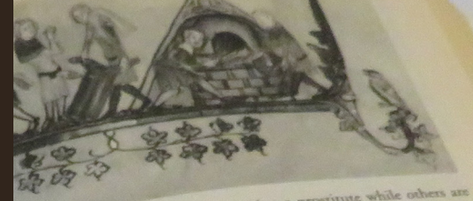
of Parisian scholars assembled by the king soberly announced that the problem was astrological, something about Saturn in the house of Jupiter.

Of course moralists pronounced the plague to be divine retribution for sin, and while the sermonizers worked overtime to disseminate this conventional explanation, it was not convincing when the good and bad perished in equal numbers in the Black Death. Serpents and snakes were thought to be carriers of the plague, or it was attributed to Jewish malevolence.

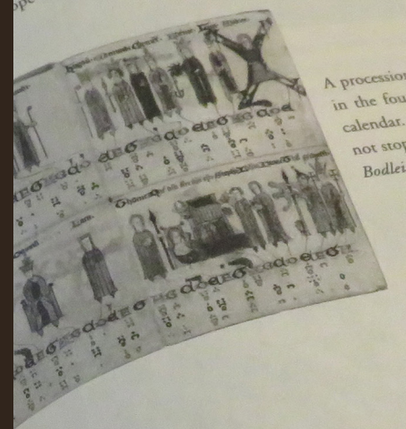
In Germany in the fourteenth century it was widely claimed that the plague was the result of Jewish conspiracy—the Jews had poisoned the wells. This could not be a good explanation for the plague in England or France, however, because the Jews had already been expelled from England and from France, except Alsace, between 1292 and 1306.

The Black Death helped to make apparent that Thomism was an intellectual dead end. It failed to perceive the necessity for quantification in determining natural processes. It had no inkling of the crucial importance of experimentation. It was burdened with a strictly observational and rhetorical approach to science and furthermore remained specifically committed to Aristotle's error-driven physics.

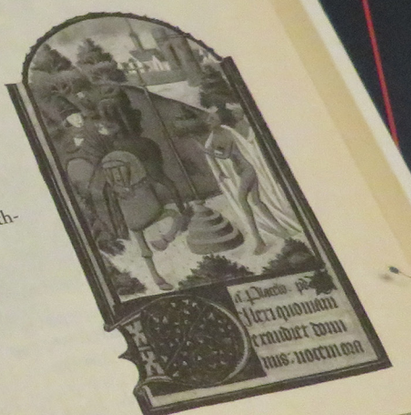
Thomism looked liberal on the outside, a progressive philosophy that imagined a rationally constructed world. But Bradwardine knew the world was not rational.



of the Black Death. A man is paying a prostitute while others are pe of stopping the spread of the infectious disease. *Bodleian Library,*



A procession of bishops depicted in the fourteenth-century saint's calendar. Episcopal prayers did not stop the Black Death. *Bodleian Library, Oxford, U.K.*



Bad news! The dead addressing the living, in a fifteenth-century manuscript. *Bodleian Library, Oxford, U.K.*

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From the Dean

Dr. Roger A. Byrne, Dean,
Cook-Cole College of Arts & Sciences

Longwood University prides itself on producing citizen leaders, and one of the ways in which this leadership is produced and honed is through the individual and small-group efforts of students in forming their own scholarly and creative works. The process instills development of critical thought and enhancement of skills. But more than this, it also cultivates persistence through overcoming initial failures and challenges while striving to attain a goal, a sense of shared purpose through working collaboratively with faculty and peer mentors, and it results in a great sense of accomplishment when the act of creation is complete. This happens in many ways and at many times throughout a Longwood student's progress through his or her educational program in the Cook-Cole College. What is included here in this slim volume is a carefully selected set of examples of the works of Longwood students that demonstrate the best of what can be achieved. It serves as a model and a testament to the efforts of the students involved and their faculty mentors and collaborators.

I would like to acknowledge and thank the students who permitted their work to be included, and the faculty mentors who guided the students in the creation of these works. I would also like to thank the faculty board, the editor, and the students of the Design Lab for all their efforts in producing this fine volume.

I hope you take some time to review the works included in this volume of *Incite* and you will come away with a greater appreciation for the achievements of our students.

From the Editor

Dr. Larissa "Kat" Tracy
Department of English & Modern Languages

The 2019–2020 academic year will go down in history as one irrevocably shaped by the outbreak of the Covid-19 pandemic. In the last half of the spring semester, Longwood University, like most public schools, sent its students home and went fully online for the rest of the academic year. As administrators, faculty, staff, and students waited out this global crisis, this issue of *Incite* was in production. Working with the Faculty Board, the student contributors, and student interns, we were able to complete this issue of *Incite* despite the unusual circumstances.

Last year, we established a new Faculty Advisory Board, comprised of volunteers within the various departments of CCCAS, who worked diligently to refashion the submission guidelines in order to offer publishing opportunities to a larger body of students. As a consequence, we received submissions from students through the summer and fall semester, resulting in an extremely high volume of essays and art work to review. These Board members worked tirelessly to review and comment on the student submissions, ensuring that each piece is of the highest caliber. There have been a few adjustments to that Board, and I am extremely grateful to all who have been willing to serve. Other faculty members also stepped up when asked to review submissions within the various disciplines, namely Dr. David Coles, Dr. Julian Dymacek, and Dr. Scott Cook.

Last year we implemented a new design by students in the Design Lab under the supervision of Chris Register and Wade Lough, and even though this year's issue was not produced by the Design Lab, we intend to remain faithful to their design concept. I am grateful to both Chris Register and Wade Lough for their continued service to this journal, and to Nicholas Elmes who helped me sort out various small software glitches.

Like last year, the student contributors were a pleasure to work with; they met deadlines and they worked in the spirit of cooperation to get their pieces in publishable form. Our student proofreading intern, Karyn Keane, an English major in the Rhetoric and Professional Writing track, was indispensable. She proofed every submission, checked all the references, and cross-checked the citation formats before each piece came to me for editing. James Spence, whose original internship was upended by the closure of the University, read through the

proofs and caught all my mistakes. It would not have been possible to produce this journal without him, Karyn, and the rest of the *Incite* faculty and student volunteers.

This journal is truly a team effort. From the students who submitted their work, to the individual faculty advisors who spent the time outside of class to help them revise and professionalize their submissions, to the Faculty Board members who vetted them, to our student interns, to the Design Lab team who did the initial redesign, to the Printing Office that met our deadlines and delivered this amazing volume, and to the CCCAS Dean Roger Byrne who has given this endeavor his full support, we could not have done it without you. Especially at this time, when we are not on campus and our students are sheltering at home, it is important to showcase the outstanding accomplishments of our students and the faculty who mentor them. We rely on the dedication of faculty, students, and staff to promote the best of undergraduate research in the Cook-Cole College of Arts and Sciences so that this journal, *Incite*, can continue. Thank you very much for all your hard work in making this possible.

From the Designers

Rachel English
Rachel Hanson
Longwood University
Graphic Design, 2019

Welcome to the redesigned *Incite*. The changes we made were intended to give this academic journal a new design voice. As designers, our intention was to create a journal that would communicate its purpose as an academic publication, but also please its audience visually. There is an established format that journals and scholarly articles tend to fall into, but we have learned in our design study at Longwood to bring a fresh perspective to established design. Without the guidance and assistance of our professors none of this would have been possible. We are thankful to everyone who helped make this journal possible, and grateful for the opportunity to help craft the eleventh edition of the undergraduate academic journal. We hope you enjoy it.

Immortality in the Mortal World: Otherworldly Intervention in *Lanval* and *The Wife of Bath's Tale*

Haleigh James
Faculty Advisor: Dr. Larissa Tracy
Department of English & Modern Languages

Awarded first place Humanities paper

Abstract

Marie de France's twelfth-century lai Lanval *and Geoffrey Chaucer's fourteenth-century* Wife of Bath's Tale *from* The Canterbury Tales *both draw on faery lore to test romance and courtly obligation, using irony to condemn chivalry. Through the use of supernatural women, Marie criticizes the corruption of the court by analyzing the treatment of Lanval, a penniless foreign knight, by King Arthur. Chaucer echoes Marie with the appearance of an Otherworldly being, condemning the knight's moral decisions and lack of chivalric values after the rape of an unnamed peasant woman. Drawing on courtly dynamics in their own societies, under Henry II and Richard II respectively, Marie and Chaucer criticize the corruption of the Arthurian ideal in the king's court, juxtaposing two worlds—the faery realm and the real world—through Otherworldly women who test Arthur and his knights and reprimand them for their failures.*

Marie de France's twelfth-century lai *Lanval* and Geoffrey Chaucer's fourteenth-century *Wife of Bath's Tale* from *The Canterbury Tales* both draw on faery lore to test romance and courtly obligation, using irony to condemn chivalry. With the sudden appearance of a beautiful supernatural woman, Marie criticizes the corruption of the court by analyzing the treatment of Lanval, a penniless foreign knight, by King Arthur. Chaucer echoes Marie with the appearance of an Otherworldly being, condemning the knight's moral decisions and lack of chivalric values after the rape of an unnamed peasant woman. Both Marie and Chaucer criticize the corruption of the Arthurian ideal in the king's court, juxtaposing two worlds—the faery realm and the real world—through Otherworldly women who test Arthur and his knights and reprimand them for their failures.

Using the legend of King Arthur and his knights to evaluate the morals of those in power critically, Marie and Chaucer rebuke existing courtly dynamics in their respective societies. Marie criticizes weaknesses in the royal court of Angevin King Henry II of England, and Chaucer points out the inequities in the rule of Henry's descendant, King Richard II. Arthurian tradition upholds the system of primogeniture in feudal society, where a select few hold the land and wealth, often leading to disputes over inheritance. In feudal society, the community revolves around the command of a king to dispense wealth and land to the nobles and gentry who in turn govern and protect the peasants and serfs (Cartwright). By inheriting the throne from his father, Arthur demonstrates the practice of primogeniture in the court system as a method of acquiring titles through birthright rather than as a communal judge of character and morals, leading to conflict and corruption in the court system. Additionally, Marie's reflection on the social system criticizes courtly relations in the twelfth-century under Henry II, who "refused to accept strict primogeniture, which would have left his younger sons landless, but his failure to solve issues of inheritance proved his undoing" (Turner and Heiser 25). These issues had not been resolved by Chaucer's time, and, in fact, had been exacerbated by in-fighting between Richard II and his family. Thus, over the course of the late-medieval period, the court of King Arthur provides a template for social and cultural emulation as well as criticism.

Well into the fourteenth century, "King Arthur was known as a great historical figure" across Europe, specifically in England and Wales, where the people "naturally had a particular interest in him—the Welsh as an ancestral Celtic hero, the English as a great predecessor of their own kings" (Burrow 69–83). In twelfth-century Britain, Arthur and his knights were celebrated in Breton songs, or *lais*, that were "written not for the king but for powerful nobles," representing "one reason why the Arthurian court is not always presented as glamorized or united" (Archibald 139–153). Despite their popularity, unfortunately, "none of the songs that inspired Marie's stories have survived from the Middle Ages" (Putter 36–52). In *Lanval*, Marie

attacks the patriarchal practices under feudalism by criticizing the lack of care Arthur gives to members of his court and suggests a view of Guinevere, and perhaps queens in general, as "fundamentally untrustworthy," possibly alluding to Eleanor of Aquitaine, Queen of France and later England after her marriage to Henry II (Archibald 139–153). Comparatively, in the fourteenth-century, Chaucer plays off Arthurian legend and his own knowledge of malevolent nobles in the *Wife of Bath's Tale* [hereafter *WoBT*], in which the Wife aims for "realism deeper than that found in her sources" to create a "realistic view of menfolk" (Wurtele 58). By portraying men in power more accurately, the Wife holds a mirror up to fourteenth-century society, allowing Chaucer to blatantly criticize the aristocracy; the common people suffer from the growing disputes among the upper class and the decline of feudalism brought on by war, famine, and plague. Referring to faery lore either as historic legends or as a play on the present and ever-growing problems surrounding power-hungry kings, lustful queens, and corrupt noblemen, Marie and Chaucer disguise their present societies in Arthurian legend, suggesting that people will uncover the faulty courts and strive for a more just rule.

Marie and Chaucer each employ Otherworldly women to address the flawed concept of justice in the court system and the failure of those in power to uphold established virtues. Writing in the courts of Henry II in the twelfth century and Richard II in the fourteenth century, respectively, Marie and Chaucer witnessed rebellions against their kings by power-hungry relatives. Henry's sons rose up against him, supported by their mother, and Richard was deposed by his own cousin who took the throne as Henry IV. Just as Henry II was challenged by his eldest son, Henry the Young King, for his reluctance to relinquish the throne and questions over the division and rule of parts of France, Richard II was deposed by Henry IV "because of his arbitrary and factional rule" demonstrating the failures in both the individual morals of man and the court system as a whole (Knowles, Saul). Living two centuries apart, both authors espouse similar beliefs about corruption in the court; Marie about the exploitation of an individual to fuel the greed of higher nobles, and Chaucer about the immorality of one that can infect the otherwise moral court system. In both *Lanval* and the *WoBT*, the hero "is a young knight who is enticed into or wanders into the realm of faery … Both heroes are accused of a crime and condemned to death … [and] both are rescued by a nameless lady" (Quinn 211–12). By exposing these flaws, Marie and Chaucer attempt to draw connections between the fictionalized Arthurian society and the courts in their respective centuries, condemning corruption in the aristocracy and calling for justice through the use of an Otherworldly woman. As the voice of reason and a parallel to the dishonorable and ignorant men and women of the aristocracy, the supernatural women force a reexamination and reevaluation the flaws of the nobility and the justice system in their contemporary societies.

In *Lanval*, the supernatural realm contrasts with the unjust human world, aiding Lanval in acknowledging the court's mortal flaw: specifically, the greed and neglect in the king's court. Here, Arthur "gave many rich gifts / both to counts and to nobleman…/ he shared out wives and land / among all except one who had served him: / that was Lanval" (*Lanval* ll. 13–14, 17–19). In the Wife's tale, after the rape of an unnamed peasant girl, the knight is cast out of society, having received a supposed reprieve to mitigate his sentence if he can find the answer to the Queen's question. This knight is particularly dishonorable: "Ther is noon oother incubus but he, / And he ne wol doon hem but dishonour," noting that the knight's lustful actions will cause his downfall (Chaucer ll. 880–81). Overcome with immorality and lacking restraint upon seeing a maiden walking in the woods, the knight seizes the opportunity to satisfy his own sexual desires and "by verray force birafte hire maydenhed" (*WoBT* ll. 888). Facing death for raping the girl and failing to conform to the set laws, the queen grants the knight life if he can find what "wommen moost desiren" (Chaucer ll. 905). Condemned to answer the queen's question within a year and a day, the knight quickly sets out, discovering numerous and often contradictory answers from every woman he questions, essentially pushing the knight further away from society until he is again alone in the forest. The knights in both stories are so ostracized that the faery women see them at their lowest. Separated from the community and disassociated from their positions of power, supernatural mediation humbles the knights into uncovering and abandoning the injustices of society or their own inner moral judgment, pushing them to change their understanding of or obligations to the governing system in the mortal world.

By relaying the experiences of Lanval in King Arthur's court, Marie relates the corruption of the Arthurian court to the flaws among the aristocracy in her own time. Ostracizing Lanval by making him a foreign knight, Marie emphasizes his Otherness, separating him from the flawed system around him. Marie describes Lanval as "a knight's son, of high lineage, / but he was far from his heritage," meaning that despite his title, Lanval lives as a foreigner in court (*Lanval* ll. 27–28). While the king provides wives, money, and land to all his men, Lanval is left impoverished "for the king gave him nothing" (*Lanval* ll. 31). Arthur's blatant disregard for the wellbeing of one of his knights suggests a lack of generosity and kindness in the power structure that requires supernatural intervention. Historically, Henry II has his son, Henry the Young King, crowned while he was still actively occupying the throne, which led to infighting over the rules of inheritance because Henry II refused to share power (Turner and Heiser 25). Marie mirrors the court in her own time, illustrating the king's disregard for others and the growing disunity among the English court. In noting the neglect of a foreign knight and using the imagery of a beautiful woman as the parallel to the queen, Marie critiques the human

world, denouncing the misuse of power and alluding to Guinevere's dubious reputation in analogue texts.[1] Despite Lanval's notable position in society as a member of the court and the son of a king, Arthur and the other knights ostracize him for his foreign background, leaving him friendless and poverty-stricken in a situation where he should be treated as an equal. When the faery queen appears to Lanval in the forest, she recognizes his virtue and courtesy as something unlike others in his social position. Lanval finds himself alone in a meadow outside of town, when "he saw two maidens coming" (*Lanval* ll. 55). When the maidens bring Lanval to their queen, the narrator describes how "she surpassed in beauty / the lily or the new rose / when it appears in summer" (*Lanval* ll. 94–96). The perfect beauty and fidelity of the faery queen contrasts with the mortal and disloyal Queen Guinevere and the haggard human world. Beginning their affair, the faery queen binds Lanval to secrecy, stating, "I command and beg you, / tell no one about this!" (*Lanval* ll. 144–45). Upon promising fealty and affection, Lanval returns to court having procured generous gifts. Gaining wealth, Lanval "escapes the penury to which Arthur's stinginess had previously condemned him," enabling him to expose the king's ignorance and inequality and the knight's greed (Kinoshita 57). In addition to revealing the corruption in the court, the promise requires Lanval to violate the chivalric code, and his "attempt to be loyal to both Arthur and the fairy queen demonstrates his desire to persevere in two allegiances" (Ireland 138). By becoming his lover, she challenges Lanval's allegiance and adoration for his king, a concept that is again contested when the greedy Guinevere tries to seduce Lanval into committing treason.

When Lanval unexpectedly begins amassing wealth, Guinevere sets out to make Lanval her lover and, because of "the Queen's misconduct and lies, Arthur is eventually made to bring an accusation of treason against Lanval" (Rider 115–131). Trying to convince Lanval, she states, "I am willing to be your lover; / you should be delighted with me" (*Lanval* ll. 267-8). Vainly claiming herself as the most desirable woman, Guinevere proclaims her superior power as queen to obtain her desires without considering the potential harm to those involved. In rejecting her advances, Lanval exclaims, "I have no interest in loving you. / For a long time I have served the king; / I don't want to betray my faith to him,'" (*Lanval* ll. 270–72) appealing to his feudal obligation of undying loyalty to the king (Kinoshita 271–72). In addition to risking feudal bonds, Marie also introduces Guinevere as an adulterous, and therefore treasonous, queen, perhaps in reference to the rumors about Eleanor of Aquitaine's romantic affairs and

[1] See *The Broadview Anthology of British Literature, Volume 1: The Medieval Period*, ed. Robert Boeing and Andrew Taylor, for the earlier legendary histories of Geoffrey of Monmouth. See also Wace, and Laʒamon and the contemporary, *Knight of the Cart* by Chretien de Troyes for Marie's allusion to Guinevere's adultery with Mordred, Arthur's nephew, and Lancelot, one of Arthur's knights.

her role in aiding the Young King in his rebellion against his father. In response to his refusal, the queen accuses him of having "no desire for women," after which Lanval unintentionally reveals his love affair with the faery queen, thus breaking his vow of secrecy (*Lanval* ll. 280). The two queens' requests create a paradox because Lanval "cannot serve Arthur and the queen, too" (Ireland 138). By attempting to seduce him, Guinevere challenges Lanval's loyalties to both Arthur and the faery queen, ultimately leading the knight to break his ties with the corrupted mortal world. In contrast to violating the feudal bond between knight and king as in *Lanval*, the knight in *WoBT* initially seeks only to regain his power in the court, but with the help of Otherworldly intervention, ultimately, he strengthens his relationship with the opposite sex as well.

While *Lanval* concentrates on saving a foreign knight from the abusive court, the Wife's tale focuses on the flaws in the justice system and the reformation of an individual man. Unlike Lanval, the Wife of Bath's knight breaks the law by raping the peasant girl in the woods. While the court lets the knight live, the king does not try to administer a just sentence and instead turns the case over to the queen who believes the knight will fail his quest, representing the rigged system that allows the knight to escape punishment for his crime given his high status. Chaucer relates the concept of Arthurian justice to contemporary issues between Richard II and disobedient nobles who challenged the king, just as the Wife's knight challenges Arthur. Beginning his rule by "inheriting the throne from his grandfather in 1377, at the age of [ten]," Richard II spent his "final days alone and [died] either from starvation, or by murder on the orders of Henry IV" (Bremner). By relaying the knight's quest and inserting a hideous old hag from the Otherworld (a Loathly Lady), the Wife of Bath draws parallels with the appearances and overall sovereignty of an unnamed peasant girl and a faery disguised as an old woman, contrasting the perfect and virtuous reasoning of the supernatural realm with the sinful mortal world. Overall, Otherworldly beings appear after the isolation and banishment of knights to challenge allegiances within the court system and the skewed concept of justice.

Where the first part of the tale deals with the knight's outward journey "to fulfill public, legal obligations of Arthurian society for his violent crime and to develop a cognitive understanding of woman's perspective," the second part concerns the "knight's journey inward" to understand his "obligation in an intimate relationship" (Brown 19–20). Subsequently drawn back into a forest by the sight of dancing women and desperate to fulfill his quest and avoid death, the knight's reappearance parallels the start of the tale. Suddenly, the dancing women vanish, and instead "a fouler wight ther may no man devyse" sits before him (*WoBT* ll. 999). With the help of supernatural forces, the knight returns to fulfill his quest and avoid death, enabling him to learn a greater lesson and combat his weak moral reasoning. Before

announcing the answer to the court, the Loathly Lady requests that the knight marry her because she saved his life. Utterly shocked, the knight endeavors to avoid marriage, but he must give up his attraction to beauty and youth to preserve his life. Revealing that "wommen desiren to have sovereynetee" (*WoBT* ll. 1038), the Otherworldly woman inexplicably reveals the knight's failure to give the peasant woman bodily autonomy, representing a more sympathetic view to the historic plight of women. In both *Lanval* and the *WoBT*, each knight must face the corruption of the human world or their own immoral judgment after their return to court. For Lanval, Guinevere's attempted seduction allows him to uncover the queen's greed and lust, while the Wife's knight is left to contemplate his own lustful actions when confronted with marrying the old hag. Leading Lanval and the unnamed knight into fully understanding the failures of the court, the Otherworldly women rescue the knights from the injustices of others and their own corruption.

While the knights in either tale appear as complete opposites—as the loyal Lanval and the Wife's rapist knight—both face the ignorance of their communities and are isolated before Otherworldly intervention. The faery women aid the two knights because, as social outcasts, they fail to conform to the social expectations of those around them, whether moral or immoral, ultimately allowing the knights to escape their pasts. Suddenly encountering beings from the Otherworld, the knights find support to re-immerse themselves in society in exchange for love and loyalty to the faery women. Lanval vows to be faithful and silent about his love, and the unnamed knight agrees to grant whatever the Loathly Lady asks of him in exchange for the correct answer and, ultimately, he grants her the sovereignty that *all* woman desire. However, the faery women expose the greedy, self-absorbed, and lustful actions of the upper class by disguising themselves as opposing representations of those who have wronged Lanval or those who have been mistreated by the unnamed knight. The faery woman's revelation of the corrupt ideals of the human world, leads Lanval to challenge his leaders, while the unnamed knight is forced to question his own values. Because of his actions, the knight must face the morally superior Otherworld in the form of the Loathly Lady through an opposing image to his lust, providing a link between the mortal world and the realm of faeries. Additionally, Chaucer illustrates the decline of just principles among the nobility, using the Arthurian court as a disguise for the corruption of the court of Richard II in the fourteenth century, as the king was seen as "highly self-conscious, and much preoccupied with his self-image," indicating he "had the characteristics of a narcissistic personality" (Saul). Richard II's "narcissist's craving for recognition and outward success" ultimately demonstrate the knight's self-concerned and egotistical attitude at the start of the tale, before receiving supernatural intervention (Saul). For both tales, the equitable supernatural forces expose courtly injustices and reprimand the

mortal failure to maintain ethical or chivalric standards.

While both Lanval and the Wife's knight escape death, whether rightly charged or wrongfully convicted, the two must face trial, allowing the knights to reevaluate their morals and their obligations to the court. After denying the queen, Arthur unjustly condemns Lanval based on Guinevere's false charge of sexual misconduct. Additionally, by exposing his affair with the faery queen, Lanval "becomes an outcast in two worlds…Once again he is out of favor with the king; once again Arthur does him an injustice" (Ireland 140). After awaiting judgment, the faery queen finally arrives to save Lanval, "a maiden [came] riding on a horse: / in all the world there was none more beautiful" (*Lanval* ll. 549–50), thus proving his innocence and criticizing the flawed concept of justice in the court system. By unveiling herself to the court, the faery queen affirms Lanval's claim against Guinevere and exposes Arthur's neglect and injustices against his knight, juxtaposing the morally superior Otherworld with the corrupted mortal realm. Comparatively, in *WoBT*, the old hag mirrors the defenseless peasant girl at the start of the tale, allowing the knight to understand a woman's perspective and reassess his flawed morals, while also highlighting the inequities in the system of royal justice because there will be no justice for the rape survivor. Both Marie and Chaucer criticize corruption and disloyalty within the courts of their respective centuries, using Arthurian legend to disguise issues under the rule of Henry II and Richard II. In the false accusation against Lanval, Marie denounces the court system as a whole under Henry II. Comparatively, Chaucer does not rebuke the king (Richard II), placing the blame instead on the nobles among the court who, like the knight, rebel against the king and the established laws. Demonstrating the superior judgement and understanding of the Otherworld, the hag refutes the knight's ingrained concept of wealth and authority, and he becomes a symbol of the corruption of Chaucerian society. After avoiding his new wife for most of the wedding, the knight finally confronts the old woman upon her constant questioning, stating, "thou art so lottohly and so oold also, / And therto comen of so lough a kynde" (*WoBT* ll. 1100–01). The faery woman, having superior judgment and understanding of the human world, quickly discredits the knight for believing virtue and wealth come only from inheritance and money, instructing him that "Thy gentillesse cometh fro God allone" (*WoBT* ll. 1162). By challenging the knight's reasoning, the Otherworldly woman refutes the idea upheld by corrupt noblemen that value and merit come only from power. Finally, to test the knight's improved decision making after his quest, the faery woman tells him to choose "To han me foul and old til that I deye / And be to yow a trewe, humble wyf /…Or elles ye wol han me yong and fair / And take youre aventure of the repair" (*WoBT* ll. 1220–21, 1223–24). Now understanding women's need for freedom and independence, the knight gives her the ability to choose, providing another contrasting image

to the start of the tale in which the knight failed to give the peasant girl any choice. Through Otherworldly intervention, the knight "can learn what he needs to learn…His confidence in speaking *for* women shows he has made some cognitive progress. No longer bound by only his own needs and wants, he can now consider woman's perspective" (Brown 27–8). Showing the ability to reject dishonorable actions and unfair judgments, the supernatural forces expose the failures of authoritative figures, urging them to rule without greed, ignorance, or lust. While *Lanval* presents women as powerful queens, they are still susceptible to worldly desires and are capable of being adulterous, greedy, and untrustworthy. A similar situation appears in *WoBT* as the peasant woman is denied sovereignty, but the Loathly Lady is given a choice, more accurately asserting the risk of everyday life for women. Ultimately, both knights are able to live with beautiful faery women after demonstrating their ability to challenge the court or change their own moral understandings.

Writing in reference to the rising problems among noblemen and sovereigns, specifically Henry II and Richard II, Marie and Chaucer effectively use faery lore and Arthurian legend to mirror problems of their own societies, employing Otherworldly beings to contrast the supernatural with the human realms. In *Lanval*, the faery woman scolds Arthur for abandoning his knight and warns Guinevere against lustfully challenging Lanval's fealty, possibly rebuking Henry II and Eleanor of Aquitaine, while the old hag in *The Wife of Bath's Tale* attempts to correct the knight's perverted morals and stop members of the court from committing rebellious and unlawful actions, like those of Richard II's court. Juxtaposing two worlds to test allegiances or the concept of justice, the Otherworldly women reprimand Arthur and his knights for failing to uphold chivalric justice. Leaving the court in *Lanval* to question the success of Otherworldly intervention, in the Wife's tale, the faery woman successfully transforms the knight's perspective on the need for women's independence, arguing for their sovereignty in the face of injustice.

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Analysis of Phenolic Compounds in Moroccan Olive Oils by HPLC

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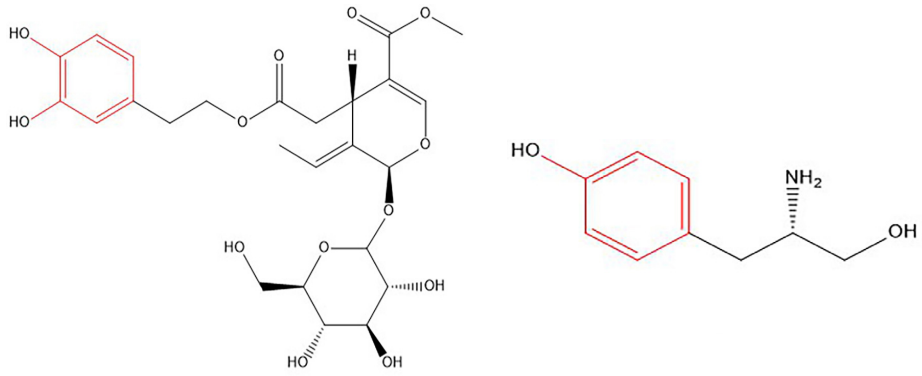
Awarded first place Natural Sciences paper

Abstract

Five extra virgin olive oils collected from farms in Morocco were analyzed for phenolic compounds. The chemical composition of the olive oils was analyzed by high performance liquid chromatography. To compare the efficiency of different extraction solvents, DMF and methanol were used. Six phenolic compounds in the oils were identified and quantified. Specifically, levels of oleuropein and luteolin were quantified in the low mg/kg range, and qualitative comparisons were made between the oil samples for tyrosol, vanillic acid, sinapic acid, and apigenin.

Introduction

Phenolic compounds are small molecules categorized by their structure having at least one phenol unit and are the secondary metabolites in olives.[1] These compounds are commonly found in most plant tissues, including fruits and vegetables. Phenolic compounds give olive oils to give their pungent taste and high stability, and contribute to health benefits.[2] The main phenolic compound in green olives is oleuropein, while the main one in black olives is tyrosol.[1]



Oleuropein: $C_{25}H_{32}O_{13}$ Tyrosol: $C_8H_{10}O_2$

Figure 1. *The chemical structures and formulas for oleuropein and tyrosol.*

The purpose of investigating Moroccan olive oils is to correlate chemical composition with anti-cancer activity. Moroccan olive oils were chosen because they are not studied as well as and as often as Italian/Spanish varieties. In recent studies on colon cancer, a phenolic compound in extra virgin olive oils was found to induce cell death in human cancer cell lines.[3] Unpublished work at Longwood University has indicated that these Moroccan varieties also show anti-cancer activities.

In this study, high performance liquid chromatography (HPLC) was used to analyze various Moroccan oils for their compounds. This study will be used to develop a lab for undergraduate students in analytical chemistry. Students will compare Moroccan oils to other more common varieties while learning analytical chemistry techniques as applied to food.

Experimental

Olive oil samples were collected from 'Agropole Olivier' Meknes. The varieties of olive oil studied were 1: Moroccan Picholine; 2: Koroneiki; 3: Arbequine; 4: Picual; 5: Arbosana. All varieties are Extra Virgin on the Physicochemical and Sensory Plan. All standard compounds tested were purchased from Sigma Aldrich. The standards used for comparison are shown in **Table 1**. The phenolic compounds studied were selected based on previously published literature. Stock solutions were prepared using a solvent of 50/50 HPLC grade methanol (Acros) and 16.7 MΩ doubly deionized water (in-house system). Calibration standards were prepared to determine the linear range for each compound and the appropriate calibration levels for the olive oil extracts. The final ranges selected for quantification are noted in Table 1.

Table 1. *Summary of phenolic standards analyzed*

Name	Calibration range, mg/L	Retention Time, Min.	Detector
Tyrosol	0.6-13	5	DAD @ 280 nm
Oleuropein	0.7-4	11.5	FL (ex. 280, em. 320)
Vanillic Acid	0.08-17	6.5	FL (ex. 280, em. 320)
Luteolin	0.3-17	12.2	DAD @ 330 nm
Apigenin		11.7	DAD @ 325 nm
Sinapic Acid		10.2	DAD @230 nm

The extraction of phenolic compounds from Moroccan olive oils was based on a procedure that was previously published:[2] 0.6 grams of olive oil were accurately weighed and mixed with 1 mL of dimethyl formamide (DMF) (Acros) in a test tube. The tube was vortexed briefly and centrifuged for 3 minutes. The DMF layer (bottom layer) was removed, and this extraction was repeated three times. The pooled DMF extracts were washed with 2 mL hexane (vortex and centrifuge 3 minutes). The hexane layer (top layer) was discarded and this wash was repeated twice. The DMF extract was diluted to a final volume of 2 mL with DMF and filtered through a 0.45 µm nylon syringe filter. The extraction method was later modified by using methanol instead of DMF to prepare a lab for undergraduate students in analytical chemistry.

The HPLC analysis was done on a Shimadzu Prominence HPLC system outfitted with a diode array detector (DAD) and a fluorescence detector (FL). The mobile phase consisted of (A) 50 mM phosphoric acid, prepared with 16.7 MΩ doubly deionized water and HPLC grade phosphoric acid (Fisher) and (B) HPLC grade acetonitrile (Fisher). The mobile phase gradient

was the following: initial solvent 10% B, hold 10% B for 2 min, increase to 90% B at 18 min, hold 90% B for 2 min (total analysis time 22 minutes). The column used was a C18 stationary phase, 150 mm x 4.6 mm, 5 µm particle size (Shimadzu), and the column oven was maintained at 40°C. The injection volume was 10 µL. Detection for each compound is shown in Table 1.

Results and Discussion

Several other phenolic compounds were detected in the chromatogram of each of the olive oils, but not quantified due to lack of a quantitative standard. Several other peaks were visible, but not identifiable with the standards selected for this study.

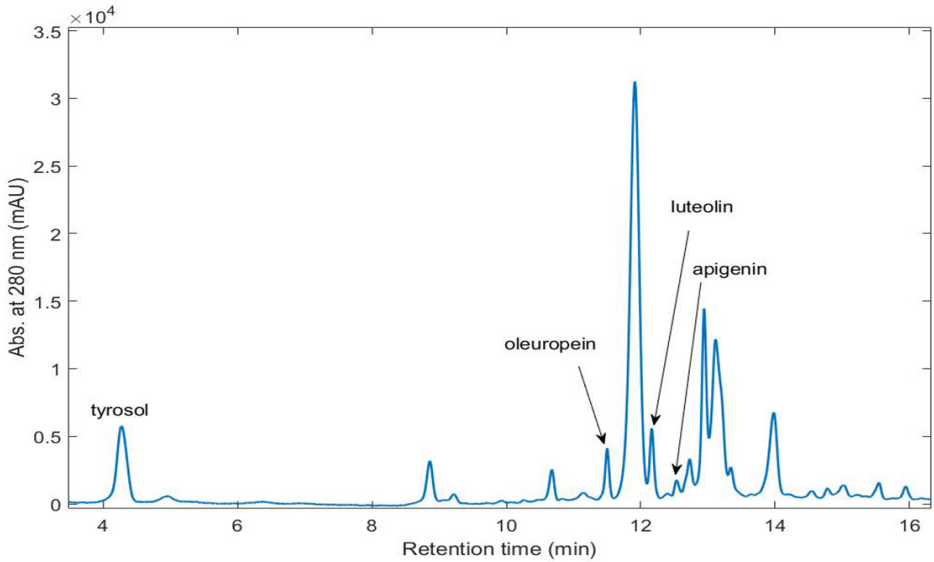


Figure 2. *Representative chromatogram of the extract of the 'Arbequine' olive oil, with several of the main phenolic compounds noted.*

The quantitative data for the four compounds identified in the five different olive oils are shown in **Table 2.** The results in Table 2 indicate that tyrosol is the main contributor to the phenolic compounds in Moroccan olive oils, and that there are significant variations in the relative amounts of the other compounds that were included in the study. The concentrations of vanillic acid, luteolin, and tyrosol calculated in the Moroccan olive oils are comparable in magnitude to previously published work.[4,5]

Table 2. *Summary of quantitative analysis of four phenolic compounds identified in Moroccan olive oils. Average and ± standard deviation is given for three replicate samples.*

	luteolin	Oleuropein	vanillic acid	Tyrosol
	average conc. (mg/kg oil)	average conc. (mg/kg oil)	average conc. (mg/kg oil)	average conc. (mg/kg oil)
Moroccan Picholine	2.06 ± 0.04	5.6 ± 0.4	1.9 ± 0.3	29.4 ± 0.6
Koroneiki	1.02 ± 0.02	5.8 ± 0.6	6 ± 2	14 ± 1
Arbequin	4.1 ± 0.1	3.9 ± 0.2	1.5 ± 0.3	22 ± 3
Picual	2 ± 1	1.5 ± 0.8	2 ± 1	12 ± 6
Arbosana	4.0 ± 0.3	3.0 ± 0.5	4.5 ± 0.1	13.8 ± 0.4

To compare the efficiency of different extraction solvents, DMF and methanol were used on Arbequin. The quantitative data for the two solvents and concentrations of phenolic compounds are shown in **Table 3**. The results in **Table 3** indicate methanol was a better solvent for oleuropein; however, DMF provided better extraction efficiency for luteolin and apigenin. The extraction efficiencies were different due to the solubility variation of compounds when in different solvents. Both DMF and methanol provided similar peak areas and concentrations for sinapic acid. The concentration of oleuropein calculated in Arbequin was comparable in magnitude to the concentration found in spring of 2019.

Table 3. *Summary of quantitative analysis of four phenolic compound identified in the Moroccan olive oil, Arbequin. The extraction for each solvent was repeated twice (Winter 2019).*

	Oleuropein	Luteolin	Apigenin	Sinapic Acid
	Conc. (mg/kg oil)	Conc. (mg/kg oil)	Conc. (mg/kg oil)	Conc. (mg/kg oil)
DMF 1	5.546	0.701	0.985	0.995
DMF 2	5.832	0.699	1.043	1.171
MeOH 1	24.334	0.138	0.305	1.170
MeOH 2	25.188	0.100	0.385	0.912

Conclusion

Six phenolic compounds in Moroccan olive oil were identified and quantified. MeOH may be a useful extraction solvent for certain compounds. The quantitative analysis of tyrosol (the main contributor for black olives, see **Table 2**) needs to be redone to confirm the results. Future studies include methanol/DMF comparison studies to establish the extraction efficiency, comparing all Moroccan oils, comparing other extra virgin olive oils to Moroccan, and correlating the data to cancer studies.

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Artist:

Hope Irvin

Faculty Advisor: Lauren Rice

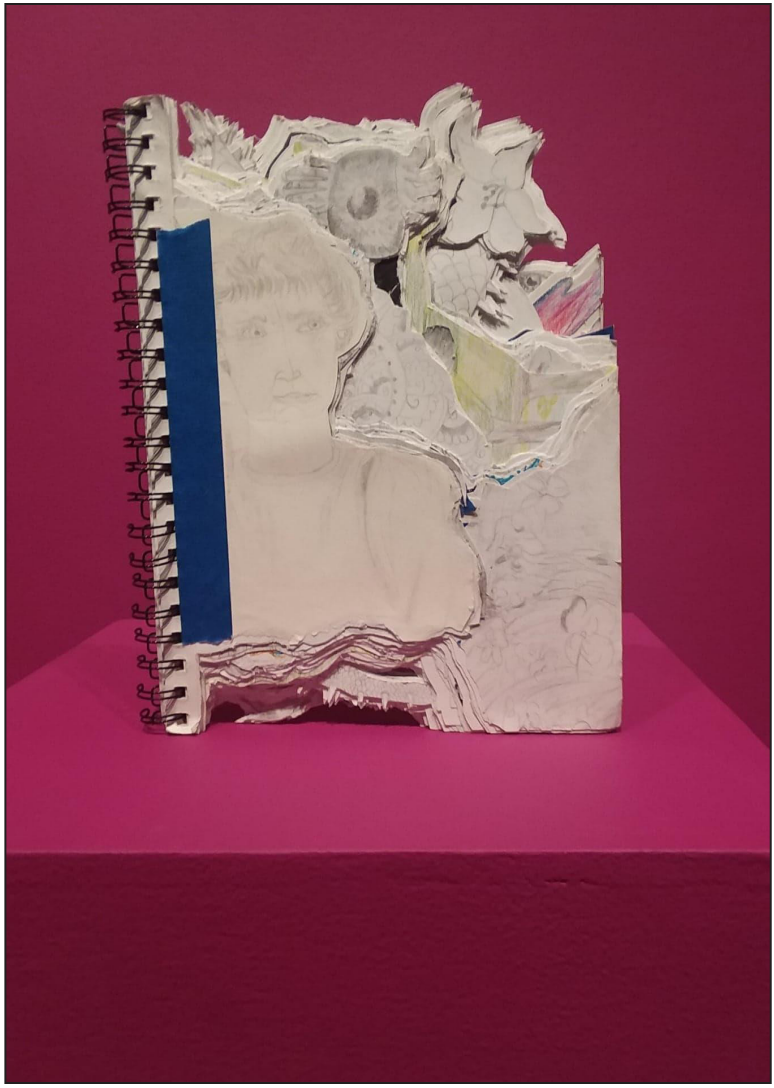
Awarded first place in Visual Arts

Artist's Statement

An artists' sketchbook work is often considered just the practice before the 'real art' happens, just studies and research, not a finished piece. However, they often seem to become these interesting and personal art objects in themselves. I am transforming my old sketches and presenting them as the finished work, presenting my practice as the art.

I started with sketchbooks I had saved from my childhood and early adolescence. For each piece, I used one book, first choosing what image to start with in the foreground. I then clipped the whole thing together with the chosen image page on top and started cutting around it with an X-acto knife, carving down through the book, page by page, making choices about which imagery to keep and what to take away. I removed the excess with a combination of careful cutting and tearing. I have had to construct simple display devices that respond to the needs of each individual piece. The display structure plays a part in determining how the sketchbook pages will be re-bound together in their new form. Some pages are bound by stitching and some by glue, depending on the needs of the new form of the paper.

By transforming work that I made as a child, I subconsciously began to discuss the impermanence of childhood. The hiding, revealing, and altering of the imagery began to represent the warping and fading of memory over time. By carving through the book, allowing the viewer to see inside it all at once, I destroy the sequential aspect of turning through pages, resulting in a new narrative.



Stories of My Grandmother's Life as a Dragon: Sketchbook at 14 Years Old
(2019)
Drawing and Relief Carving

The Skeleton of Weeds: Sketchbook at 12 Years Old (2019)

Drawing and Relief Carving

The Monster Living Behind the Couch: Sketchbook at 8 years old (2019)

Drawing and Relief Carving

Figure Studies Have a Dance: Sketchbook at 16 Years Old (2019)

Drawing and Relief Carving

The Effects of Cell Phone Use on Gameplay Enjoyment and Frustration

Megan E. Hlavaty, Samara L. Gall, and Austin J. Funk
Faculty Advisor: Dr. Sarai Blincoe
Department of Psychology
Awarded first place Social Sciences paper

Abstract

Past research suggests that the presence and use of cell phones can reduce the quality of face-to-face social interactions. To build upon past findings, we examined how the presence and use of a cell phone affected participants' enjoyment of and frustration with a prompt-and-response card game. We randomly assigned participants to one of three groups: no phone present, a phone present but not used, or a phone present and used during the game. We had two hypotheses for this study. The first hypothesis was that the ratings of enjoyment would be highest when no phone was present, lower if the cell phone was present during the game, and lowest if the phone was used during the game. The second hypothesis was that the ratings of frustration would be lowest when the phone was not present, higher when the phone was present but not used, and highest when the phone was used during the game. The game (Cards Against Humanity) lasted three rounds, after which participants filled out a survey measuring their enjoyment of, and frustration with, the gameplay. The results of two One-Way ANOVAs showed no significant differences between the groups in terms of their enjoyment of and frustration with the gameplay, which were generally high and low, respectively. We discuss the possible limitations of our design and future directions for research on phones and game play.

Humans are social creatures. Social interactions are a major part of well-being. People feel more positive on days they socialize with others than on days they do not, and feeling connected to others through social interactions positively affects a person's well-being (Sandstrom & Dunn, 2014); however, research suggests that cell phones reduce the quality and enjoyment of face-to-face social interactions and cause frustration (Misra, Cheng, Genevie, & Yuan, 2014). Playing games (e.g. card games, board games, video games, etc.) with others is a common social interaction, so we examined how the presence and use of a cell phone during play affected the enjoyment and frustration of a game of Cards Against Humanity.

Unlike many other social interactions, a game has a specific definition. A game must be outside of the real world (i.e. does not affect life outside of the game) and be a combination of a set of rules, uncertain outcomes, specific goals, and interactions (Juul, 2003). The game must be played between two or more people to be considered a social interaction. Unlike some other types of social interactions, games are played for the reward of reaching a specific goal; reaching an assigned goal stimulates several parts of the brain (mainly the reward system) and releases dopamine during gameplay (Balkaya & Catak, 2016). Hedonic games, such as Cards Against Humanity, are played for enjoyment, which is a crucial part of a person's well-being (Hamari & Keronen, 2017).

Enjoyment is a positive affective state that reflects pleasure, liking, and fun, and improves an individual's well-being (Kimiecik & Harris, 1996; Sandstrom & Dunn, 2014). Individuals experience enjoyment when they find their social identity and have positive social interactions with others (Chen, Lu, & Wang, 2016). If a person enjoys a social interaction, such as a game, they are more likely to enjoy and participate in the same activity in the future, especially when they are with friends or acquaintances (Sandstrom & Dunn, 2014). However, failing to reach some aspect or goal of the game can lead to frustration.

Frustration occurs when an individual is deprived of something they want or when they do not receive a reward (Britt & Janus, 1940). When playing hedonic games, the goal of the activity is to have fun (Hamari & Keronen, 2017). If something interferes with the fun of the game, such as distraction due to a cell phone, the players may become frustrated by not being able to reach their desired goal of enjoyment.

Having a good connection with others through social interactions can positively affect individuals' well-being and feelings of closeness (Sandstrom & Dunn, 2014); however, cell phones can be distracting and interfere with social interactions. No matter the closeness of the individuals' relationships, there was a decrease in perceived connection and empathetic concern during meaningful conversations in which people were using cell phones (Misra et al., 2014). Interactions among strangers are reduced in quality and are less likely to result in

future positive relationships if the person is distracted by their cell phone than when no cell phone is used (Brown, Manago, & Trimble, 2016). Cell phones also interfere with interactions between romantic partners and friends. Women reported that cell phones interrupted their time with their romantic partners, and the more frequent these interruptions, the lower the satisfaction in their relationships (Brown et al., 2016). A study of the effects of cell phones on conversations among friends at dinner found that if a person is on their phone while dining with friends, the people around them have increased boredom and less enjoyment than when a phone is not being used (Dwyer, Kushley, & Dunn, 2017). The benefits gained from social interactions are diminished for the person using the phone as well as those around them (Dwyer et al. 2017; Misra et al., 2014).

The phone does not even need to be in use to be a distraction. Simply having a cell phone present during a face-to-face social interaction can cause reduced conversational quality and interfere with tasks that require the person to focus on multiple things at once. When assigned a complex task, groups that had a cell phone on the table performed worse than groups with a notepad on the table (Thornton, Faires, Robbins, & Rollins, 2014). The presence of a cell phone can also negatively affect the development of relationships and the quality of a conversation between two people, even when the phone is not used (Przybylski & Weinstein, 2012). When asked to discuss a recent meaningful event with another participant for 10 minutes, participants rated the closeness and relationship quality lower when a cell phone (versus a small notebook) was present (Przybylski & Weinstein, 2012).

The current research looked at how cell phones affect a game, as games are a common way to connect with others. We specifically looked at whether the presence and use of a cellphone during a game affected the enjoyment and frustration of the gameplay. This study expands on the past research by examining both the presence and the use of a cell phone in a single study. Groups of participants in this study played a game of Cards Against Humanity with a confederate and then reported gameplay enjoyment and frustration. We predicted that when a cell phone was present during gameplay, enjoyment would be lower and frustration higher than when no phone was present, and that these differences would be even more extreme when a cell phone was being used during the game.

Method

Participants

Psychology students from a small liberal arts university ($N = 76$) chose to participate in this study by signing up for an available timeslot from a list posted online. The ages of the participants ranged from 18 to 27 ($M = 20$, $SD = 1.64$). We used convenience sampling to recruit

participants and participants received extra credit for their participation in this study. After excluding data from 13 participants due to failed manipulation checks about the presence and use of a cell phone, data from 63 participants (54 women, 9 men) was analyzed.

Materials & Procedures

The researchers randomly assigned participants to one of three groups based on time slots: the confederate having no phone present during the gameplay, the confederate having phone present on the table but not used, or the confederate using his phone during the game. One researcher joined each session as a confederate. The confederate, a bearded Caucasian male in his early 20s, wore a t-shirt and jeans for each session to blend in with the participants. Upon entering a classroom, the group of participants and the confederate sat around a large table **(see Appendix A)**. In the middle of the table were four stacks of face-down cards from the prompt-and-response game Cards Against Humanity: one set of black prompt cards and three stacks of white response cards.

After welcoming the participants, the researchers asked all participants to put their cell phones on silent, with no vibration, and out of sight. In all three groups, when we told the participants to put their phones away, the confederate said, "I'm expecting an important call" and one of the researchers responded, "That's fine. Just try to focus on the game." In the group with no phone present, the confederate put his phone out of sight and did not touch it during the game. In the group with a phone present and in the group with the phone used, the confederate put his phone face down on the table in front of him.

Next, the researchers explained the rules of the game **(see Appendix B)** and assigned the person to the left of the confederate the role of the first judge. Then the group of participants, along with the confederate, played three rounds of Cards Against Humanity. The three rounds lasted between 10 and 20 minutes, depending on the size of the group, which varied from three players to seven players (including the confederate). The larger the group, the longer the game lasted. In the phone present condition, the confederate did not touch his phone during the game. In the phone used condition, the confederate pretended to text each time it was his turn to judge a black card. He pretended to text after reading the black card, while the participants chose a white card to submit, and for an extra five seconds after all participants had submitted a card. The confederate held the phone above the table but close to his chest. During the five-second delay, he seemed to solely focus on his phone instead of on the game, causing a disruption in the flow of gameplay.

After three rounds, participants counted their black prompt cards to determine the winner. Each participant then used a seven-point Likert scale (1 = *strongly disagree*, 7 = *strongly*

agree) to respond to 15 statements measuring their enjoyment of, and frustration with, the gameplay. We created the survey and chose these anchors because most of the studies we looked at that used Likert scales had *strongly disagree* and *strongly agree* as the anchors. Three of the statements measured the participant's enjoyment (e.g. "I enjoyed this activity very much"), one measured their frustration (e.g. "I felt frustrated playing this game"), and eleven filler statements used to mask the other statements **(see Appendix C)**. The results of a Cronbach's Alpha ($\alpha = .73$) showed enough internal reliability to combine the means of the three statements measuring enjoyment into one mean rating of enjoyment for each participant. Participants also responded to two manipulation check statements: "There was a phone in sight during the game" and "There was a phone being used during the game" with either a "yes", "no", or "I don't know". We collected the surveys, debriefed the participants, thanked them for participating, and dismissed them.

Results

We excluded data from 13 participants due to failed manipulation checks (whether the phone was present or used during the game) or improper survey completion. A One-Way Analysis of Variance (ANOVA) was conducted for each hypothesis. The first hypothesis was that participants' ratings of the enjoyment of the gameplay would be highest if no cell phone was present, lower when a cell phone was present but not used, and lowest when a cell phone was used during the game. We conducted a One-Way ANOVA on the enjoyment measure, $F(2, 61) = .91$, $p = .41$, partial $\eta^2 = .03$. There was no significant difference between the group with no cell phone present ($M = 6.11$, $SD = .96$, 95% CI[5.78, 6.31]), the group with the cell phone present but not used ($M = 6.41$, $SD = .52$, 95% CI[6.08, 6.75]), and the group with the cell phone being used ($M = 6.32$, $SD = .74$, 95% CI[5.99, 6.65]); **see Figure 1** for the display of means. The results did not support our hypothesis for enjoyment; the presence and use of the cell phone did not impact the level of enjoyment, which was high across all three conditions.

Our second hypothesis was that participants would rate their level of gameplay frustration lowest when no cell phone was present, higher when a cell phone was present but not used, and highest when a cell phone was used during the game. We ran a One-Way ANOVA on the statement "I felt frustrated playing this game." The results of the ANOVA showed no significant differences in the levels of frustration between the group with no phone present ($M = 1.32$, $SD = .95$, 95% CI[.89, 1.75]), the group with a phone present but not used ($M = 1.43$, $SD = .81$, 95% CI[.99, 1.87]), and the group with a phone being used during the game ($M = 1.52$, $SD = 1.21$,

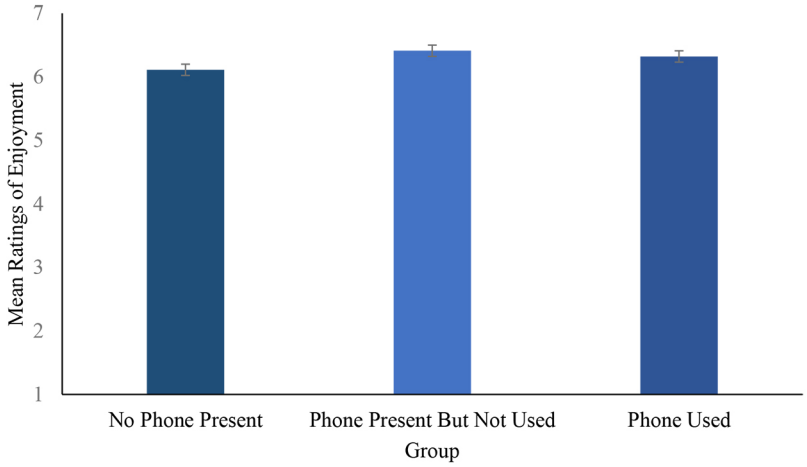


Figure 1. *This shows the group means for the ratings of gameplay enjoyment on a scale from 1 (strongly disagree) to 7 (strongly agree). There were no significant differences between the three group ratings of enjoyment.*

95% CI[1.09, 1.96]), $F(2, 61) = .23$, $p = .80$, partial $\eta^2 = .01$. Our hypothesis for frustration was not supported; the presence and use of a cell phone did not affect the ratings of frustration. **See Figure 2** for the display of the means.

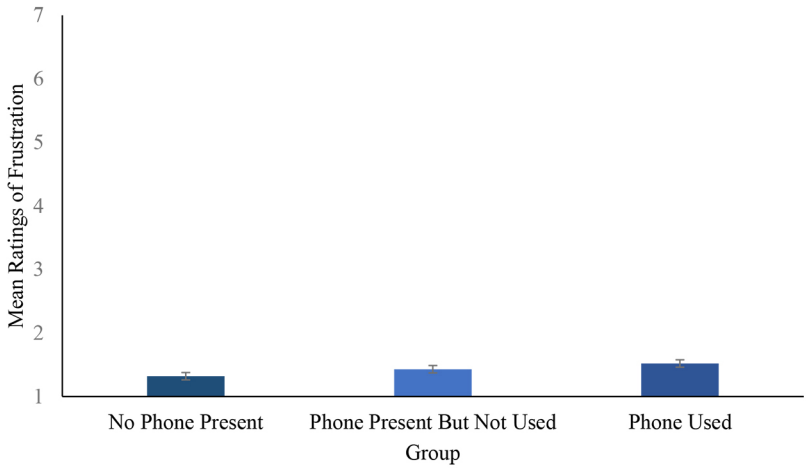


Figure 2. *This shows the group means for the ratings of gameplay frustration on a scale from 1 (strongly disagree) to 7 (strongly agree). There were no significant differences between the three group ratings of frustration.*

Discussion

This study looked at whether or not the presence and use of a cell phone during a game affected the enjoyment and frustration of the gameplay. Since playing games with others is an important social activity and cell phones are common, it is important to know if the phone's presence and use negatively affects the gameplay.

We had two hypotheses for this study. Our first hypothesis was that when a cell phone was present during the game, the level of enjoyment would be lower than when no cell phone was present, and the ratings would be lowest when a cell phone was being used during the game.

The second hypothesis was that when a cell phone was present, the ratings of frustration would be higher than if no cell phone was not present, and the ratings would be highest when a cell phone was being used during the game. The results of our analyses did not support either of our hypotheses. Cell phone presence and use did not affect gameplay enjoyment or frustration, which participants found generally high and low, respectively.

Our results were inconsistent with past research on cell phones and social interactions in which the presence of a cell phone during face-to-face social interactions caused lower enjoyment and quality of the interaction than when no phone was present (Dwyer et al., 2017; Misra et al., 2014; Thornton et al., 2014). A possible explanation for the inconsistency could be that the gameplay in our study took place among mostly strangers rather than in an established social group. Much of the past research studied the effects of cell phone use during face-to-face social interactions with close relationship partners, such as friends or romantic partners (Brown et al., 2016; Dwyer et al., 2017). While social interactions between close people are beneficial, interactions with strangers also show a positive benefit for the well-being of the individuals (Sandstrom & Dunn, 2014). It is important to know how cell phones affect social interactions that are often between strangers, such as playing a game.

Another possible cause of the inconsistency could be the difference in the number of people in the groups studied. Past researchers looked at how a cell phone impacts social interactions within a small group, such as a conversation between two people (Brown et al., 2016; Dwyer et al., 2017; Misra et al., 2014). Seventy-three percent of the groups in our study had six or seven players, with only twenty-seven percent having three or four. Due to having large groups instead of small, the participants may have lacked awareness of the other players' behaviors, including the confederate's phone use, which was intrusive on gameplay but quiet.

A limitation to our study was our measurement of frustration. Our researcher-designed measure lacked internal reliability, and the single frustration statement we analyzed from the

survey may lack construct validity. Additionally, participants may not have known what numbers two through six on our scale meant since we only said what one and seven meant. Future replications could use the Positive and Negative Affect Schedule (PANAS-SF; Watson, Clark, & Tellegen, 1988), the Frustration Discomfort Scale (Harrington, 2005), or other pre-established measurements.

Another limitation was the exclusion of the data from the participants who failed the manipulation checks. The exclusions reduced our statistical power and likelihood of finding a significant difference. Eleven of the participants failed the manipulation checks which asked whether or not the phone was present or used during the game. Several participants answered "I don't know" for both manipulation checks. This could be because they were more focused on the game than on their peers. Furthermore, the confederate's cell phone behavior was subtle. He leaned back in his chair when pretending to text and put the phone on the edge of the table in front of him. Future research may produce different results if the confederate is more obvious in their phone use (e.g. leaning forward on the table, placing the phone more towards the middle of the table, etc.).

The inconsistencies of the results of this study with past research suggests that this study should be replicated and expanded upon in future research. Instead of looking at only a prompt-and-response card game and cell phone presence and use, other researchers could use a different type of game (e.g. a board game, a video game, or a different type of card game that requires more focus such as poker). Past research has shown that the presence of a cell phone can diminish the participants' effectiveness while doing a complicated task (Thornton et al., 2014). Based on this, participants may be affected more during a game that requires more concentration than a hedonic game such as Cards Against Humanity. Another idea is to compare different types of games to each other (e.g. board games, video games, and card games) to see if cell phones affect the gameplay of different games in different ways. Studies with participants playing more rounds or a longer duration of gameplay may also yield more information, such as whether cell phones have a greater effect during short games or long games.

Another possibility for future research is to look at the effects of cell phones on other emotional states, such as boredom or anger, during gameplay. By looking at different emotional states, future researchers could determine which emotional states cell phones affect and to what degree. Past research has shown that cell phones being used during social activities, such as dinner with friends or conversations, can reduce positive emotions and increase negative emotions (Dwyer et al., 2017; Misra et al., 2014; Thornton et al., 2014). These studies focused on the closeness or overall quality of the interaction instead of specific emotions. A

final way to expand would be to see if different types of cell phone use affects participants' attitudes toward the game. One example would be the amount of time the confederate uses their phone. Studying how the amount of time spent using a phone during the game affects the emotional states of the other players could show whether or not the amount of time alters emotional states differently. This could be studied using a between-subjects design with a group with no phone present, a group with the confederate texting during their turn to judge, and a group with the confederate texting the entire game. Alternatively, is there a difference between texting or calling in the change of emotional states? A between-subjects design could be used to study this with a group with no phone present and a group with the confederate texting the whole game. Studying these subjects could help us understand the effects of cell phones on gameplay and help gaming events know how much phone presence and use will diminish the benefits gained from social interactions during events.

Social interactions are an important part of a person's well-being, and the use of a cell phone can interrupt and diminish the benefits of these interactions (Brown et al., 2016; Dwyer et al., 2017; Misra et al., 2014). By studying how the presence and use of cell phones affect social interactions, researchers can better understand and explain to the general public the importance of not having a cell phone present or used during social interactions such as games.

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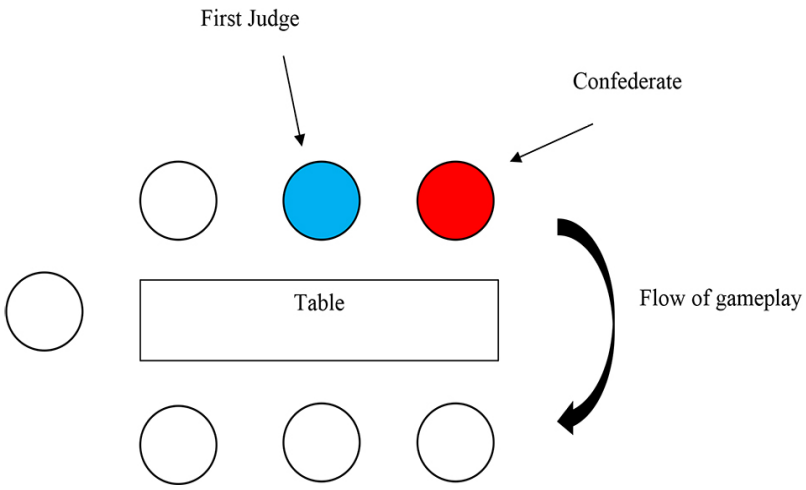
Appendix A

Table Set-up and Participant Seating



Appendix B

Cards Against Humanity Rules

To start the game, each player draws ten White Cards. The first player acting as Judge draws a Black Card and reads the Black Card out loud and puts the card face-up in the middle of the table. Everyone else responds to the Black Card by passing one White Card from their hand to the Judge face-down. The Judge shuffles all the White Cards submitted and reads each one out loud. For the full effect, the Judge should re-read the Black Card before presenting each response. The Judge picks the funniest White Card and gives the Black Card to whoever submitted it. Each Black Card is worth one point. After each round, the player to the left of the Judge becomes the new Judge and everyone draws back up to ten White Cards. For this study, the player with the most Black Cards after three rounds will be the winner.

Appendix C

Enjoyment and Frustration Survey

Age:

Sex: Male Female Other

Class: Freshman Sophomore Junior Senior Other

Mark the correct statement: At the end of the game….

____ I had the most amount of cards among the players

____ I had the least amount of cards among the players

____ I had in between the most and least amount of cards among the players

Rate the following statements on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

____ *I enjoyed this activity very much

____ This activity was fun to do

____ *I thought this was a boring activity (R)

____ This activity did not hold my attention at all

____ *I would describe this activity as very enjoyable

____ *I felt frustrated playing this game

____ I felt like everyone was enjoying the game

____ This was a relaxing activity (R)

____ I thought the other players were distracted

____ I thought everyone was engaged in the game

____ I was focused on the game

____ I am competitive when playing games

____ Winning is not important to me

____ I don't mind losing if I have fun

____ I feel frustrated if I don't win

There was a phone in sight during the game	Yes	No	I don't know
There was a phone being used during the game	Yes	No	I don't know

Items with a * were used in the analyses. Items with (R) were reverse coded.

Care, No Matter What: Planned Parenthood's Use of Organizational Rhetoric to Expand its Reputation

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Awarded second place Humanities paper

Abstract

In this article, I examine the organizational rhetoric on Planned Parenthood's (henceforth, PP) website. I explain the rhetorical situation within which the website operates, including the role of the current political climate in shaping PP's rhetoric. Conservative, anti-choice politicians often criticize PP for its abortion services; however, the organization's rhetoric suggests that its role in healthcare and society is more extensive than this. I analyze several of PP's webpages through a framework of organizational rhetoric, ultimately arguing that the organization curates its image as a provider of healthcare for people of all genders rather than just an abortion clinic for women alone. This rhetoric is critical to ensuring the future of PP as an organization given that it relies on governmental funding for significant support.

The Planned Parenthood Federation of America, Inc. (also known as PPFA, but most commonly as Planned Parenthood; henceforth, PP) faces heated criticism in contemporary American society. Despite performing a myriad of valuable reproductive healthcare services for people of all genders, anti-choice protesters condemn the organization because it offers abortions to those wishing to terminate pregnancies. Although Planned Parenthood is not the only provider of abortions in the United States, its nationwide reputation and accessibility make it a recognizable target for criticism. Individuals against abortion procedures argue that PP commits atrocities by offering abortion services. On a larger scale, Congressional Republicans have tried repeatedly to revoke federal funding for the nonprofit. *New York Times* writer Timothy Williams notes, "Tennessee, Nebraska, Ohio, South Carolina, and Idaho could all quickly approve bills next year [2020] that would in effect ban abortion," adding that Alabama, Kentucky, and Georgia all attempted to pass restrictions on the procedure, though these efforts were blocked by federal and state courts. These points of view ignore the fact that PP provides a variety of crucial reproductive health services other than abortion, including contraceptive services, general health care, sexually transmitted disease (STD) services, LGBTQ+ services, men's healthcare, education, and pregnancy care. In addition, Planned Parenthood provides services that are unavailable in many other places. According to a study from The Guttmacher Institute, "Among the 491 counties with Planned Parenthood clinics currently, there are no other centers in 103 of them where low-income patients can get affordable contraceptive services" (Covert). Thus, a lack of federal funding for this nonprofit organization would result in a loss of healthcare for many.

The tension between PP advocates and its anti-choice detractors affects how the organization creates messages to curate its public image. For example, PP's informational and promotional materials on its current official website (PlannedParenthood.org) address a widespread audience consisting of critics and supporters as well as prospective and current patients of the PP facilities. This essay draws on the scholarly work of Mary F. Hoffman and Debra J. Ford to examine PP's use of organizational rhetoric in such promotional and educational materials. Much of PP's rhetoric in these materials argues that the organization is more than an abortion center and that its reputation should reflect this fact. These materials aim to accommodate the widely varying needs and backgrounds of audiences, including their potential desire for personalized contraceptive options, personal beliefs, and socioeconomic status. In making these accommodations, PP then improves its public image as an accessible, non-partisan healthcare provider.

In the following sections, I will first provide an overview of the methods used in my analysis and the rhetorical situation surrounding PP's public image. I will then explain how PP's use of

rhetoric establishes the organization's vital role in contemporary society as a provider of holistic healthcare and asserts that any threats to PP's funding and existence are threats to people of all genders everywhere.

A Framework for Analyzing Organizational Rhetoric

This analysis uses concepts of organizational rhetoric to examine the communication on PP's website and the rhetorical methods at play within it. Hoffman and Ford define "organizational rhetoric" as "the strategic use of symbols by organizations to influence the thoughts, feelings, and behaviors of audiences important to the organization" (7). This subdiscipline achieved prevalence in recent decades, as explained by George Cheney and Jill J. McMillan who note:

> Scholars have only recently begun to discover and examine the pervasiveness of persuasion within every area of organizational life, ranging from activities such as recruiting, motivation, mobilization, and retention on the 'inside' of the organization to image making, identity maintenance, and political influence within the wider environment. (93)

Given PP's particularly fierce emergence in contemporary political debates, this analytic lens through which to study organizational rhetoric is useful because it refers specifically to the contemporary rhetoric it produces. While all individuals and groups must contend with the fact that their messages are inherently argumentative, organizations like PP must do so with particular care given their more expansive influence and precariously crafted public image.

This analysis also features Aristotelian principles of rhetoric, with a specific focus on artistic proofs or the appeals of *ethos*, *pathos*, and *logos*. Within the context of organizational rhetoric, Hoffman and Ford expand upon Aristotle's definitions of these appeals. The authors explain "*ethos*" as organizations' acts of "building credibility" (26). My analysis will uncover the ways in which PP strives to establish a credible reputation among healthcare providers, patients, and politicians. Hoffman and Ford define the second artistic appeal, "*pathos*," as organizations' "appealing to the emotions of the audience" (26). Through analyzing PP's website as an artifact, I will examine how it executes emotional appeals to promote its importance in contemporary society (despite critics who argue otherwise). Lastly, "*logos*," defined as organizations' "use of arguments and reasoning" (Hoffman & Ford 37), will play a large role in my analysis of PP's rhetoric as I study how the organization appeals to audiences by presenting a logical argument for its continued funding and, by extension, its cruciality to contemporary healthcare.

Finally, my analysis will include some terminology specific to the study of organizational rhetoric. Cheney and McMillan explain the idea of the "corporate person," stating:

> … There is a very real sense in which the organization as a whole can be thought to be a person speaking, a 'corporate' rhetor (e.g., 'IBM announced yesterday new cuts and layoffs'). To be sure, any message is created in some way by one or more individuals, natural persons, but many messages *appear* to be from wholly impersonal collective sources. (96)

In my study of PP, I will examine the organization's "corporate person" and how it manifests within the context of the specific organization. Additionally, I will focus on how the organization uses "wholly impersonal collective sources" to discuss deeply personal issues like healthcare, reproductive rights, and pregnancy. Employing these concepts in this analysis allows for a holistic study of PP's organizational rhetoric.

The Rhetorical Situation

Discussions about birth control in America began over 100 years ago, when Margaret Sanger first coined the term "birth control" (Nikolchev). The PP official website credits Sanger with opening America's first birth control clinic, noting that she "was then jailed for 30 days for breaking the 'Comstock Law,' which forbade the discussion and dissemination of birth control" ("Our History"). Feminist historian Linda Gordon notes that PP "was the only national birth control organization until the abortion reform movement that began in the late 1960s, and its new name … defined a new concept of birth control that dominated in the United States until then: family planning" (242). Gordon also addresses the positive difference between PP and reproductive healthcare providers from previous eras, noting that "Their nineteenth-century voluntary motherhood predecessors thought sexual *control* led to family and social stability; Planned Parenthood advocates thought sexual *expression* led to stability" (245). In other words, PP made the significant assertion that patients should embrace their sexuality rather than attempting to stifle it. This view of patients as sexual beings shaped PP's reputation as a respectful and realistic advocate for reproductive freedom.

The controversial nature of abortions centered this aspect of reproductive care in discussions about PP. Despite the fact that the organization offers a variety of essential healthcare services aside from abortion, anti-choice protesters often contend that abortion is the only thing PP provides. A report from *Scientific American* describes this predicament:

> For some people, Planned Parenthood has come to symbolize abortion, which it has provided since 1970. But in all the rhetoric, facts have sometimes gone missing. For instance, Senator Jon Kyl of Arizona declared last year on the floor of the Senate that abortion accounts for "well over 90 percent" of what Planned Parenthood does. The actual figure is 3 percent. (Planned Parenthood clinics perform one in four abortions in the U.S. but use no federal funds in this practice.) (47)

Clearly, abortion is nowhere near the primary service offered by PP; however, this widespread

myth fuels debates about whether or not the organization should receive federal funding. Anti-choice zealots flock to conservative media outlets, like The Heritage Foundation's *My Heritage* blog, to argue against federal funding for PP. Abby Attia's web article entitled, "7 Reasons Why Planned Parenthood Should Not Get Government Money," lists a variety of grievances: "Planned Parenthood has become a billion-dollar organization on the backs of taxpayers," "performs one in three abortions in the U.S.," "emphasizes abortions instead of preventative care," "accused of financial fraud with taxpayer dollars," "fights laws that protect women and children," "accused of jeopardizing the health and safety of women and girls," and "women can receive wider range of care at other centers." The perpetuation of these myths leads to the erroneous belief that PP is nonessential because it only provides mythical on-demand abortions, and that its non-abortion services could be supplemented through other means.

Despite these condemnations, PP plays a critical role in providing reproductive healthcare for people of all genders, including mammograms, preventative care, STD screenings, and pregnancy care. A report from *Scientific American* explains that:

> Stripping Planned Parenthood of federal funding would also sacrifice the 97 percent of its public health work that has nothing to do with abortion, from which many people benefit directly. One in five American women have used the group's services, and three out of four of its patients are considered to have low incomes. In 2011 it carried out tests and treatment for more than four million individuals with sexually transmitted diseases. It supplied 750,000 exams to prevent breast cancer, the most common cancer among U.S. women. And it performed 770,000 Pap tests to prevent cervical cancer, which was a leading cause of death among women before this screen became widely available. (48)

Cutting or revoking federal funding for PP would result in chaos for those currently receiving its services. PP also frequently provides healthcare to underprivileged communities, as cited in one report which notes that 79% of Planned Parenthood patients have incomes at or below 150 percent of the federal poverty level ("By the Numbers"). Thus, the particular way in which PP employs organizational rhetoric emerges from this tense situation. Specifically, PP's rhetoric strives to convey that the organization offers significantly more than just abortions and that numerous people will suffer if it can no longer offer these services due to a lack of funding.

Analysis

The materials used in this analysis are from the PP website and are accessible to anyone with internet access through a cell phone, personal computer, or public computer. Due to this widespread accessibility, these materials are some of the organization's most utilized materials.

During an era of "fake news," PP's rhetoric seeks to present an objective view of the organization's services and make bipartisan appeals. PP's bipartisanship is an example of a *logos* appeal because supporting it makes sense given its ability and desire to provide non-partisan, quality healthcare to all individuals. Such efforts are evident on the organization's informational "Facts and Figures" page. The page title reinforces the incontestability of "facts" in opposition to contestable opinions and personal beliefs. This rhetorical move protects PP from critics because it cannot assert to *convince* audiences of anything: rather, the organization is simply *informing*. Further, this establishes the organization's "wholly impersonal" corporate person (as explained by Cheney and McMillan) because it presents objective figures rather than personal viewpoints. The page also features an unofficial mission statement which reads, "Through our health centers across the U.S., inclusive, medically accurate sex education programs, and tireless efforts to defend people's right to access quality, affordable health care, Planned Parenthood is working to create the healthiest generation ever—both at home in the United States and around the globe" ("Facts and Figures"). The use of the word "healthiest" appeals to *pathos* because despite varying stances on abortion, most everyone agrees that good health is a positive thing that upstanding organizations should promote. Thus, PP's rhetoric asks audiences to trust that threats to the organization's funding are unjust and that a lack of funding would adversely affect more than just patients seeking abortions.

The "Reports and Facts Sheets" also linked to this page further strengthens PP's argument that the organization is a holistic provider of reproductive healthcare. This section of the site encompasses a variety of topics, ranging from "Pregnancy" and "Sex & Sexuality'" to "Relationships" and "STDs." "Abortion" is only one option, and its presence among an array of other topics asserts that the organization's other services are equally important, if not more so, because abortion is not privileged over anything else. In addition, one option on this page—simply entitled "Planned Parenthood"—offers specific figures about what Planned Parenthood does for its patients. The attached report, listed as "Planned Parenthood by the Numbers," cites figures without any direct links to abortion, such as the following:

> Number of years Planned Parenthood has provided men, women, and young people with the education, information, and services needed to make responsible choices about sex and reproduction: 101. Number of women, men, and young people worldwide provided with sexual and reproductive health care, education, and outreach by Planned Parenthood in a single year: 5,400,00.

Here, PP employs *logos* by publicizing the widespread positive effects of the organization. "Reproductive health care, education, and outreach" encompass far more than abortion, ranging from topics like menstruation and developmental care to short- and long-term pregnancy prevention. Given that 5,400,000 patients received these valuable services in one year, PP

makes the logical argument that its presence in contemporary culture is vital to the maintenance and protection of health for countless people. Thus, the organization's use of rhetoric here establishes its reputation as an important provider of reproductive healthcare and other essential services for its patients besides and beyond abortion. Within the context of contemporary debates about PP's funding, the organization's rhetoric suggests that the importance of these services to those who receive them should end any debates about whether or not the organization merits federal funding. Given that these debates govern public opinion and influence governmental actions, promoting itself as deserving of this funding is a critical component of PP's rhetoric.

The "Our Services" page on the PP website is rhetorically effective in its use of symbols to refute arguments that it only provides abortions. At first glance, the page immediately evokes Hoffman and Ford's definition of organizational rhetoric because it employs "the strategic use of symbols … to influence the thoughts, feelings, and behaviors of audiences" (7). The primary graphic on the page features a smiling doctor in a clean facility **(Figure 1)**. PP shapes this situation into a symbol and suggests that comfortable environments and understanding healthcare providers are synonymous with the organization. This differs from the myth that PP clinics are dirty, unsafe abortion clinics whose practitioners mount fetal body parts over fireplaces. By rejecting these harmful stereotypes through the use of symbols, PP establishes its identity as a safe, clean healthcare provider for patients seeking all kinds of procedures, not just abortions.

In addition, this graphic appeals to *pathos* because it provides a positive image of care given the frequently intimidating contexts in which some patients come to PP (such as seeking abortions, receiving testing or treatment for STDs, or pregnancy testing). Lastly, the graphic is not associated with any specific procedures that could be interpreted negatively, like medical or surgical abortions. Thus, the image is applicable to different audiences and their varying reasons for choosing PP as a health service provider. PP's inclusion of the image on this page asserts that it provides more than abortions and that the organization's other services are as essential and worthy of protection.

Furthermore, PP's "Our Services" page includes a lengthy list of services provided by the organizational facilities and argues in favor of these services' wide accessibility. Although "Abortion Services" and "Abortion Referral" are the first two items featured, a myriad of non-abortion related services are also provided on this page—which include but are not limited to—"Birth Control," "General Health Care," "LGBT Services," and "Men's Health Services." By not focusing prominently on abortion throughout this educational section of the website, PP argues that its contributions to reproductive care are multifaceted in nature and that, by

extension, its reputation should reflect this. The description at the top of the page also constructs a strong appeal to *ethos* by stating, "We offer compassionate care, backed by medical experts and more than 100 years of research in reproductive health." The deliberate inclusion of phrases like "medical experts" and "100 years of research" builds its credibility because it demonstrates how well-equipped it is to handle patients' widely varying needs. PP's use of rhetoric in this section of its website argues that PP is a respectable organization and that its services are diverse, widespread, and vitally important, regardless of anti-choice critics.

PP employs rhetoric for similar purposes in its awareness campaigns, such as the #BirthControlHelpedMe social media campaign of 2015. In this campaign, PP asked participants to "share their personal stories on social media about how birth control has helped them." In conjunction with a report released simultaneously entitled "Birth Control's Transformative Effects and the Need for Expanded Access," this campaign strove to assert that "birth control is one of the most important drivers of women's economic stability and health, making the need to build upon decades of progress all the more urgent" ("Planned Parenthood Launches…"). This campaign established the importance of the organization using personal stories about contraceptives' life-changing potential and emphasizes that it provides services far beyond abortion.

Figure 1. *Planned Parenthood "Our Services Graphic"*

Planned Parenthood's rhetoric in the #BirthControlHelpedMe campaign appeals strongly to *pathos* because the contraception users' stories are characterized by emotion. Graphics associated with the campaign describe benefits of using birth control that target audiences' emotions through connecting these aforementioned benefits with patients' resulting bodily agency. In one case, Rebekah from California states, "Because I was able to get birth control from Planned Parenthood, I was able to plan my family. After college graduation, I gave birth to my son. I went on to graduate school at Harvard and a career in Washington DC on Capitol Hill" ("Birth Control Helped…"). Invoking *pathos*, Rebekah's story asks audience members to feel proud of her success and understand the important role of birth control in achieving her goals.

Logos appeals are also present in participants' stories, like that of Dakota from Washington DC, who explains, "Now that I have an IUD, I can focus on my job and study for the GRE so I can continue my education in graduate school" ("Birth Control Helped…"). Dakota's account appeals to *logos* because it constructs the argument that her personal success relies heavily upon access to birth control through PP. By extension, access to PP must continue to be federally funded so that women like Dakota can continue to receive the reproductive health benefits that meet their needs regardless of personal budgetary constraints. PP's rhetoric in the #BirthControlHelpedMe campaign contends that PP is a critical resource in the lives of many women, reinforcing its importance in marginalized communities. The organization's "This Is Who We Are" digital fact sheet explains PP's fulfillment of this need: "Seventy-nine percent of Planned Parenthood health care patients live with incomes of 150 percent of the federal poverty level or less, the equivalent of $34,575 a year for a family of four." In addition, this rhetoric bestows importance upon birth control access as a means of preventing the need for abortions.

Conclusion

Planned Parenthood's rhetoric proposes that the organization is vital to contemporary reproductive healthcare, its services consist of more than abortion, and it should receive federal funding and public support. The organization's materials employ a variety of rhetorical methods and promote extensive services which cater to the needs of all patients. Current discussions about PP often revolve around the morality of abortion and whether or not federal funding should be given to an organization that even slightly promotes it. Within this context, PP recognizes the importance of expanding its reputation to encompass more than just abortion. By advertising numerous other resources and services available to patients, PP expands the applicability of its organizational rhetoric to a wider audience and asserts that numerous, non-abortion seeking patients will be adversely affected if federal funding is eliminated.

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Analysis of Petroleum Products for Forensic and Environmental Applications

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Awarded second place Natural Sciences paper

Abstract

In arson cases as well as oil spills, it is important to identify the ignitable liquid (IL) to find the suspect or to clean up the spill. The American Society for Testing and Materials (ASTM) method is commonly used; the extraction methods vary, but the data collection is the same. The instrument used in the ASTM method is the gas chromatography mass spectrometry (GC-MS), which gives a visual identification of the IL contaminating the sample. In this study, the use of Fourier transform infrared spectrometry (FTIR) will be used in conjunction with chemometric analysis. The FTIR spectrum takes about five minutes to collect, which is much faster than the GC-MS, which can take as long as 30 minutes. The samples prepared were to simulate old ILs, an oil spill, and an arson case. Two chemometric analysis methods were used, principal component analysis (PCA) and alternating least squares (ALS), to assist in the identification of the contaminant. The spectra were hard to visually identify, but when paired with PCA or ALS gave a nice grouping of known solutions (>25%). The spectra of an IL and pentane used with the ALS method of analysis gave a better understanding of whether a sample was a blank or not. The use of ALS and PCA together was not part of this study, but in future studies they will be used together. The use of FTIR with chemometric analysis was found to be a faster, more efficient, and an accurate method of analysis compared to GC-MS.

Introduction

Petroleum products come from crude oil harvested from different oil fields. Crude oil then goes through physical and chemical conversion at a refinery, producing various petroleum products [6]. Gasolines, diesel, and kerosene, which are easily obtained at gas stations, are referred to as ignitable liquids (ILs). As the most familiar ILs, they are also commonly used as accelerants in arson cases to increase the speed and spread of the fire. This makes finding the accelerant from fire debris important in helping to establish an evidentiary link between suspect and fire. Arson cases are a forensic application of the analysis of ILs. ILs also have environmental applications. In the environment, oil spills are concerning for human health as well as the health of the coasts and estuaries. Identifying the IL in the event of an oil spill is crucial for cleaning the coast of the IL's harmful contaminants [4].

The ASTM method is commonly used to identify ILs in forensic and environmental applications. ASTM International is a global organization that delivers and develops standards for a variety of components. The purpose of an extraction method is to separate the IL analyte from the solution into a suitable solvent. Extraction methods vary from the use of passive headspace with activated charcoal to headspace vapors, but the samples are all analyzed through the use of gas chromatography mass spectrometry (GC-MS). The ASTM method allows a visual comparison of the total ion chromatograms, which can then be compared to reference ignitable liquids [7]. There have been numerous studies supporting and improving the various ASTM extraction methods in forensic and environmental applications [1, 2, 3, 6]. The use of GC-MS is common, but instead of using a data system to analyze the data or visual interpretation, chemometric analysis can be used instead.

Ferreiro-Gonzalez *et al*. created a method of headspace mass spectroscopy (HS-MS), which uses an activated charcoal strip. Desorption of the charcoal strip allowed the authors to discriminate between different IL residues. In this study, the combined burning of different ILs and substrates were performed in a can and the charcoal strip was hung in the headspace. The data was then collected by gas chromatography mass spectrometry (GC-MS) and analyzed by hierarchical cluster analysis (HCA). Compared to the ASTM method, the authors found this method faster, safer, and more environmentally friendly [1].

In another study by Ferreiro-Gonzalez *et al.*, the authors contaminated fresh and saltwater samples with various petroleum products not limited to gasolines and diesels. Each sample was analyzed using HS-MS, then by HCA and linear discrimination analysis (LDA). HS-MS was able to identify if petroleum products were present, and, when combined with LDA, created a spectrum of the IL's fingerprint region for easy identification. The authors found the HS-MS

method to be accurate, sensitive, and low cost [2]. The chemometric analysis methods used in this study are HCA and LDA, but are not the only methods of analysis used in conjunction with GC-MS.

Sinkov *et al.* analyzed arson case data from police stations in Canada. Each of the samples were stored, extracted, and analyzed according to the Royal Canadian Mounted Police protocols. The sample data was collected using GC-MS, then analyzed using chemometric analysis, which included backward-elimination/forward selection (BE/FS), chromatogram alignment, and cluster resolution (CR). A perdeuterated alkane ladder was added to the samples, which was able to correct extreme misalignment in the retention times caused by inter-lab variability. Their work was a step toward the development of a system to analyze and identify arson data which would make the analysis faster and more reliable. This study looked at distinguishing gasolines from non-gasoline samples [3].

Hupp *et al.* analyzed diesel from 25 different diesel stations, and each of the samples were then diluted and analyzed in triplicate using GC-MS. The data from the GC-MS was then analyzed using chemometric analysis, which includes Pearson product moment correlation (PPMC) and principal component analysis (PCA). Through this study, the authors were able to compare weathered diesel using PPMC to a known sample source. PCA was also used to group diesels with similar chemical components. Using both PPMC and PCA, they were able to distinguish diesels of similar origin and discrimination [4]. The PCA method of chemometric analysis is not limited to sample data collected by GC-MS, and is not limited to the IL diesel, but can also be applied to gasoline and kerosene [4]. There are only a limited number of studies deviating from the use of the GC-MS, because of its high sensitivity, accuracy, and reproducibility. Other spectroscopic methods include fourier transform infrared spectrometry (FTIR) and x-ray fluorescence spectrometry (XRF).

Zhang *et al.* created a method which analyzed sulfur-containing gasoline and diesel using total reflection X-ray fluorescence (TXRF). The samples were then digested, and microwave prepared before collecting data using TXRF. After the sample data was collected, the adding standard recovery rate (ASR) was calculated. The authors found that this method showed good potential and reliability in determining if S, Fe, Cu, Mn, and Pb are in the sample. This method can then be used to screen ILs in routine quality control for inorganic compounds [5].

In the present study, FTIR was used to identify the organic components within our samples. The GC-MS was also used as a standard method to verify the methods of extraction used. Samples of forensic and environmental similarities were prepared with the use of FTIR and GC-MS in mind.

PCA extracts the important information from data, compresses the size of the data set,

simplifies the description of the data set, and analyzes the structure of the data. PCA reduces the dimensionality of the data to two principal components, which are obtained as linear combinations of the original data. ALS deconvulates the mixture data into some number of components; in this case, the number of components is 2. ALS allows the resolution of multiple components in unknown unresolved mixtures from chromatographic systems.

Experimental

Standards were prepared by volumetrically diluting the ILs (25%, 10%, 5%, and 1%) using pentane (HPLC grade Alfa Aesar) as the solvent.

Table 1. *A table showing the ILs used during experimentation including when and where they were purchased. The kerosene with the unknown purchase date was found in a cabinet in the laboratory with only the label "kerosene" on the container.*

Purchase Date	Ignitable Liquid	Company	Location
January 2008	Diesel	Valero	Farmville, VA
February 2019	87,89, and 93 octane gas	Valero	Farmville, VA
May 2019	87,89, and 93 octane gas	Exxon	Farmville, VA
May 2019	87,89, and 93 octane gas	Valero	Farmville, VA
May 2019	87 octane gas	Exxon	Midlothian, VA
May 2019	87,89, and 93 octane gas	Exxon	Dillwyn, VA
May 2019	87 octane gas	Citgo	Farmville, VA
May 2019	87 octane gas	BP	Midlothian, VA
May 2019	87,89, and 93 octane gas	Sheetz	Farmville, VA
May 2019	87,89, and 93 octane gas	Murphy's	Farmville, VA
June 2019	Diesel and kerosene	Sheetz	Farmville, VA
Unknown	Kerosene	Unknown	Unknown

To simulate an environmental sample, natural waters were collected from the Atlantic Ocean (Virginia Beach, VA), the Pamunkey River (New Kent, VA), and the Swift Creek Reservoir (Chesterfield, VA), then contaminated with gasoline. Water samples for FTIR were prepared by placing natural water (10 mL) into a screw-top vial and adding gasoline (200 µL). A 5mL aliquot of contaminated water sample was placed into a vial, pentane (2500µL) was added then vortexed, and layers were allowed to separate. After sitting, the pentane and water separated, and the top layer was collected; this extraction was repeated four times. The pooled extract was then placed into a 25mL round-bottom flask, where it was evaporated via rotary evaporation (Büchi Rotavapor R-200) in an ice bath.

Water samples for GC-MS were prepared by placing natural water (1 mL) into a vial and adding gasoline (20 µL), which was then vortexed. To extract the gasoline, pentane (500 µL) was added to the vial, which was then vortexed and centrifuged. The top layer was then extracted and placed in a separate vial; the extraction process was repeated 4 times. The pooled extract was then centrifuged one more time and the pentane was syringe filtered (0.25 µm PTFE filter) into a sampling vial.

Weathered samples were prepared by placing 87, 89, and 93 gasoline (100 mL) into separate 100 mL graduated cylinders. The three graduated cylinders were left in a ventilated area where they were closely watched and analyzed by GC-MS and FTIR as the volume decreased. For the FTIR, 2–3 drops of the sample were placed directly on the HATR crystal and for GC-MS, the weathered sample (10µL) was placed into a sample vial with pentane (990µL).

The GC-MS system was a Shimadzu GCMS-QP2010 Ultra with a stationary phase of SH-Rxi-5Sil MS and an inner column diameter of 0.25 µm and length of 30m. The samples were injected volume of 1µl with a split ratio of 50:1 into an injector temperature of 250 °C. Helium was used as a carrier gas, the MS detector temperature was 280 °C, and the ion source temperature was 230° C. The initial column temperature was 50 °C for 3 minutes on a temperature ramp of 5 °C/min, then 110 °C for 0 minutes with a temperature ramp of 20 °C/min, and a final temperature of 280 °C for 4min [1].

The type of FTIR used was a Nicolet iS10 with a horizonal attenuated total reflectance (HATR) accessory. The background of every sample was collected before the samples (2–3 drops) were analyzed by 54 scan times and a resolution of $1cm^{-1}$. In between samples, the HATR was taken apart and cleaned using methanol with a Kimwipe.

All chromatographic and spectral data were exported into a text file format for analysis in the Matlab (R2016b) programming environment. The PCA program used was an in-house written function, and the ALS function used was done with an MCR ALS 2.0 Toolbox GUI available for download from Multivariate Curve Resolution Homepage (10).

Results and Discussion

After looking at the chromatograms, it is easy to see why the ASTM method favors the GC-MS as an instrumental method of analysis. **Figure 1** shows that the three water extraction chromatograms are almost identical. The three chromatograms have peaks at the same retention times which shows that the IL analytes are the same.

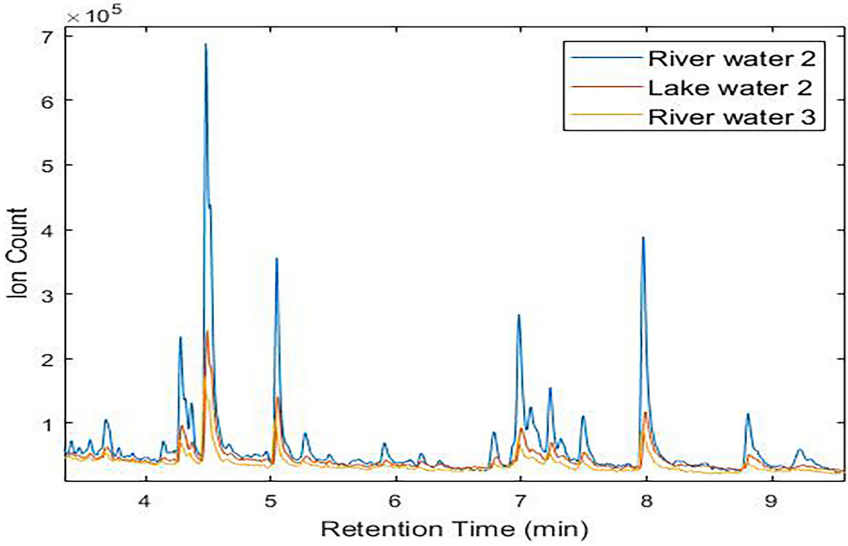

Figure 1. *Displaying three water extraction chromatograms, which look almost identical to each other, and match to a gasoline chromatogram.*

In chromatograms, it is easy to see whether various solutions are contaminated with the same IL, as well as other valuable information about an analyte. The old diesel in **Figure 2** was collected in 2008, and the new diesel was collected in 2019. The two chromatograms can be visually identified as the same contaminant because the peaks are at the same retention times. Before the retention time of 20 minutes, the old diesel had peaks at a lower ion count than the new diesel; this is because over time the lighter components have been lost. Even though the age of the IL is important, the peaks identifying the IL are crucial.

In **Figure 3**, the identifying peaks of the old kerosene purchased at an unknown date did not match the peaks of the new kerosene purchased in 2019 **(see Table 1)**. The chromatogram of the old kerosene does not match the new kerosene. The chromatogram of old diesel matches the chromatogram of old kerosene almost exactly. This indicates that the old kerosene was likely mislabeled and was purchased around the same time as the old diesel.

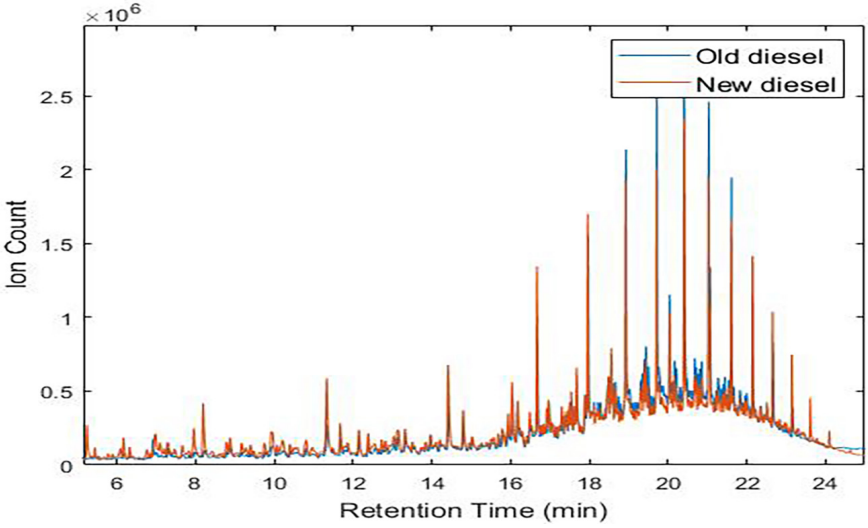

Figure 2. *In this chromatogram old diesel refers to the diesel collected in 2008, the new diesel is the diesel collected in 2019* ***(see Table 1)****. A visual representation of how weathered samples lose some of its lighter components over time.*

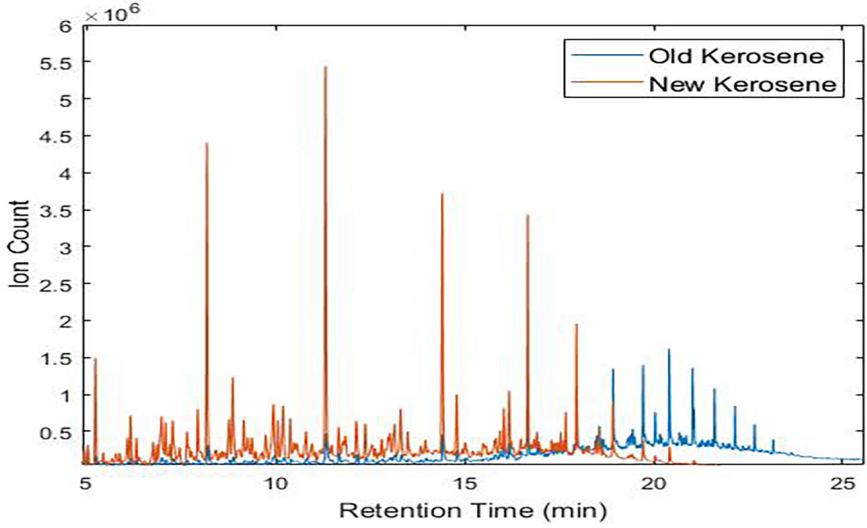

Figure 3. *Old kerosene was found in a cabinet, believed to be purchased in 2008 with the old diesel, but the new kerosene was purchased in 2019* ***(see Table 1)****. The identifying peaks of the old and new kerosene samples are completely different. The peaks of the old kerosene match diesel more than kerosene.*

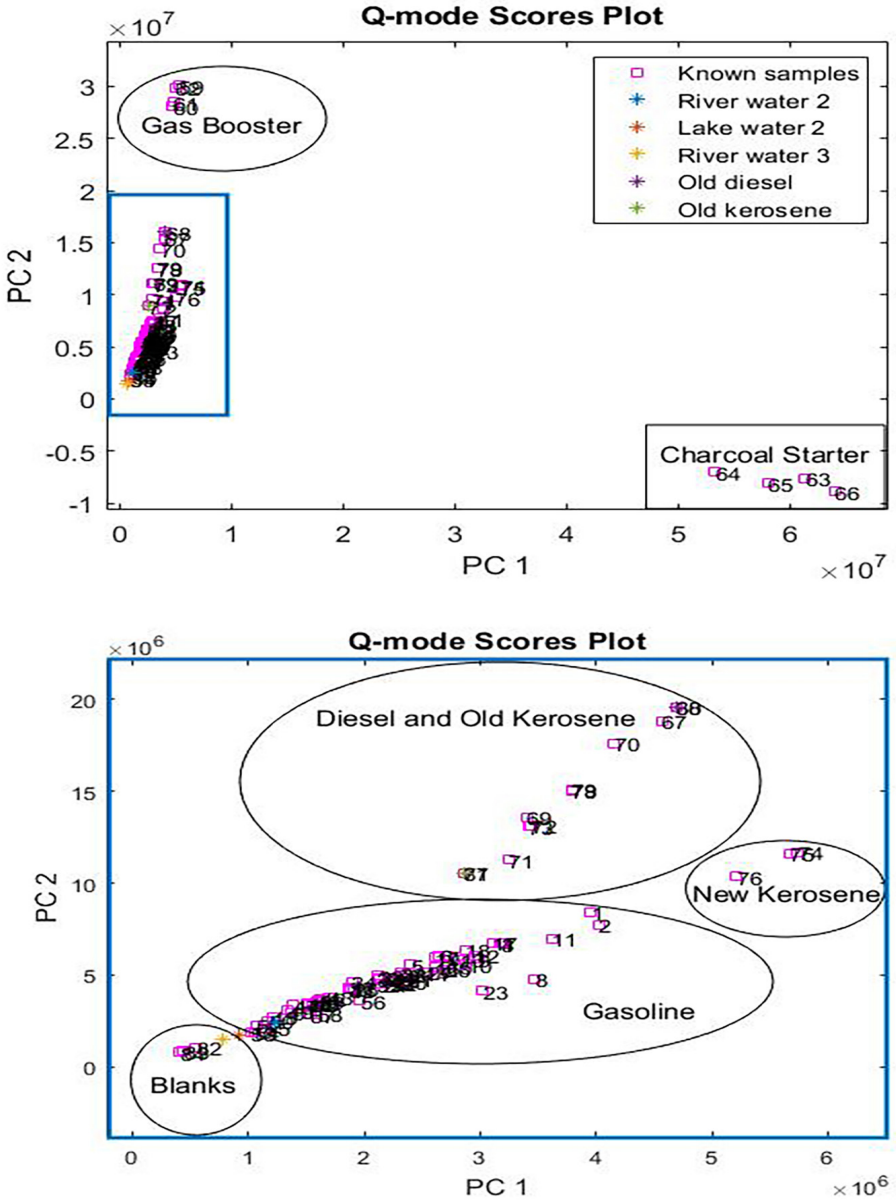

Figure 4. ***(A)*** *A PCA plot of all petroleum products and blanks analyzed.* ***(B)*** *The detailed section of the red-boxed area from* ***Figure 4A*** *shows that some water extractions can be identified as gasoline, but old kerosene and new kerosene could not be identified with their group.*

Using the chromatograms, the IL analyte can be identified and, when analyzed using PCA, forms groups with corresponding ILs, as seen in **Figure 4A**. After taking a closer look at the red-boxed region, the old diesel and old kerosene did not combine with their corresponding groups but were instead near gasoline and diesel. This also confirmed that old kerosene is in a mislabeled container and is actually a diesel.

The data analysis the GC-MS was then applied to the spectra collected by FTIR. In **Figure 5**, the spectra between gasoline, kerosene, and diesel are very similar, so visually identifying an IL is not an option, as it is with GC-MS. When the spectra of neat samples were analyzed using the PCA method, as shown in **Figure 6**, the grouping of gasolines, non-gasolines (kerosene and diesel), and blanks were easy to identify.

The testing of various dilutions was done, and it was found that the 10% and 1% were too dilute to be distinguished using PCA plots. **Figure 7** displays the neat samples, like **Figure 6**, as well as the 25% solutions using the fingerprint regions to generate the PCA plot. In **Figure 7**, a few solutions were added as unknowns and are listed in the legend area, but most of them do not correspond with their groups.

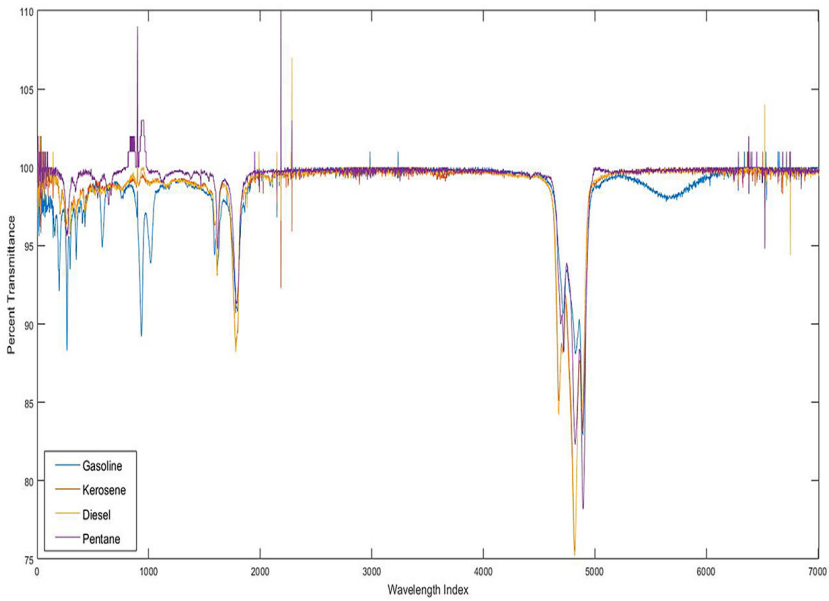

Figure 5. *The spectra of various petroleum products that are hard to distinguish.*

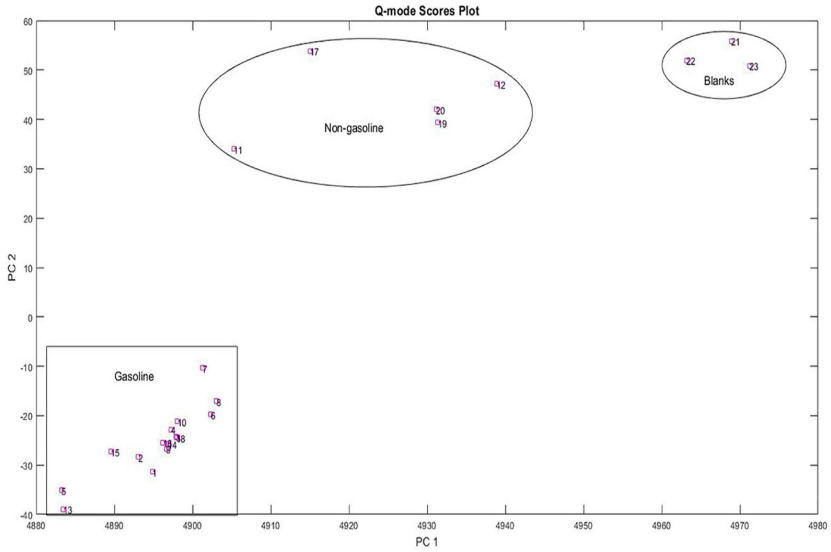

Figure 6. *A PCA plot of neat petroleum products and pentane, which can be easily grouped as gasoline, non-gasoline, and blanks.*

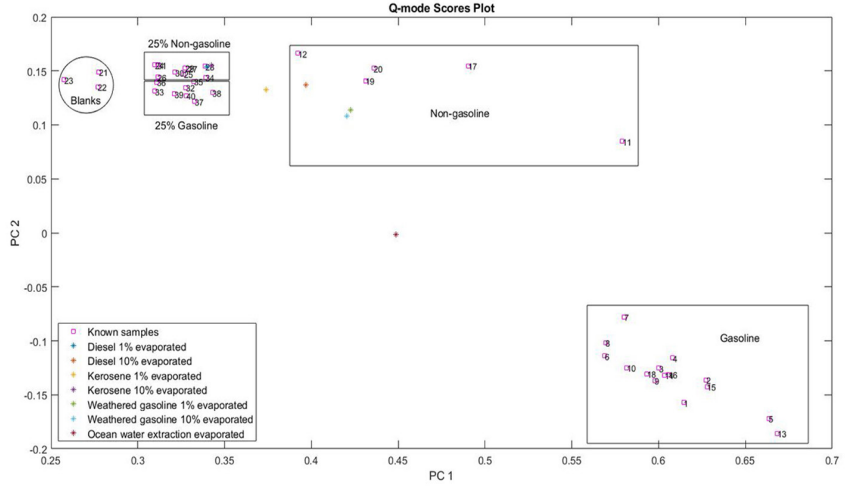

Figure 7. *A PCA plot like Figure 6, but with 25% solutions added to it and was created using the fingerprint regions. The colored stars are our unknown solutions which were evaporated via rotary evaporation. A few of the stars have fallen into groups; the other stars need a different technique to determine where they belong.*

After viewing these results, PCA is good at identifying and separating known mixtures no lower than 25% and can only identify whether a known IL is a gasoline, non-gasoline, or blank. The ALS will help identify if a solution is a mixture or neat. In **Figure 8**, spectra of the gasoline and diesel are shown with the fingerprint region boxed in red.

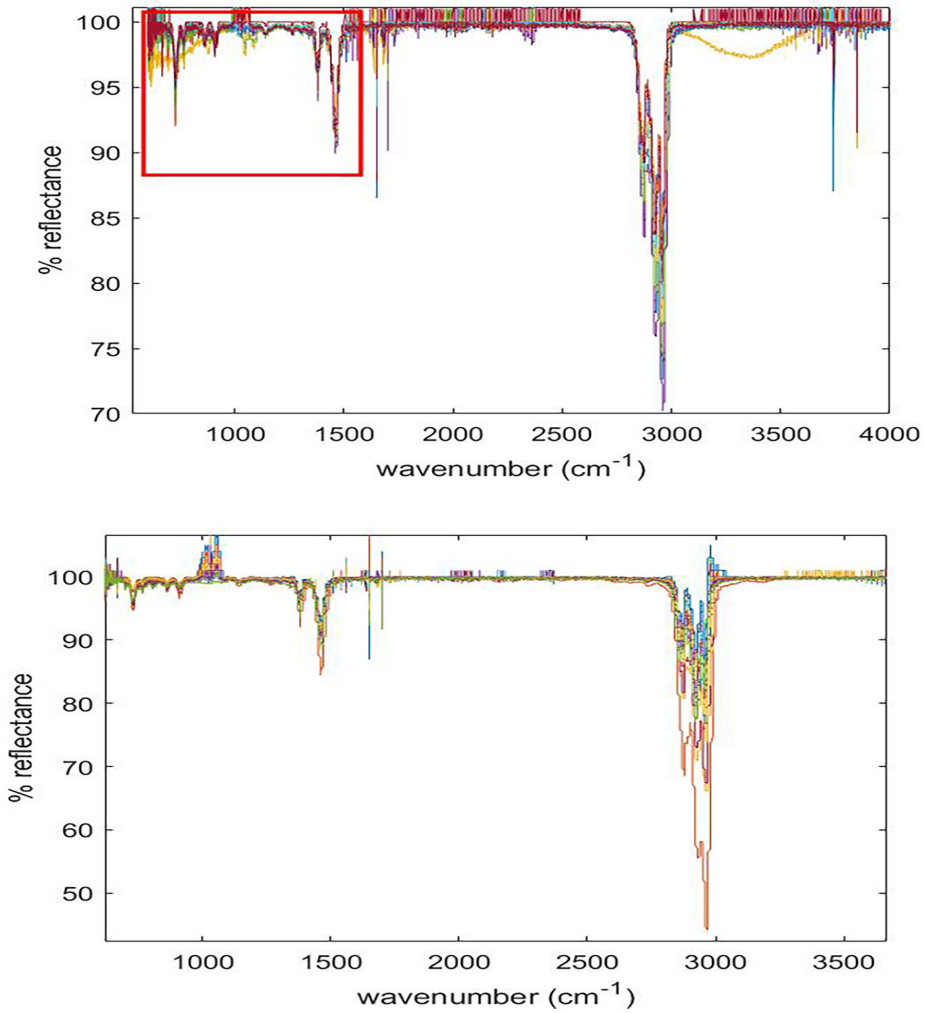

Figure 8. ***(A)*** *Original gasoline spectra collected by FTIR with the fingerprint region boxed in red.* ***(B)*** *Original diesel spectra collected by FTIR with the fingerprint region boxed in red.*

The fingerprint region was converted from percent reflectance, which is analogous to percent transmittance, to absorbance. After converting the spectra to absorbance, it was smoothed using a moving window average and negative values were forced to zero, as shown in **Figure 9**. Using the ALS resolved spectra of the fingerprint region of the IL and pentane, it could then be used to imitate the ALS program.

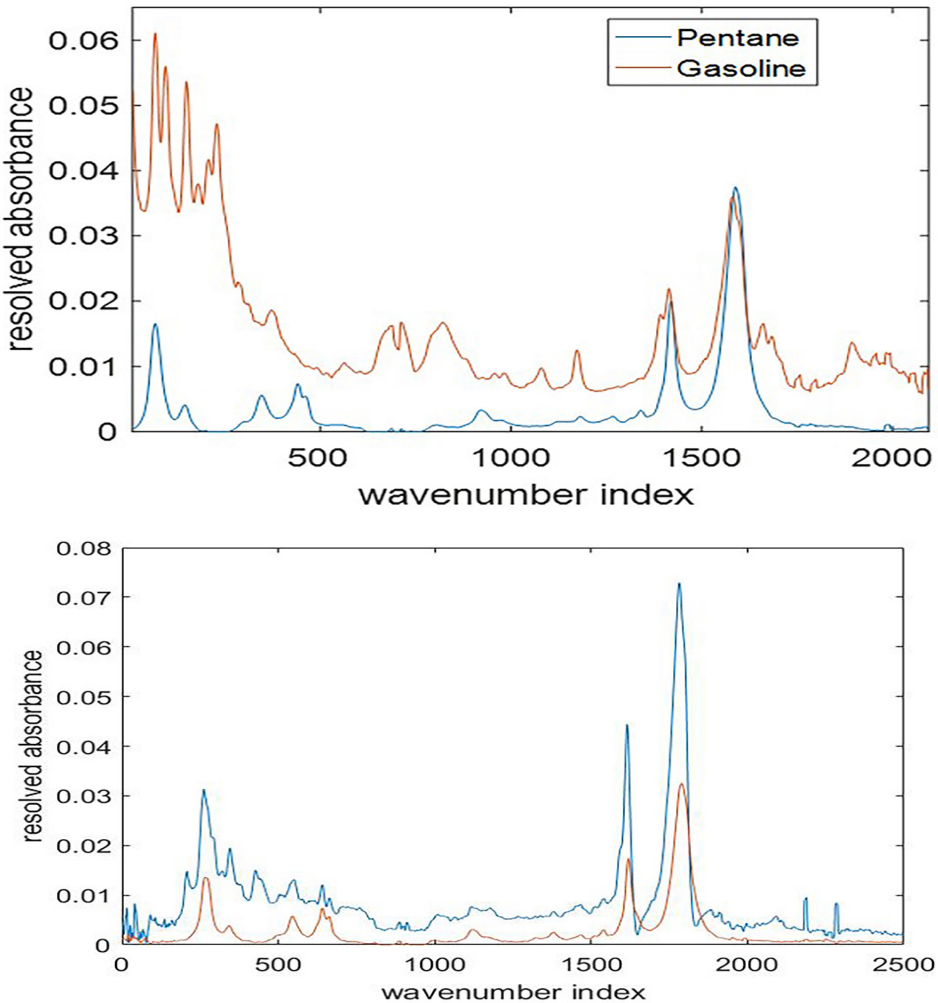

Figure 9. ***(A)*** *ALS resolved spectra of the section indicated by the red box in* ***Figure 8A****.* ***(B)*** *ALS resolved spectra of the section indicated by the red box in* ***Figure 8B****. Both spectra were converted to absorbance, smoothed, and negative values were forced to 0. Pentane was added to the spectra as well, to be used by the ALS program.*

The ALS results are shown in **Figure 10**, where the red line is the average of the blank samples. Anything under the red line is considered a blank and anything over the line is contaminated with IL. In **Figure 10A**, samples 15-19 were extracted from our contaminated water samples because its corresponding bars are above the red line, meaning our extraction method was a success. In **Figure 10B**, samples 24 and 25 are 10% and 1% prepared solutions which were evaporated via rotary evaporation. This tells us that there is a large ratio of diesel to pentane in that sample.

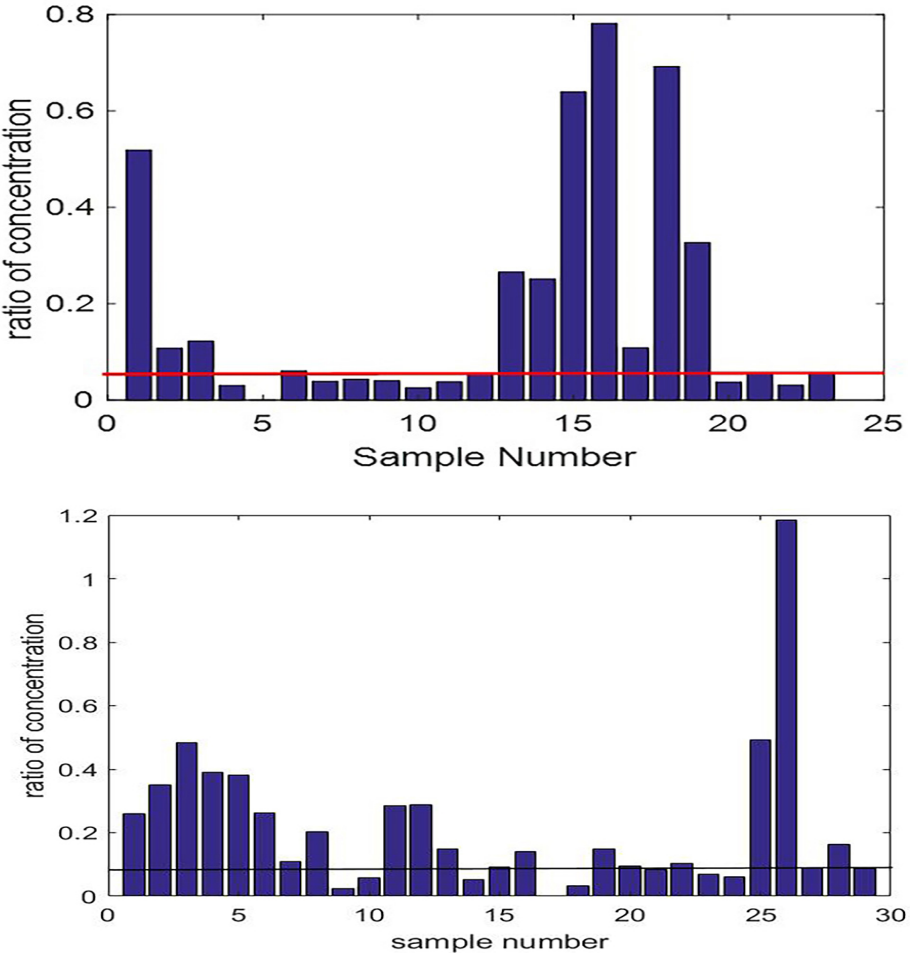

Figure 10. ***(A)*** *ALS resolved ratios of pentane to gasoline of each sample.* ***(B)*** *ALS resolved ratios of pentane to diesel of each sample. The red line on both graphs indicates the average of pentane samples, blanks, anything under the line is considered a blank.*

The PCA and ALS show two different kinds of information, PCA displays how known solutions can be grouped together and can possibly help identify unknown samples. ALS displays how a mixture can better be identified as a blank or as having an IL contamination.

Conclusion

In this study, the use of FTIR with chemometric analysis for identifying an IL as a gasoline or non-gasoline worked under certain conditions. The spectra were not visually identifiable as a gasoline and non-gasoline, but the chromatograms were visually identifiable. When used with the PCA, the chromatograms were unable to place old non-gasoline samples with their corresponding groups. The spectra with PCA was found to distinguish between gasoline and non-gasoline, even if the samples were weathered. Solutions had to be over 25% for the PCA plot to show a distinction between gasoline and non-gasoline. The use of ALS in pair with PCA was not used in this study; these methods were tested separately. In future studies, the use of ALS and PCA will be combined to better group unknown solutions. The water samples extraction method worked very well, but the carpet sample extractions did not work as expected. In the future, the carpet sample extraction method will be perfected to be used in the FTIR. The FTIR method of analysis is faster; this method takes 5 minutes while the chromatogram can take up to 30 minutes. In future studies, the use of FTIR, which analyzes organic components, can be paired with x-ray fluorescence (XRF), which analyzes inorganic components of a sample. The use of FTIR with chemometric analysis can be used as a faster, more efficient, and accurate way to analyze a forensic or environmental sample.

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Artist:

Andrew Jones

Faculty Advisor: Lauren Rice

Awarded second place Visual Arts

Artist's Statement

The year 2018 was filled with a plethora of events. From acts of domestic terrorism in America to high racial tensions on Longwood University's campus, there was so much happening on that it felt hard to actually realize what was going on. As the fall semester went on, I thought about everything that was happening in this country and on this campus and it reminded me of the music video for Childish Gambino's "This is America." In that music video, Gambino refers to tragic events in America and how, despite all the chaos, we are distracted so we don't actually address prevalent issues. The entire music video consists of Gambino dancing and singing with people, grabbing our attention. But in the background, there is rioting, tragedies, and complete chaos. In this instance, it is clear that Gambino is referring to the state of America; bad things can be happening all around us but because no one wants to fully address the issues, they distract the majority of people hoping they don't notice. This music video inspired me to make a piece highlighting the many things going on throughout the country as well as on Longwood's campus that are neither publicized, nor actively addressed. I want people to realize all the chaos that is around them.

Chaos
(2018)

Acrylic on canvas

Dimensions: 24" x 30" (1); 12" x 16" (4)

The Triangle Shirtwaist Factory Fire

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Abstract

The Triangle Shirtwaist Factory Fire occurred in March 1911. Following the death of many of the factory workers in this fire, many citizens called for the factory owners, Isaac Harris and Max Blanck, to be tried for the murder of their workers. The trial found the owners to be not guilty of the murder of their workers, however there is sufficient evidence to prove that Harris and Blanck were knowledgable of the conditions that their employees worked in. The trial transcripts proved that Harris and Blanck knew that the workers were locked in during their shifts to prevent them from stealing fabric or taking unauthorized breaks. In an interview with the fire chief, the press was told that Harris and Blanck did not provide their workers with a clear escape route in the case of an emergency, as the stairwells were too narrow for workers to quickly evacuate and all exit signs were in English, a language many immigrant workers could not read. This leads to the conclusion that Harris and Blanck were aware of the dangers of allowing their employees to work in this building, and their negligence directly led to many of the deaths in the Triangle Shirtwaist Factory Fire.

The Triangle Shirtwaist Factory Fire occurred on March 25, 1911 in the Greenwich neighborhood of Manhattan, New York City. While it was not the first factory fire in the United States, it inevitably left a larger impact American society than any previous fire. The sight of young girls jumping to their deaths to avoid the flames shocked and horrified the citizens of New York City and people throughout the United States. This horror led to cries of outrage and demands for change in industrial labor practices, which created greater press coverage of the event than previous fires had received. The increased outrage peaked when the owners of the Triangle Shirtwaist Factory, Isaac Harris and Max Blanck, were charged with manslaughter. Some people argued that it could not be proven whether the factory owners had previous knowledge of the unsafe conditions that their workers faced. This is hard to believe for many reasons, such as the owners having faced strikes and complaints of conditions prior to the outbreak of the fire, the lack of safety measures in place, and the evidence of unsafe factory conditions that came to light in the aftermath of the fire. The owners of the Triangle Shirtwaist Factory should have been found guilty of manslaughter, if not murder.

Factories were not always the prevalent way of manufacturing textiles in America. Prior to the late 1800s, technology was less sophisticated, and creating mass production factories was more expensive because businesses did not have centralized locations from which to work. That changed with the Industrial Revolution in the late nineteenth century.[1] Harris and Blanck saw the technological improvement of the Industrial Revolution as a way to make money and created the Triangle Shirtwaist Factory in the early 1900s. Shirtwaists were a common women's blouse at that time period. This business venture was very successful, and Harris & Blanck gained the nickname the "Shirtwaist Kings."[2] They grew their business and eventually the factory "occupied the top three floors of the Asch Building, a ten-story skyscraper at the corner of Washington Place and Greene Street."[3] Their success continued to grow after taking over part of the Asch Building, with the state labor department calling it "the largest blouse-making operation in New York."[4]

Many of those who worked in the Triangle Shirtwaist Factory in the early 1900s were young immigrant women. A large portion of these women came from southern Italy, populated by poor farmers and their families. In addition to facing poverty, farmers also faced prejudice from the richer northern Italians. The land was unforgiving to these farmers as well; crop fail-

[1] Albert Marrin, *Flesh and Blood So Cheap: The Triangle Fire and Its Legacy* (New York: Alfred A. Knopf, 2011), 69.

[2] David Von Drehle, *Triangle: The Fire that Changed America* (New York: Atlantic Monthly Press, 2003), 37.

[3] Marrin, *Flesh and Blood So Cheap*, 70.

[4] Von Drehle, *Triangle*, 37.

ure and diseases ran rampant.[5] Due to these conditions, families would often save enough money to send their young daughters or sons to work in America. The money the daughters and sons made would then be used to bring the rest of the family over one member at a time.

The other large group of women who worked in the Triangle Shirtwaist Factory were Jewish women, from countries like Russia. Russian Jews faced horrible treatment at this time and severe limitations of their rights in their home country. They were frequently subjected to pogroms—riots or attacks made against Jewish homes or businesses by non-Jewish Russians. Rules restricted the type of jobs they could work, and therefore how much money they could make.[6] This made supporting their families very difficult and led to many Jewish families replicating what the Italians had done. They would send their young daughters to America to get jobs, with the understanding that the money that the daughters made would be sent back home to pay for more family members to make the voyage over to America.

Blanck and Harris used the large number of immigrant women looking for jobs to their advantage. Those workers who were not satisfied with the conditions they faced or the payment they received could easily be let go and replaced by others eager to send money home to their families. This hindered many efforts to unionize the factory workers, but that did not stop dedicated workers from trying. The creation of the Women's Trade Union League (WTUL) was in response to the conditions that workers faced in factories. Union members would often hold protests outside of factories near closing time and would assist workers with strikes and negotiations with factory owners.[7]

Several strikes were moderately successful, such as the July 1909 strike by workers at "Rosen Bros., one of the largest waist manufacturers in the city, demanding a 20 percent pay hike."[8] The owners initially refused the workers' request, and went as far as hiring individuals to attack the picketers. After months of dealing with the strike, the owners agreed to the workers' demands. This undoubtedly angered other factory owners, such as Blanck and Harris, because now their workers would demand the same rights and would be willing to go on strike for them. What the workers of the Triangle Shirtwaist Factory did not know was that their owners were not as willing to negotiate. This was shown by the Triangle Shirtwaist owners' response to another strike in November 1909, called the Uprising of Thirty Thousand.[9] The strike last-

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[5] Marrin, *Flesh and Blood So Cheap*, 9-11.

[6] Ibid., 16-18.

[7] Von Drehle, *Triangle*, 16-17.

[8] Ibid., 16.

[9] Elizabeth V. Burt, *The Progressive Era: Primary Documents on Events from 1890 to 1914* (Westport, CN: Greenwood Press, 2004), 206.

ed from November 1909 to February 1910, and the strikers "demanded union shops, weekly instead of biweekly pay, a 52-hour work week, and the discontinuance of workers being charged for electricity and materials. They also called for improved safety standards, including adequate fire escapes and unlocked doors."[10]

The rapid growth of the Uprising of Thirty Thousand shocked the Triangle Shirtwaist Factory owners, as did the speed with which other factory owners gave in to the strikers' demands. Blanck and Harris held a meeting with twenty other major manufacturers about what to do in the event of a future strike. This meeting determined that "the strike must be resisted; the stampede to settle must end; the union must be crushed."[11] Word of what was agreed upon spread to other factory owners who quickly stopped settling with the trade unions.[12] Without the manufacturers rapidly folding to the union demands, the strikers had difficulty keeping the strike going. The majority of the strikers were not wealthy and needed to work in order to pay rent, buy food, and send money back home to their families.[13] Even their meager wages from working in the dangerous factories and unfair pay cuts were better than nothing at all. Unfair wage cuts was one reason that many workers agreed to strike, but they faced several other hardships in the factories. In factories such as the Triangle Shirtwaist, owners charged the workers for everything they used to do their jobs, including needles, thread, and sewing machines. Shop foremen also constantly berated the other employees to work faster.[14] In addition, the workers faced the spread of diseases in these cramped shops. David Von Drehle states that in these factories, "tuberculosis spread so easily among the exhausted laborers in the cramped, poorly ventilated shops that it was known as 'the tailors' disease' or 'the Jewish disease.'"[15]

Perhaps the main reason that so many of these workers were willing to risk losing their jobs is because they already risked their lives every day at work due to the unsafe working conditions. Inside of the Asch building, which housed the Triangle Shirtwaist Factory, there were an inadequate number of staircases for the size of the floors, but an exception was made since "the staircases are remote from each other and, as there is a fire escape in the court, it practically makes three staircases"[16] Of these two staircases, only one had direct access to the

[10] Ibid., 206.

[11] Von Drehle, *Triangle*, 62.

[12] Ibid., 62-63.

[13] Burt, *The Progressive Era*, 205.

[14] Ibid., 205.

[15] Von Drehle, *Triangle*, 42.

[16] Stein, *The Triangle Fire*, 23.

roof of the building, and both had doors that opened inward. The law about factory doors at this time was that they "shall be so constructed as to open outwardly, where practicable, and shall not be locked."[17] Once again, the Asch building was excused from this rule because the stair landings were not wide enough for the doors to open out.

Finally, none of the workers were prepared for or protected against a fire the size of that in the Triangle Shirtwaist Factory. In 1911, factory buildings were not required to have fire sprinklers. Furthermore, fire drills were not mandatory at the time.[18] Because so many of the workers in the Triangle Shirtwaist Factory were immigrants, many could not understand what was being shouted in English and they did not know where to go when the fire broke out because they had never prepared for such an event. Additionally, New York City fire truck ladders and their water hoses could not reach above the sixth floor, and the Triangle Shirtwaist occupied floors eight through ten of the Asch building.[19] The eighth floor was "basically open space, apart from an enclosed dressing room and toilets along the western wall. There were seven long wooden cutting tables … five of these cutting tables ran parallel to Greene Street, filling about half the room … the remaining space on the floor was filled by rows of sewing machines running from south to north, connected to a power plant under the Washington Place windows."[20]

The fire broke out on the eighth floor. It started just around closing time on March 25, when someone threw a cigarette or a match into a bin filled with scrap fabric. The manager of the floor, Samuel Bernstein, rushed to try and put out the fire, but the arrival of an elevator allowed wind to travel up the elevator shaft and fanned the flames. By this point, immigrant workers were panicking as they rushed to the Greene Street or Washington Place doors or ran to the windows and climbed out on the narrow ledge.[21]

Meanwhile, another worker on the eighth floor, Dinah Lipschitz, was trying to contact the switchboard located on the tenth floor to alert them of the fire. The regular switchboard operator was sick the day of the fire, and the woman filling in for her did not answer Lipschitz's call quickly. When Lipschitz did get in touch with the switchboard, the operator "remained on the line just long enough for Lipschitz to tell her to alert Max Blanck."[22] The switchboard operator dropped the phone to alert Mr. Blanck, so the eighth floor could not call back and have the

[17] Ibid., 23.

[18] Ibid., 25.

[19] Von Drehle, *Triangle*, 48.

[20] Ibid., 118.

[21] Ibid., 118-120.

[22] Ibid., 121.

switchboard warn the ninth floor about the inferno below.

As Bernstein continued trying to fight the growing fire on the eighth floor, other workers tried to assist by grabbing the fire hose with which each floor was equipped. Each hose had "a valve beside it to activate the flow of water from the tank on the roof."[23] Unfortunately, no matter which way the workers turned the valve, no water came out. Bernstein realized that it was hopeless to try to put out the fire and began assisting as many workers as he could in escaping.

Some of the girls made it down the fire escape to the sixth floor where they broke a window and climbed back inside of the building, but the majority of the girls did not know that there was a fire escape in the building and instead began to crowd around both doors. As previously stated, these doors opened inwardly, and the panicked girls were packed together so close to the door that they could not open it until one of the men pushed them out of the way and pulled the door open. He opened the door and the "screaming girls squeezed themselves into the narrow, spiral staircase, pushing and falling in their fright."[24] By this time, fire crews had begun to arrive, and several men began to assist the women in escaping down the narrow stairs.

At this point, the eighth floor was almost completely evacuated; Bernstein and Lipschitz were two of the last remaining employees. At this time, Bernstein was informed that no one had warned the ninth floor, and he ran up the Greene Street staircase to try to warn them. However, he said that "'twenty feet from the door on that floor was a barrel container of motor oil. I suppose that was burning. I don't know. The blaze was so strong I could not get into the ninth floor."[25]

Since Bernstein could not warn the ninth floor and they never received a call about the fire from the switchboard, the fire took the workers on the ninth floor completely by surprise. One worker stated that "'all of a sudden, the fire was all around us. The flames were coming in through many of the windows.'"[26] The fire sent the workers into a panic, and they rushed to both exits and the freight elevators to try and escape. The workers on the Greene Street side managed to get the door open, but on the Washington Place side, the workers soon discovered that the door was locked. This limited the exits that the ninth-floor workers could use to escape. With few options left, many tried to work their way around the crowded aisles to get to the other door, or those who knew about the fire escape attempted to climb onto it. The

[23] Ibid., 121.

[24] Stein, *The Triangle Fire*, 39.

[25] Ibid., 41.

[26] Ibid., 54-55.

fire escape quickly became overcrowded as it was "pathetically inadequate in an emergency involving hundreds of workers on multiple floors; it could accommodate only a handful of people at a time."[27] It collapsed under the heat and extreme weight.[28]

During this time, the Greene Street staircase was engulfed in flames, so the remaining workers had two options: climb out on the narrow window ledge to escape the heat, or try to get onto one of the freight elevators. The two elevator operators were praised for saving many lives on the day of the fire. One operator must have made seven or eight trips altogether; he recalled that he made "'Two of them to the tenth floor, one to the eighth floor and the rest to the ninth… Twice, I went through smoke and flames that came right into the car.'"[29] The elevator cars had to stop returning to the ninth floor when the heat became so intense that it warped the elevator tracks and bodies began to pile on top of the elevator cars, making it impossible for them to move.[30]

Several remaining girls on the ninth floor climbed out on the window ledges and jumped to escape the flames. They attempted to aim for the life nets rolled out by the firemen, but firemen quickly discovered that the life nets were ineffective against the speed of the bodies falling from the ninth floor. One fire captain later stated, "'What good were life nets? The little ones went through life nets, pavement, and all.'"[31] The majority of the 146 victims of the Triangle Fire were from the ninth floor because of the lack of warning and the speed with which their potential escape paths were closed off.[32]

Those employees who worked on the tenth floor had the best chance of survival in this horrific fire. Fewer people worked on the tenth floor because it was the executive floor and there were no sewing machines or garment makers crowding the floor. The people on this floor were also warned by the eighth floor when the fire first broke out. Many workers were able to escape in the elevator, and those who did not, knew of the staircase leading to the roof. Blanck and Harris were at the factory on the day of the fire and both escaped to the Asch building roof. Those who escaped to the roof owe their lives to the law students who were in class in the building across from the Asch building. They saw the fire and grabbed ladders, creating a way for workers to climb from the Asch building to the New York University building.[33]

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[27] Von Drehle, *Triangle*, 127.

[28] Stein, *The Triangle Fire*, 57-58.

[29] Ibid., 62.

[30] Ibid., 62

[31] Ibid., 17.

[32] Von Drehle, *Triangle*, 159

[33] Stein, *The Triangle Fire*, 45-48.

By the time the fire crews arrived at the Asch building, approximately two minutes after the fire was reported, "fire was burning in the eighth-floor window trim and sashes. Flames rising from those windows were being sucked into the ninth floor, and from there the fire lapped up into the top-floor windows."[34] Ten minutes after the fire had started, firemen entered the building and began to work on controlling the blaze. The firemen created "two teams of fire-fighters battling the blaze on eight" and began "to make slow progress, half step by half step, into the loft."[35] Despite firefighters' efforts, all victims of the fire were dead by the time they reached them.

Newspapers began reporting about the horrors that occurred in the Asch building the next day, on March 25. The *Chicago Sunday Tribune* published a front-page article that detailing how the young factory workers chose to jump out of the windows rather than be burned alive. The article reports that a passerby saw "the heads of screaming girls at the windowsills of the ninth floor" and that many of the falling girls "turned many times, shrieking as they fell."[36]

Another article published by *The New York Times* on March 26 reported the tragedy and described the women jumping from windows. But this article also told of the attempts to save jumpers through the use of life nets. The article quoted a witness who said that the life nets were ineffective, "I don't believe we saved over one or two however. The fall was so great that they bounced to the sidewalk after striking the net."[37]

The Washington Post ran an article on March 26 that discussed where some of the bodies of victims had been found. In addition to those who jumped from the windows, "on the ninth floor 50 bodies were found … and more than 30 clogged the elevator shafts."[38] The article also discussed how quickly the fire claimed the lives of its victims, stating that those who had died were dead within the first twenty minutes and it only took an hour to put out the blaze. The article also condemned the building for its useless exits, implying that they contributed to death of many of the girls. It stated, "in all there were seven exits—the single fire escape, two

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[34] Von Drehle, *Triangle*, 134.

[35] Ibid., 158.

[36] "New York Fire Kills 148: Girl Victims Leap to Death from Factory," *Chicago Sunday Tribune*, March 26, 1911, accessed February 25, 2019, https://trianglefire.ilr.cornell.edu/primary/newspapersMagazines/cst_032611.html.

[37] "Stories of Survivors. And Witnesses and Resources Outside Tell What They Saw," *New York Times*, March 26, 1911, accessed February 25, 2019, https://trianglefire.ilr.cornell.edu/primary/newspapersMagazines/nyt_032611_2.html.

[38] "148 Leap to Death or Perish in Flames," *Washington Post*, March 26, 1911, accessed February 26, 2019, https://search-proquest.com.proxy.longwood.edu/docview/145065482/AA88DB6363E0416DPQ/1?accountid=12144.

freight elevators at the rear, two passenger elevators in front, and two stairways. All of them proved almost unless."[39] The workers on the ninth floor did not have access to all the exits that everyone on the eighth and tenth floor did, and so they resorted to more desperate measures to try to escape the flames.

Another article printed in *The New York Times* on March 26, discussed the lack of available exits. It stated, "There is just one fire escape in the building. That one is an interior fire escape."[40] An interior fire escape meant that those who did survive the climb down it prior to its collapse would have been trapped inside of the Asch Building courtyard and unable to get away from the burning building without going back inside. The article also stated that the "one little fire escape" was viewed as enough because "the building was fireproof and the owners had put their trust in that."[41]

The determination of the cause of the fire meant that, according to the district attorney, "criminal negligence might be proven against some one [sic]."[42] The DA also stated that "that doors leading from the workshops on the eighth, ninth, and tenth floors to the stairways leading to the street had been kept locked" and that "even had the doors been unlocked there still might have occurred a crush at each of the doors which would have resulted in many deaths."[43] This crush would have been a result of the fact that the doors only opened inward, so the workers would have crowded around the doors, making it impossible to open them—which is exactly what happened at the other exits.

Another article published on March 28 by *The Washington Post* began assigning blame to the factory owners Blanck and Harris. The article, "Place a Firetrap," focused on the evidence of conditions in the factory found in aftermath of the fire. The opening paragraph states that investigators found evidence of "the crumpled fire escape in the airshaft, the one fire' [sic] escape blocked by iron shutters when opened, an empty water tank on the roof," evidence that "will be placed speedily before the grand jury for action, District Attorney Whitman announced."[44]

The empty water tank on the roof explained why eighth floor manager Samuel Bernstein

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[39] Ibid.

[40] "141 Men and Girls Die in Waist Factory Fire," *New York Times*, March 26, 1911, accessed February 26, 2019, https://www.nytimes.com/1911/03/26/archives/141-men-and-girls-die-in-waist-factory-fire-trapped-high-up-in.html.

[41] Ibid.

[42] Ibid.

[43] Ibid.

[44] "Place a Firetrap," *Washington Post*, March 28, 1911, accessed February 26, 2019, https://search-proquest-com.proxy.longwood.edu/docview/145126782/180085ABDA1A4310PQ/1?accountid=12144.

received no water pressure on the fire hose no matter which way he turned the valve when he first tried to extinguish the blaze. The shutters blocking the pathway for workers as they attempted to escape the flames also proved that the factory owners either did not care that the escape would be blocked, or that they never looked into ensuring that their workers would have accessible ways to escape in the event of a fire.

In addition, this article also quoted Fire Marshal Beers, who said, "'so far as I can discover … there has never been a fire drill in this factory. In my opinion it would take 700 girls three hours to reach the street by the one fire escape in that building.'" Fire Marshal Beers also pointed out that "'nine-tenths of the employes [sic] cannot speak English, yet I could not find a sign in Yiddish or Italian pointing out the fire exits.'"[45] The workers never received proper instruction about what to do in the event of a fire, which led to even more panic amongst the young workers when the fire broke out. The fact that many of the workers did not know about the fire escape, and that there was no sign pointing out where it was in the workers' native languages, also proves that the factory owners were negligent in their care of their workers. Because almost all of the workers were non-native English speakers, they would have had an even harder time trying to find a way to escape because they had never been trained what to do and they would not have understood anyone speaking English.

The majority of the newspaper articles published in the aftermath of the fire did not interview survivors about what they encountered inside of the Asch building. Most of these interviews were conducted by Leon Stein in the 1950s when he wrote *The Triangle Fire*. One such interview he conducted was with Mary Domsky-Abrams, a blouse operator on the ninth floor. She stated that, on the day of the fire, she met with the price committee on the ninth floor and that she "remarked to my colleagues that the buckets were empty, and that if anything were to happen, they would be of no use."[46] When she pointed this out to the manager, he "became enraged at our group of price committee members, and with inhuman anger replied: 'If you'll burn, there'll be something to put out the fire.'"[47] The fact that the water buckets on the ninth floor were empty, in addition to the water tank on the roof, demonstrates that while the owners of the Triangle Shirtwaist Factory may have worked on site on the tenth floor, they did not properly maintain their factory to ensure the safety of their workers.

In Domsky-Abrams' interview, she confirmed that "yes, the doors of the shop were kept

[45] Ibid.

[46] Cornell University, "Leon Stein Interviews: Mary Domsky-Abrams," *Remembering the 1911 Triangle Factory Fire*, accessed February 26, 2019. https://trianglefire.ilr.cornell.edu/primary/survivorInterviews/MaryDomskyAbrams.html.

[47] Ibid.

locked … and it was before this door that the greatest number of victims were caught; they had surged to the door, hoping to escape, but couldnt [sic] break through, because the door always was securely locked."[48] Domsky-Abrams said that in the trial against the Triangle Shirtwaist Factory owners, she testified that "if the front elevators had also been in use and if the front door had been open, there would not have been so many victims."[49] By front elevators, she was referring to the passenger elevators that earlier news articles had counted as a way of escape, not knowing that they were not operating at the time of the fire.

On December 4, 1911, the manslaughter trial of Blanck and Harris, the Triangle Shirtwaist Factory owners, began. Prosecutor Charles Bostwick's task was to prove that "a door on the ninth floor, through which many who had perished could have escaped, was locked at the time of the fire."[50] More particularly, he showed that because of the illegally locked door, Margaret Schwartz, in whose "horrible death was gathered up the deaths of her co-workers for the purpose of rendering justice, had been unable to escape and had perished in the flames."[51] The defendants' lawyer, Max Steuer, only had to provide reasonable doubt that the owners were unaware of the locked door at the time of the fire.

During the trial, one of the witnesses called by Bostwick was Howard Ruch, a fire captain. According to the trial transcript, Ruch entered the ninth floor through the Greene Street side and discovered the bodies of workers throughout the loft, including several that he believed were "between sixty and seventy feet from the Washington place entrance."[52] This was confirmed by another firefighter, Felix Reinhart, who also entered the ninth floor loft and stated that there were nine or ten bodies approximately "nine or ten feet" from the Washington Place door.[53] In addition, Rush confirmed the presence of an oil tank by the Greene Street exit on the ninth floor and that it was boiling at the time he arrived.[54] This was the same oil barrel that

[48] Ibid.

[49] Ibid.

[50] Ibid.

[51] Stein, The Triangle Fire, 179.

[52] Cornell University, "Transcripts of Criminal Trial Against Triangle Owners: November 1911 Vol. 1 Sec. 2 (pp. 81-151) Testimony by Firefighters and Police Officers as to What They Saw and Did on the Day of the Fire. Adjourned to Dec. 7," Kheel Center for Labor-Management Documentation & Archives, accessed February 26, 2019, https://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1001&context=triangletrans.

[53] Cornell University, "Transcripts of Criminal Trial Against Triangle Owners: November 1911 Vol. 1, Sec. 3 (pp. 151-228) Testimony by Firefighters and Police Continued," Kheel Center for Labor-Management Documentation & Archives, accessed February 26, 2019. https://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1002&context=triangletrans.

[54] Cornell University, "Transcripts of Criminal Trial Against Triangle Owners: November 1911 Vol.

caught fire, preventing Bernstein from entering the ninth floor to warn the girls about the fire below.

In addition to first responders, Bostwick also called many workers to the stand during the trial. One of these witnesses was Anna Gullo, a machine operator on the ninth floor. Gullo stated that when she heard the cries of "fire," she ran to the Washington Place door. Once there, she "tried the door and the door was locked."[55] Realizing that the door was locked, she ran to the Greene Street door, which had flames shooting out of it and said that she, "put my skirt around my hair" and ran through the flames and downstairs.[56] Gullo also stated that during her employment at the factory, she never once saw the Washington Place door in use and the factory never ran fire drills. This further proves that the Washington Place door was locked, because people never used it. The lack of fire drills also proves that the owners of the factory did not care about their workers' welfare.

The jury went into deliberations on December 27, 1911 and found the factory owners not guilty. One juror stated, "'I know I have not done my duty toward the people … I believed that the door was locked at the time of the fire. But we couldn't find them guilty unless we believed they knew the door was locked.'"[57] Despite the evidence of the prosecution, they could not definitively prove that Blanck and Harris were aware of the locked door at the time of the fire. The people of New York were outraged that Blanck and Harris were acquitted and demanded that something be done to change the way that workers were treated. This led to the passage of new labor laws and reforms in New York state in following years.

In conclusion, the strikes that occurred in the years prior to the Triangle Shirtwaist Factory fire prove that the owners knew of the conditions that their workers faced on a daily basis and that they were at risk. The owners never once inspected the fire escape to see if it could reasonably be used for escape during an actual fire. On this evidence, Blanck and Harris should have been found guilty of the manslaughter of Margaret Schwartz and all other Triangle Shirtwaist Factory employees who died on that day.

One positive consequence of the fire was that it brought increased attention to the condi-

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1 Sec. 2 (pp. 81-151) Testimony by Firefighters and Police Officers as to What They Saw and Did on the Day of the Fire. Adjourned to Dec. 7," https://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1001&context=triangletrans.

[55] Cornell University, "Transcripts of Criminal Trial Against Triangle Owners: November 1911 Vol. 1, Sec. 5 (pp.361-536). Testimony by Female Workers," Kheel Center for Labor-Management Documentation & Archives, accessed February 26, 2019, https://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1004&context=triangletrans.

[56] Ibid.

[57] Stein, *The Triangle Fire*, 199.

tions faced by factory workers and led to new legislation nationwide. The Triangle Shirtwaist Factory fire occurred at the middle of the Progressive Era when many labor unions attempted to get better conditions for their workers for a while, but it was a slow battle. While the New York legislature did pass a factory inspection bill in 1886, the inspectors were known to "only admonish rather than prosecute" the factory owners, because "the inspectors felt that 'it would be neither wise nor just … to be continually embroiled... with the employers... for technical violations of the law.'"[58] These lax inspections ceased after the fire and the outcry that followed.

In response to the demands for change, New York Governor John Dix "signed a law creating the Factory Investigating Commission on June 30, 1911, three months after the fire" which gave the commission "the power to subpoena witnesses and documents, to elect its own members, to employ experts, and to change its own rules."[59] The New York City Bureau of Fire Prevention was created in October 1911 and, in addition, "the powers and the duties of the Fire Commission" were expanded.[60] Within the next year, the Commission "investigated 3,385 workplaces in industries" and "held 59 public hearings around the state."[61]

These investigations led to the Factory Investigating Commission's proposal of fifteen new laws, including fire safety laws as well as labor laws, and the New York government enacted eight of those proposals into laws.[62] By 1913, twenty-five labor law bills had been passed, and "there were more fire safety laws—by that point, two years after the Triangle fire, nearly every deficiency in the Asch Building had been addressed."[63] Thus, while the Triangle Shirtwaist Factory owners should have been found guilty for the death of their employees, the Triangle Shirtwaist Factory fire led to much needed reform that undoubtedly saved thousands of lives.

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[58] "Inspections, Enforcement, Compliance," U.S. Department of Labor, accessed April 27, 2019, https://www.dol.gov/general/aboutdol/history/mono-regsafepart03.

[59] Von Drehle, *Triangle*, 212.

[60] Stein, *The Triangle Fire*, 207.

[61] "The New York Factory Investigating Commission," U.S. Department of Labor, accessed April 27, 2019, https://www.dol.gov/general/aboutdol/history/mono-regsafepart07.

[62] Von Drehle, *Triangle,* 214.

[63] Ibid., 215.

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Artist:

Madison Schmitz

Faculty Advisor: Lauren Rice

Artist's Statement

I aim to create aesthetically interesting compositions in my paintings with the intention of seizing viewers' attention and prompting deeper thinking. In this triptych, I explore the visual representation of words from my perspective. The words represented in the three paintings are Fragmented, Palimpsest and Superstitious. The schools of Fauvism, Pop Art, and Dadaism are great sources of inspiration for my work, especially the Fauvists' use of canvas as a flat surface for design. Furthermore, some of the artists who inspire my work include Henri Matisse, Roy Lichtenstein, Hannah Lee Cameron, Martin Wittfooth, and Ben Lewis Giles.

Superstitious (2018)

Acrylic paint, glitter pens and embroidery on primed and unstretched canvas.

14.75″ x 14.75″

Fragmented (2018)

Acrylic paint, glitter pens, yarn and embroidery on primed and unstretched canvas.

14.75″ x 14.75″

Palimpsest (2018)

Acrylic paint, glitter pens and embroidery on primed and unstretched canvas.

14.75″ x 14.75″

Ercilla y la imitación: Araucanos al estilo europeo

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Abstract

The purpose of this research paper is to investigate how Alonso de Ercilla used imitation of classical epic in La Araucana (1589), including Orlando Furioso by Ludovico Ariosto (1516), Pharsalia by Lucan (A.D. 61–65), and The Illiad by Homer (762 B.C.). The paper first presents a short biography of Ercilla, then provides an overview of the imitation techniques used by the poet. It then examines three scenes in which he uses imitation: the invocation of the muse, the martial aspects of the poem (poem opening, military traditions and a specific military leader), and the magician Fitón. Through imitation of different passages from these works, I argue that Ercilla elevates the Araucanians to the level of classical heroes in order to create an honorable origin story for the new Spanish Empire.

Con el poema *La Araucana*, Alonso de Ercilla captura el glorioso pasado del nuevo Imperio Español. Fascinado con la destreza militar, los valores elevados, y la estructura social del pueblo araucano, logra capturar su importancia. Así presenta a los araucanos como un enemigo digno del bando español. Lo hace a través de una imitación heurística de la *Ilíada* de Homero y *Farsalia* de Lucano. Sabemos que los araucanos en realidad eran "la gente más belicosa que ha habido en las Indias" con fuertes valores de libertad y honor, que Ercilla respetaba y en su obra los eleva al nivel de los héroes de Virgilio (Ercilla 29, MacCormack 215). Para entender cómo el autor eleva a los araucanos, hay tres pasos. Primero, consideramos la biografía de Ercilla y cómo fue expuesto a los poemas épicos clásicos que usa en su obra. Segundo, examinamos la teoría de imitación. Tercero, este ensayo pasa por tres ejemplos de la imitación de textos clásicos en la Araucana: invocación de "la musa," lo marcial del poema y finalmente el mago Fitón. A través de estas tres escenas, es evidente cómo Ercilla engrandece a los araucanos.

Ercilla y los poemas épicos clásicos

Para comprender cómo el autor fue expuesto a los textos que usó para escribir su obra usando la imitación, es importante mirar su vida. Alonso de Ercilla y Zuñiga nació en Madrid en 1533, en una familia noble de Berneo. Recibió una educación clásica, en teología, la ley y las ciencias naturales. Frank Pierce, quien investigó cómo la vida de Ercilla influyó su obra, dice que fue presentado a las obras escritas en octavas recientemente traducidas, como *Orlando Furioso* (Ludovico Ariosto), *Pharsalia* (Lucano) y la *Aeneida* (Virgilio) (Pierce 5). Estas obras, como otras obras en latín que Ercilla leyó debido a su educación, le proveyeron con la estructura básica de su poema como otros tropos épicos que evaluaré a lo largo de este trabajo de investigación. Es posible que también leyera poemas narrativos contemporáneos, como *Carolea* (1560) de Jerónimo Sempere y *Carlo Famoso* (1566) de Luis Zapata, que usaban el mismo medidor poético (Pierce 7). Estos detalles de su vida facilitarán el entendimiento de la obra y su uso de imitación.

La teoría de imitación

Para comprender las complejidades de la imitación que Ercilla usó en *La Araucana*, debemos considerar las cuatro categorías generales de imitación, expuestas por el estudioso de la poesía épica, Roland Greene. Hay dos tipos de imitación más básicos que Ercilla usa raramente. En el primer tipo, llamado la imitación *sacramental* o *reproductiva*, el autor está completamente leal a la estructura o el contenido de la obra original (Greene 38). Así el autor muestra admiración y transmite la grandeza a su obra. El segundo tipo se llama imitación *ecléctica*, donde "allusions, echoes, phrases and images" son usadas de fuentes diferentes

(Javitch 70). Es similar a la imitación *sacramental* en el hecho que imita una obra de manera cercana, pero hace un *collage* de obras diferentes.

Los dos tipos de imitación que Ercilla sí usa son la imitación *dialéctica y heurística*. A través de imitar a notables obras del pasado, subrayan el abismo cultural, moral y lingüístico que se formó entre su presente y los años pasados. Como lo define Greene,

Heuristic imitations come to us advertising their derivation from the subtexts they carry with them, but having done that, they proceed to distance themselves from the subtexts and force us to recognize the poetic distance traversed. [… An] informed reader notes the allusion but he notes simultaneously the gulf in the language, in sensibility, in cultural context, in world view, and in moral style. (Greene, 40)

Es decir, la diferencia entre textos, sirve a gritar los temas en lugar del autor o texto. Más extremadamente, la imitación dialéctica abiertamente critica la obra histórica (Javitch 71). Estas técnicas poéticas permiten que Ercilla subraye las cualidades honorables de los araucanos, mediante una comparación con las escenas similares de las obras clásicas.

La imitación: de los textos clásicos a la Araucana

Ahora que hemos investigado cómo Ercilla leyó los textos originales y las técnicas de la imitación, podemos investigar cómo Ercilla los aplica en tres diferentes escenas de *La Araucana*: "la musa" que Ercilla evoca en el exordio no es una diosa, sino el rey; los guerreros araucanos son tan dignos como los guerreros troyanos; y finalmente, la supremacía del chamán araucano sobre las brujas clásicas.

La invocación de "la musa"… el rey Felipe

El primer lugar donde Ercilla usa la imitación está en el exordio: no incluye a la musa típica de la poesía, sino al rey Felipe. Los poetas de la antigüedad pidieron a las nueve musas de la mitología greco-romana que les dieran el conocimiento a la inspiración para escribir sus grandes obras. Por ejemplo, Virgilio abre la *Eneida* con una invocación, "Mas tú á mi osado verso, Musa, inspira! / Abre de estos sucesos el arcano" (I.2.5-6).[1]

Ercilla, por otro lado, invoca al Rey Felipe en los primeros versos del poema. Conocía al rey personalmente: como parte de la nobleza, en 1548 empezó a trabajar como un paje para el futuro Felipe II. Fue un funcionario leal y permaneció en este puesto hasta el final de su vida. Desarrolló una relación profunda con el rey y esto le permitió dedicarle el poema a él y tener confianza que él lo apoyaría:

[1] En este artículo, cuando me refiero a la Eneida, la citación en paréntesis contendrá libro.estrofa.verso. En este caso, I.2.5-6 se refiere a libro I, estrofa 2, y versos 5 y 6.

Suplícoos, gran Felipe, que mirada
esta labor, de vos sea recibida,
que, de todo favor necesitada,
queda con darse a vos favorecida.
Es relación sin corromper, sacada
de la verdad, cortada a su medida;
no despreciéis el don, aunque tan pobre,
para que autoridad mi verso cobre. (I.3)[2]

Como Ercilla decide escribir una "historia verdadera" sin la presencia de deidades, no puede invocar a las diosas (Ercilla 69). Si incluyera a una diosa, esto empeoraría su credibilidad, porque en el tiempo de Renacimiento los dioses, como se usan en las épicas romanas y griegas, ya se considera fantasía. Todavía necesita una figura que dé autoridad a su cuento. Además, refiriéndose a Felipe II añade autoridad, porque implica que el rey leerá el texto, dándole importancia. También con *captatio benevolentiae* Ercilla prepara el rey para las descripciones controversiales de un pueblo que debería ser considerablemente inferior al bando español, pero no lo es.

Así Ercilla combina la estructura preexistente de la épica para crear una obra maestra exaltando los hechos de los españoles, pero lo hace con una versión moderna de la invocación que le permite añadir credibilidad a todo el poema. Está técnica crea una base que va a hacer que el lector crea más fácilmente lo que dice Ercilla sobre los araucanos. Omitir la musa típica de la poesía épica clásica Ercilla supuestamente añade credibilidad a su "historia verdadera."[3]

Lo marcial del poema

El segundo uso de la imitación que nos importa en este ensayo, es que los guerreros araucanos son tan dignos como los héroes clásicos. Uno de los elementos del poema que le permite que Ercilla subraye la supremacía del pueblo indígena es lo marcial.[4] Ercilla enfatiza

[2] En este artículo, cuando me refiero a La Araucana y *Orlando Furioso*, la citación en paréntesis contendrá canto.estrofa.verso. En este caso, I.3 se refiere a canto I, estrofa 3.

[3] Pero en realidad pierde credibilidad con el lector exigente, porque sabemos que usará técnicas poéticas/ literarias para adornar lo que dice.

[4] Lo que la hace una obra digna de una guerra que vale la pena recordar, es un adversario meritorio. Ercilla mismo dice, que solo un adversario digno, convertirá la conquista en una hazaña gloriosa para los españoles. "Cosas diré también harto notables / de gente que a ningún rey obedecen, / temerarias empresas memorables / que celebrarse con razón merecen: / raras industrias, términos loables / que más los españoles engrandecen: / pues no es el vencedor más estimado / de aquello en que el vencido es reputado."(I.2) En otras palabras, la expedición será notada y podrá proveer orgullo a los españoles como los habitantes de esta región del futuro, solo la lucha era entre iguales.

la importancia de lo marcial en su poema con negar escribir del romance, incluir ejemplo de las tradiciones militares, y resaltar en líder exitoso de los araucanos.

"No las damas"

En el proemio Ercilla declara que su poema no va a hablar de temas ligeros sino de temas bélicos que serán dignos de una civilización respetable. Es una imitación dialéctica de un poema épico renacentista *Orlando Furioso*, tratando de "post-classical, medieval legends, especially those relating to the paladins of Charlemagne and the knights of Arthur" (Ariosto 11). Ludovico Ariosto empezó con lo siguiente en *Orlando Furioso*,"Le donne, i cavalier, l'arme, gli amori, / Le cortesie, l'audaci imprese io canto" para establecer su tema de amor (I.1.1-2). Ercilla usa el mismo vocabulario, pero niega la proposición de Ariosto:

> No las damas, amor, no gentilezas
> de caballeros canto enamorados,
> ni las muestras, regalos y ternezas
> de amorosos afectos y ciudados […] (I.1.1-4)

Aunque Ercilla mantiene la misma estructura del poema (octavas reales), la imitación dialéctica negativa de la proposición muestra que decide distanciarse de los temas cortesanos de las epopeyas italianas. El académico Hayes notó esta característica: "Ercilla seems to be saying that the epic of the New World demands a bellicose cast unknown in Renaissance Europe, and he is refusing to write his work according to the manners and values of the Old World epics of his time" (Hayes 83). Es decir, manteniendo las mismas palabras, pero con significado invertido, muestra la gran distancia que Ercilla quiere lograr con su obra. *La Araucana* no quiere ser un poema que trata de "regalos y ternezas" o "amor y gentilezas" sino es una gran obra de una guerra monumental, capaz de rivalizar el combate de los grandes héroes de sus predecesores griegos y romanos para crear un origen glorioso para los araucanos.

Tradiciones militares

Ercilla usó otra técnica para hacer un paralelo entre la gente araucana y la gente de la antigüedad en su conjunto. Esto es en la comparación de una de las tradiciones militares clásicas: los juegos militares. El hecho de que Ercilla pasó tiempo en las Américas como guerrero le dio la oportunidad ver y a veces oír cómo los araucanos operaban en asuntos militares (Pierce 8). Canto X incluye la descripción de la celebración que los araucanos organizan después de

muchas victorias sobre los españoles. Hay juegos militares como también en el libro V de la *Eneida*. Aunque la imitación aquí no es exacta, la idea es que los araucanos tienen competiciones y celebraciones organizados, como los legendarios troyanos. Esto dice mucho sobre su nivel de desarrollo. Significa que la gente tiene valores y características similares y puede apreciar y participar en juegos militares de una manera civilizada. También significa que tienen líderes que pueden organizar todo esto y controlar a la gente. Con este canto de juegos militares, Ercilla crea una imagen de la cultura araucana positiva.

Como muchas otras veces, Ercilla no esconde que basa la imagen de los araucanos, sobre el ideal griego-romano. En una celebración de la batalla, vemos:

> Por él las fiestas fueron alargadas,
> ejercitando siempre nuevos juegos
> de saltos, luchas, pruebas nunca usadas,
> danzas de noche en torno de los fuegos;
> había precios y joyas señaladas,
> que nunca los troyanos ni los griegos,
> cuando los juegos más continuaron,
> tan ricas y estimadas las sacaron. (III.88)

Comparándolos y aun diciendo que hacen las cosas mejor que predecesores de los españoles es una decisión audaz, pero una que muestra mucho respeto al pueblo araucano: es tan digno de ser parte del Imperio Español como fueron los troyanos para los griegos.

El líder honrado

En lo más específico, Ercilla también imita la maqueta griega en un líder araucano exitoso. Uno de sus protagonistas más respetados, Lautaro, está relacionado muy profundamente con el héroe homérico, Héctor. La comparación entre los dos sirve muy bien para identificar las características que Ercilla les asigna a sus personajes para mostrar su carácter noble. La descripción es muy similar a la proveída por Homero. Héctor es un personaje noble que defiende a su familia y la gente. En vez de presentarlo con un gran pasaje, al referir a Héctor, siempre empieza con un adjetivo positivo. Por ejemplo, "gran Héctor" (II.816),[5] "divino Héctor" (V.467), "intrépido Héctor" (XIII.163). Ercilla, por otro lado, describe a su héroe araucano:

[5] En este artículo, cuando me refiero a la Iliada, la citación en paréntesis contendrá libro.línea. En este caso, II.816 se refiere a libro II, línea 816. Como es una traducción en prosa, no hay números de estrofas.

Fue Lautaro industrioso, sabio, presto,
de gran consejo, término y cordura,
manso de condición y hermoso gesto,
ni grande ni pequeño de estatura;
el ánimo en las cosas grandes puesto,
de fuerte trabazón y compostura,
duros los miembros, recios y nerviosos,
anchas espaldas, pechos espaciosos. (III.87)

Así Ercilla pone en el mismo nivel o más Lautaro con Héctor. El héroe troyano era leal a su gente y pagó por los errores de su hermano con la vida, lo más noble que un líder puede hacer. Esto eleva a los líderes araucanos al nivel de las personas más nobles de la literatura clásica.

La imitación se expande a una escena amorosa, aunque Ercilla dijo que no iba a hablar ni de "amor ni gentilezas." Efectivamente, no es una blanda escena de amor. Ercilla la usa como modelo para mostrar cuán guerreros son en realidad. Una escena donde la semejanza entre los dos héroes es preeminente, es en su interacción con su mujer. Imita la escena de Homero, donde antes de que Héctor se vaya, su mujer Andrómaca, "llorosa, se detuvo á su vera, y asiéndole de la mano […]" (VI.405-406). Le pide que considere su "tierno infante" y que "¡no hagas á un niño huérfano y á una mujer viuda!" (VI.407-437). A esto Héctor le responde, "Todo esto me preocupa, mujer, pero mucho me sonrojaría ante los troyanos y las troyanas de rozagantes peplos, si como un cobarde huyera del combate […]" (VI.440-442). Esto muestra que a Héctor le importa mucho el honor y la opinión de su gente. Prefiere abandonar a su mujer y a su hijo para defender su ciudad. Prefiere morir, que vivir con vergüenza. Es un héroe honrado.

La escena de *La Araucana* incluye una conmovedora despedida entre Lautaro y su mujer Glaucolda. Ella sabe que Lautaro tiene que luchar en la guerra y probablemente morir. Parece que es una escena desgarradora de amor en realidad tiene un rol sutil para mostrar las características únicas del carácter y las relaciones mapuches. Es decir, no son un pueblo bárbaro, sin valores, sino uno digno de comparación con los grandes de la historia. Los amantes mapuches también se abrazan, discutiendo el futuro. Ambos tienen un sueño, que toman como un presagio que Lautaro va a morir. Su mujer Guacolda empieza como Andrómaca, "[…] menos segura y más llorosa, del cuello de Lautaro se colgaba" y le dice, "¡es ya llegada/ la fin tuya y principio de mi llanto!" (XIII.52.1-2, 46.2). Pero continúa pidiéndole, "y es que os vistáis las armas prestamente/y al muro asista en orden vuestra gente" (XIII.53.7-8). Esta imitación heurística, que nos hace notar las diferencias entre las dos escenas, rompe la tradición

cuando trata del tema importante. La fuerte mujer mapuche prefiere que su esposo defienda a su gente en vez de permanecer con ella. Tiene la fuerza moral para pedirle que se vaya a la cierta muerte.

De un modo, Ercilla no miente: esto no es una escena de amor, sino una escena que a través de la imitación heurística muestra las similitudes y las diferencias en las creencias entre los troyanos y los araucanos. La fuerza de carácter que Guacolda muestra eleva a los araucanos sobre los troyanos, los fundadores de la civilización europea. Indica que, además de la idea de honor, la mentalidad colectiva prevalecía sobre la mentalidad individualista. Si olvidamos el hecho de que Ercilla estaba insinuando que los araucanos son más desarrollados moralmente que los españoles, un tema que reaparece muchas veces a través del poema, a lo menos está diciendo que los raíces para una nueva cultura americana serán tan buenos como los de los europeos.

Los temas marciales, los juegos marciales y la psicología de un líder mapuche y su mujer, subrayan la sofisticación y honor de los araucanos. Esto les hace un enemigo digno, pero también una civilización meritoria de ser el origen de la nueva cultura americana.

Los magos: Fitón y Erito

Además de los personajes poderosos físicamente y militarmente como Lautaro hay otro personaje araucano que es producto de la imitación de la epopeya clásica: el mago Fitó[n.6] En el poema, Ercilla se topa con el sobrino de Fitón, un mago araucano. Además de presentar al mago como un personaje civilizado y educado, Ercilla usa la imitación heurística de la escena con Erito en *Farsalia*, a través del contraste de su morada, sus valores y su personalidad, para ampliar su mensaje. Ercilla lo presenta con las siguientes palabras:

> […] ¡Oh Gran Fitón, a quién es dado
> pentrar de los cielos los secretos,
> que del eterno curso arrebatado,
> no obedecen la ley, a ti sujetos!
> Tú, que de la Fortuna y fiero hado
> revocas, cuando quieres, los decretos,
> y el orden natural turbas y alteras
> alcanzando las cosas venideras […] (XXIII.58)

[6] Fitón le muestra a Ercilla, en una bola de cristal, los logros militares españoles en otras partes del mundo. Aunque es tema para otro trabajo de investigación, incluyendo batallas de las otras partes del mundo permite que Ercilla incluya gloriosas victorias de los españoles, que faltan en Arauco.

Sabemos que Ercilla se está basando en una escena de Lucano, porque empieza con una imitación sacramental: "O Crown of Heamonia's daughters, who have power to read / mortals their destiny, divert events from their course, I pray: / let me learn what certain end the fortune of war / assigns […]" (VI.590-593).[7] Ambos empiezan con una exclamación de respeto, notan el poder de la omnisciencia de los brujos y continúan con su poder de cambiar las vidas de mortales y los cursos de los eventos. En este caso, Ercilla le indica al lector en cuál pasaje hay que pensar.

La misma escena continúa con imitación sacramental en la descripción de los ingredientes mágicos que ambos brujos usan, para fortalecer la idea que los brujos son los mismos en la mente del lector para luego romper esta idea más adelante.[8] Para resucitar a un soldado, Erito usa:

> Anything Nature has brought forth to misshapen birth
> is thoroughly mixed with generous lashings of rabid dogs'
> slaver, a lynx's intestines, revolting hyenas' chines;
> minced gizzards of stags force-fed with snakemeat; *remora*
> sucker-head fish that, in midocean, stop a ship
> cold, despite a gale-force wind ripping through her rigging;
> dragon's eyes; stones that sing when warmed by a nesting eagle;
> an Arabian winged serpent; vipers native to the Red
> Sea the ones that watch over the pearl oysters there;
> cast skin of a still-living Libyan crested adder;
> ash of the Phoenix swept up from an Eastern altar. (VI.670-680)

Aunque Fitón, en el pasaje de Ercilla, no usa estos ingredientes para hacer magia, los tiene alrededor de su cueva. Hay "espumajos de perros [que] rabiosos," "del lince preparados los penetrantes ojos virtuosos," y "la coyuntura de dura hiena" (XXIII.49.6, 49.2-3, 50.2). Además, hay "lengua de la emorróys," "el meollo del cencris, que se cría dentro de Libia en la caliente arena" y "ceniza del fénix, que en Oriente se quema él mismo de vivir cansado" (XXIII.51.7, 50.4-5, 53.3-4). Aquí podemos notar la imitación y esto nos hace pensar en Lucano. Esto es el

[7] Entre las ediciones que me resultaron disponibles en español, ninguna parecía tan confiable como la edición en inglés. Por eso decidí usar la edición moderna de Jane Wilson Joyce.

[8] Es verdad que los temas y las imágenes que Ercilla usa en este pasaje aparecen en otros poemas, como Las metamorfosis de Lucano y Eneida de Virgilio, y por eso se pudiera identificar como imitación ecléctica. Es posible que magos en poemas usaran ingredientes similares, pero en estos dos textos son mencionados los mismos en casi el mismo orden.

último pasaje con imitación sacramental que sirve para vincular la idea de los dos brujos para romperlo más adelante.[9]

La apariencia de los brujos y de sus residencias es donde las diferencias empiezan a ser más explicitas. Esto podía significar que Ercilla imita a Lucano de manera dialéctica, pero tal vez su intento no es criticar, sino crear un brujo individualmente araucano. En el ejemplo del domicilio, la bruja Erito vive en un cementerio; "abandoned tombs are her home" (VI.510). A contrario, Fitón tiene:

> […] una cámara hermosa
> que su fábrica estraña y ornamento
> era de tal labor y tan costosa
> que no sé lengua que contarlo pueda,
> ni habrá imaginación a que no exceda. (XXIII.6)

Erito, aunque una bruja como Fitón con poderes muy similares, vive en un lugar frío, oscuro y bárbaro; pero él parece tener habitaciones dignas de un rey. Así que Fitón, a través de su residencia, está elevado a las altezas de los monarcas europeos, elevando también el pueblo en su conjunto. A través de esta imitación, los araucanos se convierten de una tribu salvaje de la selva en una nación que ha producido a Fitón.

Ercilla continúa a subrayar esta diferencia en la manera en la cual describe la personalidad de su mago. Lucano, por un lado, usa una descripción repugnante de Erito. Las imágenes inquietantes crean una idea visual de la extensión de la crueldad que posee Erito. Por ejemplo:

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[9] Un elemento interesante de imitación, que fortalece el vínculo conceptual entre los dos pasajes, es que ambos magos están contentos que su nombre sea conocido. Cuando Sexto Pompeyo busca a Ericto y exalta sus poderes, Lucano nos informa en la siguiente manera que ella está satisfecha que su nombre y reputación están conocidos: "The impious witch, [was] gleeful to find the fame of her name widespread" (VI.603-604) Algo similar pasa en La Araucana. Después de estar introducido por su sobrino, Ercilla describe así a Fitón, "Holgó el mago de oír cuán extendida / Por aquella región su fama andaba (XXIII.63.1-2)" Parece que el hecho de que es conocido, también entretiene al mago.

Después de crear un vínculo en la mente del lector con la imitación sacramental, Ercilla lo rompe para distanciar el "bueno" mago araucano de la "mala" bruja de Lucano. Con la imitación heurística, rompe las esperanzas creadas por la reverente imitación del principio y distingue a Fitón como un ciudadano responsable y educado – o sea, europeo. Aunque parece que ambos magos están contentos de ser conocidos por su mundo, en el caso de *Farsalia* Lucano usa la palabra "gleeful," mientras que Ercilla usa la palabra "holgó." Erito está motivada por gloria vana, pero a Fitón le entretiene cómo su reputación se ha extendido, aunque vive en la selva, pero el reconocimiento no le importa mucho. Con esta diferencia sutil, Ercilla subraya la elevación cultural de los araucanos, representada en su personaje más poderoso y más humilde.

Nor do her hands hold back from murder if she has need of
the first blood that gushes hot from an open jugular,
of if her ghoulish banquet requires quivering flesh.
Through a wound in the womb and not as Nature intended,
a fetus is scooped out to be displayed on a red-hot altar. (VI.554-559)

Esta descripción le da asco al lector. Por otro lado, Ercilla añade elementos del comportamiento de Fitón que lo presentan como al menos un intelectual europeo. Por ejemplo, Ercilla menciona que Fitón conoce las normas de los poemas épicos. Fitón, refiriéndose a Ercilla como personaje, le aconseja que le "[falte] una naval batalla con que será tu historia autorizada" (XXIII.73). La reunión de los dos personajes también nos revela mucho sobre la identidad de Fitón:

Aunque en razón es cosa prohibida,
profetizar los casos no llegados,
y es menos alargar a uno la vida,
contra los estatutos de los hados,
ya que ha sido a mi casa tu venida
por incultos caminos desusados,
te quiero complacer, pues mi sobrino
viene aquí por tu intérprete y padrino. (XXIII.64)

Esto muestra que Fitón tiene algunas reglas que no cree que se deba romper. Es decir, él sabe que hay algún código moral, unas reglas universales que hay que respetar y esto lo hace más cercano (en contraste con Erito que sacrifica a niños y come cadáveres). Puede controlar los hados de personas, pero lo hace con cuidado y no para sus deseos malignos.[10] Además, tiene compasión por Ercilla aunque es del bando enemigo, y le trata con un respeto universal que Ercilla también extiende hacia los araucanos.[11] Lucano usa adjetivos como "evil" para describir los deseos y la personalidad de Erito, mientras que Fitón, "por mágica ciencia y saber puro / […] / puedes en el profundo reino oscuro / meter la claridad y luz del cielo" (XXIII.59.1-4). Estos versos nos muestran que Ercilla presenta a Fitón como un personaje muy

[10] Al final, sí que rompe las reglas y le cuenta a Ercilla el futuro del Imperio Español. Lo hace para mostrar respeto a su huésped y el camino que ha hecho. Esto añade aún más cultura a este personaje y como consecuencia a los nobles araucanos.

[11] El hecho de que Fitón tiene un sobrino y reconoce que él se encarga de ser padrino de su sobrino, muestra que tiene relaciones familiares y reconoce vínculos sociales y esto lo hace aún más cercano.

poderoso y que usa estos poderes para el bien de todas las personas.

Pues, ¿cuál es la razón para terminar la escena con una desviación notable de su modelo de imitación? El hecho de que Fitón conoce las reglas de los poemas épicos, se comporta como un caballero y no es antropófago, le crean como una persona noble y digna de respeto. Es mucho más civilizado y erudito que una bruja reconocida de los romanos. Esto, de nuevo, eleva a los araucanos nobles que podrían integrarse con la población española y ser parte del futuro de la nueva nación. Pero en este caso, los hace aún más poderosos que cualquier español.

Conclusión

A través de los tres ejemplos de imitación (la invocación de "la musa," lo marcial del poema y finalmente el mago Fitón), notamos cómo Ercilla engrandece a los araucanos. Presentando el poema como un relato de una guerra monumental verdadero, eleva a los araucanos a nivel de una civilización desarrollada que puede resistir al grande ejército del Imperio Español. En el exordio les presenta como un digno rival, "esta soberbia gente libertada [….] siempre fue esenta, indómita, temida […]" (I.47.2, 7). Nos hace pensar que la razón por qué eleva tanto a los españoles, especialmente de un punto de vista marcial es para engrandecer el logro militar de los españoles. Pero como sabemos, los españoles nunca ganan de verdad, sino solo continúan atacar a la tribu centroamericana (Pierce 8).

Craig Kallendorf subraya bien el dilema que existe: ¿Ercilla apoyaba a los españoles o los araucanos? Innumerables veces a través del poema, Ercilla exalta la elaborada estructura social y el carácter fuerte y noble de los araucanos. Escandaliza al lector, proponiendo que el bando enemigo es tan desarrollado – o más – que su propio. Además, varias veces critica el comportamiento de los españoles y no les da ningún protagonista preeminente, como Lautaro, Caupolicán o Galbarino.[12] Por otro lado, por las razones expuestas en esta investigación, parece que Ercilla quiere glorificar las Españas.

Ercilla, como el intelectual que era, notaba que de una manera u otra los españoles van a permanecer en las Américas y los dos bandos se fusionarán en uno. Es interesante notar que en la *Farsalia*, el épico en el que Ercilla se basó principalmente, se trata de una guerra civil en el pueblo romano. Supuestamente, con esta obra Ercilla hizo caso a la hazaña cumplida por los españoles, pero también inmortaliza a todos los héroes que luchaban hasta la muerta

[12] Cuando la frente de batalla está tan distanciada, los guerreros no sienten la presión social de hacer cosas que siguen el código moral. Muchos conquistadores, cuando vinieron al Nuevo Mundo, dieron rienda suelta a sus deseos, como por ejemplo Valdivia a quien Ercilla denuncia en cantos 2 y 3.

por la gente y tierra que pertenecía a ellos. Muchas veces aumentaba y distorsionaba los personajes, intentando ponerlos en modelos europeos. Puede ser, que así preparaba una base para una nueva civilización. Esto apoya la última teoría: que Ercilla usa la imitación para crear una imagen de los araucanos que servirá el imperio español cuando se integre este pueblo de guerreros nobles.

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Designer:

Haley Tebo

Faculty Advisors: Wade Lough and Chris Register

Designer's Statement

CompostED collaborates with educational communities to inspire sustainability and educate about the natural processes of food and plant recycling through composting. The goal is to raise upcoming generations with a concern for where food may end up when they are done with it and encourage them to take a first step towards sustainable thinking and waste reduction. The design of this campaign was inspired by how I want it to live in educational communities. For example, I created my own seed paper, potato stamps, and other sustainable assets to aid the design of the project.

COMPOST
ED

Recycling Food Waste: How to Regrow Kitchen Scraps

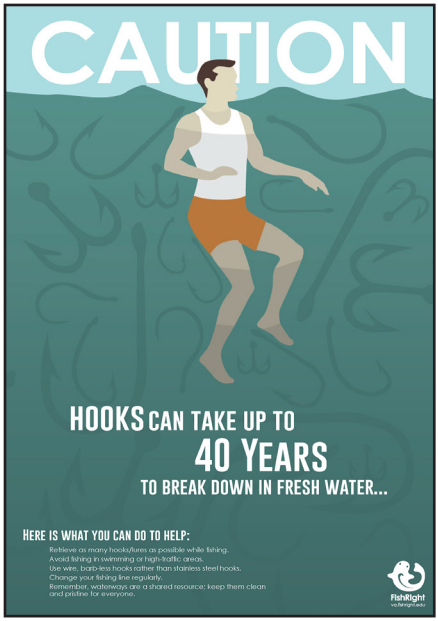
Designer:

Jeremiah Gilmer

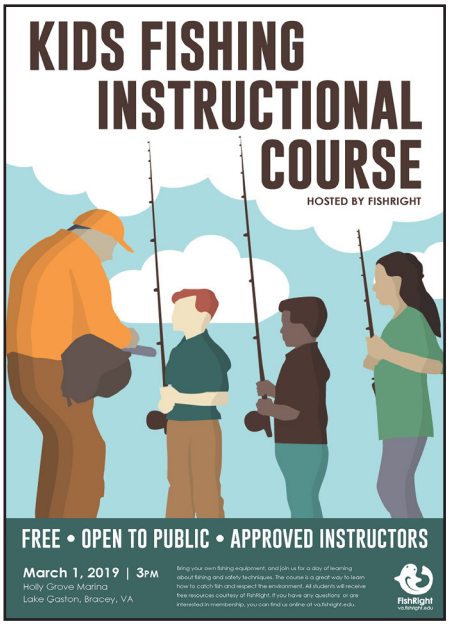
Faculty Advisors: Wade Lough and Chris Register

Designer's Statement

The goal of the FishRight Youth Fishing Education Campaign is to design print, web, and interactive collateral that will help teach children how to fish in a sustainable way. I grew up on Lake Gaston in southern Virginia, so fishing is a topic I am passionate about. Not everyone has a caregiver or mentor to teach them how to fish, which results in the formation of poor fishing habits that can end up harming the environment and the fishermen. This graphic design undergraduate project was a year-long process that focused not only on the creation of a polished product but also on the research and process.


CAUTION
HOOKS CAN TAKE UP TO
40 YEARS
TO BREAK DOWN IN FRESH WATER...
HERE IS WHAT YOU CAN DO TO HELP:
Retrieve as many hooks/lures as possible while fishing.
Avoid fishing in swimming or high-traffic areas.
Use wire, barb-less hooks rather than stainless steel hooks.
Change your fishing line regularly.
Remember, waterways are a shared resource; keep them clean and pristine for everyone.
FishRight

CAPTURE
PLASTIC AND TRASH
KILL THOUSANDS
OF FISH AND BIRDS EACH YEAR...
HERE IS WHAT YOU CAN DO TO HELP:
If you have to break off line, follow it to the start of the snag before breaking the line.
Do not litter. If you see trash while fishing, be sure to clean it up.
Recycle and compost.
If you find a lure or line, collect it so that it doesn't harm wildlife.
Remember, waterways are a shared resource; keep them clean and pristine for everyone.
FishRight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White Supremacist's Appropriation of the Persuasion of Passivity in Marvel's *Captain America*

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Abstract

In the last few years, Captain America, a hero who originated in the second World War, has counterintuitively emerged as an emblem of Neo-Nazism. Twenty-first century Captain America is depicted swastika-adorned and defending America against ideals like "Islam," "Immigration," and "Globalism". These modern interpretations align Captain America with fascism, racism, and anti-Semitism. Considering that the debut cover of Captain America *Comics depicts Captain America punching Hitler across the face, this is a drastic shift in interpretations. So how did we get here? Neo-Nazis and white nationalists have not misappropriated* Captain America *comics as propaganda on websites and in political demonstrations, but rather appropriated an already toxic icon because "the defender of American ideals" is frequently and disturbingly portrayed as racist, fascist, and a defender of laws and rules, disregarding what is truly right.*

In the last few years, fans of Marvel Comics' Captain America have been confronted with the appropriation of their hero by fascists, racists, and white nationalists. A hero who originated in the second World War has counterintuitively emerged as an emblem of Neo-Nazism. Jewish artists Stan Lee and Jack Kirby created Captain America in 1941 as they watched real-life Nazis attack their people and their belief system. Not wanting to watch idly, Lee and Kirby used comic books to make a very specific political demand, urging a pro-isolationist America to enter World War II and fight the Nazi regime (Trevithick). Since his creation, Captain America has been widely accepted and promoted as both the persona and defender of American values. Recently, however, there has been a surprisingly drastic shift in the way Captain America (henceforth, Cap) has transformed in popular representation **(Figures 1 and 2)**. The cover of the debut issue of *Captain America* comics, printed during World War II, depicts Cap punching Hitler in the face **(Figure 1)**. Twenty-first century white nationalists offer a very different image of Captain America, like that of a swastika-adorned Cap defending America against bullets labeled "Islam," "Immigration," and "Globalism," as bullets labeled "Jews" and "Political Correctness" fall crumpled to the ground, defeated **(Figure 2)**. This image, created by an unknown artist with the username Neetsfaggin322297 on Deviantart.com, aligns Captain America with fascism, racism, and anti-Semitism (Schul). Jim Griffin's appropriation of Captain America portrays Cap in a similarly dark light. Griffin, a frequently-photographed right-wing protester, dressed as Captain America at a pro-Trump rally **(Figure 3)** (Scott). Griffin's costume, with an the "Oath Keepers" badge on his shoulder **(Figure 4)**, aligns Captain America with a nationalist organization that uses familiar anti-Semitic discourse by inveighing against the Hungarian-American philanthropist and pro-democracy advocate George Soros **(Figure 5)**. A Holocaust survivor who fled Nazi-occupied Hungary at the age of seventeen, Soros has become firmly linked in the paranoid imaginations of right-wing nationalists with anti-Semitic conspiracy theories of a globalist cabal. So how did we get here? Neo-Nazis and white nationalists have not misappropriated *Captain America* comics as propaganda on websites and in political demonstrations, but rather appropriated an already toxic icon because "the defender of American ideals" is frequently and disturbingly portrayed as racist, fascist, and a defender of laws and rules, disregarding what is truly right.

One way of understanding how Captain America ends up on websites such as *4chan*, a frequently racist forum, and at white nationalist events like the Unite the Right Rally in Charlottesville in 2017, involves recent storylines in Marvel Comics. For example, the shocking twist within the 2017 promotional issue of *Secret Empire* (a series that centers on the exploits of Hydra, the supervillain organization that has historically been Captain America's nemesis) in which Captain America is revealed as a secret agent of Hydra. In this free-comic-book-day issue,

Figure 1. *The cover of the debut issue of* Captain America. *Reprinted with permission.*

Figure 2. *Online image of* Captain America *created by Neetsfaggin322297 on Deviantart.com. Public Domain.*

Figure 3. *Jim Griffin, a frequently-photographed right-wing protester, dressed as Captain America at a pro-Trump rally. Public Domain.*

Captain America utters the phrase, "Hail Hydra" **(Figure 6)**, revealing his allegiance to an anti-democratic, fascist organization bent on world domination through subterfuge and violence (Spencer, Cover). In the final panel of the issue **(Figure 7)**, Captain America holds Thor's hammer aloft, while

Figure 4. *(Detail) "Oath Keepers" badge on Jim Griffin's Captain America costume. Public Domain.*

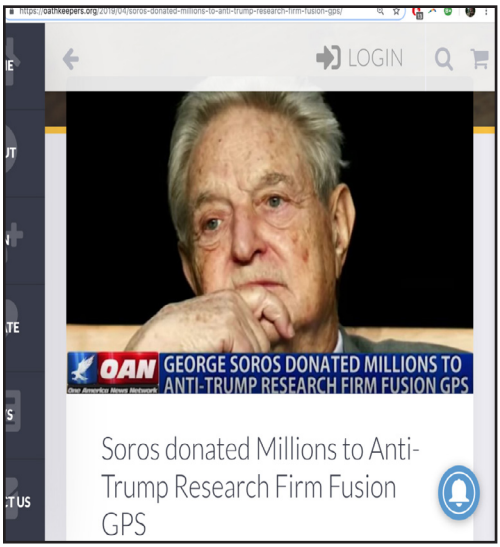

Figure 5. *Anti-Semitic nationalist propaganda against philanthropist George Soros. Public Domain.*

Figure 6. *Promotional issue of* Secret Empire *(2017) revealing Captain America as a secret agent of Hydra. Reprinted with permission.*

the caption explains that everyone who has lifted Thor's weapon has a trait in common: "they were worthy" (Spencer 12). Rather significantly, the bottom of the panel **(Figure 8)** presents most of the Avengers, including Hulk, Ironman, Quicksilver, Spider-Man, and Black Widow, lying unconscious at Captain America's feet as he stands with one fist clenched, raising Thor's Hammer in the other, his feet in a powerful stance shoulder-width apart, his head held high. In online commentary, these images have unsurprisingly been described as inspiring real-life fascism as they not only present fascists as worthy of a powerful medieval object, legitimizing their beliefs with history, but also legitimizing fascism as an "American value" due to Captain America's strong patriotic association.[1]

In fan forums and blogs, these images from *Secret Empire* and the plot it narrates have

[1] Blogger Griffin Schul believes that Marvel will never recover from this 2017 promotional issue due to the amount of backlash from audiences and its appropriation by the alt-right. Schul, Griffin. "Marvel's Nazi Fascism Fixation: Real Life Doesn't Have Relaunches." *The Fandomentals, The Fandomentals*, 12 Sept. 2018, www.thefandomentals.com/nazi-captain-america-bombshells/.

Fan Aliza Weinberger's online opinion-based commentary argues that Marvel made a huge mistake with this issue, in that it has a complete disregard for Cap's history and the modern day political climate. Weinberger, Aliza. "Marvel Comics Has Taken This Nazi Captain America Thing Too Far." Mashable, Mashable, 25 Apr. 2017, mashable.com/2017/04/25/captain-america-hydra-nazi-marvelcomics/#_xOZC6A4csqd.

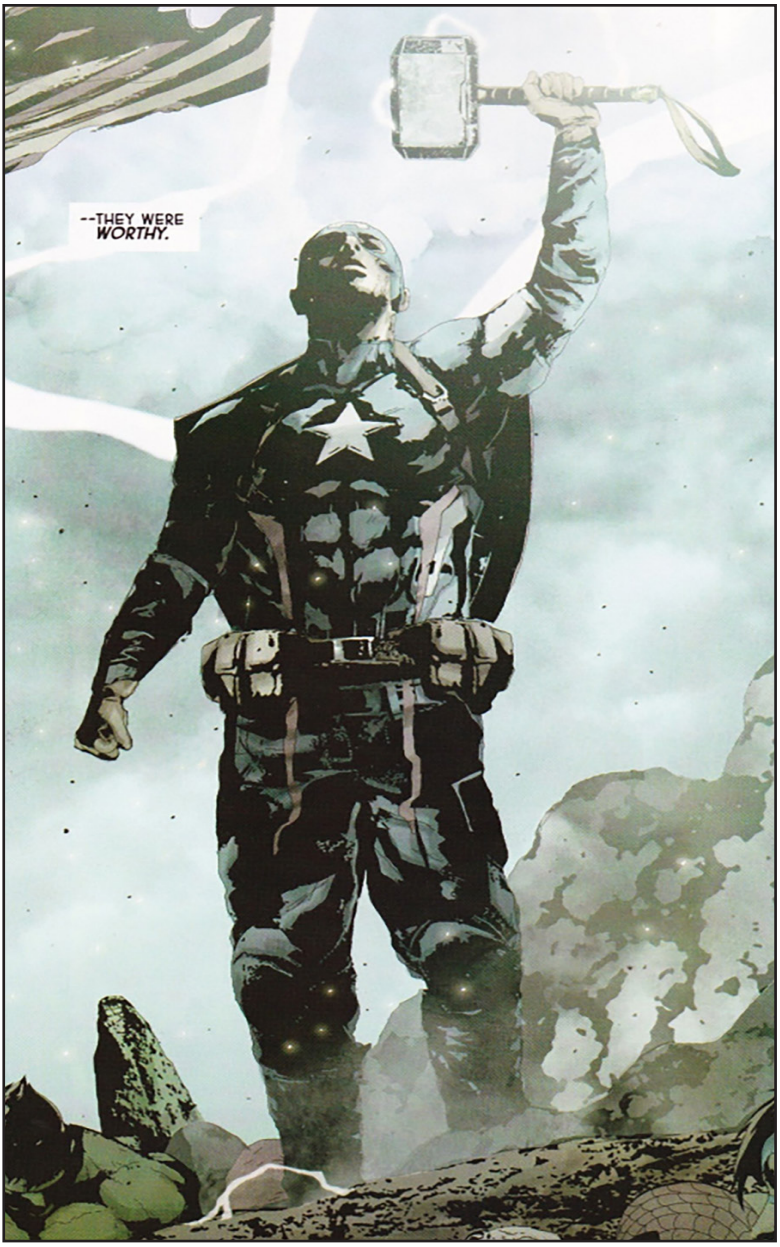

Figure 7. *Final panel of* Secret Empire *(2017) showing Captain America, a secret agent of Hydra, wielding Thor's hammer. Reprinted with permission.*

been presented as evidence for a white nationalist interpretation of Captain America, as well as the nation he symbolizes. In commentary by Griffin Schul and others, *Secret Empire* has been described as not only praising Hydra but, by extension, the enemy Captain America fought before that organization: Nazism (Schul). It is, after all, a short step from the White Supremacist slogan, "Heil Hitler," to Captain America's "Hail Hydra." Additionally, there are obvious parallels between the hand signals of the Nazis and Hydra, shown in **Figures 9 and 10**, respectively (Doctorow; "HYDRA"); Marvel slyly closed the Nazi hand symbol into a fist, but fans like Charles Pulliam-Moore are not ignorant about the origination of Hydra's hand signal (Pulliam-Moore). Fans have found the implications of the previous image of Hydra Captain America wielding Thor's hammer, Mjolnir, even more troubling (Schul). In the Marvel Universe, the ability to hold and use Mjolnir is contingent upon the hammer's judgment of worthiness. Figure 7, therefore, is even more disturbing; Captain America defeated his fellow Avengers without a scratch on him, and he, and by extension Hydra, are deemed worthy of a supernatural weapon forged by the Norse gods.[2]

While this issue of *Secret Empire* specifically encourages readers to interpret Captain America as a figure for white supremacy, critics have long recognized fascistic underpinnings in the figure of Captain America. For example, Nicole Devarenne argues that Captain America is inherently anti-democratic because his methods are violent, authoritarian, and dictatori-

[2] For additional information about the 1940s Nazis affinity for Mjolnir and their actual attempt to create a "lightning-bolt-emitting hammer," see: Martin Arnold's "Myth," in *Medievalism Key Critical Terms, edited by Elizabeth Emery and Richard Utz* (Cambridge: D.S. Brewer, 2017), 165–172, at 170.

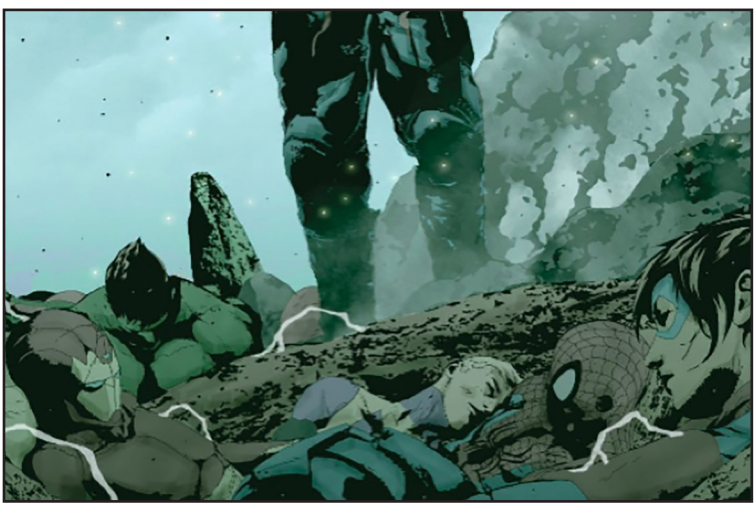

Figure 8. *(Detail) Bottom of the final panel of* Secret Empire *(2017) showing Captain America, a secret agent of Hydra, wielding Thor's hammer, standing over the other Avengers who are unconscious. Reprinted with permission.*

al (Devarenne). Forrest Phillips adds that opposing factions can easily appropriate Captain America because he broadly stands for American values, which allows him to represent all types of ideologies, including fascist ones (Phillips). Brannon Costello argues that the Captain America mythos is not only recognizably fascist but also racist, citing a storyline from the early 1970s in which the hero allows his African American sidekick, Lemar, to be lynched (Costello 63). In a sense, then, the pictures of Captain America in *Secret Empire* simply make explicit that which scholars have long recognized: both the character and the comic book *Captain America* have racist and fascist undertones. The substantial attention that fascism and racism have received in analysis of *Captain America* clarify how white nationalists have come to embrace this figure, as these disturbing qualities support their beliefs.[3]

Modern readers can understand the appeal of Captain America for white nationalists in light of Hannah Arendt's account of the "banality of evil" (252). In *Eichmann in Jerusalem: A Report on The Banality of Evil,* Arendt argues that the Holocaust happened because mediocre people found it more convenient to follow orders than to think for themselves or fight against those in power (50). She continues that Nazis rose to power because of the terribly and terrifyingly normal human tendency to blindly follow rules, obey orders, and not question those in charge. This tendency allowed for the crimes of the former Nazi official Adolf Eichmann, and

[3] For another example of scholarly recognition of Captain America's racist underpinnings see: Chad Barbour's "When Captain America was an Indian: Heroic Masculinity, National Identity, and Appropriation" which discusses Captain America's tendency to marginalize minority cultures while extoling the white identity. *The Journal of Popular Culture* (Apr. 2015): 269–281.

Figure 9. *Nazi children give the characteristic salute. Public domain.*

Figure 10. *Hydra's Nazi-like salute in* Captain America. *Reprinted with permission.*

many other criminals, to be accepted and routinized without any moral or political revulsion. Ardent criticizes this complacency in Eichmann and the public's acceptance of Eichmann, arguing that there is collective guilt among the millions of Germans who allowed Nazis to commit mass murder uncontested. It is crucial to understand the roots of totalitarianism as that of the common folk; it explains white supremacists' attraction to Captain America because the hero continually appears sympathetic to, and reinforces the real sources of "banality of evil." He preaches obedience to authority figures which is the mindset white supremacists need to rise to power, just like the Nazis in the 1930s.

Captain America often promotes such obedience through its use of what Arendt calls "cliché" (49). In her observation of Eichmann's trial, Arendt recognizes a blend of stock phrases, including Nazi jargon, that Eichmann continually relies on to answer questions from the prosecutor and judges. Arendt describes how, even in the Jerusalem courtroom where he was tried for crimes against humanity, Eichmann describes his actions variously as merely following orders, on the one hand, and as advancing "[t]he battle of destiny for the German people," on the other (52). Eichmann repeats such self-deceptive, robotic "empty sayings" in order to justify the extermination camps to himself and to the world. Arendt's theory of clichés explains that an inability to use words other than formulaic stock phrases equates to Eichmann's inability to think for himself. In the repetition, she argues, he was "surrounded by the most reliable of all safeguards against the words and presence of others" (Arendt 49). Not unlike today's political climate, clichés create banal communities. The public is enticed not to think but to repeat simple political campaign slogans as the answer to frighteningly complex problems—not to imagine the world from others' perspectives, but to build walls and obey laws.

Arendt's insights sometimes seem as if they provide the material for Marvel's representation of the obedient and cliché-spouting villains of Hydra. For example, Hydra's goons utter such phrases as their repeated motto, "Hail Hydra!" and "We hear … and obey!" **(Figure 11)** (Lee, #110, 15). Their use of such clichés illustrates Hydra's clear evocation of Nazism without glorifying such familiar symbols as swastikas, the skull and crossbones, or even Hitler. Lee and Kirby introduced Hydra in 1965 in an attempt to criticize Nazis and the kind of blind obedience that Arendt theorizes, without depicting actual Nazis. This marked a significant change in the series, which originally depicted Captain America fighting Hitler and the Nazis as a way of encouraging America to enter World War II.[4] Hydra was first introduced to Marvel decades

[4] For further reading on the Jewish comic books artists movement during the World War II era, see Mike Milford, "Veiled Intervention: Anti-Semitism, Allegory, and Captain America," *Rhetoric and Public Affairs,* 2017. Milford discusses how the carefully crafted characters of this era, especially heroes like Captain America, allowed Jewish artists to challenge America's isolationism and the widespread anti-Semitic attitude during the 1940s.

Figure 11. *Hydra's goons utter Nazi-like phrases as their repeated motto, "Hail Hydra!" and "We hear … and obey!" in* Captain America. *Reprinted with permission.*

later, long after America and its allies had won the war. No longer wishing to present the Nazis as a looming threat demanding American intervention, Lee and Kirby substituted Hydra for Nazis (Lee).

At the same time, the comics nonetheless present Hydra in terms that Arendt would find troubling. Hydra's symbols, clichés, and hand signals all quite obviously emulate Nazis. For example, comparing the Hydra skull and the Nazi Totenkopf **(Figures 12 and 13)**, the similarities are more obvious: there is a skull detached from the rest of the body, with the same eye and nose holes on both images. This Nazi symbol, and others like the hand signal, illustrate Marvel's affinity for Nazi-based imagery ("Nazi Salute"; "HYDRA"). Therefore, it is not surprising that images like that in **Figure 14** were adopted by white nationalists at the Unite the Right Rally in Charlottesville, Virginia in 2017. In the image, a racist white nationalist, surrounded by his other white, racist friends, sports a Hydra T-Shirt. While this could be a simple coincidence, it seems unlikely that the similarities between the white nationalism platform and Hydra's beliefs went unnoticed by this man, or by white nationalists in general. The general public, not just scholars, is aware of the connections between Marvel and Nazis/Hydra. Therefore, the prominence of these disturbingly racist issues is more serious than they may have appeared at first. On the one hand, Arendt's analysis of cliché helps us recognize the continuity between Hydra and Nazism. However, by substituting real historical figures with supervillainy, Marvel discredits Arendt's ultimate argument—the collective guilt of bystanders who did not resist Nazism and who obeyed their laws. That twenty-first-century readers sympathetic to fascism have found a hero in Captain America might not seem so surprising given Arendt's insights

Figure 12. *Hydra symbol. Reprinted with permission.*

Figure 13. *SS Totenkopf. Source: https://commons.wikimedia.org/wiki/File:SS_Totenkopf_1923-34.gif*

about cliché and obedience. After all, obedience sometimes appears to be one of Captain America's most deeply held ethical values. Consider the following series of panels from a 1974 issue in which Hydra frames Captain America for murder **(Figure 15)**. In the first panel, police officers come to arrest Cap for murder and the caption in the second panel describes him as "a man in conflict." He is torn as he weighs his options, saying "these are law officers, protecting everything I represent. I … can't disobey them! ... But what if they, *too* are a part of the set-up!" Cap's use of the phrase "*law officers,*" unlike the more familiar term "police," implies that obeying these officers means obeying the law. In this way, Captain America instills in the audience the idea that obedience to laws represents the character's essence. It is, in Cap's own words, "everything [he] represents" (Friedrich 3). Only when he contemplates the possibility that the police themselves are "part of the set-up" does he allow himself to strike.

Figure 14. *White nationalists at the Unite the Right Rally (2017) sport Nazi symbols and a Hydra t-shirt. Public Domain.*

Figure 15. *Captain America framed by Hydra for murder.* Captain America *(1974). Reprinted with permission.*

Therefore, Cap's powerful desire to obey the law perpetuates the same attitude towards the law that Hannah Arendt calls "banality."

Another example of Captain America's banality occurs in *Captain America and The Falcon* issue number 170, yet in this issue the banality has a disturbingly racist consequence. Costello notes that in this issue, Captain America is complicit in vicious racialized violence. What is more troubling is that Cap's complicity arises *specifically* from the kind of obedience that Arendt describes. Captain America is disguised as a watchdog, another fascistic enemy that appeared for about three years, but which is just another variation of Hydra and Nazis **(Figure 16)**. Cap, in this panel, actively participates in the "banality of evil." He states "Everyone's leaving. What do I do? Stay here and try to save Lemar … or …? It's like the commission wants to know if I'm willing to risk a friend's life for the sake of a mission! Those blasted …!" He is frustrated with the Commission, a governmental organization designed to supervise America's "superhuman resources" ("Commission"). Cap again struggles with whether or not to obey the rules, but this time his deliberation is whether to save his sidekick from being lynched or to obey the desires of the Commission. Unsurprisingly, based on our knowledge that Cap has a powerful desire to obey laws and rules, he chooses the route of compliance, abandoning his friend in order to appease the Commission. In the bottom right panel featured in **Figure 18**, he unheroically states: "I pray you can handle this, Lemar," as a defenseless Lemar is literally being strung up from a tree (Gruenwald 19). This is the exact complacency that Arendt describes in *Eichmann and Jerusalem*, but, in this case, it is perpetuated by the supposed perfect example of American virtues. As Arendt observes, "in politics obedience and support

Figure 16. *Captain America complicit in the lynching of Lemar.* Captain America and The Falcon, Issue 170 (1974). *Reprinted with permission.*

are the same" (Arendt 279). Captain America actively participates in the "banality of evil" by not preventing, but watching, and therefore allowing the extremely racialized hate crime of lynching. This is as horrible as Eichmann's plight in relation to the historical Nazis and the horrific atrocities committed in the Holocaust.

Given the various ways in which Captain America has been appropriated, it may be tempting to think this is just another example of what the theorist Stanley Fish calls "interpretive communities" (1901). In his famous *Is There a Text in This Class? The Authority of Interpretive Communities*, Fish theorizes that texts only exist as texts when an interpretative community acknowledges them as such. For example, Fish describes writing the list of authors on a classroom wall in one class and, before the next class begins, he adds a page number and draws a box around the list. He then asks the students to analyze what he tells them is a poem. According to Fish, the students' ability to analyze the list of authors as a poem means that, for that interpretive community of students, it *is* a poem. Therefore, Fish argues, texts have no ob-

jective existence independent of an interpretive community. For Fish then, each political party or group will interpret Captain America in light of their own ideological commitments. Fascists will see a fascist Captain America, racists will see a racist Captain America, and advocates for social justice will see Captain America as a hero for their cause. Indeed, the gap between the images this paper began with seems to illustrate this point. Viewed this way, it appears that there is no independently verifiable truth about what Captain America is or what that figure means, that Captain America is merely open to interpretation and that Marvel has no obligation to clarify the ethical and political biases of their characters.

Yet, arguably, audiences need a consensus about truth, independent of the preferences and biases of their interpretative communities in order to prevent the kind of atrocities that Arendt discusses in *Eichmann in Jerusalem*. If audiences say all that matters at the end of the day is what an interpretative community says, then audiences can logically justify a holocaust—after all, an interpretive community of Nazis justified the mass murder of six million Jews. An interpretative community of Germans were convinced that the final solution was an acceptable remedy to economic upheaval. This is all to say that we have been here before and have convinced ourselves that certain kinds of people are not people via interpretive communities. To explore an example of the need for objective truth independent of interpretive communities, a beneficial comparison is that of the Facebook Ad Scandal of 2016. According to British journalist Carole Cadwalldr in her April 2019 TED Talk, Facebook sold ad space to agents who used a targeted campaign of disinformation to 87 million "persuadable" voters in months before the Brexit referendum which would take the UK out of the European Union (Cadwalldr). Those ads present misinformation in the form of memorable, repeatable slogans, or, in the words of Arendt, clichés. For example, one of the ads reads: "Immigration without Assimilation Equals Invasion" **(Figure 17)** (Cadwalldr). The advertisement stokes fear of Turkish immigrants flooding into the UK, especially into parts of the country with few immigrants. This racist ad appeared on Facebook before the Brexit vote in June 2016. Some pro-Brexit politicians have argued that these are just ads; that Facebook users are capable of judging what to believe; that the factual inaccuracy of claims about Turkey joining the EU is a matter of opinion and rhetoric. Cadwalladr argues that there is such a thing as objective truth and without it, democratic institutions will give way to authoritarianism. However, Facebook assures its users that such ads are "just interpretations." Cadwalladr contends that Facebook profited from these lies even as it undermined British democracy. As Cadwalladr suggests, Facebook, Twitter, and Google risk becoming "handmaidens to authoritarianism" when they profit from these lies.

Marvel runs the same risk as Facebook—of becoming a handmaiden to authoritarianism—when it traffics in the kind of images shown throughout this paper. That is not say that Face-

Figure 17. *Pro-Brexit ad on Facebook stoking fears of Turkish immigrants in the UK. Source: Carole Cadwalldr, April 2019 TED Talk: https://www.ted.com/talks/carole_cadwalladr_facebook_s_role_in_brexit_and_the_threat_to_democracy?language=en*

book equates with Marvel; they are not doing the same thing. Whereas Facebook is selling ad space to white nationalists, Marvel's works are being appropriated by white nationalists. Thus, there may be hope that Marvel recognizes its moral responsibility. In 2018, Ta-Nehisi Coates, an African American comic book artist who is most famous for writing about race and culture, particularly in relation to white supremacy, took over writing *Captain America*. In his 2018 article "Why I'm Writing *Captain America*," Coates describes his work in terms that seem to echo the kind of moral imagination that Arendt finds lacking in Eichmann. Coates frames writing *Captain America* as a way of avoiding cliché: "What is exciting [about writing *Captain America*]," Coates explains, "is not some didactic act of putting my words in Captain America's head, but attempting to put Captain America's words in my head. What is exciting is the possibility of exploration, of avoiding the repetition of a voice I've tired of" (Coates). Coates echoes Arendt's claim that in order to avoid the dangers of acceptance through clichés, people must "think from the standpoint of somebody else" (Arendt 49). With the 2019 release of *Avengers: Endgame*, Marvel Studios recognizes the attitude that Coates advocates. In a monumental moment at the end of the movie, the heroic identity "Captain America" is passed from the elderly, white Steve Rogers to his crime-fighting, black partner, Sam Wilson (The Falcon) when Rogers gives Wilson Cap's shield, echoing both Coates and Arendt, as the character of Captain America will now "think from the standpoint of somebody else" (Arendt 49), vastly

different from Steve Rogers. This change to an African American Cap could mean that Marvel recognizes its responsibility to not become a handmaiden to authoritarianism: Marvel directly opposes white supremacists by placing a non-white actor in the very role that the modern day hate groups have appropriated, while simultaneously giving the African American audience a hero in their image.[5] If, on the surface, comics sometimes appear a rather insignificant form of popular entertainment, Coates suggests how the form may answer the needs that Arendt describes. There are enormous implications for American political life that attend the work of editors, illustrators, and writers. As Arendt reminds those artists: they must think.

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[5] Fan and Marvel blogger Kwame Opam offers an opposing opinion in his blog entry "Marvel is replacing Steve Rogers with the new, black Captain America," arguing that Marvel is simply trying to diversify their biggest titles, citing shifts in heroes like Captain America and Thor. Yet, even if Opam's argument holds true, this move by Marvel still distinguishes the corporation as opposing white supremacy: https://www.theverge.com/2014/7/16/5878527/marvel-is-replacing-steve-rogers-with-the-first-black-captain-america.

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Designer:

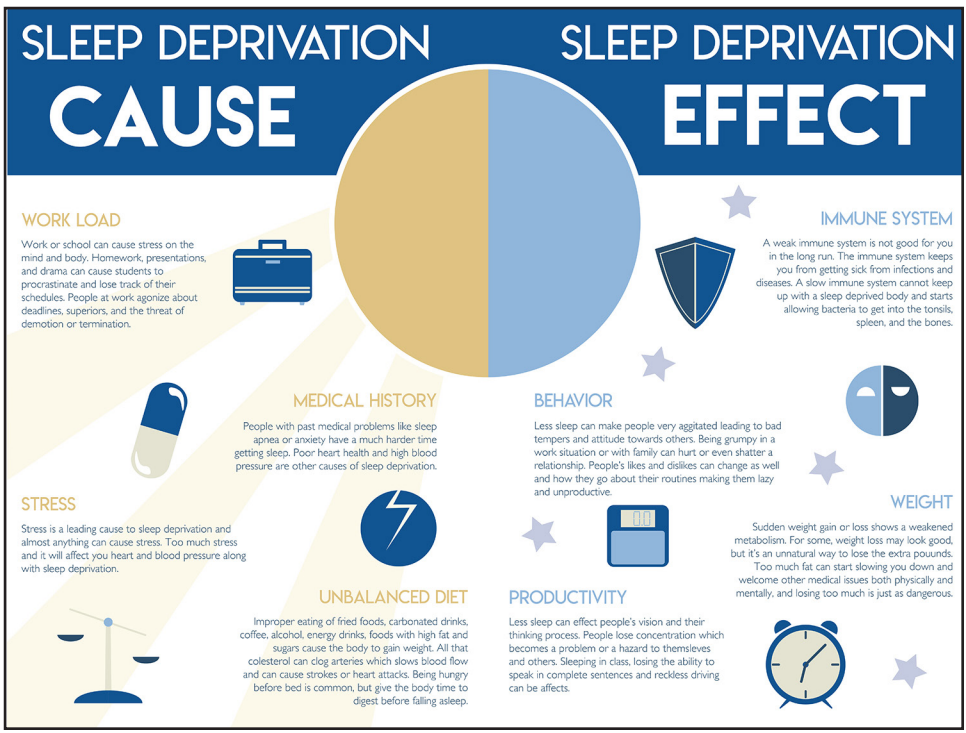
Benjamin Sullivan

Faculty Advisors: Wade Lough and Chris Register

Designer's Statement

My senior project, Sleep On It, focuses on the causes and effects of sleep deprivation and how getting seven to eight hours of sleep every night can improve a person's mind and body. Staying asleep at night can be difficult for some but maintaining a healthy sleep routine can be a real challenge for anyone. The information presented in my project gives detailed causes for losing sleep and the effects of not getting enough sleep, accompanied by natural remedies and solutions to help people get the hours they need for a good night's rest. Sleep is as important as eating and breathing.

SLEEP ON IT
THE SEVEN HOURS YOU NEED FOR A GOOD NIGHT'S SLEEP


SLEEP DEPRIVATION
CAUSE
SLEEP DEPRIVATION
EFFECT
WORK LOAD
Work or school can cause stress on the mind and body. Homework, presentations, and drama can cause students to procrastinate and lose track of their schedules. People at work agonize about deadlines, superiors, and the threat of demotion or termination.
IMMUNE SYSTEM
A weak immune system is not good for you in the long run. The immune system keeps you from getting sick from infections and diseases. A slow immune system cannot keep up with a sleep deprived body and starts allowing bacteria to get into the tonsils, spleen, and the bones.
MEDICAL HISTORY
People with past medical problems like sleep apnea or anxiety have a much harder time getting sleep. Poor heart health and high blood pressure are other causes of sleep deprivation.
BEHAVIOR
Less sleep can make people very aggitated leading to bad tempers and attitude towards others. Being grumpy in a work situation or with family can hurt or even shatter a relationship. People's likes and dislikes can change as well and how they go about their routines making them lazy and unproductive.
STRESS
Stress is a leading cause to sleep deprivation and almost anything can cause stress. Too much stress and it will affect you heart and blood pressure along with sleep deprivation.
WEIGHT
Sudden weight gain or loss shows a weakened metabolism. For some, weight loss may look good, but it's an unnatural way to lose the extra pouunds. Too much fat can start slowing you down and welcome other medical issues both physically and mentally, and losing too much is just as dangerous.
UNBALANCED DIET
Improper eating of fried foods, carbonated drinks, coffee, alcohol, energy drinks, foods with high fat and sugars cause the body to gain weight. All that colesterol can clog arteries which slows blood flow and can cause strokes or heart attacks. Being hungry before bed is common, but give the body time to digest before falling asleep.
PRODUCTIVITY
Less sleep can effect people's vision and their thinking process. People lose concentration which becomes a problem or a hazard to themsleves and others. Sleeping in class, losing the ability to speak in complete sentences and reckless driving can be affects.

Artist:

McKenzie Johnson

Faculty Advisor: Lauren Rice

Artist's Statement

I am a Special Effects makeup artist. I use my body as my artwork and try to express my feelings through my body paintings. These images show the innocent and demented sides of my mind. The depth of light and dark shadows are my main focus through these pieces, as well as the idea that demons dwell within us.

"Monster in The Mirror" (2019)
Photography, colored print
12"x 6"

"Emotion" (2016)
Photography, colored print
12"x 6"

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