many times, it's becoming difficult for me to get back out.

USING COMICS TO CAPTURE MY IDEALS

I grew up perceiving that I live in an action-driven world where I have to know. Comic book readers want Heliora or Neptune to know how to save the world. Classmates want to talk to a class clown who knows how to subtly riff on the administration. Colleges want applicants who know what they want in the world and in their future. I've always felt like the world doesn't want the complex and paradoxical Author Joy -- the world wants Character Joy, the perfect extrapolation of myself who knows how to make an interesting punchline on the spot.

It recently occurred to me that this state of “knowing,” which my brain seems to equate to self-confidence, has become an ideal of mine.

I had trouble putting this idea into words until I came across a concept by Erving Goffman called “idealization,” in which a performance (in my case, a character) is molded — or “socialised” — to fit certain (perceived) societal expectations. These two new words make me question whether I actually draw for myself or whether it’s been for societal acceptance all along. When I “idealize” my superhero characters, for instance, have I been constructing an Ideal Self, or only a socialized shell of someone who will reinforce society’s

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moral values as I perceive them? Goffman’s use of the word “performance” in his definition above is vague enough that I’ve begun to notice some crossovers between how I draw and how I conduct myself socially:

When I draw, my characters fill noble, expected roles. When I talk to professional interviewers, or fellow artists, or new friends I meet during Rush, my persona is indeed ‘socialised’ to an archetype you’d probably see in a movie. During science fellowship interviews, I slip into the Tony Stark community-hero-in-a-lab-coat archetype to save myself from revealing the gaps in my technical skills, or revealing how nervous I’m feeling. During receptions with other artists, I dress for the occasion in a quirky ‘art hoe’ wardrobe because I know my art won’t stand out – so I should, at least. Similarly, during Rush, nerves caused me to lapse into the persona of a high-school-Netflix-drama star, where I never seemed to stop talking. I’m not sure why I’m so worried about being less-than-confident, but it’s only gotten worse since I’ve come to college.
Idealization pervades college campuses. As a freshman, I've been given a fresh start and a new shot at convincing others that I am the best version of myself. Meeting strangers in academia, the question is never "What are you like?" but instead the utilitarian "What do you DO?", and I always feel pressured to answer it with convincing conviction. Goffman would say I'm simply a part of a social contract between a performer (convincer) and audience (believers).

ERVING GOFFMAN

“When an individual – [JOY] - plays a part, [she] implicitly requests [her] observers to take seriously the impression that is fostered before them. They are asked to believe that the character they see actually possesses the attributes [she] appears to possess…”

Well, Goffman. Now I feel exposed. Does my crisis come across as this needy? You almost make it sound like I'm putting on a magic show, "implicitly requesting" from my audience that they validate my ego by regarding me as "ideal" or some crap like that.

But see? I’m doing it again.

I’m writing in a way that tries to be relatable. I’m asking all of you readers to believe that I’m the type of person who is confident enough to sass a renowned 20th-century sociologist.

And as I search for laughs like this, Goffman, you’re starting to help me see why it always feels like I’m screaming “BELIEVE ME!” at my audiences; why I am obsessed with how my comics will be received.

I’ve realized that ‘idealization’ perfectly captures one reason I draw: the need for validation – validation I feel that I lack during social interactions due to my fear of messing up. My characters aren’t the problem; my repression of my own social anxiety is the problem.
CARTOONS: MY TRUE SELF OR MY SECRET IDENTITY?

I discovered I'm not the only one concerned with having an audience.

In a recent study by University of Chichester, researchers found that children drew their own self-portraits differently depending on their audience.⁴

Stumbling across this study was like a wake-up call to me: maybe the reason I feel like a fraud is because I succumb to the same pressures as these kids. In the study, it seemed like many of the kids restrained the "emotions" of their drawings if they were presented to strangers or figures of authority, in the same way it seems like I restrain my deep insecurities on paper and withhold them from my characters. Reading about these children's drawings made me wonder, if I too am so attentive to pandering to my audience with my drawings, can I really call them my drawings in the end? A goal of mine I've been working on is to draw for myself — doodling monsters crying and animals playing instruments and aliens smoking cigarettes in the margins of my math notes — expressing whatever weird (subliminal?) messages are on my mind instead of drawing the valiant warriors and stylish women I think would be more aesthetically "pleasing" to the effortlessly perfect audience of Duke University around me.

At the same time, having the ability to choose what I draw is a superpower in and of itself. A second study analyzed children's portraits over time and

found that the students’ crayon-drawn avatars progressed from sharing strong commonalities at the start of the year to being entirely different (in appearance, clothing, speech, attitudes, etc.) by the last week of class. Perhaps, like their avatars, my True Self is simply evolving, or becoming more comfortable with being shared over time? This study challenges me by shedding a positive light on something I had condemned for so long: having the power to maintain “agency over [my] representations of identity” by simply choosing which parts of myself I wish to draw. There is something inherently powerful about creating a drawing with a personality. My goal is to take more time to self-reflect and distinguish how my characters are helping me become more confident and authentic in real life.

*Study referenced is “Comics, Collage, and Other Things with Crayons: The Power of Composing with Image” by Jessi Thomsen. See bibliography.*
THE FEAR OF A MASK

Even if my drawings do indeed contain fragments of my “truer self;” I still fear that I go overboard in creating what many sociologists would refer to as my “mask” of self-characterization.5

“The greater our difficulties the greater our zeal [to hide them]. Under our published principles and plighted language we must assiduously hide all the inequalities of our moods and conduct, and this without hypocrisy, since our deliberate character is more truly ourself than is the flux of our involuntary dreams.”6

“...our conception of our role becomes second nature and an integral part of our [truest] personality.”7

5George Santayana, “The Tragic Mask.” In Soliloquies in England and Later Soliloquies (Charles Scribner’s Sons, 1922).

6 George Santayana, “The Tragic Mask.” 133-34

So, you’re saying that...I shouldn’t feel bad about my drawings?

Santayana’s bold statement has taken me a while to unpack. This whole time, I’ve felt like a hypocrite, and then Santayana argues that there is nothing hypocritical about playing a “deliberate character,” because it’s more “me”...than my own subconscious is. Reading his quote makes me feel less guilty, in a sense, for lifting myself up through my drawings. By drawing out cartoons or playing flawless roles during job interviews, I am merely extending a piece of myself that doesn’t feel real to someone so insecure, but is real.
The purist side of me wants to argue back against Park that some part of me will be forever preserved, untouched by the manipulative hands of every character I’ve played, and prove that my self-growth would never rest on the shoulders of a couple of cartoon archetypes. However, the reality is that I will always be a cartoonist at heart. Park’s words challenge my assumption that, in order to be an honest human, I must maintain complete separation (draw a line) between my Author Self and my Character Self in the first place. I will always be attached to my characters. I will always appreciate the sentimental and spontaneous moments of my life, and I will most always turn them into drawings to share.

Now, my goal is to strive towards acceptance – to embrace the fact that even if I can’t pin down my own identity as easily as I can an archetypal character’s, the bottom line is that characters help The Real Me form joyful connections with my audience. It’s okay to be boring; it’s okay NOT TO KNOW. It’s okay to lack the comfort of knowing the beginning, middle, and end of a character’s story, because I cannot emulate fiction — my own story is still a work in progress. Now is simply my time to be the realest version of myself.

Putting unnecessary social pressure on myself, I think I’ve lost sight of the fact that comics are not my replacement for socializing but are my GATEWAY to making real connections with people. As I continue growing and becoming more comfortable with myself, I’m realizing that the ability to step in and out of character is something beautiful, not something to fear. Getting such a great response to Character Joy doesn’t mean I should fear
being myself, Author Joy. From meeting hundreds people at the Science and Engineering Festival to posing for photos with other cartoonists in my Padme costume at AwesomeCon, my characters are indeed increasing my confidence and authenticity. I CHOOSE to draw because I agree with philosopher Henri Bergson: “Comedy in character strikes far deeper roots into life.” Bergson’s words resonate with me because they remind me how often I have also used cartooning to form new bridges and connections with people. Having taught cartooning to fifth graders for two spring semesters, bonded with my Spanish exchange student by creating a comic chronicle of our adventures, and witnessed young girls at the Science and Engineering Festival look up at my comic Helíora and see themselves, I am reminded of why I love using comics to make meaningful connections with others and learn from them. Such is the hidden, ironic selflessness behind drawing myself.

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Perhaps, from time to time, I've given my characters a little TOO much life, meaning they have become independent manifestations of my ego as I seek constant praise for them.

All I need to do is take a step back. I am no single character. If anything, they are all a part of me. I should take comfort in the fact that the nuances of my personality and soul can't be captured on paper. Why should I attempt to?

I am more than the sum of my characters.

I am neither a protagonist nor an antagonist.

For I, Joy Elinor Marian Reeves, am not a character, but the Author, of myself.
Work Cited


"Not quoted or cited within case study, but another relevant link for a further reading on a "Resume of Failures":

https://hbr.org/2016/05/write-a-failure-resume-to-learn-what-makes-you-succeed
THE END.
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Top row left to right:
Carolina Salzman, Abbey List, Nicholas Doak, Miranda Gershoni, Matthew Griffin, Joy Reeves, Anne Crabill, Sheryl Welte Emch

Bottom row left to right:
Caroline Avery, Erica Langan, Carlee Goldberg

Not pictured:
Dani Yan & Melissa Pascoe
Colophon
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