AUSPEX

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Interdisciplinary Journal of Undergraduate Research

Volume VI

Landon Bayless-Edwards | Biology and Environmental Studies

Isabelle Coppinger | Art

Sarah Edwards | Sociology and Anthropology

Leo Proechel-Bensman | Psychology

Eliza Stokes | Global Studies and Creative Writing

Remy Sutherland | Chemistry

Sophie Yates | English and Theatre

Table of Contents

Editorial: Finding Self Beyond the Self
Editors of *Auspex*, Volume VI

"Self-identity is inextricably bound up with the identity of the surroundings." -Lars Fr. H. Svendsen, A Philosophy of Boredom

The concept of understanding one's self is completely related to the circumstances and environment that one finds oneself in. Our decisions and how we interact with our surroundings makes us who we are. When people say that they try to find themselves, they are generally separating themselves from a specific place or going deep into another. 2016 has been a year of self-discovery, being in the midst of an era where identity is brought into question both personally and politically. There has been a push for equality, for group recognition, and an overturning of power dynamics. With the Black Lives Matter movement, the push for LGBT equality, and the Standing Rock protests, many marginalized groups are speaking out, trying to make their mark and be recognized. They are finding their place in their surroundings and finding their identity.

In a broader sense, college is viewed as a time and a place to find your identity. Some find it sooner, some find it later, but it is that transition from childhood to adulthood where we come to find our strengths and skills. It is where we learn about the world we live in, whether that is naturally, socially, artistically, or another way, and we find where we can fit and influence that world. Each writer in this volume, and any Auspex volume, is a college student. They are in that place of learning and self-discovery.

The pieces in this volume focus on identity in relation to the environment. Leo Proechel-Bensman's piece on shame-aggression brings into question how our perceptions of others dictate our feelings toward ourselves and our surroundings. This plays into how we project ourselves and how we subconsciously adjust ourselves to the outside world. Sophie Yates' piece follows with gender stereotypes found in literature and delves into the internal issue of conflicting obligations: to fulfill a social role and to stay true to one's self. Both of these frame the general issue of how people's interactions influence who they make themselves into.

Nestled in the middle of the volume are works by Isa Coppinger, Remy Sutherland, and Landon Bayless-Edwards. Isa explores the properties of the mica mineral as well as its cultural and personal significance. Remy researches human impact on the environment by looking at the effect of different harvest events on nitrogenase activity in alfalfa grass. Landon, likewise, searches for a way to improve our connection to the environment by improving land management techniques. If our surroundings play such an integral role in our personal identities, it is important to understand that environment and how we relate to it.

The final two pieces look at our identities in foreign environments by exploring the impacts of study abroad and volunteerism in a foreign country. Sarah Edwards hones in on the concept of the self versus perceiving "the other" and how foreign identities are sometimes viewed as fantastical and exotic. Eliza Stokes brings the idea a little closer to home by comparing the experience of Warren Wilson students volunteering in Latin America. She presents the stereotypes and uneven power dynamics and how students looked to disrupt these preconceived notions and power inequalities to create social change. Travel, stepping into an unfamiliar environment, is a good way to assess personal identity and strengthen the sense of self.

Each of these writers has searched for identity and meaning beyond themselves by exploring the world and the environments they found themselves in. It is our hope that reading these pieces helps you solidify, at least to a degree, your own identity or to provide avenues to seek it out. We hope that you engage with this volume of Auspex and engage with your surroundings to learn more and find your place amidst it all.

Burr Bowl by Isabelle Coppinger, 2016. Porcelain

The Frustration-Shame-Aggression Hypothesis: Does Shame Mediate the Relationship Between Frustration and Aggression?

Abstract: The frustration-aggression theory states that aggression is caused by frustration (being prevented from achieving a goal). However, a large body of research has indicated that shame may play a role in inducing aggressive behavior. This study investigated the possibility that the link between frustration and aggression can be explained by the presence of shame in the frustrated individual. After being tested for trait shame, five males and 14 females engaged in a frustrating task and were asked to report their hostility levels. Trait shame was found to be significantly associated with self-reported hostility following the frustrating task.

Leo Proechel-Bensman | Psychology

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I. INTRODUCTION

Aggression in humans is generally defined as any behavior that is carried out with the immediate intent to cause harm to another individual who does not want to be harmed (Anderson & Bushman, 2002). One of the most popular theories of aggression is the frustration-aggression theory. The frustration-aggression theory states that aggression is caused by frustration (the experience of being prevented from achieving a goal). Despite its prevalence, there are several phenomena that this theory has trouble explaining. The purpose of this study is to attempt to expand the popular understanding of aggression by investigating whether the link between frustration and aggression is reliant on or influenced by the presence of shame in the frustrated individual.

Researchers often divide aggressive behavior into two motivation-dependent categories. Behavior that is driven by the ultimate goal of harming the target is labeled *hostile aggression* (Blair, 2012). Hostile aggression is often unplanned, driven by anger, and a response to provocation. Distinctively, *instrumental aggression* is conceived of as an act of aggression that is necessary in order to achieve a goal that is not inherently violent. For example, physical assault would most likely be hostile aggression, and robbery instrumental aggression. This paper will focus on hostile aggression, as well as anger, of which hostile aggression can be considered the ultimate behavioral expression.

II. LITERATURE REVIEW

Many theorists have postulated differing causes of hostile aggression. For instance, cognitive neoassociation theory states that negative affect stimulates cognitive associations with anger and aggressive acts, which are consequently produced (Berkowitz, 2012). Meanwhile, social models such as the social learning theory seek to explain how aggressive behaviors are learned from parents, peers, and media (Bandura, 1978). The influence of even broader social contexts are considered in script theory, which postulates that when children are exposed to violence in the mass media, they adopt a social script that includes aggressive responses to particular situations (Rowell, 1998). On a more individual level, excitation transfer

theory suggests that aggression is the result of arousal that has built up slowly over the course of several events (Zillmann, Katcher, & Milavsky, 1972). Assuming the premise that aggression is rational, social interaction theory views all aggression as a goal-oriented tactic that is intended to change the target's behavior (Tedeschi & Felson, 1994). Each of these theories has proven useful for explaining aggression in different contexts. However, many of them address the ways in which aggressive behavior is learned. This study's focus is primarily on the stimuli that lead to those behavioral tendencies once they are already present. Among the theories that attempt to explain these stimuli, the most popular and well-supported is the frustration-aggression theory.

The frustration-aggression theory was first postulated in a book by Dollard and Doob (1939) called *Frustration and Aggression*. These researchers proposed that all human aggression could be explained as a response to frustration, saying that "aggression is always a consequence of frustration" (p. 1). Furthermore, they claimed that all frustration resulted in aggression, saying "the existence of frustration always leads to some form of aggression" (p. 1). They explained frustration as "an interference with the occurrence of an instigated goal-response at its proper time in the behavior sequence" (p. 7). In other words, frustration was defined as the experience of being prevented from achieving a goal (Berkowitz, 1989).

The frustration-aggression theory appears able to explain many situations that result in aggression (Berkowitz, 1989). However, there are several notable exceptions. These exceptions are usually incorporated into the theory, even though they seem to suggest that aggression is affected by some affective or cognitive mechanism other than frustration. For example, Pastore (1952) suggested that frustration only induces aggression when the reason that one's goals are thwarted is considered illegitimate. As evidence, he showed that people report they would only be angry in unjustified frustrating situations. For example, they would be angry if a bus failed to stop at a routine location but would not be angry if it was clearly on its way to a garage. Many other studies have provided further evidence for this phenomenon (see Bandura, 1973; Kulik & Brown, 1979;

Rule, 1978).

A study by Younger and Doob (1978) highlighted the importance of attributions surrounding the cause of frustration. Participants who were provoked by researchers were less aggressive if they believed that a pill was responsible for their emotions, suggesting that self-appraisal could play a role in aggression. On a similar note, in a study by Zillmann (1978), participants were less likely to display aggression toward another individual who had mistreated them if they were told that the mistreatment was not deliberate or personal. Related research has shown participants to become less physiologically aroused when they are told that mistreatment is not deliberate or personal (Zillmann & Cantor, 1976). These physiological responses could theoretically indicate a variety of factors, but as the frustration-induction paradigm remained constant in both groups, frustration (as defined by Dollar & Doob, 1938) cannot be one.

For some, the above exceptions have appeared to be merely cause for modification to the frustration-aggression theory (Berkowitz, 1989). However, I propose that they signify a fundamental fault with it. If simple goal inhibition were the core cause of aggression, social factors such as beliefs regarding the causes of a frustrating situation and beliefs about the intents of an aggravator should not have any influence on aggression. The influence of these factors seems to suggest that aggression is less an individual phenomenon and more a social one. That is, aggression appears not to be strongly tied to one's inability to complete a goal but rather to perceptions of and by others. In Pastore's (1952) study, Zillman's (1976) study, and Zillman and Cantor's (1978) studies, aggressive responses were dependent not on frustration (as defined by Dollard & Doob, 1939), but rather on beliefs about the intentions and mindsets of others. Younger and Doob's (1978) research may not immediately appear to suggest a social factor of aggression; however, it still calls into question the validity of the frustration-aggression theory and could theoretically be connected to social influences in some currently indiscernible way. Therefore, in response to the above research indicating non-frustrating influences of aggression, I am proposing that the causes of aggression can be better explained with a body

of research regarding the effects of shame and social rejection on aggression.

In his 1996 book *Violence: Our Deadly Epidemic and its Causes*, James Gilligan proposed a theory of aggression that he had developed after working as a psychiatrist of violent criminals in the Massachusetts prison system for 25 years. One of his most prominent ideas was that violence (the realization of aggression) has its roots in shame. He reported that in his experience violent criminals, especially the most contemptuous ones, experienced overwhelming degrees of shame that they emphatically attempted to hide from the public eye. He also noted that their crimes tended to have been triggered by shameful experiences. However, Gilligan clearly noted a distinction between shame, or the belief that oneself is bad, and guilt, or the belief that one has done something bad. Guilt, he claimed, has an inhibitory effect on violent behavior. Gilligan even went so far as to claim that shame is always at the root of violence, no matter the circumstance. A quote from his book Preventing Violence provides a concise summary of his theory:

> Violence, like all behavior and all disease, is multi-determined…each [variable] can be shown to have the effect of increasing or decreasing the frequency and severity of violence, when all the other variables are held constant. However, beneath all that there are certain regularities and unities, one of which is that shame is a necessary (but not sufficient) cause of violence. (Gilligan, 2001, p. 67)

In other words, while many variables are involved in violence (or aggression), shame is always a prerequisite.

Gilligan's claims have been supported by several empirical studies. In a 1992 study at George Mason University, 243 undergraduates were asked to take one of two questionnaires measuring their likelihood to respond to every-day scenarios with guilt, shame, externalization of blame, or detachment-unconcern, as well as one of two questionnaires measuring either likelihood to display anger or anger-related behavior and emotions (Tangney, Wagner, Fletcher, & Gramzow, 1992). All measures of anger and hostility, as well as externalization of blame, were positively correlated with proneness to shame. However, they had the opposite relationship

8

with guilt. In other words, propensity toward believing that one-self is a bad person (shame) and propensity toward blaming others (externalization of blame) were both predictors of aggression, while propensity to believe that one has done something wrong (guilt) was an inhibitor of aggression.

In 2014, Tangney, Stuewig, and Martinez published a study on shame and aggression, using 482 convicts of violent crimes. Participants were measured for shame, guilt, and externalization of blame. The study found that participants who scored high on measures of shame were significantly more likely to commit a subsequent violent crime following release from prison. Conversely, those who scored high on measures of blame were less likely to commit a subsequent crime. These two studies are far from the only ones suggesting a relationship between shame and aggression, or related measures such as anger and blame (see Andrews, Brewin, Rose, & Kirk, 2000; Bennett, Sullivan, & Lewis, 2005; Harper & Arias, 2004; Paulhus, Robins, Trzesniewski, & Tracy, 2005).

Shame, as described by the *Oxford Handbook of Social Exclusion* (DeWall, 2013), is a common response to social exclusion/rejection. Shame, as well as guilt, it says, seem to be "involved in systems that mediate reactions to real, anticipated, and imagined rejection" (p. 15). If this is true, it could explain the links that have been found between social rejection and aggression. For example, Twenge and colleagues found that participants in their study were more likely to choose to blast another participant with a loud noise if they had first been told that nobody had chosen them as a group partner for a previous task (Twenge, Baumeister, Tice, & Stucke, 2001). This study was replicated several times with similar findings, as summarized by Leary (2010).

This relationship was further explained via a study that linked ostracism to anger and subsequent aggression (Chow, Tiedens, & Govan, 2008). Participants were first either excluded or included by confederates in a virtual ball-tossing game. They were then asked to rate their levels of sadness and anger. They then had the option to give another participant desirable or aversive food to eat. Participants who had been excluded were more likely to rate themselves as high in anger and sadness. Those who said they were

angry were likely to choose aversive food. Sadness, however, was not found to be related to the choice of food. This experiment exposed an apparently causal chain linking social exclusion to anger, and anger to aggression.

A wide body of research has suggested links between shame, social exclusion, anger, and aggression. However, neither shame nor social exclusion findings have been reconciled with the frustration-aggression theory. This being said, some research has anecdotally indicated a potential relationship between frustration and shame. For instance, Tomkins (1963) wrote extensively about the causes and effects of shame in childhood. He suggested that frustration caused shame, which in turn caused anger in children. Moreover, he specified that shame can arise in a child when a parent provides a sort of barrier to that child's goals. For example, if a parent prevents a child from exploring a dangerous situation, the child may display shame. This blocking of goals is consistent with Dollard and Doob's definition of frustration.

Possible links between shame and frustration have also been suggested in several studies on frustration in which unwarranted provocation by researchers (which resulted in apparent humiliation, embarrassment or shame), rather than the frustrating scenario, was indicated as a cause for aggression (Tangney, Wagner, Fletcher, & Gramzow, 1992). For example, in Rickers-Ovsviankina's (1976) study on frustration, she noted that her subjects displayed signals of shame in response to frustrating situations. One participant, after being interrupted from a task, grabbed the arm of an experimenter and, "blushing hotly," said "I won't let myself be fooled again." On a similar note, Geen and Berkowitz's (1967) study on frustration-induced aggression suggested the possibility that frustration can serve as a "blow to the ego" and that the resulting aggression may simply be a response to that blow, heightened by the arousal provided by frustration.

Considering all of the above material, I propose the hypothesis that shame mediates the relationship between frustration and aggression. For instance, when one's peers witness one's failure, it may create a perceived threat of social rejection by those peers. As evidence toward this possibility, failure has been indicated as a

frequent cause of shame (McGregor & Elliot, 2005). Alternatively, a seemingly intentional act that inhibits one's ability to achieve a goal may be interpreted as a symbol of social rejection. This would make sense considering aforementioned research on the influence of perceived intentions behind frustrating behavior. Finally, the simple act of failing could create a sense within oneself of being a bad person. This sort of self-appraisal has been theorized to be an internalized version of a social code, serving as a defense against one's own actions that might result in social rejection (DeWall, 2013).

Regardless of its underlying explanation, an integrated theory of frustration and aggression would be the following: frustration can create the threat of social rejection, the threat of social rejection can induce shame, shame can cause anger, and anger can lead to hostile aggression. Therefore, shame would mediate the relationship between frustration and aggression. It is important to note, however, that measuring each of the steps in this model was beyond the scope of this study.

III. METHODS

For the purpose of this study, I proposed that the presence of shame may predict the relationship between frustration and aggression. An ideal design to test such a claim would have been to induce frustration, measure shame, and then measure aggression. However, there has been little work on developing strong measurements of shame in the moment (Tangney & Dearing, 2002). Furthermore, if frustration leads to shame and then aggression, it would likely be difficult to pinpoint the exact moment in which shame is experienced. Therefore, I instead used a quasi-experimental design to determine whether trait measures of shame could predict self-report levels of hostility in response to a frustrating paradigm. I presumed that if there was a shame-inducing aspect of the frustrating paradigm, participants with higher levels of trait shame would experience higher levels of shame during the experiment.

Participants
Participants consisted of 5 males and 14 females between 18 and 24 years of age. They were solicited in classrooms at Warren

Wilson College and told that they would have an opportunity to win a gift card in exchange for their help with the project. Some were offered a small amount of extra credit from their professors for their participation.

Materials

The Test of Self-Conscious Affect-III (TOSCA-III) consists of 16 short scenarios that an adult might experience in daily life (Tangney & Dearing, 2002). Respondents are asked to rate their likelihood to exhibit a series of responses to the various scenarios. It contains subscales that measure shame, guilt, externalization, detachment/unconcern, alpha pride (self-pride), and beta pride (pride in behavior). For the purposes of this study, the TOSCA-III was used primarily to measure tendency to experience shame, which was presumed to indicate a greater likelihood of the experience of shame during the frustration paradigm. Correlations between the other sub-scales and this study's dependent variables were also analyzed. Internal consistency for the past versions of the TOSCA have been .76 for shame, .60 for guilt, .59 for detachment/unconcern, and .57 for externalization of blame, with low consistency for both pride subscales (Luyten, Fontaine, & Corveleyn, 2002).

The Marlowe-Crowne Social Desirability Scale (Reynolds, 1982) is a 13-item questionnaire designed to measure the likelihood of a participant answering future questionnaires in a way that will make her more socially desirable. In this study, it was measured against trait shame and self-report hostility measures, in order to assure that social desirability did not prevent participants from reporting their true feelings or actions. This study used the Short Form C, which is a 13-item version that has strong convergent validity with the original. It has been shown to have consistency and reliability scores between .62 and .76 (Andrews & Meyer, 2003).

To frustrate participants, this study used a rigged version of the Wisconsin Card Sort Task (WCST) adapted from Henna, Zilberman, Gentil, and Gorenstein (2008). Participants were presented one-by-one with 12 sets of 4 cards each, in escalating difficulty, and asked to arrange them in the correct logical order (see Figure 1). They were told that if they arranged more than half of the sets in the correct order, they would win a $10 gift card to amazon.com,

and that if they correctly arranged all of the sets, they would win a $25 one. Sets 1, 2, 4, 5, 6, and 9 were marked correct, regardless of how they were arranged by the participant, and sets 3, 7, 8, 10, 11, and 12 were always marked wrong. The researcher then counted the number of correct responses in front of the participants, so it was clear that there they had gotten exactly half correct and would therefore not receive a gift card.
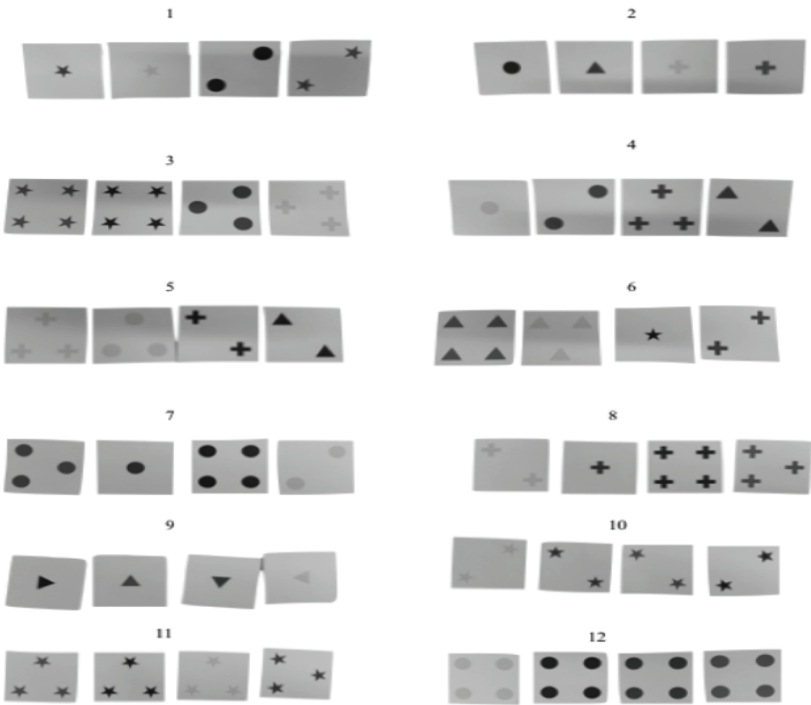
Figure 1. Card Task Sets. This figure depicts all 12 sets of cards that participants were presented.

The State Hostility Scale first appeared in 1995 in an article by Anderson, Deuser, and DeNeve (1995). It consists of 34 self-report items that measure anger and related hostile emotions such as unsociableness and meanness. Examples of questions are "I feel furious" and "I feel offended." It asks respondents to rate each question on a 5-point Likert scale from "strongly disagree" to "strongly agree." Internal reliability usually ranges between .90 and .95 (Anderson et al., 2003). This measure was used as a dependent

variable, in place of a performance measure, the administration of which would be beyond the scope of this study.

The Three-Item Frustration Scale was developed by Peters, O'Connor, and Rudolf (1980) to measure frustration in the workplace. The questionnaire uses a 7-point Likert scale ranging from "strongly disagree" to "strongly agree" in regards to three statements: "trying to get this job done was a very frustrating experience," "being frustrated comes with this job," and "overall, I experienced very little frustration with this job." For the purposes of this study, the word "job" was replaced with "task." This scale was used to measure the success of the frustration-induction paradigm.

Procedure

The experiment took place in a small windowless room at Warren Wilson College that is used as an office space by the college newspaper.

When the participants first entered the room, they were asked to read and sign an informed consent form. Next, they were given the TOSCA-3, followed by the Marlowe-Crowne Social Desirability Scale: Short Form C. They then participated in the WCST frustration-induction paradigm. Immediately after this task, they were presented with the State Hostility Scale, followed by the Three-Item Frustration Scale. The Frustration Scale was presented last in order to prevent suspicion of the purpose behind the frustration paradigm before hostility was measured. Finally, participants were orally debriefed and given a written debriefing form.

Data Analysis

This study used a quasi-experimental design to measure the effect of trait shame on frustration-induced anger. Data underwent correlational analyses using SPSS software. All subscales of the TOSCA-III were measured against social desirability, average time spent on each puzzle, state hostility, and Three-Item Frustration Scale scores. Social desirability was accounted for via Marlowe-Crowne Social Desirability scores.

IV. RESULTS

As anticipated, the TOSCA-III shame subscale positively predicted state hostility scores, $r(17) = .49$, $p < .02$. This correlation did not appear to be influenced by social desirability, which was not significantly correlated with either shame or hostility (social desirability and shame: $r(17) = -.16$, n.s.; social desirability and hostility: $r(17) = -.24$, n.s.). There was also no significant correlation between frustration and hostility, $r(17) = .37$, $p > .1$. The mean shame score was 45.75, N = 19, SD = 8.51, min = 27, max = 61. The mean hostility score was 2.24, SD = .42, min = 1.66, max = 2.97. The mean social desirability was 5.88, SD = 2.83, min = 0, max = 10. The mean frustration was 4.79, SD = 1.21, min = 2.33, max = 6.67.

Consistent with previous research, shame was positively correlated with externalization of blame, $p(17) = .50$, $p < .02$. Also consistent with expectations, externalization of blame was positively correlated with hostility; however, this correlation fell just short of a significant level, $r(17) = .38$, $p > .05$. Contrary to expectations, guilt also showed a positive correlation with hostility, though also at a slightly less than significant level, $r(17) = .37$, $pp > .05$. Mean externalization of blame was 35.63, SD = 7.7, min = 27, max = 52. Mean guilt was 65.94, SD = 7.8, 48, max = 78.

V. DISCUSSION

The high correlation between shame and hostility is consistent with previous research indicating that shame may influence the manifestation of aggressive affect (e.g. Tangney et al., 1992). Given the context of the frustration paradigm, it also suggests that this influence of shame on aggression may account for some or all of the influence that frustration has also been shown to have on anger and hostile aggression. That is, this research suggests that shame may account for at least part of the relationship between frustration and aggression. Shame could merely have an influence on the relationship, or it could be solely responsible for aggressive responses to frustration. If future research confirms these findings, it will call for a reconfiguration of the frustration-aggression theory that includes, or possibly centers around, shame.

The lack of significant correlation between frustration and

hostility may signify a confirmation that variation in the frustration manipulation was not responsible for any correlation between shame and hostility. It may also signify counter-supportive evidence for the theory that frustration causes aggression: shame clearly had a stronger predictive ability than frustration on hostile affect. However, it may also signify a reason to question whether the frustration-induction paradigm in this study was effective. It is conceivable that the effect of trait shame on hostility would have been present even in the absence of frustration manipulation. It is also important to note that the frustration questionnaire used in this study asked participants to rate their own levels of frustration, leaving the definition of that construct up to their own interpretation. This colloquial definition of frustration is likely to differ from Dollard and Doob's (1939) definition, which was simply the experience of being prevented from reaching a goal. It might have been more useful to use a questionnaire that asks participants not whether they were frustrated, but whether they were prevented from achieving a desired goal.

The positive relationship between guilt and hostility is inconsistent with previous research, which has suggested the opposite relationship. However, this may be explained by the lack of a performance measure of aggression in this study. It could be the case that guilt leads to aggressive affect yet prevents the actual manifestation of aggression.

Consistent with this study's findings, externalization of blame has previously been shown to have a strong relationship with shame, as well as aggression (Tangney et al., 1992). This relationship could be included, along with shame, in a model explaining the relationship between frustration and aggression. Such a model could be that frustration leads to shame (possibly because of a threat of social exclusion), which leads to externalization of blame, which leads to anger, which leads to aggression. Because frustration is at the beginning of this theoretical causal chain, it could be eliminated or replaced with another cause of shame, therefore rendering false the theory that frustration is necessary for aggression.

Limitations & Future Research

One limitation of this study was that it measured trait shame rather than actual shame experienced in the moment of frustration. If future researchers could find a way to measure state shame following frustration, this would greatly enhance the validity of the study. However, there does not currently appear to be any valid measures of state shame. Furthermore, the shame involved in frustration may be brief and fleeting, or even subconscious, which would make measuring it in the moment difficult to impossible.

Another limitation of this study was the absence of a control group. Due to the small number of available participants, a control was not included. This study operated on the assumption that the presence of the frustration-induction paradigm resulted in heightened hostility scores. Future studies could include a control to check if this assumption was correct.

Besides having a control group, one way to ensure the presence of frustration would be to induce high frustration levels. One way to achieve higher levels of frustration might be to, in accordance with Pastore's (1952) research, increase participants' perceived lack of legitimacy in regards to the frustrating paradigm. The frustration paradigm might also be enhanced by providing a more desirable goal, such as a higher monetary value.

One final limitation was the possibility of the experience of researcher-induced shame. It is conceivable that participants experienced shame only because the researcher witnessed their failure. If shame can explain all frustration-induced aggression, it should be able to explain it in the absence of a witness. This could be measured by using a computer-based frustration paradigm, as well as a computer-administered hostility scale.

Table 1: Intercorrelations
The relationships between multiple potential factors of aggression.

	1	2	3	4	5	6	7	8	9	10	11
1. Age	1										
2. Social Desirability	.18	1									
3. Shame	.23	-.16	1								
4. Guilt	.22	.12	.32	1							
5. Externalization of Blame	.21	-.46	.50*	.14	1						
6. Detachment	.29	-.52	.21	-.28	.70**	1					
7. Alpha Pride	-.31	-.62**	.06	-.12	.37	.46*	1				
8. Beta Pride	-.41	-.71**	.07	-.39	.23	.34	.752**	1			
9. Average Puzzle Time	.23	-.06	.19	.19	-.06	-.287	-.06	-.08	1		
10. Hostility	.24	-.24	.49*	.37	.38	.01	.303	.32	.29	1	
11. Frustration	.11	.03	.41	.523*	.293	-.1	.08	-.17	.48*	.37	1

$* \ p < .05$
$** \ p < .01$

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Acknowledgments

Untitled by Isabelle Coppinger, 2017. Earthenware 4 x 11 ft.

Helen Huntingdon to Helen Markham: The Development of an Independent Morality in Anne Brönte's *The Tenant of Wildfell Hall*

Abstract: *Helen Huntingdon to Helen Markham: The Development of an Independent Morality in Anne Brönte's The Tenant of Wildfell Hall* explores the moral development of the titular character in one of the least-well-known Brönte works. Helen Huntingdon's journey from a conventionally codependent and endangered participant in an abusive marriage to a fiercely independent and socially questioned recluse is examined through its existence as an intellectual and narrative rebellion against oppressive societal conceptions of marriage and morality as they existed in Victorian society.

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When *The Tenant of Wildfell Hall* was published in 1848, the courtship or marriage plot was beginning to make a significant mark upon English culture (Brown 70). Samuel Richardson's *Pamela,* "the first work, at least in England, to mark the completed transition from the prose tale to the modern novel," had established the wooing and winning of a potential mate as dramatically and personally interesting to the reading public (Steeves 53-54). Fanny Burney and Jane Austen had expanded the implications of the marriage plot further, creating marriage as a means by which conflicts of generation, class, and gender might be reconciled. By the mid-1800s, the conventions of the genre had become cemented enough in the literary consciousness to be actively satirized in Thackeray's *Vanity Fair*, with the ambitious Becky Sharp manipulating her romantic and marital relationships in order to climb the social ladder.

Central to the marriage or domestic plot was a saint-sinner frame of relationship, in which "a woman's virtue alone [overcame] sexual aggression and [transformed] male desire into middle-class love" (Armstrong 6). In these works, worldly men were redeemed and nurtured back to a state of moral wellbeing by the love of a saintly and virginal girl. A veritable "legion of female saviors" dominated the literary landscape, impressing the public with both their attractiveness and their goodness, which were one and the same thing (Langland 118). Writers depicted the home and its mistress as the ultimate safeguards against vice, offering marriage as a kind of sacred vocation for the otherwise unfulfilled woman. The courtship plot, in effect, was "invested with such overwhelming significance that it [seemed] difficult to imagine that such an enterprise [as marriage] could fail" (Hagen 20). Novels began in a meeting and ended in marriage. The focus had not yet shifted to the examination of the lives of the hero and heroine following their marriage. The literary world was primed for an exploration of the domestic life that naturally must follow the union it had taken a book's length to bring about. The reading public was ready for the introduction of the domestic plot to English literature.

This reading world was one unprepared for the stark psychological portrayals of concealed lust, moral ambiguity, and

harsh self-denial exemplified in the work of the Brönte sisters. Publishing under the male pseudonyms of Currer, Ellis, and Acton Bell, they shocked critics and readers of the 1840s with their disturbingly honest portrayals of female agency and repressed feminine desire. However, the uproar caused by the publication of Anne Brönte's *The Tenant of Wildfell Hall* in 1848 outstripped any titillation the public might have felt in response to either Charlotte's *Jane Eyre* or Emily's *Wuthering Heights*. It tells the story of Helen Huntingdon, a young woman who enters into a predictably ill-advised marriage with a charming wastrel. When her husband Arthur proves to be both alcoholic and abusive, threatening the lives of Helen and her young child, she chooses to leave him, taking their son with her, even though, at the time when the novel is set, to undertake either course of action would have been highly illegal. Disguising herself as the Widow Graham, Helen takes up residence in the abandoned ruins of Wildfell Hall, where she attracts the suspicions of her neighbors and the interest of a young farmer, Gilbert Markham. When faced with her own growing attraction to Gilbert, Helen is forced to deal with the emotional and spiritual fall-out from her previous experiences as an abused wife and to attempt to forge a future for herself and her son away from the influence of her disastrous first marriage.

  Much has been made of Helen's decision to flee what had become an abusive and unproductive marriage to create her own independent life as a painter, removing her young son from his father's negative influence. Interestingly, in the examination of a character who remains so fiercely insistent upon her own independence, modern scholars commonly view Helen only in the context of one of her various relational roles: wife, mother, advocate, or member of her community. Christine Colon argues that Helen ultimately defines herself by the changes she enacts in the lives of the people around her, positing that "the loving community [she] is able to create in her own neighborhood" far outweighs the personal felicity Helen creates in her eventual union with Gilbert Markham (28). Kristin LeVeness, similarly, details the transition of Helen from wife to mother and the moral empowerment she finds as a result of this transition (347).

Elizabeth Langland states that Helen's shift in moral obligation moves expressly from her husband to her son, "thereby rejecting her wifely duties for the sake of. . . motherly ones" (351). Or, alternatively, Helen's second marriage to Gilbert exists as a manifestation of the need to "repair and restructure" the "fractured domestic sphere" exemplified by her first disastrous union with Arthur Huntingdon (Diederich 30). The traditional interpretation of the moral progression in *Tenant* that these and other writers establish is that Helen undergoes a transition in loyalty from her first husband to her second, or from Huntingdon to Young Arthur, or from her husband to the community at large. The change that she undergoes as a woman is always tied to her affection for and alliance with a different male figure, remaining inseparable from and dependent upon the feelings and opinions of the people around her.

The critical tradition established above neglects the significance of Helen's personal moral development, beginning before her marriage and continuing through her flight from Grassdale and eventual second marriage to Gilbert. Her responsibilities as a wife and mother do not necessarily define her as an independent woman. Rather, the establishment of her system of ethics precedes her marriage, and she merely refines and changes her beliefs in reaction to the great social pressures that she encounters in her interactions with the people around her. Helen is adamant in preserving a personal moral code in the face of conventional judgment, and she risks the resultant disapproval of and exclusion from society (as represented by her family, friends, and neighbors). Brönte represents the development and eventual reassertion of Helen's ethical autonomy as a deeply rebellious act. For Helen, it is the only way in which she can battle the unfair and abusive repression that the strictures of conventional nineteenth-century society often allowed.

The romance of Helen and Arthur serves as a reassuringly traditional example of the marriage or courtship plot, in which "desire and will mask themselves in the rituals of social life" under the watchful and managerial eye of more experienced chaperones (Brownstein 89). In full conformance with contemporary notions

of ethical imperative in personal choice, the two young people seem to engage, from the beginning, in a negotiation that entwines sexual interest with discussions regarding the structure of moral obligation and responsibility in their future life as a couple. During their courtship, the language of salvation plays as much a part as any other more romantic rhetoric. Huntingdon recognizes and even exploits Helen's reforming instincts, assuring her that her very presence in his life makes him wish to "live like a Christian" and that her "wise counsels" are all that he needs in order to turn to an existence of "prudence and virtue" (163). In this way, their relationship is defined at its very outset by Helen's perceived sense of responsibility for the salvation and maintenance of Huntingdon's ethical wellbeing.

This invocation of the language of salvation could, of course, merely be a safe way to express romantic and even erotic feelings in an age where all expressions of love and desire remained heavily closeted and couched in misleading language. As Langland points out, due to the stringent policing of female sexuality in the nineteenth century, "women's physical desires, because illicit, [were] often encoded in literature as spiritual ones" (118). Arthur even eroticizes, to a certain extent, the nature of Helen's goodness, comparing her to "a sweet, wild rosebud gemmed with dew" in a world of "flaunting peon[ies]" (159). Her very virtue is part of what makes her so extraordinarily attractive to men and, without her will or knowledge, becomes in itself a means of temptation. In this way, personal attraction and moral edification negotiate with each other in the establishment of a marital contract. In the exchange represented by their marriage, it is understood, Huntingdon will receive the right to indulge in his desire for Helen. In return, Helen will gain a greater purpose in her mission to reclaim Huntingdon for God. This reciprocally beneficial construction of romantic relationships was supported by convention in the Victorian era, combining "the idealization of marriage" itself with "the rise of the nineteenth-century ideal of vocation" to create a vision of "marriage as a 'calling'" (Brown 76). The "deep responsibilities" and "urgent claims" to preserve and protect the "nation's moral wealth" leant an ideological weight to any young woman's decision to enter

into marriage (Ellis 17). For Helen, the "personal importance" she can attain as the "spiritual guide and companion" of Huntingdon "amounts to an almost divine power," something she can never hope to attain in single life or (even) in a more equitable marriage (Jacobs 210). Therefore, the spiritually coded language employed during the Huntingdons' courtship acts simultaneously as a romantic enticement and a promise of marital fulfillment, rooting their union in a sense of moral accountability that would have been considered laudable at the time.

This particularly conventional construction of the Huntingdons' early romance is, additionally, in strict accordance with a traditional belief in courtly love, a system of courtship in which "the transfer of an attitude of religious adoration from a divine to a secular object" created a "fantasy invented to gratify the noble lady whose actual social and economic future had already been decided by her marriage," inevitably hiding the dangerous practicalities of marital negotiation in an aura of romance (Watt 136). Helen does express discomfort in regarding such a simplistic paradigm, which features her as the salvation-bestowing "light" and Huntingdon as the infidel "darkness," perhaps because she can sense the potential for disaster in such an unhealthy marital schema (166). Huntingdon sets his intended partner up to be a paragon, in what Elizabeth Berry calls a "reductive language of extremes" that separates women "from a common humanity, effectively isolating and locking [them] into the household angel role as titular wife and housekeeper" (77). By placing his future wife "above all human sympathies," he removes her from the pitfalls of human fallibility but also from the benefits of human connection (193). Meanwhile Helen, while realistically affirming her humanity in the assertion that she does not "deserve to be worshipped," feels the compliment without understanding the threat (227). She willingly enters into a system of intercourse that sanctifies her while simultaneously removing her personhood, effectively disenfranchising her.

The reality that lurks behind all of this courtship language is made apparent after the Huntingdons' marriage, when the continual debate over sin and salvation turns from closeted expressions of romance into a serious play for power in their

relationship. Helen becomes more aware of the implications of the power structure that she has introduced and complied with in her marriage. Seemingly, all the accountability and agency lies with her as the spiritual safeguard of the home. Arthur continues to emphasize Helen's moral responsibility for him throughout their marriage, calling her his "saint" (163) and "angel monitress" (188). He willingly acquiesces for a time in the notion of Helen's perceived moral authority because it means he is removed from any responsibility for his actions, asserting his will only when he is contradicted or challenged by Helen on even the smallest of issues. As Nicole Diederich states, Arthur spends their early marriage repeatedly "declaring [Helen's] influence over him. However, his later horrific treatment of Helen undermines this ideal, showing Helen's lack of power " (27). Indeed, the moral inequity of the Huntingdons' marriage is soon eclipsed entirely by the reassertion of Huntingdon's real and indisputable ability to exercise a kind of tyrannical control over his young wife.

As their marriage truly begins to sour, Huntingdon arbitrarily enforces his power with a growing callousness, removing Helen's access to her household keys, money, friends, and means of creating an independent life (350) even as he admonishes her for playing the "exorbitant tyrant" in her unfailing attempts to make him conscious of his own immorality (223). He questions her devotion to God because he feels that it "lessens her devotion to her earthly lord" (193). When he sees the joy and empowerment that Helen finds in the birth and rearing of their young son, a "pure spark," in her own words, which she intends to make her "life's sweet labor to keep unsullied from the world," he does his best to break even that healthy outlet for Helen's ministering impulses (228). His vision of a wife as "a thing to love one devotedly, and to stay at home—to wait upon her husband, and amuse him and minister to his comfort in every possible way, while he chooses to stay with her; and, when he is absent, to attend to his interests. . .and patiently await his return"—betrays a shallow conception of the marital contract that enslaves his wife to his service without allowing her any interests or pursuits that are untied to his own (233). "He knows he is my sun," Helen frets, "but when he chooses

to withhold his light, he would have my sky be all darkness; he cannot bear that I should have a moon to mitigate the deprivation" (219). Huntingdon attempts to isolate his wife to the point where she has no other resource or authority but himself, endeavoring to achieve a perfect ownership over her body and soul. In the last years of their marriage, he is so confident in his complete ownership that he casually offers her up to "any one" of his friends "that can fancy her," adding his "blessing into the bargain!" (340). Helen finds herself to be completely subjugated in this union that she, at one time, had hoped would lend her so much authority and purpose in her own life.

Helen's initial audacity in believing that she can exert efficacious change over Huntingdon's personal morality places her in a both unsatisfying and endangered situation and forces her to conceive of their fate as inalterably entwined. In her mistaken decision to marry Huntingdon, Helen has implicated herself in his sinful behavior. In her attempts to raise him from his depravity, Helen so identifies with Huntingdon that she begins to conceive of herself as damned as well. "I feel his degradation, his failings, and his transgressions as my own," she admits, "and hence, I must be and am debased, contaminated by the union, both in my own eyes, and in the actual truth" (250). She even confronts Huntingdon with her fears, declaring that he is now "a part of [herself]," and asking of him, "do you think you can injure and degrade yourself and I not feel it?" (245). Helen, of course, operates under the conception of man and wife as "a male and female who were structurally identical, positive and negative versions of the same attributes" who combined to make a single whole in matrimony (Armstrong 19). While this collective conception of their marriage serves Huntingdon as enticement and love-talk, for Helen it represents a very serious and, ultimately, perilous moral obligation. Not only is she inextricably bound to her husband's moral fate, but also, as his counterpart, she carries the main ethical burden in their relationship. Moreover, the "shame" and "wounded pride" that she feels in the knowledge that she has voluntarily attached herself to someone so basically inferior to herself, compromising her own religious destiny in her attempts to salvage his, are the "recurring

excuses that are given" for her refusal to speak of or acknowledge the unbearable nature of her life with her husband (Bullock 140). Helen comes to regret bitterly the almost sacrilegious folly of her former hubris, passionately exclaiming: "Fool that I was to dream that I had strength and purity enough to save myself and him! Such vain presumption would be rightly served, if I should perish with him in the gulf from which I sought to save him!" (251). Helen places herself, through sheer moral overconfidence, in an ethically (and potentially physically) dangerous situation. When she voices, throughout the book, such fears regarding her moral safety in relation to that of her husband's, she believes her own self to be irrevocably implicated in Huntingdon's present and future behavior. For the years of their marriage, this belief both haunts and terrorizes Helen, as it is fundamentally reinforced by the dictates of her society.

The true change in Helen's outlook upon morality and love becomes apparent when she begins to envision her own person as an entity separate from her husband's. Lisa Surridge describes how Helen reacts to the unsatisfactory state of her marriage by "attempting to reclaim the legal status of *femme sole*, or single woman" (92), but neglects to emphasize the painfully gradual process Helen must undergo in order to consider herself as truly independent from her husband. She struggles continually with conflicting desires to follow her own "cherished predilections— [her] almost rooted principles" or to behave solely "in obedience to Arthur's wish" (206). Long before their marriage begins to enter into grave trouble, however, Helen expresses feelings of unease as she is confronted with Huntingdon's insistence that she become wholly dependent upon him and his love. Even in the days of her courtship, at the height of her passion for Huntingdon, Helen voices a certain amount of trepidation because she can "not get [Huntingdon] to write or speak in real, solid earnest," saying, "I don't much mind it now; but if it be always so, what shall I do with the serious part of myself?" (190). Once they are married, she speaks of her union with Huntingdon in terms of barrenness and virgin solitude, saying:

how little real sympathy there exists between us; how many

of my thoughts and feelings are gloomily cloistered within my own mind; how much of my higher and better self is indeed *unmarried* [my italics]—doomed either to harden and sour in the sunless shade of solitude, or to quite degenerate and fall away for lack of nutriment in unwholesome soil! (231)

This sentiment, written in the supposedly happier days of the Huntingdon's union, soon gives way to a sense of dreadful obligation which, in turn, eventually is replaced by a sense of complete disengagement from her husband and his vices.

"Have I," Helen writes, "not laboured long and hard to save him from this very vice? Would I not labor still, to deliver him from it if I could? But could I do so by fawning upon him and caressing him when I know that he scorns me? Is it my fault that I have lost my influence with him. . .? No, never, never, never! He may drink himself dead, but it is NOT my fault!" (309)

This revelation sparks a more urgent need to completely disassociate herself and her son from the influence and physical presence of her husband. From giving implicit credence to the idea that Huntingdon is her complementary "other half" (363), she comes to realize that she and he are "husband and wife only in name" (294). "I am your child's mother," she says to Huntingdon, "and *your* housekeeper—nothing more" (295). Having been presented with the more traditional options available in her given circumstances, she chooses instead to remove herself from the situation entirely: In, first, a spiritual sense and, then, in a physical one.

While Helen views the separation of her moral self from that of her husband as a move towards independence, the people around her presume that it is merely a move from codependence with one individual to codependence with another. Her status as a single woman is not only considered to be suspicious, but it is also believed by most to be fundamentally false. Walter Hargrave, in his attempts to woo Helen away from her marriage with Arthur, makes her painfully aware of what society will think when her decision to leave her husband becomes public knowledge. "You," he says to Helen, "will have no credit for your virtue (if you call it such): even

your best friends will not believe in it; because, it is monstrous, and not to be credited." Furthermore, he argues, "what can you do in the cold, rough world alone? you, a young and inexperienced woman, delicately nurtured" (341). Helen, as a solitary woman, is incomprehensible and uncomfortably difficult to define in her contemporary society. She is encouraged by others to leave the toxic and abusive relationship that exists between her and her husband. The presumption, however, is that she will seek new protection in the love and partnership of another man (even if this partnership is clandestine and illegitimate). Helen finds echoes of this emphasis on her value only as part of a coupled or dependent entity when she later comes into contact with her neighbors in Linden-car as the newly-single Widow Graham. Mrs. Markham, in her first encounter with Helen, voices her skepticism at Helen's professed determination to remain alone. "'Though you are alone now,'" she tells Helen confidently, "'you will not be always so; you have been married, and probably—I might say almost certainly—will be again'" (14). Gilbert, in response to his mother's account of her meeting with the Widow Graham, agrees that Helen's independent status is merely a "romantic" notion that certainly "won't last long" (14). The disbelief and patronizing condescension that Helen meets as an independent woman show an understanding of the material disadvantages that a single woman with little means to support herself might face in the nineteenth century. However, Helen's detractors seem to frame that disadvantage not in terms of worldly means, but in terms of spiritual or emotional need. Hargrave, Mrs. Markham, and even Gilbert seem bent on asserting that Helen, aside from any consideration of income or livelihood, will be miserable without a romantic partner and provider. While Helen's misery is derived from her continuing status as a dependent woman, the voice of conventional morality attempts to assert that she has merely chosen the wrong person upon whom to be dependent.

Having escaped the ordeal of a harmfully dependent and unequal marriage, Helen is tempted by a dependency on society as a whole. As it exists in the chronological outline of Helen's narrative, the move to Linden-car represents a shift from the *micro*

dependence upon another individual to a *macro* dependence upon the rules and judgment of the social world. While both are equally dangerous, Brönte intimates, the latter indelibly informs and encourages the former, creating a practically unbreakable cycle of vulnerability and reliance that ultimately disenfranchises the individual woman. Helen soon comes to realize that "disappearing from the outside world is much more difficult than one might expect" (Colon 24). Rather than simply allowing her to live in the isolation she so obviously prefers, the residents of Linden-car draw her into their community against her will, forging connections for her through gossip and harmful insinuation. Although determined to maintain a chaste and single life, she is romantically attached in the communal discourse multiple times: first, fleetingly, to Gilbert, and then to local landlord Frederick Lawrence, whose identity as Helen's brother is kept hidden from public knowledge. In an attempt to neutralize the threat that they perceive in Helen, the villagers seek to "circumscribe [Helen] within the usual sexual economies" (Langland 114) through insinuation and gossip, attaching her to multiple partners in turn. Helen laments this intrusion upon her solitude, remarking to Frederick at one point that her existence at Wildfell is "all that I could wish, if they could only have left me alone" (100). The presence of societal opinion is so pervasive in Helen's life as the Widow Graham that it becomes almost as oppressive as her marital life had been previously.

In the narrative chronology, Brönte first introduces Helen as a stubborn and backward loner with an indefinite history, who viciously resists the interest of the well-intentioned people of Linden-car. The revelation of her brutal marriage and the depths of despair to which she has been driven reveal the dangers that she perceives and attempts to avoid in her encounters with the pressures of outside opinion. Mrs. Markham's comical assertion that Helen's decision to encourage an aversion to alcohol in the young Arthur will only turn him into the "veriest milksop that ever was sopped" is merely a voicing of what, at the time, was a popular opinion (28). For Helen, however, it must bear echoes of the older Huntingdon's tendency to give alcohol to the boy, and to "encourage . . .all the embryo vices a little child can show, and

to instruct in all the evil habits he could acquire—in a word, to 'make a man of him'" (335). The villagers of Linden-car attempt to negate the beneficial aspects of Helen's role as mother, much as her husband had attempted to do, in an effort to limit still further any claim to authority or power that Helen might have obtained.

So marked is the distasteful presence of communal thought in Helen's life that what romance she can embark upon is distinguished by a marked and seemingly necessary retreat from civilized society. As Gilbert begins to notice and become attracted to Helen, he increasingly feels the persecution she experiences at the hands of his friends and family and sympathizes with her desire to be removed from the hurtful presence of outside judgment. The courtship between Gilbert and Helen (if it can be termed a courtship, for it is conducted largely under strictly expressed terms of platonic friendship) takes place in the outdoors for the most part, away from the questionable influence of other people. Their ability to relate and sympathize with each other becomes adversely affected by the presence of society, and they learn to avoid its scrutiny whilst conducting their acquaintanceship and eventual romance. When the two meet indoors, in the company of others, their differences come out, and they see each other in their most artificial and inauthentic forms. Helen presumes that Gilbert is merely "an impudent puppy" (15) while Gilbert characterizes her as "too hard, too sharp, too bitter for [his] taste" (39). Within the strictures of society, Gilbert is too easily swayed and Helen too permanently on the defense for any connection to be formed. In the natural world, however, they are free to discover each other's authentic selves. When they meet for the first time on the grounds of Wildfell, after Gilbert has saved young Arthur from falling from a tree, Helen betrays a capacity for human warmth and emotion not before seen, "a faint blush mantling on her cheek" and a "half-embarrassed laugh" disrupting the "beclouded spirit" that Gilbert had before observed (22). In nature they are able to exist and relate to each other simply as they are, and find common connections that are threatened rather than preserved by the venues provided in civilized society. Even when he has fallen deeply into love with Helen, Gilbert seems cognizant of the restrictions that the

trappings of social convention hold over their relationship. At one point, seeking an interview with Helen, he meditates upon the best possible way in which to encounter her: "Perhaps," he, recounts, "I might see her in the field or garden and then there would be no great difficulty: it was the formal knocking on the door, with the prospect of being gravely ushered in. . .to the presence of a surprised, uncordial mistress, that so greatly disturbed me" (84). Gilbert understands the constraints that envelope them both when they confront the conventional iteration of each other's personalities, and so remains open to a courtship conducted away from the judgmental eyes of society.

Gilbert resents Helen's presumption that he is a willing participant in the frivolity of the villagers and also recognizes her bravery for choosing to shun the influence of public opinion. On a picnic organized by the villagers, Helen leaves the group and, in a heavily symbolic action, proceeds "along the steep, stony hill, to a loftier, more precipitous eminence at some distance, whence a still finer prospect was to be had," ignoring the warnings of "some of the ladies," who "told her it was a frightful place, and advised her not to attempt it" (62). When Gilbert follows her, she half-scornfully wonders why he doesn't "go and amuse [himself] with [his] friends." Gilbert rejoins, "Because I am tired of them, like you" (63). Through Helen's eyes, he becomes aware of the "playful nonsense" (63) with which the Millwards, Wilsons, and even Markhams of Linden-car seem to sustain their intellectual and spiritual discourse, and becomes disgusted with the tyrannical pettiness with which they seem content to judge their own lives and the lives of the people around them.

This growing disgust with the empty rituals designated by village life reveals in Gilbert a delight in nature and the natural world that matches Helen's, demonstrating a deeper level of understanding between what would otherwise seem to be two irreconcilable personalities. Earlier on this same day of the picnic, in a spot overlooking the sea, Gilbert describes the landscape with language that evokes and echoes some of Helen's own ecstatic depictions of natural settings:

. . .the blue sea burst upon our sight!—deep violet blue—not

> deadly calm, but covered with glinting breakers— diminutive
> white specks twinkling on its bosom, and
> scarcely to be distinguished by the keen-white wings glittering
> in the sunshine. (61)

The attraction inherent in such a like enjoyment of the beauty of
nature becomes clear when Gilbert's description of the landscape
then switches and becomes enveloped in an assurance that Helen
Graham, standing next to him, feels the same "exhilarating
influence" upon viewing "this glorious scene" (61). Gilbert's
appreciations for the beauty of the landscape and for Helen engage
in a curious kind of interplay, as he observes the way in which the
"cool, reviving breeze. . .waved her drooping ringlets and imparted
a livelier colour to her usually too pallid lip and cheek." Finally,
Helen looks upon Gilbert, allowing him to observe in her "an
aspect of subdued exhilaration. . .kindled into almost a smile of
exalted, glad intelligence as her eye met mine" (61). The kindred
desire for a haven away from the corruption of civilization and its
dangers both petty and grandiose joins these two would-be lovers,
creating a point of contact and sympathy that overrides any pre-
existing prejudices they might have held regarding one another.

Under these new circumstances, Helen's attitude towards
marriage and companionship begins to undergo a marked change.
She sees in Gilbert qualities and beliefs that reflect and equal her
own, creating the possibility of a kind of relationship that she has
hitherto been unacquainted with and establishing a new context
with which a marriage would seem to be at once acceptable and
eminently desirable. Gilbert himself notes the easy respect in
companionship that the two are able to achieve in each other's
company: "Where her opinion and sentiments tallied with mine,"
he writes, "it was her extreme good sense, her exquisite taste and
feeling that delighted me; where they differed, it was still. . .her
earnestness and keenness that piqued my fancy" (60). Russell
Poole describes how the previous traditional construction of
relationships, "stressing Helen's teacherly role and minimizing
her complicity in corruption," is challenged in the relationship
between Gilbert and Helen, in which they display "both restraint
and spirit, teachability and unteachability, reform and regression,

in a continuing dynamic" (863-865). Instead of creating a romance in which Helen as the improving female can act upon Gilbert as the recalcitrant male, the two forge a dynamic in which they do change, but of their own volition. Helen feels no need to attempt to convert or persuade Gilbert into another way of thinking, engaging with him on matters of morality and propriety with the understanding that they are meeting on an equal intellectual footing. This new reciprocal understanding compels Helen to reconsider her single existence. At one point, she confides in Gilbert that she has "often wished in vain for another's judgment to appeal to," admitting that her thoughts have often been "so long occupied with the contemplation of a single object, as to become almost incapable of forming a proper idea respecting it." "That," Gilbert responds, "is only one of the many evils to which a solitary life exposes us" (64). This quick interchange reveals an uncertainty that Helen has never had the luxury of admitting before. She, as much as anyone else, feels the limitations of a single perspective. With Gilbert, she is capable of owning her own shortcomings and expressing the desire, however tentative, for support and advice in the choices that she seems to make with so little hesitation. In the growing connection between Helen and Gilbert, Brönte creates the possibility of a relationship without dependency, where neither partner is wholly dominant or subservient. They encounter each other away from societal notions of responsible and dependent parties. Instead, their relationship begins on an understanding of equality that proves to be essential to its development.

Helen's decision to return to Grassdale when she hears that her husband has been fatally injured establishes a final confrontation between the two possible constructions, one healthy and one unhealthy, of the balance between independent will and emotional dependency that Brönte attempts to strike in her portrayal of marriage. Helen's "own sense of duty" is all that compels her to return to Huntingdon's side (406). Even though she has, seemingly, cut all ties with her old existence as a wife, she feels a continuing sense of loyalty to the "rash vow" that she made as a young girl, when she promised to honor and obey her husband (86). Even if she feels no remaining love or faith for

Huntingdon himself, she feels that she owes a payment of duty to her own decisions. In this choice, Helen makes an important distinction between the abandonment of an unworthy partner and the abandonment of the institution of marriage. She has been disappointed and threatened by her partnership with Huntingdon, and yet upholds her previous conception of marriage as, not only a "biological, social, and economic imperative," but also as an "act by which an individual makes a definitive moral choice" (Brownstein 89). When she married, she married under certain terms and, although she no longer agrees with those terms and finds them unbearable, she feels the need to honor them nonetheless. She returns to Grassdale, takes on her former duties as its mistress, and sets to fulfill her role as Huntingdon's wife: attempting either to nurse him back to health or, at the very least, to endeavor to make his death a repentant and holy one, completely reassuming what society perceives to be her vocation as housekeeper and wife.

Helen undertakes her old duties, however, under the understanding of a new moral and legal empowerment that ensures her safety. She insists, for instance, that Huntingdon sign a document before witnesses leaving young Arthur entirely in her "care and protection" and giving her permission to "take [her son] away wherever and whenever" she deems it to be necessary (410). In the signing of this document, Helen corrects the mistakes inherent in the dynamics of her union with Huntingdon, augmenting her emotional and spiritual duties as a wife with a promise of legal autonomy that did not exist in the former version of her marriage. The structure of power in their marriage has been further reversed in Arthur's complete helplessness as an invalid, which places him in a position where he is forced to experience "what it is to fear a supposed caregiver" (97). The only reason that Helen is able to return to her place as Huntingdon's wife at all is because she now feels a sense of security that had, previously, been nonexistent. Empowered both in the sense of her moral integrity and in the sense of her practical safety, Helen is finally able to fulfill her duties as a wife.

This practical approach to her return translates even to the completion of her established duty as "savior" to her husband.

The determination with which she vainly struggles to "benefit" her dying husband's soul bears with it the grim realization that she cannot complete what she feels to be her obligation in this marriage without the compliance of the man she is attempting to help (413). "I have sacrificed my feelings," she says to Huntingdon, "and all the little earthly comfort that was left me. . .as well to better your mind as to alleviate your present sufferings; but it appears I will do neither—your own bad spirit will not let me" (413). In this final encounter of their relationship, Helen makes one last attempt to save her husband, only to be definitively faced with the limitations of her power to help the dying Huntingdon. She can no longer hope, either by efforts of love or coercion, to save her husband if he himself remains content to be unsaved. In some ways, she understands that she has undertaken what may be an empty mission, but it fulfills her duties as a wife as she originally conceived them. Although no longer that younger self, she remains faithful to the promises made when she was young.

Recognizing Helen's determination, Huntingdon attempts to manipulate Helen back into a romantic relationship, relying upon the former language of dependence and moral protection that once won her as his wife. He insists repeatedly that she "*must* save [him]" (425) and clings to her with an "unrelenting pertinacity—with a kind of childish desperation, as if [she] could save him from the thing he dreads": That is to say, his own eternal damnation (429). In spite of this expressed desire for salvation, Huntingdon remains doubtful of his own ability to commune with or be reconciled to God, saying, "I can't repent; I only fear" (429). His moral helplessness distances him from Helen even as he attempts to employ it as a means to draw them closer together. When, at the moment of his death, he exhorts Helen to "pray for [him]," Helen replies, "I do pray for you—every hour and every minute. . .but you must pray for yourself" (431). At this pivotal moment, Helen both acknowledges her former sense of obligation in marriage and establishes her moral boundaries in a combination of compassion and firmness that both fulfills her promise and maintains her sense of liberty. While Huntingdon endeavors to re-establish the old conception of their union and seems only comfortable within the

boundaries of that out-dated understanding, Helen actively changes and redefines her previously toxic relationship to her husband, effectively repairing it and creating a balance between personal interest and extrinsic empathy that simultaneously fits within and subverts the expectations of society.

While Huntingdon's death provides Helen with the opportunity to completely shake off the more conventional notions of marriage to which she had previously adhered, Gilbert's behavior provides an alternative example of male behavior to Huntingdon's. Having wrongly entreated Helen to capitulate to his desires, he distinguishes himself by actually realizing the gravity of what he has done. Gilbert remains henceforth determined to maintain their relationship as that of "kindred spirits. . .mingl[ing] in communion whatever be the fate or circumstances of their earthly tenements" (387). This self-denying separate-yet-together ideal of Gilbert's offers a much more appealing alternative to the codependent drudgery of Helen's first marriage. The mere fact that Gilbert acknowledges and pays respect to Helen's spiritual and personal independence paves the way for a more serious and mutually beneficial relationship. Even though it pains him to remain apart from Helen in any sense, Gilbert denies himself in order to preserve any future chance that they might have as a couple.

This sense of social decorum, however, comes shadowed also by the recollection of "that man who had been the scourge of her life, and had dragged her with him nearly to the portals of the grave" (434). Gilbert cannot but be conscious of the despair and disillusionment that Helen has experienced as a married woman. Aside from the strong influence of social hierarchy that must now play a part in the way in which he regards her, her past existence as Arthur Huntingdon's wife lays a distinct pall over her future as the wife of anyone else. Indeed, Gilbert is conscious of the fact that his "quest to marry Helen [is] more competitive in that he must not only win her heart, but also do battle with the loss of legal authority and ownership that" she has only recently regained (Diederich 30). Having endured the worst of marriages, Helen has supposedly now gained all of the power and agency that she had been promised as a wife, without any of the moral responsibility.

Gilbert reacts to both the consciousness of his newly inferior social status and the freedom that Helen might be enjoying as a legitimately single woman by taking on the passive (one might even say, traditionally female) role in their courtship. He decides not to contact her, but to "wait, and see if she would notice [him]" (435). His respectful restraint is such that he finds himself to be incapable of expressing "the same [romantic] regard" that he continues to hold for Helen (465). His hesitation places Helen into the position of agency in their relationship. Rather than simply reacting to the aggressions of another's affections, she chooses her second husband, proposing to him in a direct opposition to traditional gender roles. In her active choice to marry Gilbert, Helen reaches a state of recognition regarding her past experiences as a wife, not erasing the traumas of the past but using them to inform her future decisions.

Having established the safety of her relationship with Gilbert and ensured her continued independence, Helen is now capable of facing and interacting with the rest of the world in a real and authentic way. The freedom that she finds is, paradoxically, ensured in her remarriage to another man. The result, as Gilbert proudly states in the conclusion of his narrative to his friend and brother-in-law Halford, is a happy and prosperous home in which he and his "Helen have lived and loved together,. . .blessed. . .in each other's society and in the promising young scions that are growing up around" them (471). The final few lines of the book, indeed, are an expression of outreach and community, with Gilbert mentioning to Halford that they are just now expecting "the advent of you and [Gilbert's sister] Rose, for the time of your annual visit draws nigh, when you must leave your dusty, smoky, noisy, toiling, striving city for a season of invigorating relaxation and social retirement with us" (471). Now that Helen and Gilbert have defused the harmful influences of community, they can work to re-establish its presence in their lives. Helen has finally found an ally in her independence, one who is quite content and willing to allow her to do "what [she] will with [her] own" (469). In her marriage, she feels secure in facing the corrupting influences of the world in all their entirety and magnitude. In the very nature of their courtship and marriage,

Gilbert and Helen achieve a system of marriage that allows both for harmony in togetherness and independence in the maintenance of separate identities. Gilbert and Helen Markham, therefore, become a perfect example of wedded singleness (at least in Gilbert's own estimation) and resolve or reject all of the pitfalls, both moral and practical, of conventional marriage. Helen, settled again in marriage, finds herself to be free.

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Acknowledgments

I would dearly like to thank my readers, Margee Husemann and Carol Howard, for scrupulously lending their eyes, ears and knowledge in their examination of this thesis, taking what they read and repaying me tenfold in their advice as to direction and further study for the paper (which fed into its current iteration in this journal). I also owe a distinct debt to the staff and resources of the Warren Wilson Library for so generously lending me, not only the original source material, but a fount of secondary articles and books that informed and guided my thoughts in the composition of my work. First and foremost, however, in my thanks must be my reader and advisor David Bradshaw, who witnessed this paper's inception in the far-flung speculations of an eager 19-year old student, leant countless books and hours of advice to the development of those speculations into a concrete idea, read (and graciously edited) every imperfect draft and, throughout, encouraged and drove me to the creation of something resembling a readable scholarly work with a nurturing patience that seemed to have no bounds. I could never hope to repay such kindness.
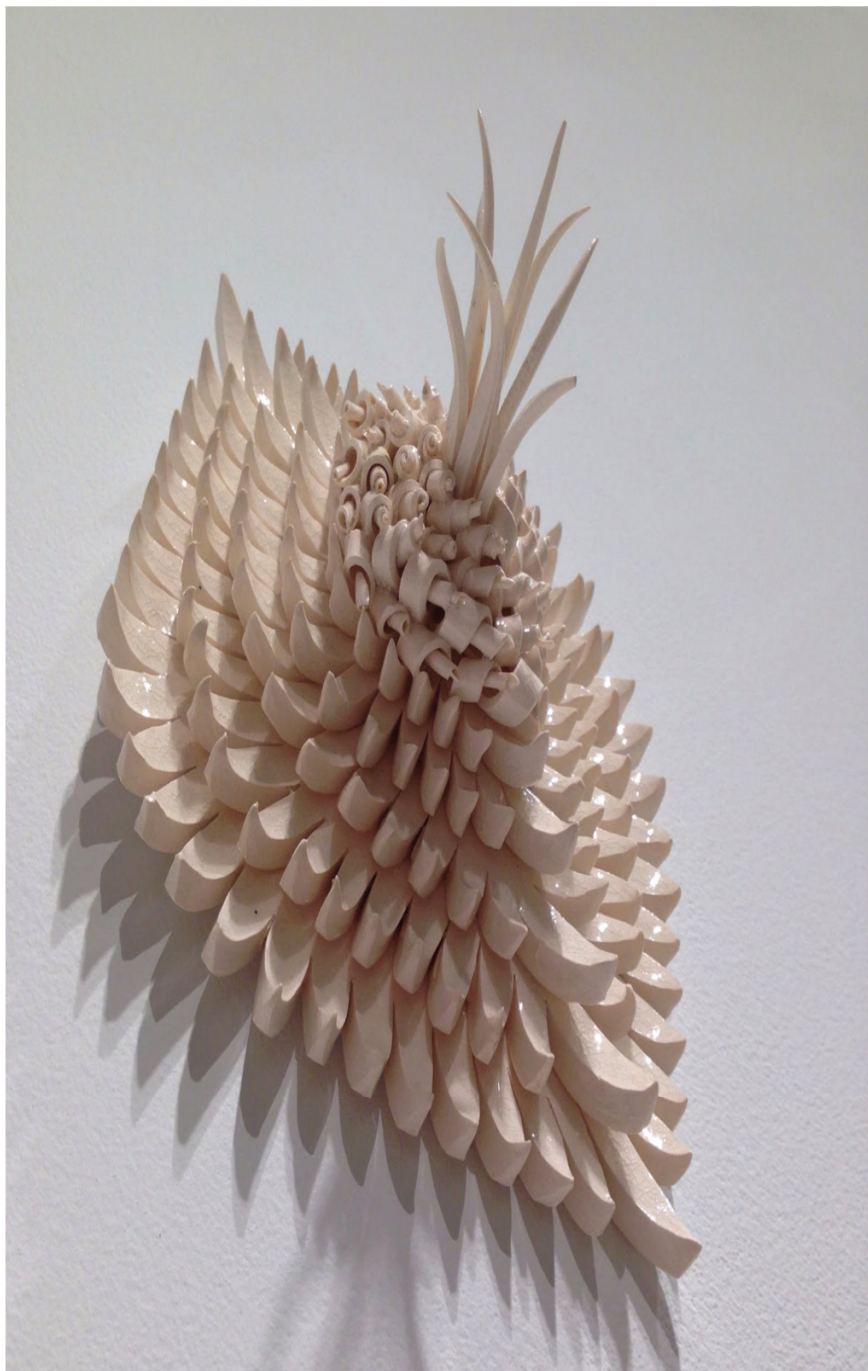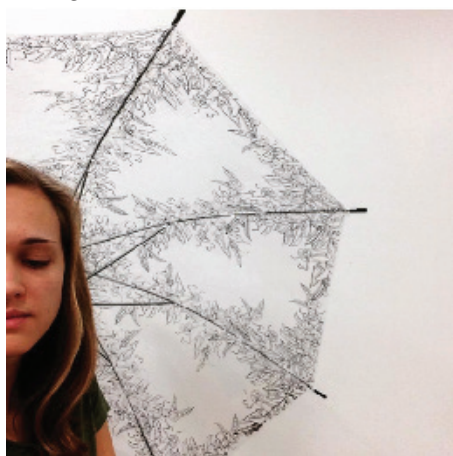
Untitled (wall hanging) by Isabelle Coppinger, 2016. Porcelain and clear crackle glaze 8 x 4 in.

Working with Mica and Micaceous Clay

Abstract: Mica and micaceous clay have been used by Native American potters in the southeastern United States since 200 A.D. Mica has always been used for its insulative effect. Increasingly, potters have experimented with visual elements of mica and with its sculptural possibilities. In this research, I studied the history, production, chemical makeup, firing practices, temperatures, and physical abilities of mica and micaceous clay when used in the context of ceramics. I compared and contrasted the different visual effects between earthenware and stoneware clays, thrown and handbuilt vessels, application methods (e.g., mica wedged into clay, micaceous slip), and firing practices (salt, electric, gas kilns). This research is important because it pushes the physical limits of mica and micaceous clay in order to understand what mica can do visually and artistically.

Isabelle Coppinger | Art
Isabelle Coppinger will graduate in May 2017 from Warren Wilson College with a BA in Art, concentrating in Ceramics and Sculpture. As a student she has worked on the 3D Ceramics Crew for two years learning to run and upkeep a ceramics studio. Her work on the crew consists of firing kilns, mixing glazes, recycling clay, and making functional pottery, among other things. Working on the crew inspired her interests in clay and different types of ceramic process, which led to her undergraduate research on mica and micaceous clay.

I. Introduction
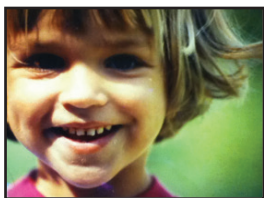
When I was a little girl, living in the woods of Massachusetts, I used to play make-believe with my friends on the playground at school. We would all give ourselves made-up names and then run as fast as we could to a giant rock in the middle of the woods. We would slide our small bodies underneath this massive rock, and with our fingers we would pick away at the belly of the rock. We were mining for mica. The layered mica was wedged in so tightly that we would spend hours excavating this shiny, enchanting material from the stone. Once we had gathered enough large flakes of mica, we would then take it and use it as currency in our make-believe world. We would hide it, steal it, and trade it. Mica was what made our small world in the woods go round.

Many years later, at Warren Wilson College in Asheville, North Carolina, mica suddenly reappeared in my life. It reappeared in the dirt, in the river, and in the earth all around me. I was inspired by this glittering material once more. This led to the creation of this project.[1]

A Brief History of Micaceous Pottery

Micaceous pottery is a type of art that has deep roots in Native American communities of the southwestern United States.[2]

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[1]Editor's Note: Most capstone theses at Warren Wilson are students' culminating works. In the Fine Arts, however, students conduct undergraduate research prior to completing original artistic work as their capstone projects. Isa's thesis is an undergraduate research project from the Art Department that preceded her senior capstone work in ceramics. Given its different role in the major, the requirements of the undergraduate research project in Art differ from capstone projects in other fields at Warren Wilson. Auspex is delighted to publish a research project from Art for the first time, and to invite readers to enjoy a piece that uses research to inform creative expression.

[2]As described in Anderson, Duane, *All That Glitters: The Emergence of Native American Micaceous Art Pottery in Northern New Mexico* (Santa Fe, NM: School of American Research, 1999); Trimble, Stephen, *Talking with the Clay: The Art of Pueblo Pottery in the 21st Century*, (Santa Fe, NM: School for Advanced Research, 2007); Hayes, Allan and John Blom *Southwestern Pottery*: *Anasazi to Zuni* (Flagstaff AZ: Northland Pub, 1996).

When working with mica and micaceous clay, I researched the ways in which the southwestern people of the U.S. worked with these materials to understand the basic techniques and principles of micaceous clay. Since these people have been making micaceous pottery for hundreds of years, they gave me a great place to start when doing my research.

In the southwest region of the United States, there is an abundance of micaceous potters. This concentration of such a specific and unique art form is due to the abundance of micaceous clay that is naturally occurring in the soil of the southwest.[3] Many potters use this resource to their advantage, creating stunning works of micaceous pottery that are widely known throughout this region.

Native Americans have been using micaceous clay to make pottery since 200 AD. This art form that started so long ago still exists today due to the pottery's durability and practical, everyday use. The mica in the clay acts as an insulator, which makes the contents of a micaceous pot, like food or drink, stay hot or cold for longer.[4]

Many towns and groups of Native Americans of the southwest, including the Jicarilla Apache, San Juan, San Filipe, Pojoaque, Nambe, and Laguna, are connected to the art of micaceous pottery.[5] These groups of Native American people make similar but unique styles of micaceous pottery. Most of the diverse works of these people are usable and functional. Micaceous pottery started out as a functional form of art, and mostly it still is today, although many artists have begun to add more sculptural and decorative elements to the basic utilitarian shapes.

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[3]Trimble.

[4]A test was done with a cup made out of micaceous clay vs. a non-micaceous clay cup. The micaceous clay cup took longer to heat up when hot water was poured in and took longer to cool down than the non-micaceous clay cup. This experiment was done just by touching both cups periodically to observe their temperatures.

[5]Hayes and Blom.

Until recently, micaceous pottery in places in the southwest like Taos and Picuris, New Mexico, have been made for utility and not for art.[6] The pottery is safe for everyday cooking and can be used on a stove top or open fire.[7] In these southwest regions of the U.S., it is tradition to fire micaceous clay at a low temperature in a pit firing or open fire.[8] The pots can be fired to a sparkling black or golden color depending on how much oxygen is present when firing the pottery. An oxygen rich atmosphere creates a golden pot, while a smothered and oxygen deprived fire creates a black pot. Different potters use different types of wood to fire their pots. Some take their work out of the firing immediately, and others let the fire cool completely. Some potters cover their work to seal it and make it water proof with oil or sap, while others don't. Some decorate on top of the glittering surface of their pots, and others keep them simple and plain. Overall, there is a wide range and variety of ways to make this unique type of pottery.

The Chemical Makeup of Mica and Micaceous Clay

Mica has a distinct two-dimensional elastic sheet or layer-like structure. This natural material is found in all three major rock varieties, which include igneous, sedimentary, and metamorphic.[9] There are many types of mica. Of the twenty eight known species, muscovite mica is the most commonly known, being light in color and very abundant. Muscovite ranges from colorless, greenish to blue-green to emerald-green, pinkish, and brownish to tan. Much of the muscovite in igneous rocks is thought to have been formed during or after the cooling and consolidation of magma. Muscovite

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[6]Trimble.

[7]I made a micaceous clay frying pan and fried an egg on the stove with it. Everything went smoothly until I put the hot pan under cold water and it broke!

[8]A pit fire is essentially a hole in the earth that one fires pots in. Wood is typically used as fuel source, but other materials can also be added for different effects.

[9]The three main rock types: Igneous rock is formed through the cooling and solidification of magma or lava. Sedimentary rock is the deposition and solidification of sediment. Metamorphic rock is rock that was once one form of rock but has changed to another.

mica is relatively resistant to weathering, and therefore occurs in many soils over muscovite-bearing rocks as well as sediments and sedimentary rocks derived from them.[10]

Muscovite mica is used in many different ways due to the fact that it is a natural insulator, meaning that it does not readily conduct heat or electricity. Muscovite mica is valued in commercial industries because it can withstand high heat and high voltage, and can create a safe pathway for electricity to travel. This mica is used in electronic insulators, in paints, plastics, roofing, welding rods, cosmetics, lubricants, and much more. Micaceous clay is made up of clay that contains this muscovite mica mineral due to its insulative properties as well as its aesthetic beauty.

II. Experimenting with Mica: My Research Process

My undergraduate research project's purpose is to extensively experiment with micaceous clay,to study the history, production, chemical makeup, firing practices, temperatures, and physical abilities of mica and micaceous clay when used in the context of ceramics. The purpose of this research, on top of understanding the many ways mica and micaceous clay can be used, is to compile the organized data and results I gather in visual and written form for others to learn from. This research is important because it pushes the physical limits of mica and micaceous clay in order to understand what mica can do visually and artistically. There is no clear documentation of how variations in processes, such as firing and glazing techniques, affect mica and micaceous clay. This research strives to fill the gaps in this ancient art form of micaceous clay.

In my work, I strive to find a balance between functional and sculptural. The southwestern Native American culture that surrounds micaceous clay started in functional work, and has recently moved to more sculptural forms. In my research on micaceous clay, I wanted to find a balance between the two and

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[10]"Mica," *Encyclopædia Britannica Online* (2015), accessed Dec. 7, 2015, http://www.britannica.com/science/mica.

make work that is both functional and sculptural.

In my research, I work with both earthenware clay, a low fire clay that I fire to cone 04, and stoneware clay, which is a high fire clay I fire to around cone 10. Traditionally, low fire clay is used when working with mica in the clay body, but in my research I wanted to include high fired mica and micaceous clay, as no documented work has been done on this type of pottery.

To start, I knew that a typical melting point of muscovite mica is anywhere from 2,100 to 2,300 degrees Fahrenheit depending on the chemical makeup of the mica.[11] Therefore, this type of pottery is typically fired at a low temperature as the chemical makeup of mica cannot withstand higher temperatures. Low fire clay is used as the clay reaches its maturity[12] at a lower temperature, working alongside the low temperature the mica can be fired to.

Mica naturally occurs in layers or sheets that make up this semi-lightweight mineral. These layers can be separated from one another into rigid and relatively translucent sheets. Mica can also be cut to create different pliable and precise shapes, be ground up into small flakes, or powdered. When working with this material, I wanted to apply the mica to a clay body in several different ways.

I started by making test tiles that were small thrown bowls about 1.5 inches tall by 2 inches wide. I made the same consistent shape and thickness for all of the bowls to make sure I had a constant form to use throughout my research.

I started out with the traditional technique of making work with mica powder in the clay. Since I did not have naturally occurring micaceous clay, as found so abundantly in the earth of the southwestern United States, I made my own. Felipe Ortega is a Native American and a well known micaceous potter based in Taos, New Mexico who gives an in-depth description of micaceous pottery and his unique techniques when working with micaceous

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[11]Ibid.
[12]Clay maturity is the point in a firing when the clay has reached its maximum non-porosity and hardness.

clay.[13] I researched and followed many of his practices when working with micaceous clay. He also gives great insight into the Native American traditions that he uses to make and fire micaceous pottery.

I first wedged powdered muscovite mica that I had bought into my clay body. I did this by taking clay that had a bit more water in it than usual so that the mica powder would stick, and wedging the powdered mica in while adding water as I went. I found that the powdered mica dried out the clay, and so I added more water to get the right consistency for throwing or sculpting. I started throwing the test tiles using this clay, and found that throwing with micaceous clay hurts the hands! But to keep the consistent shape of the test tiles, I needed to throw with the micaceous clay on the wheel. I ended up using plastic gloves in order to protect my hands from the rough micaceous clay, and to maintain the uniform shape I needed.

I wedged the powder into the clay until there were enough flecks of mica evenly dispersed throughout the clay so that it looked aesthetically pleasing to me. For me, I settled on about five parts clay to one part mica. This ratio allowed me to get the physical look I wanted without the clay crumbling. If I added more micaceous powder, the clay was not able to hold onto the mica, and the clay fell apart. This five to one ratio seemed to respect the amount of mica the clay could hold, along with giving the work the shiny surface I wanted. If one were to add more mica, say a four to one ratio of clay to mica, the malleability of the clay would change and be more likely to crumble. One can also achieve a less intense shine to the outside of a work by simply using less mica.

When wedging the mica powder into the clay, I was aware that the more mica added, the more insulating the piece of pottery would be, due to the extensive research that has been done on the insulating properties of mica. However, in my research I did not look into the subtleties between how much mica is added to a clay body and how insulative the work is. This area of research must be

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[13]"Micaceous Clay Pottery," *Felipe Ortega: Micaceous Pottery*, http://felipeortega.com/micaceouspottery.html

saved for another time.

As well as wedging the mica powder into the clay, I used another traditional technique by making a micaceous slip and applying the slip to the outside of a work. I made the slip by grinding up the mica powder I had to make it finer and then, using an electric mixer, I blended the fine mica powder with water and clay. I then applied this slip with a brush to the outside of a non-micaceous clay body. After the slip had dried a bit, I went back and smoothed (or burnished) the surface so that the small mica powder flakes lay flat against the surface of the pot. This made the work smooth, with more of a shiny look; it helped the mica stick to the pot and be less likely to come off with use. This slip technique is used for appearance only, as the work produces more of a glittery image due to the closer particles of mica that the qualities of the watery slip allow.

After applying the mica powder to the clay, I took a wet clay form and dipped it in mica powder to coat the outside of the work with a dense amount of mica flecks. Then I burnished the surface of the work so that the flecks of mica lay flat against the surface of the piece.

I also experimented with large flakes of mica, splitting the layered mineral in thin sheets. I used these sheets of mica in different ways, laying them flat against a clay body, firing them separately, and cutting them into shapes and putting them into the sides of the clay work.

When experimenting with these different techniques, I used both the high fire and low fire clay bodies for each technique I used. If I wedged mica into stoneware, I would wedge it into earthenware in the same way, making test tiles of each.

Firing the Micaceous Clay: Kilns, Temperatures, and Results

The tests made with earthenware clay went into a bisque at cone 05, (~1,888 degrees Fahrenheit) and the tests made with

stoneware were fired to cone 06 (~1,828 degrees Fahrenheit).[14] In both of these firings, the mica changed color, turning from a translucent and clear rigid form to a more flaky, more easily broken, opaque silver and gold color. The slight difference in temperature between the earthenware and stoneware did not seem to change the results.

After this bisque, one test tile from each type of micaceous technique was glazed. For the high fire tests, *Leah Celadon*, a high fire glaze, was used. This glaze was readily available to me and it is a clear glaze, so one can see the clay body under it. This clear glaze would let the micaceous clay underneath it show through, as opposed to an opaque glaze where no results could be drawn. For the low fire tests, a clear low fire glaze was used to create the same effect.[15]

Tests that were made with the stoneware clay were put in the salt kiln and gas kiln (high fire reduction) and fired to cone 10, which is approximately 1,305 degrees Celsius or 2,381 degrees Fahrenheit. Because there can be variations in the amount of salt that hits the work from bottom to top, two of every test tile were made, one placed at the top of the kiln and the other at the bottom. The melting point of muscovite mica, as mentioned before, is anywhere from 1,250 to 1,300 degrees celsius; therefore, the mica melted in these firings.

The test bowls were put in the reduction kiln as well as the salt kiln, with glaze as well as no glaze, and came out looking speckled, as the powdered mica darkened in color and looked almost burnt, a mix of light and dark brown. When the mica melted, it lost its shiny appearance and became more dull as the high temperature in both kilns changed the mica's physical makeup.[16]

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[14]To compare temperatures to cones, see "Kiln Firing Chart," *Ceramic Arts Daily* (Ceramic Publication Company, 2010), accessed Mar. 27, 2017, http://ceramicartsdaily.org/wp-content/uploads/2015/10/kilnfiringchartCAD.pdf.

[15]See earthenware test tiles (Figure 1).

[16]See stoneware test tiles (Figures 2 & 3).

III. Results

Comparing results from the salt and reduction kiln, the only difference between the test tiles that had no glaze on them was that the salt kiln gave the mica and the surface of the test tiles a slight shine to them, due to the salt that was added to the kiln. The work fired in the reduction kiln did not have a shine to the surface but was rough and matte-like.

The low fire earthenware test tiles were tested in a small electric kiln to cone 05, after they had gone through the first bisque firing and after some of them had been coated in glaze. The mica in these test pieces seemed to keep the same qualities as after they were put in the bisque kiln. The clear glaze that was added to some of the test pieces gave the work a glossy finished look and allowed the mica to still shine through.

When working with the large flakes of mica, I put them on flat test tiles made of both types of clay, and fired them with and without glaze in the salt, gas, and electric kilns. The flakes fired in the gas and salt kilns curled at the edges and seemed to puff up, creating small pockets of air between the layered sheets of mica. The sheets turned more brittle and took on an orange and brown color. The sheets melted and stuck to the test tiles that they lay on. When covered with glaze, the mica had the same qualities, although the mica was glossy and turned a white to gray color, with only bits of orange and brown.

The mica sheets that were put in the electric kiln and fired to a low temperature kept their glimmering appearance but changed to an opaque silver and gold color. The sheets fired without a glaze did not stick to the clay test tile that they lay on, and seemed flaky and breakable. The sheets of mica fired with the clear glaze stuck to the clay test tile and when the sheet was fully coated, it seemed strong and not easily broken.[17]

My Own Artistic Work: Getting Creative

I took this research and used the test pieces that I found aesthetically pleasing to create finished work of my own. I

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[17]See mica sheets in the electric, gas, and salt kilns (Figures 4 & 5).

handbuilt cups with the micaceous earthenware clay, where the powdered mica is wedged into the clay body, because handbuilding was easier on my hands than trying to throw with the clay. I glazed these cups with clear glaze and found that they seemed to retain heat and keep things hotter for longer than the non-micaceous clay cups I made. I have not scientifically researched this; these ideas are all from touch and my own experience with using this functional pottery for everyday use. I also handbuilt cups with earthenware clay and then added micaceous slip in certain places to accent certain areas of the cup. I found that one can be very precise with where the micaceous slip is added. These cups were then glazed and fired and became functional works.[18]

I also cut the large mica flakes into small shapes and inserted them into a thrown earthenware clay bowl. The work was bisque fired to cone 05; then, the mica and clay were coated in clear glaze, and fired to cone 04. The end result was a functional vessel that could hold water.

IV. Conclusion

Mica alone is an incredible material that has many remarkable properties. When mica is mixed with clay and transformed into works of art, the end product is stunning. Micaceous pottery is easily recognized by its distinct, breathtaking, and glittering surface. Micaceous pottery also has deep roots and history in the Native American community of the southwestern United States.

This paper has described many different techniques used to experiment with mica in clay. However, there are many more possibilities, such as different combinations and ways one can mix together mica and clay. Through this research, I studied the history, production, chemical makeup, firing practices, temperatures, and physical abilities of mica and micaceous clay when used in the context of ceramics. This research attempted to explore mica further, in order to understand its physical and chemical properties. In the end, this research is to be used and furthered by other artists in the ceramic world.

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[18]See micaceous clay cups (Figure 6).

Figure 1. Earthenware test tiles in the electric kiln.

Figure 2. Stoneware test tiles in the gas kiln.

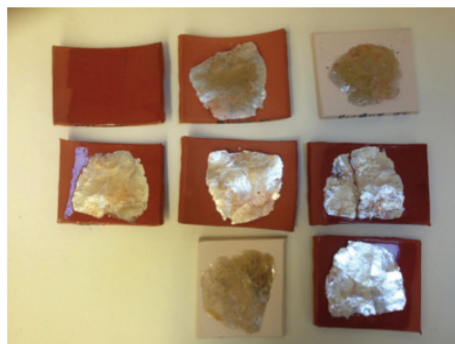Figure 3. Stoneware test tiles in the salt kiln.
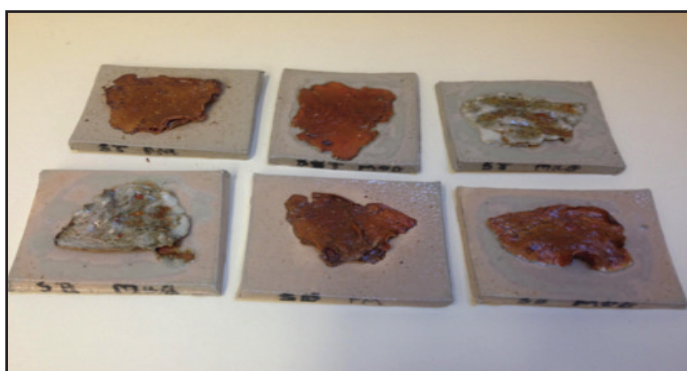
Figure 4. Mica flakes in electric kiln.

Figure 5. Mica flakes in salt and gas kiln.

Figure 6. Earthenware micaceous clay cups.

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Acknowledgments

I would like to thank Leah Leitson, Julie Caro, and James Darr who have guided me through this undergraduate research project. I would like to also thank the Warren Wilson College Writing Studio and the many people who have helped me revise my work. I would also like to express how grateful I am to live in such a beautiful part of this country as Asheville, North Carolina and its abundance of mica that has inspired me to do this research.

The Effects Of Different Harvest Events On Nitrogenase Activity in Alfalfa Root Nodules

Abstract: Defoliation and harvest of shoots have been shown to negatively affect nitrogenase activity in the root nodules of *Medicago sativa* plants. When shoots are completely removed, it can take more than 20 days for nitrogen fixation rates to return to those prior to harvest. In this experiment, different types of harvest were examined in order to observe the variance in the resulting nitrogenase activity. Plants were grown in a greenhouse in isolated pots. Four different harvesting events were examined: an unharvested control in which shoots were not affected, a "graze" treatment in which leaves were denuded from stalks, a "mow" method in which shoots were removed at half-height, and a complete harvest control in which shoots were cut at the base. Nitrogenase activity following the harvesting events was analyzed by acetylene reduction assay. The results indicated that the "graze" treatment showed significantly greater nitrogenase activity than the "mow" method. These results perhaps suggest that negative response to shoot harvest in nitrogenase activity is not due to decreases in photosynthesis directly but rather to the redistribution of plant carbon resources away from root nodules following shoot damage.

Remy Sutherland | Chemistry

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I. Introduction

Nitrogen, the limiting resource in many plant communities, is of particular significance within agricultural systems. Due to the nitrogen regularly exported from agricultural environments in the form of food and crops, there must also be regular investments of nitrogen into the system by manure, synthetic fertilizer, or biological nitrogen fixation (Denison, 2012). The form of biological nitrogen fixation of particular significance to agriculture is the symbiotic relationship between legumes and rhizobial bacteria, which is responsible for one third of the global nitrogen input (Connor et al., 2011). Forage legumes, such as alfalfa (*Medicago sativa L.*), have a large impact in this value as they have been shown to fix nitrogen at faster rates on average than seed legumes, such as soybeans (Smil, 1999). Agricultural legumes planted for forage are usually harvested by one of two methods: cutting in order to make stored forage or direct grazing by livestock. These methods have fundamental differences in the resulting effect on above-ground plant tissue, which could mean different effects on nitrogen fixation activity. Thus, this project investigates the respective effects of two above-ground harvesting techniques on below-ground nitrogen-fixing activity in one forage legume species, *Medicago sativa*.

Nitrogen-fixing plants is a misnomer; in fact, only certain species of bacteria and archaea can convert unreactive N_2 (80% of the atmosphere) into reactive nitrogen accessible to plants (Denison, 2015). In the case of legumes, rhizobia bacteria infect the host plant's roots, which then form specialized nodule organs. Host plants provide photosynthates, in the form of carbohydrates, to bacteria colonies in exchange for reactive nitrogen fixed by the bacterial enzyme nitrogenase. This symbiotic relationship has allowed leguminous species to inhabit nitrogen-deprived soils and can be utilized in agriculture to invest valuable nitrogen into the soil.

Yet, the legume-rhizobia relationship is certainly not a static interaction. It has already been stated that forage legumes fix nitrogen at different rates than seed legumes. It is further true that within the group of forage legumes there are variations in nitrogen fixation rates. Additionally, not all legumes invest the same

amount of photosynthate carbon into nitrogen fixation. Pea plants have been shown to donate 4.1 grams of carbon for every gram of nitrogen fixed in rhizobial root nodules, while alfalfa plants have been shown to spend 5.1–8.1 g of carbon for every gram of nitrogen fixed (Minchin and Pate 1973; Lundquist, 2005). Thus, more highly producing legume species are not necessarily the most efficient in fixing nitrogen. Given its large energetic demands, it is pertinent to consider the conditions that influence nitrogen fixation.

Unsurprisingly, environmental conditions have a massive effect on the presence and extent of legume-rhizobia interactions. In 1974, Penning de Vries et al. showed that the cost of supporting rhizobial nitrogen fixation to plants is greater than the metabolic costs of absorbing reactive nitrogen from the soil if it is available. Thus, it has since been proven that plants will only support rhizobial nitrogen fixation if the payoffs outweigh the costs (Oono et al., 2011; Simms et al., 2006). The efficiency of these interactions becomes especially significant when plant resources become stressed. One such stressful event that is particularly important to agriculture is the harvest of the plant, in which a large percentage of the plants' photosynthesizing portions are mechanically removed either by incision or herbivory.

Research over the past several decades has shown that damage to the above-ground shoots of legumes can affect nitrogen-fixation rates in root nodules (Kim et al., 1993; Macdowall, 1983; Vance et al., 1979). In their landmark study, Vance et al. (1979) observed that nitrogenase activity in alfalfa nodules is negatively impacted by complete removal of the host plant's above-ground shoots. Within 48 hours, nitrogenase activity was shown to decrease by 88% and not recovered for upwards of 20 days. Following these results, research has been conducted to look at how the plant-rhizobia relationship is affected by harvest events. In 1983, Boller and Heichel examined how allocation of photosynthate products affected N_2 fixation in nodulated alfalfa. By examining plants at different growth stages, the team identified a "coupling between supply of current photosynthate and nodule activity." These results suggest that the decrease in nitrogenase activity following harvest is due to the immediate reduction in

primary photosynthesizers in the host plant (the leaves). In 1994, Hartwig and Nosberger, in a review article, evaluated another possible explanation. They suggested that, due to increased carbon requirements for regrowth of damaged structure, the host plant limits carbohydrate uptake by rhizobia nodules via a controlled oxygen gradient.

Perhaps even more influential on the scientific community than the findings of the Vance et al. study was the popularization of the methods they employed to achieve their results. Nitrogenase activity was measured using acetylene as a proxy gas to dinitrogen (N_2). It was found that in an atmospheric environment the enzyme, nitrogenase, would preferentially bind to acetylene, if available, and reduce the triple bonded molecule to ethylene, similar to the reduction of N_2 to NH_4^+. Thus, by putting the roots of the harvested plants into an airtight environment with a known amount of acetylene, the rate of nitrogenase activity could then be estimated by the amount of acetylene converted to ethylene after a timed interval. Vance et al.'s famous use of nitrogenase's convenient preferential binding to acetylene over nitrogen has led to the development of the acetylene reduction assay (ARA) as a common test for nitrogen fixation activity.

Since its inception, the ARA procedure has been shown to have certain limitations. The accuracy of Vance et al.'s results hinged on one critical assumption: that nitrogenase will reduce acetylene to ethylene at the same rate at which it fixes atmospheric nitrogen within root nodules. Research by Bergersen (1970) found that when conditions of the assay do not match the same conditions in which nitrogenase fixes nitrogen, within the nodule of a living organism, then the enzyme will reduce nitrogen at a rate of 2.7–4.2 times the rate of biological nitrogen fixation across several different experiments. In the same experiment, it was observed that light intensity on nodulated root systems can affect assay results. The results are complemented by the findings of Davis (1987), which suggested that the assay presents several "technical and kinetic complexities" that can hamper results. Unfortunately, even though the enzyme preferentially binds to acetylene, N_2 is still a competitive inhibitor in the reaction. Thus, finding the substrate

binding coefficient K_m was found to be confounding and difficult to model accurately.

Following these findings, the acetylene reduction assay has not been abandoned, but rather its role has changed in the scientific community. Further studies have shown that the assay has particular merit in comparing relative nitrogenase activity in samples (Vessey, 1994). While the rate of reduction of acetylene will be empirically different from the actual nitrogen fixation rates, these differences will be consistent for each examination, and thus experimental results can be compared to find relative enzymatic activities. Furthermore, it is argued that the assay requires certain conditions in order to be implemented accurately. Referring to the first published paper on the assay (Hardy et al., 1968), Vessey's review suggests there is a time restraint in which the assay maintains a linear range. The authors have found that as long as the reaction is only allowed to occur for an hour or less, the results are linear and can be used to accurately compare nitrogenase activity between samples.

As such, the crux of this experiment is inherently comparative. Its purpose is to investigate the difference in effects on nitrogenase activity between two agricultural harvesting treatments, direct grazing by cattle and cutting for hay. Livestock are inherently selective and will, when given the choice, eat more tender and greener leaves before the shoot organs of a forage plant (Menneer et al., 2004). Conversely, hay cutting removes the leaves and shoots equally from the pasture crop. These two harvesting techniques cause fundamentally different damage to the above-ground plant: grazing removes most to all of the plant's photosynthesizing organs, while hay cutting damages both the photosynthesizing organs of the plant and the nutrient pathways found in the shoots. Both of these treatments will cause additional stress to the plant that may likely affect resource allocation to rhizobial symbionts, but perhaps to different degrees. An understanding of how these two processes differentially affect the nitrogenase activity of the harvested crop could not only inform agricultural management decisions, but it could also further develop our knowledge of the symbiotic relationship between the

legume and rhizobia bacteria and how plant resources are mediated to root nodules.

II. Methods
Greenhouse Methods

Alfalfa seeds ("Summer Alfalfa," *Johnny's Selected Seeds*) were inoculated with rhizobia bacteria (Alfalfa/True Clover Inoculant, *N-dure*) and planted in two seed trays of 72 pods each containing Jiffy Seed Starter Potting Mix. Multiple seeds were planted into each pod. At least one seed germinated in each pod. Pods with multiple germinated seedlings were thinned out so that only one plant was growing in each pod. Seedlings were watered every 2–3 days. After 17 days, seedlings were transplanted to larger pots. 72 plants were chosen at random to be transplanted. The soil used in the new pots was a potting soil without nitrogen amendments. Plants continued to be watered every 2-3 days. After 4 weeks, M-Pede insecticide was applied to plants in order to treat a spider mites infection.

The harvesting event took place at 10 weeks after plants first germinated. Plants were randomly divided into four different treatments. There were two experimental treatments. In one treatment, plant shoots were cut at 50% of the height of above-ground shoots. In the second experimental treatment, plants were denuded of all leaves, but shoots were completely left intact. There were also two control treatments. In a positive control, plants did not undergo any harvesting event and above-ground shoots were left completely intact. In the negative control, treatment shoots were cut at the base, thus removing all above-ground plant material. For all treatments, any removed plant material was massed immediately following removal. Plants were left in the soil for 5 days following harvest.

N Components of Soil Analysis Methods

A Carbon-Hydrogen-Nitrogen (CHN) elemental analyzer was used in order to calculate the nitrogen concentrations of the potting soil the plants were grown in. A random sample was removed from the same bag of soil that was used in the growing

pots. This sample was then dried using an oven and pulverized. Ten samples of 1 mg of soil were massed and then analyzed by the CHN instrument. These values were then analyzed for significant difference by an ANOVA analysis.

Assay Analysis Methods

After 48 hours following the harvesting event, each plant was completely removed from the potting soil. Any soil particles remaining on plant roots were gently shaken off. Following the methods of Binkley et al. (2003), plants were immediately placed into Erlenmeyer flasks fitted with gas-tight rubber septums. Ten percent of the headspace in each flask was removed by gas syringe. Subsequently, the same volume of acetylene gas was pumped into the Erlenmeyer flask. Samples were incubated for 2 hours at room temperature as the reduction reaction was allowed to occur. Following the incubation time, 20 mL of headspace was removed by gas syringe and injected into 25 mL evacuated vials. These vials were placed in a 0 ºC freezer until time of analysis.

Ultimately, samples were separated and analyzed by gas chromatography analysis. An HP 6890 gas chromatograph was used, equipped with a ValcoPlot Alumina sieve column (Na_2SO_4 deactivated, 0.53 inner diameter, 30 m length), in order to separate the ethylene and acetylene concentrations. 1.0 mL of sample headspace was injected with a gas syringe. The injector was run split/splitless with a ratio of 15:1. The carrier gas was helium, and a flame ionization detector ultimately detected the effluent.

A calibration curve was created using known concentrations of ethylene gas. Pure ethylene was used to make samples of 0.038, 0.019, 0.0023, and 0.0064 mM by serial dilution. Round bottom flasks were flushed with air and fitted with a rubber septum cap. One mL of air was removed from the flask, then one mL of ethylene was injected into the flask. The number of moles of ethylene within the flask was calculated with Equation 1.

(1) $$(n_1 * T_1)/(P_1 * V_1) = (n_2 * T_2)/(P_2 * V_2)$$

Once the number of moles was known, the molarity could be calculated.

Removal of Nodules and Massing

Following the assay, sample roots were removed from the vial and placed on a white dissecting surface. All visible root nodules were then removed from the host plant's roots with tweezers. These root nodules were then massed.

III. Results

Harvest Treatment Measurements

Prior to performing the assay, the different harvest treatments were quantified by massing the removed plant material for each group. Figure A shows a chart illustrating these results.
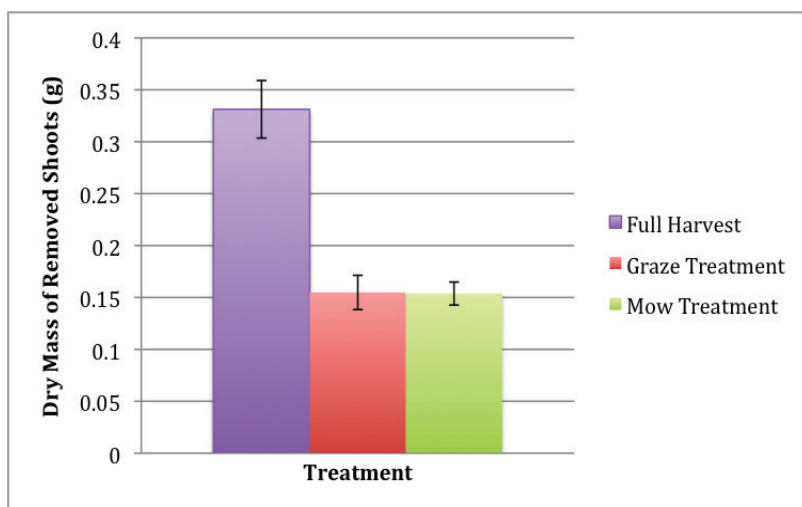

Figure A: Mean dry mass of removed shoots during harvest for each harvest type treatment. Error bars indicate one standard deviation. The results of a Tukey range test indicate that the Full Harvest treatment is significantly different from the other two and is approximately twice as large. The Graze and Mow treatment are not significantly different.

Figure A indicates that the Full Harvest treatment removed approximately twice as much plant material by dry mass than either the Graze or Mow treatment. An ANOVA analysis of the results yielded a p-value of <.0001, suggesting there was a significant

correlation between the treatment and the mass of removed shoot. Furthermore, a Tukey range test suggested that the Full Harvest treatment was significantly different from the Graze and Mow treatment. The means of the Graze and Mow treatment were calculated to be within 1 mg of one another, and the Tukey test did not find significance difference between the two values.

CHN Analysis

The CHN analysis of samples from the soil used in the study returned a mean nitrogen composition of 0.45% with a standard deviation of .07%.

Acetylene Reduction Assay Results

The standard curve was calculated from a total of four samples. This curve is shown below in Figure B. The curve region was calculated with linear fit and returned an R^2 value of 0.98749, indicating reasonable fit. The slope equation of the line was used to calculate concentration of produced ethylene in the experimental samples (as a function of peak area detection).
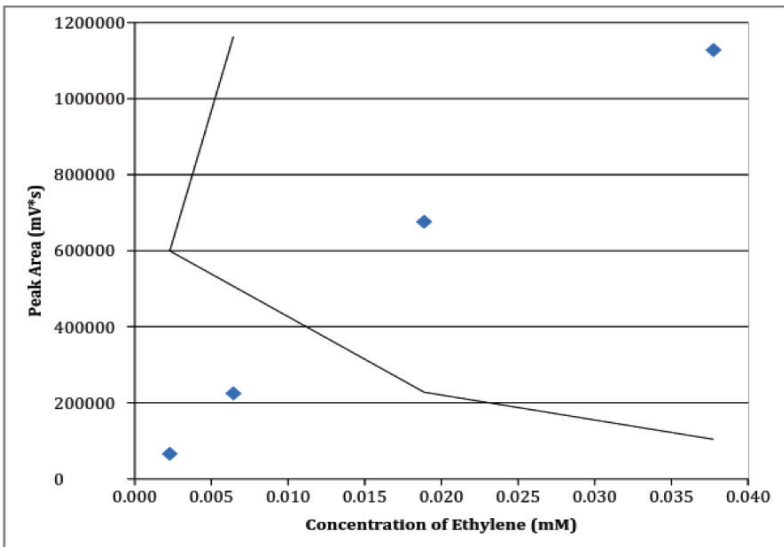

Figure B: Standard plot of known concentrations of ethylene gas.

Plot shows equation used to calculate experimental concentrations of samples from peak area results.

Each sample's concentration of produced ethylene was independently calculated using the calibration curve. These values were then used to find a mean for each treatment of ethylene produced by acetylene reduction for each treatment. These results are shown in Figure C.
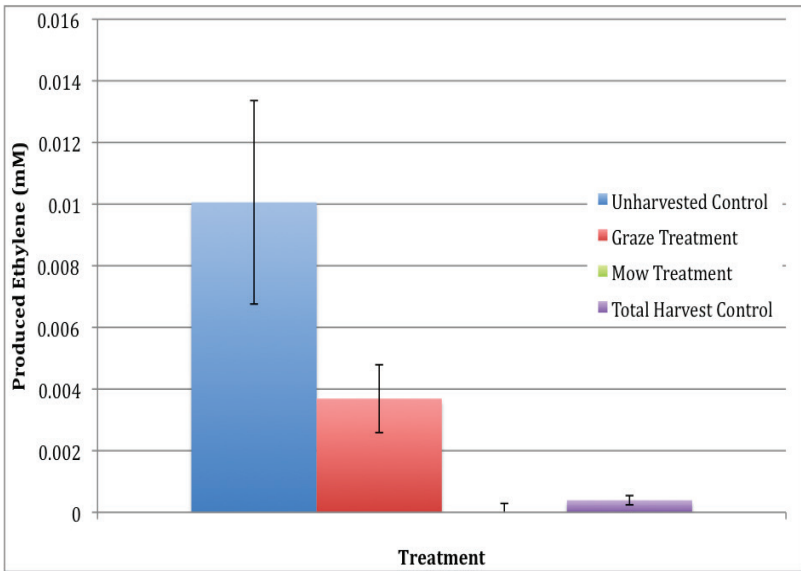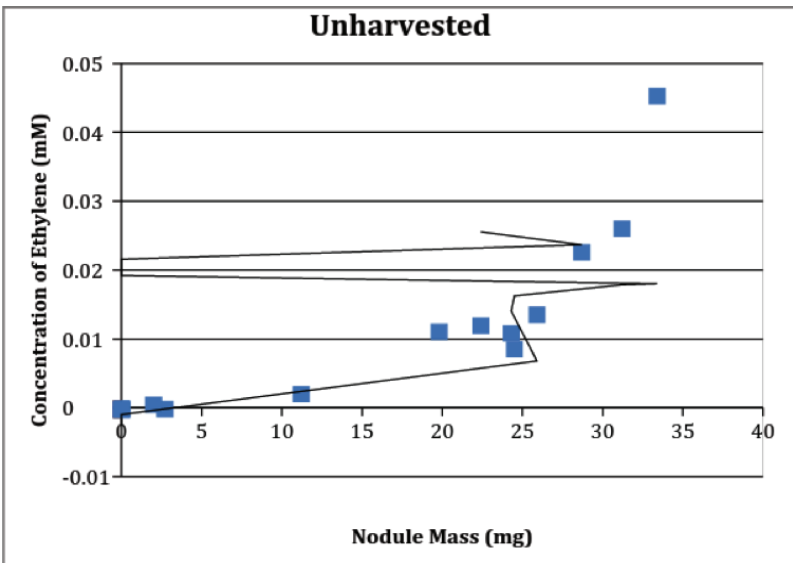

Figure C: Results of the acetylene reduction assay showing mean concentrations of produced ethylene for each treatment. Unharvested control treatment is significantly different from all others. Graze treatment is significantly different from all others. The Mow and Total Harvest treatments are not significantly different. Bars in the graph show one standard deviation.

The results shown in Figure C were analyzed by an ANOVA test and returned a p-value of 0.0003, which suggests that the harvest treatment made a significant difference upon the amount of ethylene produced. Furthermore, according to the results of a Tukey range test, the mean of the Unharvested Control is significantly different from all other means. Also, the Graze treatment is significantly different from all other means. The

Total Harvest and Mow treatments are not significantly different. Furthermore, some of the values for these two treatments' samples were below the detection limit of the instrument.

Nodule Mass in Conjunction with Acetylene Reduction
The total mass of nodules for each plant was plotted against the concentration of produced ethylene by acetylene reduction. Figure D shows these plots for each treatment. The Graze and Unharvested treatments showed significant correlations between the two variables; in both cases, an ANOVA test yielded a p-value of <0.0001. An ANOVA conducted for the Total Harvest treatment returned a p-value of 0.0341, suggesting some significant correlation between the two variables. The calculated p-value for the Mow treatment was 0.451, suggesting no significant relationship. The Graze, Unharvested, and Total Harvest treatments were fitted with a third degree polynomial linear regression. The R^2 values for both of these treatments are shown in the figure.
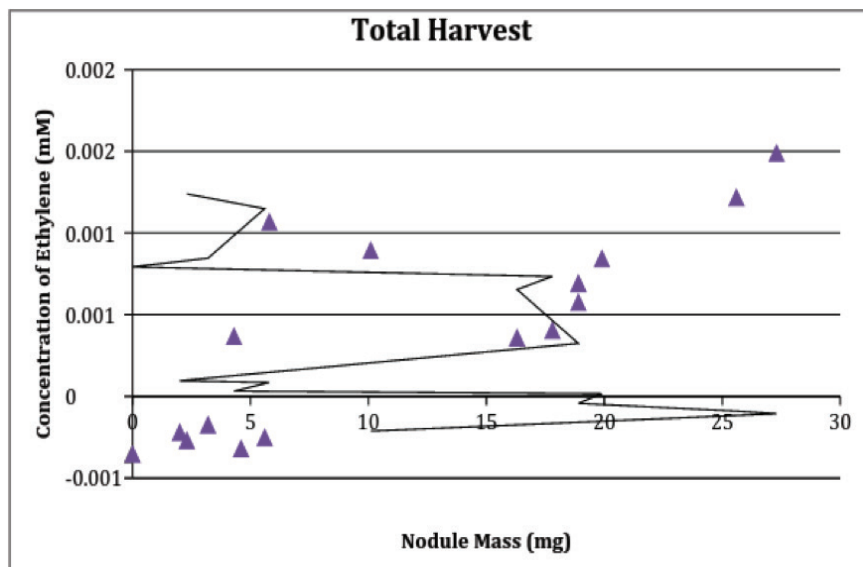

(i)

Graze Treatment

(ii)

Mow Treatment

(iii)

Total Harvest
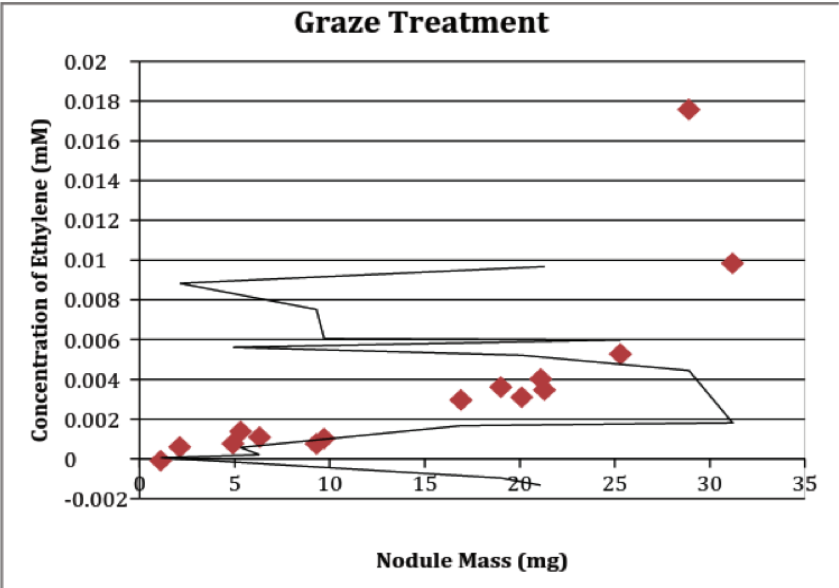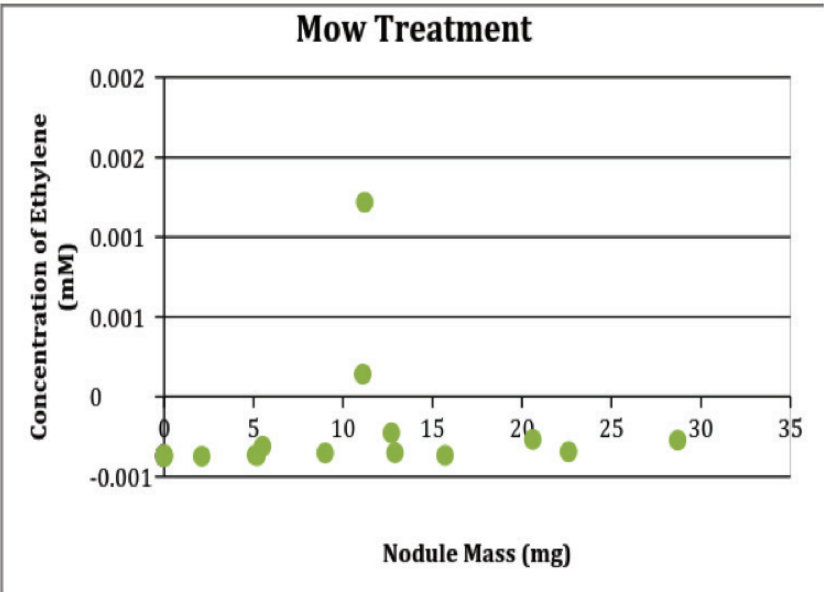
(iv)

Figure D: (i–iv) Scatter plots showing results for acetylene reduction assay plotted as a function of the nodule mass for each sample. Plots show the strong correlation between nodule mass and reduction of acetylene within the Unharvested, Graze, and Total Harvest treatments, yet no correlation is shown in the Mow treatment.

IV. Discussion

The CHN analysis was undertaken prior to harvest of the samples as a potential source of explanation if the plants failed to nodulate. Of course, upon extraction of the plant's roots, it was soon evident that the plants effectively nodulated during the course of the growing period. Despite this, these results still bear mentioning because the low standard deviation around the mean (small range) of the soil's nitrogen component suggests that all samples were likely growing within the same nitrogen availability conditions. Thus, environmental pressure for nitrogenase activity within nodules prior to harvest is effectively the same for the entire population.

The results of the acetylene reduction assay for the Unharvested control treatment represent the nitrogenase activity

of the plant population prior to any sort of harvesting event. These results contrast with those of the negative control, the Total Harvest treatment. The initial findings of this experiment are in agreement with those of Vance et al. (1979). The complete harvest of the above-ground shoots of the host plant greatly reduced the nitrogenase activity of root nodules (as shown in Figure C). This solid agreement with previous literature gives ballast to further analysis of the assay results.

It is important to note that the harvest difference between the Graze and Mow treatment is of type not of degree. As Figure A indicates, the mass of harvested material for these two treatments is not significantly different from one another and, indeed, their calculated means are within 1 mg of one another. This commonality bears significance because of the drastic difference between the two treatments' assay results. As shown in Figure C, the Graze treatment is significantly different from all other treatments, and its calculated mean concentration of ethylene by acetylene reduction is second highest (after Unharvested). In contrast, the Mow treatment does not have significantly different results from the negative control (Total Harvest), and many of the calculated concentrations are in fact below the detection limit of this experiment.

Further contrast between the Graze and Mow treatments appears in Figure D. The plots of ethylene production, as a function of total nodule mass, show significant correlation for all of the treatments except for the Mow treatment, which did not return a significant p-value. In addition, the Graze and Unharvested plots bear readily apparent similarities in their curves. These plots are fitted with a third degree polynomial curve. This curve represents a mathematical model in which the calculated mass approximates the total volume of the plant's nodulation. If each nodule is approximated as a sphere, the volume of which is given by the function $V = 4/3 * \pi * r^3$, and mass is proportional to the volume of the object, then the nitrogenase activity of the nodules appears to be directly related to the volume of nodules formed on the plant. These curves fit very well with the Graze and Unharvested treatments, high R^2 values, and even with the Total Harvest control. Yet, this relationship does not appear to hold for the Mow

treatment, although this could be due to Mow treatment ethylene production being below the experimental detection limit.

Of course, this mathematical model does not fully account for the complexity of the host-symbiont relationship. Yet, because all of the plants were exposed to the same bacterial inoculant and environmental conditions, any significant variations from this well-fitting model are presumably due to effects of the harvest treatment. Clearly, the harvest of the Mow treatment significantly altered the plant-rhizobia relationship in ways that the Graze harvest did not (Figure D).

Since both of the experimental treatments have been shown to undergo similar mass reduction during harvest, the significant difference in their assay results should be due to the different targeting of their specified defoliation. These results are contrary to the conclusions suggested by Boller and Heichel (1983), referred to in the Introduction. Harvesting the primary photosynthesizers of the host plant did not have nearly as much of an effect on nitrogenase activity as un-targeted removal of plant tissue. Thus, if there is a relationship between current photosynthetic rates and nitrogenase activity, it is a relatively weak one. In agreement with the prior-mentioned analysis by Hartwig and Nosberger (1994), it appears that destruction of primary structure fundamentally alters the host plant's metabolic association with the rhizobial symbionts. Although this experiment cannot provide a conclusion of how this relationship is altered, it should be noted that perhaps the Mow and Total Harvest treatments had similar assay results because the regrowth requirements were high enough that the host plants in both cases largely cut off rhizobial associations in order to repair damaged tissue.

This study provides significant evidence for the differences between two different defoliation techniques upon nitrogenase activity. However, as an agricultural resource it bears significant limitations. No livestock will exclusively graze upon the leaves of a forage crop, just as no mower will cut every plant at exactly its half-height. Similarly, significant variables of agricultural harvests that may heavily impact nitrogenase activity were excluded, including impaction and excrement of nitrogen-containing compounds by

livestock. Further research examining the effects of these two forms of agricultural harvest should address these possible factors via a field study within grazed and mowed swards of alfalfa.

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Acknowledgments

Spotted Knapweed Managment: Plant Community Effects Due To Grazing and Aminopyralid Herbicide on Rangelands

Abstract: Spotted knapweed (Centaurea maculosa), an invasive weed, has severely affected the productivity of western rangelands by decreasing forage palatability, yield, and diversity. Effects of weed eradication methods have been reported but the effect of combinations for those control methods is poorly understood. This study presents the results of a two-year analysis of the effects of a single aminopyralid herbicide application following multi-year grazing on a population of the spotted knapweed in Missoula, Montana, USA. We tested four treatment combinations: grazed and sprayed, non-grazed and non-sprayed, grazed and non-sprayed, and non-grazed and sprayed . Ten paired plots were established with five pairs in grazed areas and five pairs in non-grazed areas. One plot in each pair was sprayed with herbicide. In each plot, we measured the total density of spotted knapweed and the percent cover of perennial grass, annual grass, and perennial forbs. Results showed that grazing significantly affected total, non-flowering, and seedling spotted knapweed density and spraying significantly affected flowering spotted knapweed density. The combination of treatments was most effective while also having no effect on native perennial grass, silky lupine, or common yarrow.

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I. Introduction

Invasion by exotic weeds is one of the biggest environmental concerns of the day (Lym, 2005; Powell, 2004). Invasive weeds are defined as "a plant spreading naturally (without direct human assistance) to significantly alter composition, structure or ecosystem processes" (Frost & Launchbaugh, 2003). Invasive species are usually abhorred by farmers and land managers in the western United States, as they lead to decreased biodiversity, increased soil erosion, and destruction of wildlife habitat (Frost & Launchbaugh, 2003). Spotted knapweed (*Centaurea maculosa*), a noxious invasive weed found in 45 US states, is of particular concern in Idaho, Washington, Montana and Wyoming (Plant Conservation Alliance's Alien Plant Working Group, 2005). In Montana, specifically, spotted knapweed had invaded 4.7 million acres by 1990, and has spread even more today (Lacey, Husby, & Handi, 1990). This species has been shown to decrease forage production, impact wildlife, and increase surface runoff and stream sediment (Jacobs & Sheley, 1998). Therefore, it is imperative that spotted knapweed is controlled properly in order to maintain healthy and diverse ecosystems in the West.

Understanding the life history and ecological niche of spotted knapweed is an essential first step in the research aimed at removing this noxious weed. Since its introduction from Eastern Europe, spotted knapweed has spread widely and currently has a large geographic range, which includes every county in Washington, Idaho, Montana, and Wyoming (Jacobs & Sheley, 1998). The species occupies dry rangeland and shaded sites, as well as roadsides and other heavily disturbed locations (Watson & Renney, 1974). Spotted knapweed produces up to 1,000 seeds per plant, with a viable seed output of 7,815 seeds/m2 in a densely populated area (Jacobs & Sheley, 1998, Missoula County Extension and Weed District). Knapweed flowers in May or June, and colonies expand through seed dispersal and benefit from the presence of livestock or disturbed land (Jacobs & Sheley, 1998; Tyser & Key, 1988). Because spotted knapweed flowers produce seeds in such high numbers, only an estimated 0.1% of seeds produced are needed to maintain the population at current levels (Schirman, 1981). Spotted knap-

weed seeds tend to stay in the soil seed bank for long periods of time, making knapweed especially difficult to control (Jacobs & Sheley, 1998). Studies have shown that less than 6% of seeds that reach the soil germinate in the same year, but 50% of artificially buried seeds can stay in the seed bank for five years and 25% remain viable but dormant after eight years (Davis, Fay, Chicoine, & Lacey, 1993). Those results suggest that the knapweed seed bank is enormous and continually growing, making seed production an important target for effective weed management.

At this time, herbicide application is the most common weed management tool in the United States (Harker & O'Donovan, 2013), but a large capital investment is necessary (Griffith & Lacey, 1991) and herbicide must be reapplied about once every four years (Harris & Cranston, 1979). Although treatments with herbicide that target broadleaf weeds (picloram, aminopyralid, clopyralid) have been shown to reduce spotted knapweed populations (Ortega & Pearson, 2011; Sheley, Duncan, Halstvedt, & Jacobs, 2000), they also have negative environmental impacts. For example, this management technique has been shown to contaminate groundwater (Wood, Issa, Alberquerque, & Johnson, 2002); contribute to herbicide resistance, or cause the evolved ability of the crop to withstand herbicide treatment (Heap, 1997); and impact terrestrial wildlife by decreasing populations of beneficial insects, decreasing species abundance, or affecting diet composition (Freemark & Boutin, 1995). Therefore, ongoing research is focused on finding a more environmentally and financially sustainable, yet effective method of control.

Current literature on spotted knapweed management also takes into account the challenges in this area of the United States, such as vast roadless areas with limited access and dry climate (Frost & Lanchbaugh, 2003). There are multiple ways to sustainably target spotted knapweed while working within the physical constraints of this region. These methods include prescribed grazing, biological control insects, mowing, and controlled burns. There has been some work looking at the effects of a combination of these treatments, but there is room for further research (Frost & Lauchbaugh, 2003).

Methods such as grazing or mowing are generally classified within the broad category of defoliation methods, and are considered similar management approaches. Ultimately, the goal is to time defoliation so that the plant cannot produce viable seeds (Benzel, T. Mosley, & J. Mosley, 2009). According to Benzel et al. (2009), complete removal of seed heads right before or during flowering should reduce the number of viable seeds produced by nearly 100%. However, complete removal of seed heads is a challenge. For example, mowing is sometimes impossible on steep slopes, protected land, or rocky areas. However, Ganguli et al. (2010) found that knapweed is an acceptable forage for sheep that also has adequate nutritional value, suggesting that sheep can be used to control spotted knapweed and still receive adequate nutrition. For maximum control, the livestock stocking rate must match the density of spotted knapweed, and the palatability of other range species must be taken into account (Frost & Launchbaugh, 2003).

Prescribed burning, on the other hand, requires the complete removal of aboveground biomass of the weed and all surrounding species. When determining the correct timing of a burn, the land manager must consider the growth stages of all plants in the community and how a burn would affect native and forage species. A 2005 study by Emery and Gross suggested that population modeling could be used to determine the best time to burn by reducing reproduction of the noxious weed, but allowing the growth of other native species. In their study in Michigan, the best time to burn was during the middle of the summer (Emery & Gross, 2005). Another study in Michigan found that mid-spring burning significantly reduced spotted knapweed populations, while increasing populations of warm-season grasses (MacDonald, Scull, & Abella, 2007).

Finally, biological control insects provide the most targeted form of knapweed control. These insects are the natural predators of spotted knapweed in its native range in Eastern Europe and have been shipped to the United States to help control the weed. The species of insect determines the plant organ that is being targeted. For example, root weevils such as knapweed root weevil (*Cyphocleonus achates*), sulfur knapweed moth (*Agapeta zoegana*), and

the bronze knapweed root borer (*Sphenoptera jugoslavica*) produce larvae that tunnel into roots for the winter. The larvae feed on the inner vascular tissue in the cortex of the root, depriving the knapweed of its energy stores and causing the plant to spend extra energy trying to repair the damage (Forest Health Technology Enterprise Team, 2005). Seed head-boring insects target the seed head, instead of the roots. These include, but are not limited to, the four-barred knapweed gall fly (*Urophora quadrifasciata*), the banded knapweed gall fly (*Urophora affinis*), and the seed head weevil (*Larinus minutus*). Much like the root weevils, these insects produce larvae that like to feed on immature or mature seed heads. They form a gall that reduces the number of seeds produced by the plant by up to 75% and require the plant to use extra energy to enclose the gall and protect some of the viable seeds (Forest Health Technology Enterprise Team, 2005; Harris & Cranston, 1979). Consequently, both plant reproduction and energy reserves are reduced. Biological control insects are self-perpetuating and require only a small initial cost (Harris & Cranston, 1979).

Ultimately, the most sustainable management plans consider not only the decline of knapweed, but also the effects on the other species in the ecosystem. For example, Kennett et al. (1992) investigated the effects of defoliation, shading, and competition on both spotted knapweed and bluebunch wheatgrass (*Pseudoroegneria spicata*) and found that the wheatgrass was actually less productive in a monoculture than when it was competing with knapweed. Other studies have looked at the effect of herbicide on spotted knapweed and the surrounding grass species, and Sheley et al. found that herbicide treatment directed at knapweed increased perennial grass biomass (2000). Most herbicides used on knapweed are broadleaf herbicides, meaning they directly impact forbs. A 2009 study by Crone et al. found that application of a picloram herbicide, a broadleaf herbicide that targets woody plants, significantly reduced flowering and seed set of the native forb, arrowleaf balsamroot (*Balsamorhiza sagittata*), for four years after the application (Picloram).

The goal of this study was to monitor the effects of grazing and aminopyralid herbicide on spotted knapweed as well as native

grass and forb species. Specifically, we hypothesized that multiple years of grazing followed by one application of aminopyralid herbicide would cause greater declines in the spotted knapweed population than either grazing or herbicide treatment alone. Some work has been done to measure the effects of a combination of treatments on spotted knapweed populations, but this specific combination of treatments in this order has not been tested (Frost & Launchbaugh, 2003). We theorized that this combination would be most effective because multi-year grazing would significantly reduce the seed bank, and the herbicide application would kill the remaining vegetation. Aminopyralid herbicide was chosen because it is marketed as a restoration herbicide that does not impact native forbs or grasses.

We also wanted to determine if each treatment had a significant effect on perennial grass, annual grass, and non-target perennial forbs. We included this secondary aim in order to determine whether or not this treatment combination also caused negative effects on the native vegetation.

Finally, we gathered preliminary data on the populations of various biological control insects to determine if grazing had an effect on their population size. Frost and Launchbaugh (2003) state that grazing has the potential to increase the efficacy of biological control insects, so we wanted to find out if this increase in efficacy was coming from an increase in population size.

II. Methods
Study site
The research was conducted on the Jumbo Saddle, on the north side of Mount Jumbo in Missoula, Montana, USA. This land is owned by Missoula Parks and Recreation and is designated as City of Missoula Conservation Land (See Fig. 1 for an aerial view of Mount Jumbo). Pertinent slopes in the study site range from 4-60% and soils range from gravelly loams to sandy silts (NRCS Soil Web Survey, California Rangelands Soils). The sites are at approximately 1250m above sea level. Precipitation in May 2015 was 3.68cm and was 1.83cm in June. This is much lower than the historical averages for May and June, which are 5.11cm and 5.31cm respectively. The

average temperatures were 12.77°C in May 2015 and 20.39°C in June 2015 (NOAA GIS MAP).

The dominant perennial grass species on these plots are bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), and Sandberg's bluegrass (*Poa secunda*). Annual grasses consist of cheatgrass (*Bromus tectorum*) and Japanese brome (*Bromus japonicus*). Dominant native perennial forbs consist of hairy golden aster (*Heterotheca villosa*), silky lupine (*Lupinus sericeus*), common yarrow (*Achillea millefolium*), and arrowleaf balsamroot (*Balsamorhiza sagittata*). Experimental plots were placed in areas of high knapweed invasion.
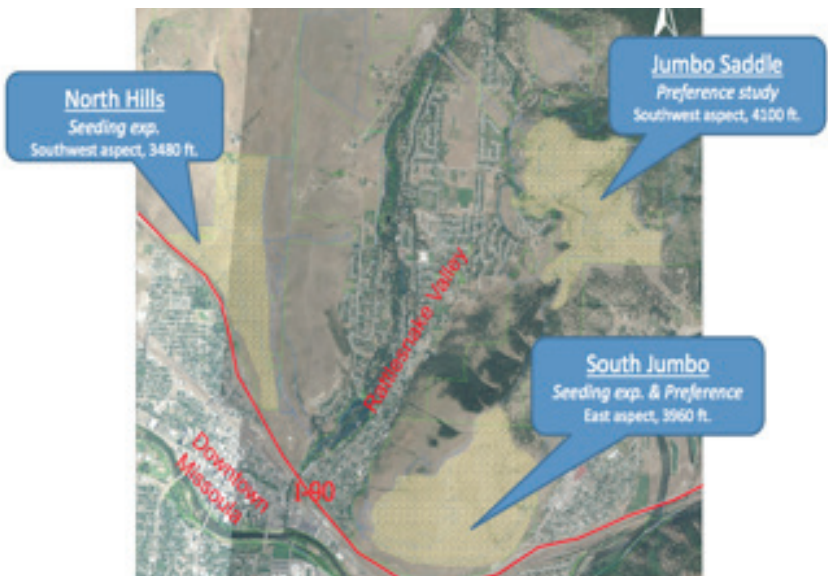

Figure 1: Map of Mount Jumbo landscape. Plots were located on the jumbo saddle and slightly further north.

Experimental treatments and field methods

The study was conducted using paired plots, where one plot in each pair was sprayed with MilestoneTM aminopyralid herbicide and one pair was unsprayed. Chris Carlson, the Conservation Lands Research Specialist at Missoula Parks and Recreation, established ten pairs of plots during the summer of 2014,

for a total of 20 plots. Five pairs of plots were non-grazed and five pairs of plots were grazed. There were five plots in each treatment combination: sprayed and grazed (S+G), sprayed and non-grazed (S+NG), non-sprayed and grazed (NS+G), and the control which was non-sprayed and non-grazed (NS+NG). Plots were 5m x 5m with a one meter buffer between the two plots in the pair. Each plot contained 16 systematically placed sub-plots that were 0.25m x 0.25m. Plot pairs were set on a variety of slopes and aspects in areas with well-established spotted knapweed populations.

Grazed plots had been grazed for about two months each summer for seven years before the start of the study, and non-grazed plots had never been grazed. Plots were grazed by a herd of approximately 150 sheep during July and August of each year. Grazed plots were fenced in July 2015 to simulate the end of the grazing program in these sites. No plots were grazed in summer 2015.

During summer 2014, one plot in each pair was sprayed with MilestoneTM, using a four-gallon backpack sprayer to mimic broadcast spraying. The other plot was covered by a tarp to protect it from the drift (Fig. 2). Spraying was performed in October 2014 at a target rate of 6oz per acre, the rate recommended by the manu-facturer. The plot that was sprayed was determined using a coin flip method. Distances from popular trails were taken into account so that the sprayed plot would be placed further from the trail in order to not disturb the aesthetic.
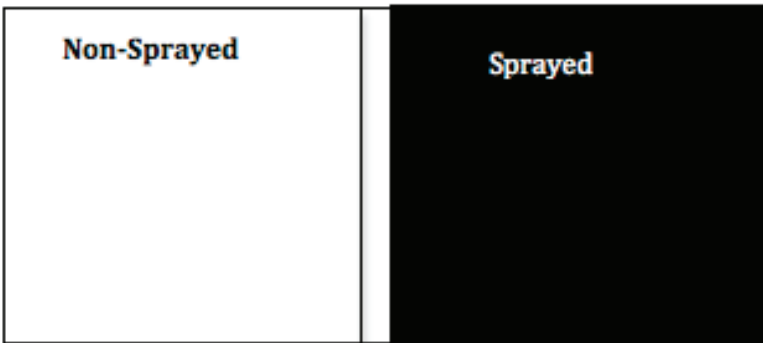

Figure 2: Layout of sprayed and unsprayed plots. Sprayed plots were sprayed with Milestone™ aminopyralid herbicide in summer 2014 and the other plot was covered with a tarp to protect it.

A vegetation survey was conducted upon establishment of the plots in summer 2014 and summer 2015. A preliminary survey of bio-control insects was also conducted during the summer of 2015.

Vegetation survey

Measurements were taken using 16 – 0.25m2 sub-plots. Each plot contained four horizontal transects spaced one meter apart, with the lowest transect placed at 0, 0.5 or one meter up from the bottom of the plot. Placement was determined randomly. Sub-plots were placed at one, two, three, and four meters along each transect (Fig. 3).
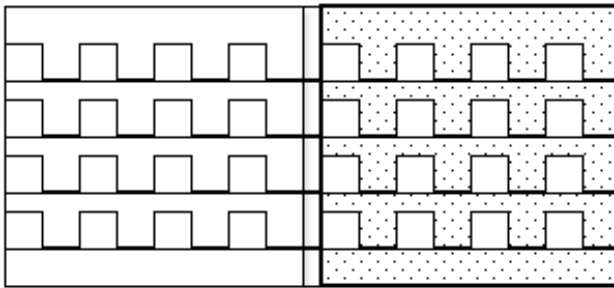

Figure 3: Placement of subplots within larger plots. The lower-most transect was either placed at 0, 0.5 or 1 m up from the bottom of the plot. Transects were placed 1 meter apart. Subplots were 0.25 m² and were placed at 1, 2, 3 and 4 meters along each transect.

The cover of perennial grass, annual grass, and each perennial forb species was assessed using visual cover class estimates ranging from 0.5% to 100%, with cover class values concentrated on the low end of the percent spectrum. The number of individuals in the seedling, nonflowering adult, and flowering adult stage were counted for all perennial forbs. The number of flowering stems was also counted for all perennial forbs, and the number of flower buds was counted on knapweed plants.

Root weevil survey

Sampling for root-dwelling knapweed bio-control insects began at the lower left corner of each plot. The first fifteen adult plants within one meter of the plot perimeter were excavated while

moving clockwise around the plot. Only knapweed growing out-side the perimeter of the plot were sampled so as to not artificially reduce the number of knapweed that would be surveyed during the vegetation survey.

Because the presence of biological control insects cause the plant to weaken at the root crown, digging up four inches of roots was a challenge. When a plant broke off, the rest of the root was dug up if possible, and broken roots were noted. Plants were la-beled, bagged, and stored in a cooler overnight. The next day, each root diameter, or the diameter of the root two centimeters below the crown, was measured. This measurement was chosen so as to avoid the root galls near the crown (Smith & Story, 2003). The roots were then dissected, and the larvae in each root were identified and counted. The flowering status was noted and the number of living stems was counted. Root mining, or damage caused by root weevils, was also noted.

Adult biological control insect survey

Plots were swept for adult biological control insects biweek-ly between late June and late August. Sweep netting was performed in six sets of sweeps that started at each corner of the plot and the centers of the longer sides. A set consisted of ten sweeps with one step in between each sweep. Sweeps were made walking at a 90-de-gree angle to the edge of the plot. See Fig. 4 for a diagram of sweep sets. The number, species, and life stage of biological control insects were recorded.
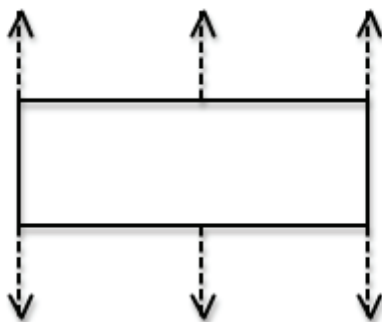

Figure 4: Sweep netting set-up. Ten sweeps were made in each transect and transects were walked at a 90 degree angle to the plot

Vegetation data was considered normally distributed, and statistical analyses were conducted using R statistical programming language. A t-test was used to determine the impact of seven years of grazing on spotted knapweed, perennial forbs, and perennial and annual grasses. A p-value less than 0.05 was considered significant.

The effect of plot was determined for each variable using a one-way ANOVA. If there was no significant effect, plots were pooled, and another one-way ANOVA was conducted to determine the effect of treatment on each variable. A Tukey Post-Hoc test was used to determine which treatments showed a significant effect on plant populations. A significance level of $P<0.05$ was used. A t-test was used to determine the effect of grazing on initial populations of spotted knapweed.

Biological control data was assessed using a Wilcoxon Ranked Sum test to determine if the population of insects on the grazed sites was significantly different than the population of insects on the non-grazed sites. This test was used because the data was not normally distributed and there were a small number of measurements.

III. Results

Spotted knapweed

First, a t-test was used to determine the effect of seven years of grazing on the density of spotted knapweed (Fig. 5). The difference in total spotted knapweed density was significantly lower in grazed plots ($t=-5.001$, $df=10.464$, $p<0.001$). A t-test was also used to determine the effect of grazing on knapweed at each life stage. Life stage was defined as flowering adult, non-flowering adult, and seedling. The difference in density was also significant for non-flowering spotted knapweed plants ($t=-4.9026$, $df=14.264$, $p<0.001$) and for seedlings ($t=-4.6427$, $df=9.0583$, $p<0.001$). However, the difference was not significant for flowering spotted knapweed ($t=-1.9622$, $df=15.636$, $p>0.05$).
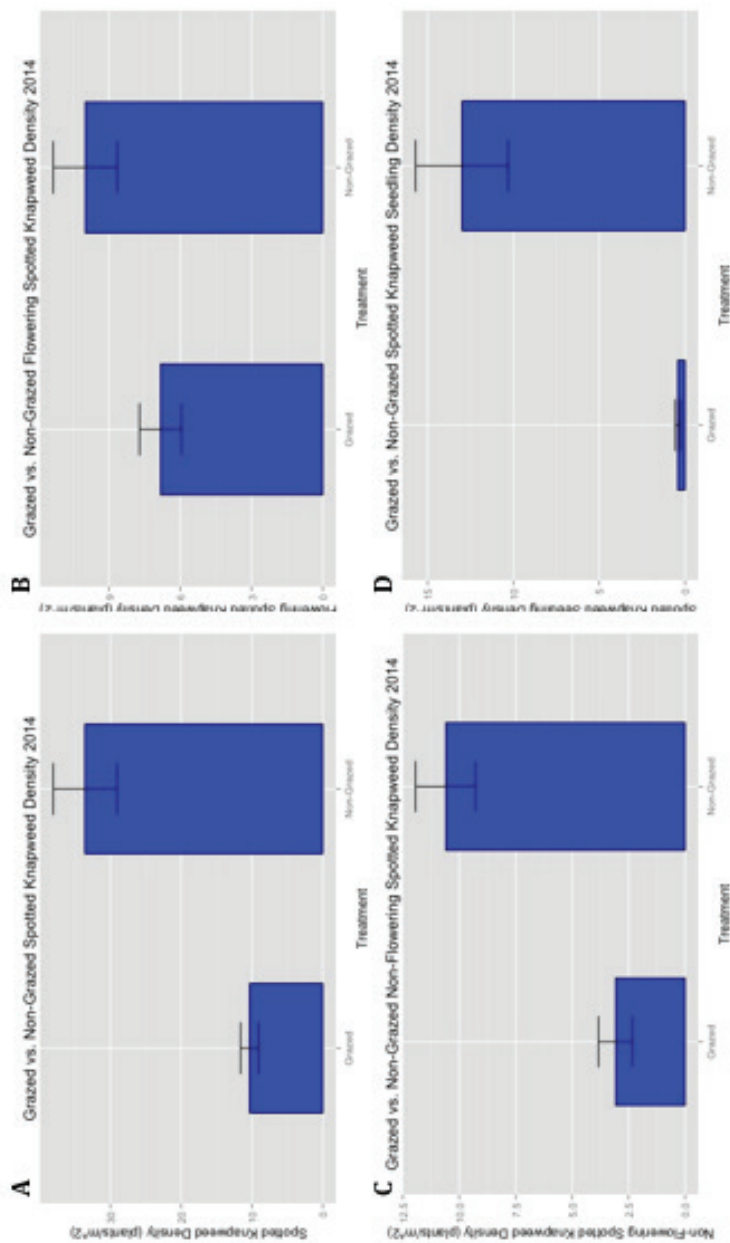
Figure 5. These graphs show the effect of seven years of grazing on spotted knapweed populations. Total spotted knapweed is shown in **a**, flowering spotted knapweed is shown in **b**, non-flowering spotted knapweed is shown in **c**, and seedlings are shown in **d**. There is a significant difference between treatments for every graph except for flowering spotted knapweed

Spotted knapweed density data was approximately normal, so a one-way ANOVA was used to determine if the difference in plots affected the change in density from 2014 to 2015. No significant effect was found ($F_{9,10}=2.114$, $p=0.12$), so plots were pooled and an additional one-way ANOVA was conducted to determine the effect of treatment on total spotted knapweed density. Percent change in density was used instead of raw difference in density because the grazed plots contained a significantly lower density of knapweed than before the spray treatment, so the raw difference would not have been representative.

Therefore, when looking at percent change in spotted knapweed, treatment had a significant effect on the total density of spotted knapweed after one year, as seen in Fig. 6 ($F_{3,16}=6.727$, $p=0.003$). The density of knapweed in the G+S plot was significantly reduced when compared to G+NS plot and the NG+NS plot. The density of spotted knapweed in the NG+S plot was significantly lower than that in the G+NS plot.

Figure 6 shows the percent change in total spotted knapweed density for each treatment. The G+S plot showed significantly less spotted knapweed than the G+NS and the NG+NS plots. The NG+S plot showed significantly less spotted knapweed than the G+NS plot.

However, the treatments had different effects on knapweed at various life stages. The effect of treatment on seedling density could not be analyzed because there were significant differences in seedling density by plot that outweighed treatment differences

(F9,10=16.27, p<0.001, Fig. 7), and the number of seedlings was so low that a percent change could not be calculated.
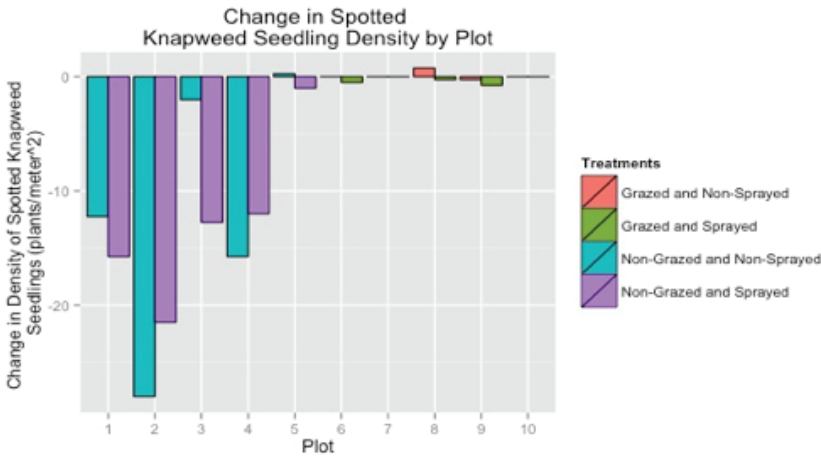

Figure 7 shows the change in spotted knapweed seedling density for each treatment and plot. Plots 1, 2, 3, and 4 and a significantly greater decrease in spotted knapweed density than plots 5, 6, 7, 8 9 and 10.

Plot was not shown to have a significant effect on the density of flowering adults, (F9,10=0.1497, p=0.9959), so plots were pooled. Treatment did have a significant effect on flowering adult knapweed, as shown in Fig. 8 (F3,16=18.68, p<0.001). The G+S plots and the NG+S plots both showed a 100% decrease in spotted knapweed density and had a significantly decreased spotted knapweed population when compared to the NG+NS plots and the G+NS plots.
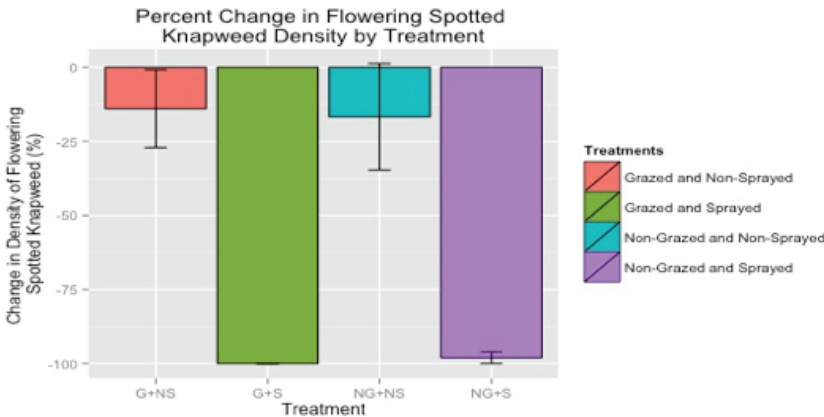

Fig. 8 shows the percent change in flowering spotted knapweed density for each treatment. The G+S plots and the NG+S plots showed significantly less spotted knapweed than the G+NS and the NG+NS plots.

Plot also did not have a significant effect on non-flowering adults ($F9.10=0.4133$, $p=0.9003$). However, treatment did have a significant effect as shown in Fig. 9 ($F3,16=5.51$, $p=0.0085$). Both the G+S plots and the NG+S plots showed a decrease in spotted knapweed larger than 90%, which was significantly more than the NG+NS plots, but not significantly different than the G+NS plots.
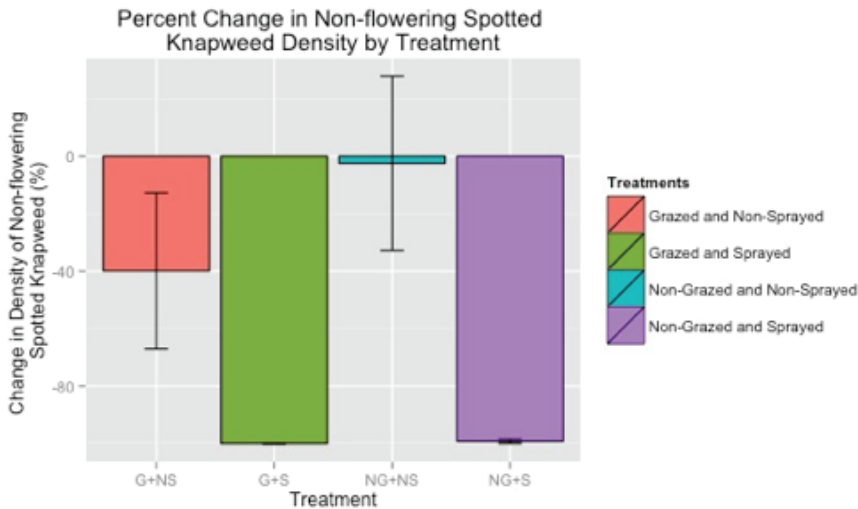

Fig. 9 shows the percent change in non-flowering spotted knapweed density for each treatment. The G+S plots and the NG+S plots showed significantly less spotted knapweed than the G+NS plots.

Annual and perennial grasses

Plot was not shown to have a significant effect on the average cover of perennial grass ($F9,10=2.965$, $p=0.05278$). Therefore, plots were pooled, and treatment was also not shown to have a significant effect ($F3,16=1.235$, $p = 0.3298$, Fig. 10).

However, plots were shown to have a significant effect on populations of annual grass, so it was determined that outside factors such as slope and disturbance must be affecting those populations ($F9,10=4.372$, $p=0.01533$). No conclusions could be made about the effect of treatment on annual grass populations.
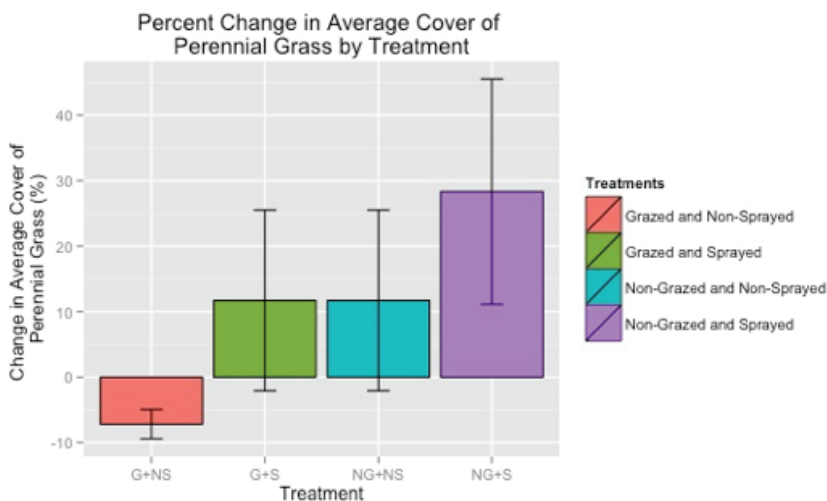
Percent Change in Average Cover of
Perennial Grass by Treatment

Fig. 10 shows the effect of treatment on the average cover of annual grass. No significant difference was found between treatments.

Perennial forbs

Silky lupine and common yarrow were at high enough densities in each plot that results could be analyzed for these species. First, it is important to note that t-tests showed that there was no difference between grazed and non-grazed populations of silky lupine (T=-1.1711, df=13.014, p=0.2625) or common yarrow (T= -0.18507, df = 15.692, p=0.8555) in 2014.

Plot was not shown to have a significant effect on the average cover of silky lupine (F9,10=.4112, p=0.9016), so the effect of treatment could be analyzed. Treatment was also not shown to have an effect on the density of silky lupine (F3,16=1.68, p=0.2113).

Plot was not shown to have a significant effect on common yarrow density either (F9,10=1.589, p=0.2402). Again, treatment was also not shown to have a significant effect on common yarrow (F3,16=1.023, p=0.4084). These results can be seen in Fig. 11. All other species were not present in every plot and, therefore, could not be analyzed.
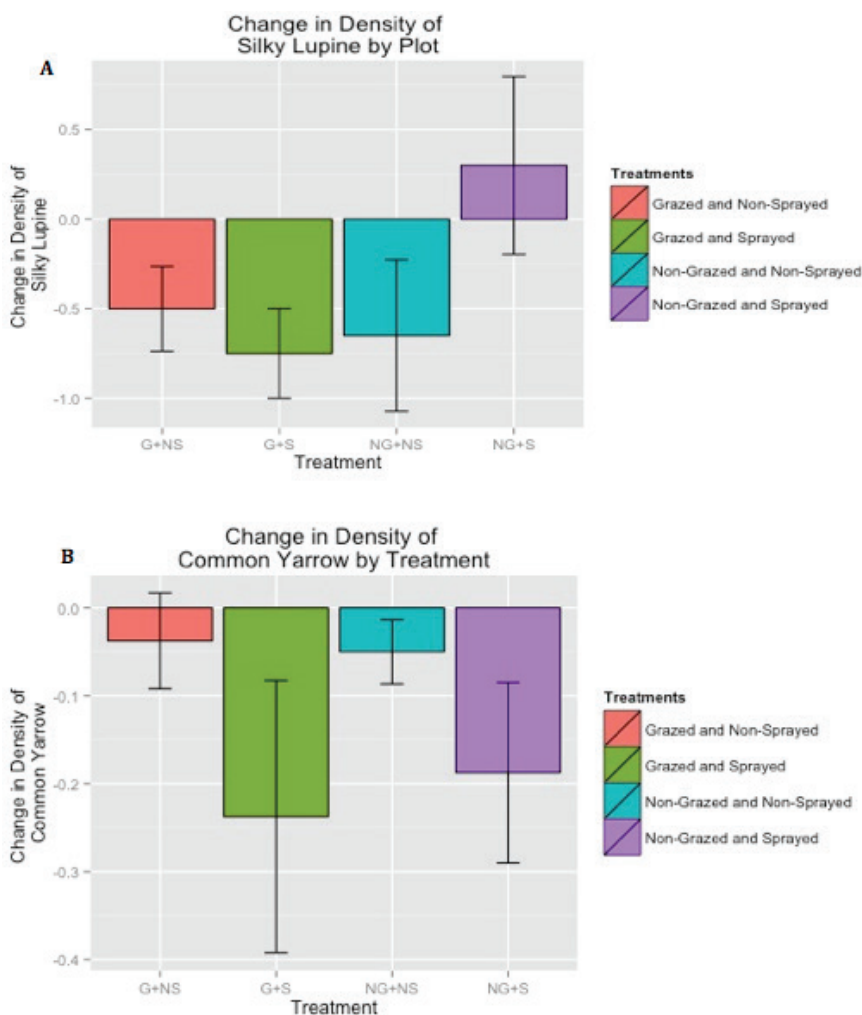
Fig. 11 shows the effect of treatment on the average density of silky lupine (a) and common yarrow (b). No significant difference was found between treatments.

Biological control insects

Biological control insect data was not distributed normally, so a Wilcoxon ranked sum test was used to determine if the populations of biological control insects differed in grazed versus nongrazed areas. No species showed a significant difference of population in the grazed versus non-grazed plots. The species present in

the plots included *Cyphocleonus achates* (W=9, p=0.5296), *Larinus minutus* (W=16.5, p=0.462), *Sphenoptera jugoslavica* (W=16.5, p=0.4338), *Agapeta zoegana* (W=8.5, p=0.4492), and *Urophora affinis* (W=9.5, p=0.5912). See Fig. 12 for the population distribution of each species.

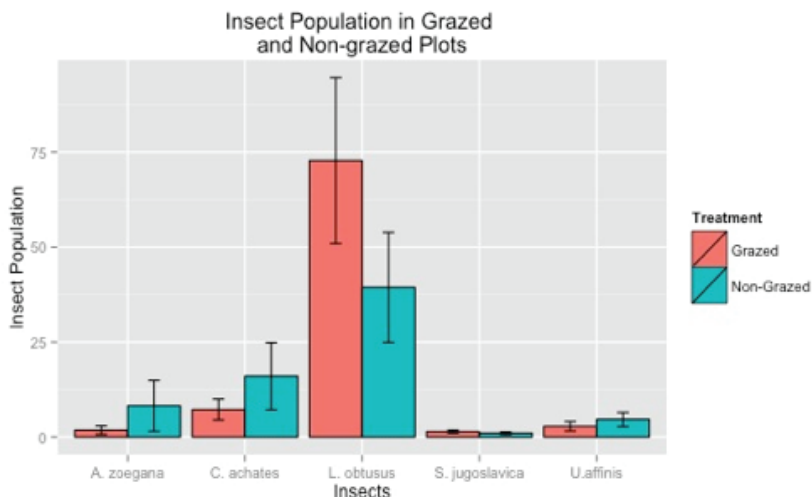Fig. 12 shows the distribution of each species in grazed vs. non-grazed plots. There was no significant difference depending on treatment.

Summary

Pre-2014 grazing had no effect on flowering knapweed, perennial and annual grasses, silky lupine, common yarrow, or biological control insects (Table 1). However, it did have a significant negative effect on total knapweed, non-flowering knapweed, and knapweed seedlings. The various grazing and spraying combination treatments had no effect on perennial grass, silky lupine, or common yarrow. Results could not be determined for knapweed seedlings or annual grass. [G+S treatment decreased total non-flowering and flowering knapweed significantly more than G+NS treatment did. Similarly, NG+S treatments decreased total non-flowering and flowering spotted knapweed significantly more than G+NS treatment did.] For flowering spotted knapweed, the NG+NS plots were not significantly different from the G+NS plots or the NG+S plots. However, the NG+NS plots were significantly

different from the G+S plots for total knapweed. For non-flowering spotted knapweed, the NG+NS plots were not significantly different from any other treatment. For the flowering knapweed, the NG+NS plots were significantly different from the NG+S plots and the G+S plots

Table 1 is a summary of all results from this study. Pre-2014 grazing treatment refers to the 7 years of grazing the occurred on grazed plots before the beginning of the study. G+NS: Grazed and Non-sprayed, G+S: Grazed and Sprayed, NG+NS: Non-grazed and Non-sprayed, NG+S: Non-grazed and Sprayed

	Pre-2014 grazing treatment	G+NS	G+S	NG+NS	NG+S
Total knapweed	Significant decrease	B	A	BC	AC
Non-flowering knapweed	Significant decrease	B	A	AB	A
Flowering knapweed	No effect	B	A	B	A
Knapweed seedlings	Significant decrease	NA	NA	NA	NA
Perennial grass	No effect	No effect	No effect	No effect	No effect
Annual grass	No effect	NA	NA	NA	NA
Silky lupine	No effect	No effect	No effect	No effect	No effect
Common yarrow	No effect	No effect	No effect	No effect	No effect
A. zoegana	No effect	NA	NA	NA	NA
C. achates	No effect	NA	NA	NA	NA
L. obtusus	No effect	NA	NA	NA	NA
S. jugoslavica	No effect	NA	NA	NA	NA
U. affinis	No effect	NA	NA	NA	NA

These findings show the general trend that grazing significantly reduces the amount of spotted knapweed over time, and the use of herbicide decreases the spotted knapweed population close to 100% in one year. These treatments had no effect on the native perennial forbs and grasses we are trying to preserve.

IV. Discussion

Vegetation implications

Our initial hypothesis was that the combination of grazing and application of herbicide causes a greater decline in spotted knapweed populations than grazing or herbicide application does alone. However, these results pose a more complex relationship between spotted knapweed density and the effects of grazing and herbicide than we had previously hypothesized. First, it is important to note that although most data was collected in a 12-month span, the grazing treatment had been going on for seven years before the beginning of the study. The significantly lower density of spotted knapweed in the grazed areas in 2014 is critical to the understanding of these results and management implication. The non-grazed plots had an average of 23.275 more plants per square meter than the grazed plots. This equals an additional 94,000 plants per acre on non-grazed pasture than compared to grazed pastures. That difference speaks to the effectiveness of grazing as a control method for spotted knapweed, an effect that cannot be easily seen by just looking at the 2015 vegetation survey results.

The vegetation survey data indicate that spraying has the greatest effect on spotted knapweed during the span of one year, while the combination of spraying and grazing reduces spotted knapweed density significantly more than each method alone. This supports our initial hypothesis. However, when looking more closely at the effect of each treatment on each life stage of spotted knapweed, the results are more complex. For example, one can see that flowering spotted knapweed populations were not considered significantly different in grazed versus non-grazed areas. However, both sprayed treatments significantly reduced the amount of flowering spotted knapweed in the plots. Therefore, spraying is crucial in reducing or eliminating a population of spotted knapweed because grazing alone is not effective in the flowering life stage.

Additionally, density of non-flowering and seedling spotted knapweed was significantly lower in grazed plots in 2014, but spraying did decrease non-flowering spotted knapweed density more than grazing alone in the 2015 vegetation survey. Therefore, we can see that the combination of spraying and grazing is effec-

tive because each treatment targets a specific life stage of the plant. Grazing targets non-flowering and seedling individuals while spraying targets flowering individuals.

Our second aim was to determine the effect of herbicide and grazing on annual forb populations. One concern with herbicide application is that native broadleaf species will also suffer after an application. Most species that we observed were not present in enough plots or at a high enough density to be analyzed, but it was shown that common yarrow and silky lupine were not significantly affected by herbicide application. In this study, plots were chosen based on the level of infestation of spotted knapweed, but in future studies, we would hope to choose plots with a higher prevalence of perennial forb species.

These data will be collected again in 2017 to evaluate the recovery of the plant community after the grazing and spraying treatments. Grazing and spraying treatments will not be applied to the plots during the recovery period. Our hope is that grazing and spraying will reduce knapweed numbers enough that the population does not reemerge by 2017.

More work could be done to study the effect of these treatments on a wider range of perennial forbs, perennial grasses, and annual grasses. This plot design was set up to target areas that were highly infested with spotted knapweed, but the abundance of other species was not taken into account. This information is crucial in our understanding of the effect of these treatments, and must be determined before we can suggest this treatment combination to land managers.

Biological control insect populations

The purpose of collecting data on the biological control species was to get a baseline population estimate and to determine which species were present on the site. It was determined that five different species were present. However, these results may have been skewed based on the survey technique. For example, the root dwelling insects were not as present in the sweep netting but were only found during the root dissection. This suggests that a more specific technique such as a seed head survey may have also been

necessary to get an accurate count of seed-head-boring insects. Further work will be done investigating insect population on other public lands, and the data will ultimately be used to determine if further releases of insects are a wise management choice.

The documentation of insect releases and publication of these releases is hit or miss in this area. Better records of this management technique would assist us in assessing the impact of these releases on local ecosystems. The impact of these releases on native insect populations is also yet to be determined, but is critical to understanding the overall impact of these species.

Management implications

These results show that grazing knapweed for multiple consecutive years does result in spotted knapweed population declines, but not in complete eradication. After one application of herbicide, the knapweed population was zero in the grazed and sprayed plots, which bodes well for the efficacy of this technique. This approach is also more cost-effective and environmentally sustainable than yearly spraying, but requires the initial purchase of livestock or a connection with a local rancher. However, the output of meat or wool may help to balance the initial cost of the livestock and herbicide.

Ultimately, this combination of treatments has the potential to increase the health and productivity of western rangelands because elimination of spotted knapweed would allow a resurgence of native species to fill in. A more diverse pasture means more diverse nutrition for livestock, as well as healthier soil and more resilient wildlife populations. This increase in nutritional value would allow more ranchers to use the land for sustainable beef and lamb production. When more ranchers are able to use the land, the plant communities will return to a natural equilibrium with the exotic weeds, and the introduction of new species will not have as drastic of an effect. The more diverse plant community will work to buffer the impact of the introduction of a new species.

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Acknowledgments

Turning the Lens: How Study Abroad Maintains and Challenges the Dominant Discourse of Travel

Abstract: It is difficult to conceptualize travel without utilizing the imaginaries constructed about journeying abroad. Study abroad is a major site in the reproduction and depiction of these imaginaries, as well as cultural Others and Otherness. While much research has been conducted on study abroad organizations, the ways in which students represent their time abroad is largely absent from the literature. With the proliferation of social media, students who study abroad are no longer merely consumers but active (re) producers of ideas and images of foreign locales. This research, grounded in postcolonial theory, used semistructured interviews and critical discourse analysis of students' Facebook and Instagram posts, as well as the promotional materials of study abroad organizations and travel blogs, to analyze the ways in which the Other is constructed both pictorially and textually. I argue that study abroad organizations' and travel blogs' emphasis on the self and use of tourist imaginaries in marketing is mirrored by students. In addition, students may attempt to challenge or subvert the stereotypical depictions familiar to them from movies, literature, or other media about travel. Due to length restrictions, not all of the study findings are included in this publication.

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I. Introduction

Images of lush landscapes, crumbling ruins, and people wearing traditional, brightly colored clothing beckon to students from flyers plastered across college and university campuses. Words such as "ancient," "distant," "native," and "pure" punctuate descriptions of far away destinations, and program summaries tout the various benefits of travel and study in different lands. Study abroad programs have become widespread at institutions of higher education with participation over the past decade in these programs increasing by 150% between 2010 and 2011 (Castaneda and Zirger 2011:544). The perceived benefits of study abroad experiences are many. Colleges and universities often cite intercultural understanding, cross-cultural exchange, the development of global perspectives, and an understanding of American identity as advantages of studying abroad (Dolby 2004:151). While these claims may hold merit, it is important to examine the ways in which study abroad programs are advertised and marketed to student populations, as the discourse and imagery used can impact the experiences, expectations, and perceptions students develop about the "Other" (Caton and Santos 2009; Feinberg 2002; Urry 1990).

I argue that study abroad marketing draws from a discursive archive that has existed since expeditions to explore new lands first became feasible. In travel accounts written by intrepid explorers, people inhabiting foreign lands are described in relation to their strange or backwards customs, and some were even depicted as physical anomalies, with eyes that they carried in their hands, or as giants taller than any human beings previously encountered (Hall 1996). Although these mythologized descriptions have largely disappeared, study abroad narratives, and travel narratives more broadly, have continued to draw from this discursive archive constructing an exoticized Other through images and texts that essentialize difference (Caton and Santos 2009:192; Hall 1996:202; Shepherd 2002:183).

Rather than allowing students to deconstruct their experiences abroad, the use of such discourse and imagery may instead create "reproductive" experiences in which these paradigms are replicated (Snee 2013:158; Holdsworth and Quinn 2012:392). In

addition, by positioning foreign locales as "ancient," "native," or "exotic," these narratives create a false dichotomy, one in which there is a "real" and "authentic" cultural encounter to be had with a "pure" Other untouched by Western influence (Caton and Santos 2009:192; Hall 1996:202; Shepherd 2002:183). Indeed, some scholars have suggested that student perceptions of studying abroad have shifted to include a respite from the familiar and pervasive effects of homogenization in the global, economic, social, and technological spheres (Grunzweig and Rinehart 2002:25). But in our increasingly globalized world, the study abroad experience may no longer provide the markedly different cultural atmosphere and landscape, deemed by many as potentially rich and rewarding, both marketed by study abroad programs and craved by those seeking these experiences (Dolby 2004:164; Engle and Engle 2002:25). Within this paradox lie questions worthy of research and examination: in our increasingly culturally homogenized landscape, how do media and marketing inform students' ideas of the study abroad experience and the Other, and what are the implications?

With the advent of social media and modern technologies, the ways in which study abroad experiences are represented and archived has changed drastically. Students and study abroad organizations use these platforms in order to document study abroad experiences and share them with friends, families, and potential recruits. This research examines the discursive archives study abroad organizations draw from and reproduce, as well as the implications of using this rhetoric. My research addresses the following questions: How are study abroad experiences marketed to students? What are the implications of this marketing, as well as other travel based media?

The study abroad experience is highly classed, gendered, and raced (Salisbury et al. 2010; Simon and Ainsworth 2012). While not a central component to my research, these factors are important to consider, as they affect who is able to participate in study abroad experiences, as well as how these experiences are represented (Salisbury et al. 2010:144). The participants in study abroad programs are disproportionately middle to upper-class white women who have access to college education (Salisbury et

al. 2010:144). Because of this demographical pattern, study abroad programs are often marketed as though all students should be attracted to these experiences for the same reasons (Salisbury et al. 2010:144). However, research has shown that the most commonly purported benefits of study abroad programs, such as the opportunity to develop cross-cultural skills and postgraduate opportunities, appear to have no effect on increasing the intent of students of color to participate in study abroad programs (Salisbury et al. 2010:144). This may be because students of color don't need to travel to other countries to develop cross-cultural understanding, as they encounter cultural differences in their everyday lives (Salisbury et al. 2010:145).

Thus, the ways in which study abroad programs are represented and marketed using broader travel discourse have important implications for who attends programs, the perceptions and expectations students have about the program itself, as well as their destinations, and the ways in which students draw upon broader travel discourses when representing their experiences. Indeed, study abroad programs and travel in general represent important cultural channels through which the construction and maintenance of the Other can naturalize and reproduce power relations between racial, ethnic, and cultural groups (Caton and Santos 2009:191). This paper investigates and analyzes the types of discourse the Warren Wilson College International Programs Office and other study abroad organizations use when marketing the study abroad experience through the use of critical discourse analysis of promotional materials and social media posts.

My findings reveal a dichotomy in the way Western and non-Western foreign locations are represented pictorially and textually by study abroad organizations and travel blogs. While Western locations are depicted in relation to pleasurable aspects, non-Western locations are often depicted in relation to their "exotic" differences. This dichotomy ultimately reinforces travel imaginaries of the Other. Students interact with these representations in complex ways to construct public portrayals of their study abroad experiences as convincingly meaningful. In addition, students may attempt to challenge or subvert the stereotypical depictions famil-

iar to them from movies, literature, or other media about travel. However, these attempts are not always successful and may act to reinforce simplistic stereotypical dualisms and the tourist gaze.

II. Research Methodology

I utilized critical discourse analysis to analyze marketing materials used by Warren Wilson College and outside organizations to promote their study abroad programs, such as posters, flyers, web pages, and other mediums. Critical discourse analysis involves identifying the relationship between the appearance of particular images in photographs or textual passages and the larger social contexts of production, consumption, and circulation in which they are embedded.

My interpretation of the data I collected from my participants is solely my own, analyzed using a postcolonial theoretical lens, and does not necessarily reflect the intent or the views of those who participated in this research. However, as Lutz and Collins argue in their seminal work, Reading National Geographic, the consequences of the rhetoric and discourse used is ultimately more important than the intent of the producers (1993:117). In addition, this research is so powerful, in part, because it illustrates the ways in which discourses about the Other operate—as taken-for-granted systems through which power circulates that we often don't realize we are complicit in. The aim of this research is thus not to judge or shame participants, but to reveal the ways in which this discourse operates in an institution that is often upheld as a standard for quality education.

III. Theoretical Layout

The United States, as well as much of what is perceived as the Western world, defines and constructs itself, in part, by its opposition to and difference from other parts of the globe (Hall 1996; Said 1983). Through the use of discourse, including signs, symbols, and images, the West positions itself in relation to an Other that is constructed and portrayed as exotic, dangerous, and pure (Bruner 1991; Caton and Santos 2009; Galani-Moutafi 1999; Hall 1996; Said 1983; Shepherd 2002). This discourse has permeated many institu-

tions, including popular media, academia, and the political sphere (Bruner 1991; Galani-Moutafi 1999; Hall 1996). Even study abroad advertising and narratives, from both organizations and students, rely on the use of such rhetoric (Bishop 2013; Caton and Santos 2009; Holdsworth and Quinn 2012; Lyons et al. 2011; Raymond and Hall 2008; Simpson 2004; Snee 2013).

Study abroad experiences are thus framed by a particular discourse (Goffman 1974; Heidegger 1977). Students who venture out into different parts of the world on study abroad excursions are influenced by, and draw from, this discourse, which in turn informs their expectations and experiences abroad, as well as their identities (Bruner 1991; Crawshaw and Urry 1997; Galani-Moutafi 1999; Giddens 1991; Rojek 1997). This reality has important implications, as tourism and study abroad represent cultural channels through which the construction and maintenance of the Other can act to naturalize and replicate power relations between racial, ethnic, and cultural groups (Caton and Santos 2009:191). With the advent of internet-based media platforms, and especially social media sites such as Facebook, Instagram, Twitter, and blogs, there are now vast archives of travel discourse to draw from. Both students and organizations utilize this medium to advertise or document their study abroad experiences.

Discourse can be defined as "a group of statements that provide a way of talking about a particular topic, as well as a way of imagining and perceiving" (Hall 1996:201). Discourse therefore simultaneously allows and limits the ways in which certain topics can be constructed and conceptualized (Foucault 1972:27; Hall 1996:201). These statements compose a discursive formation that Michel Foucault defines as the way in which statements fit together because they share the same object, style, and strategy or political pattern (1972:33). Discourse is not only the way in which knowledge is produced through language, but is also a practice that produces meaning (Hall 1996:201). These meanings are imbued in and influence all social practices (Hall 1996:202). It is also important to note that discourse necessarily implies power and is a system through which power circulates; the knowledge that a discourse produces is exercised over those who are "known" and subjected to

it, and those that produce discourse also have the power to make it true (Hall 1996:204-5). By using words such as "ancient," "distant," and "pure," the discourse of study abroad draws from discourses that have historically created dichotomies between the West and other parts of the world (Hall 1996; Said 1983).

These dichotomies have been called various names at different points in time. Stuart Hall called this dichotomous discourse "the West and the Rest," while Edward Said coined the term "Orientalism" (Hall 1996; Said 1983). While using different names, Hall and Said essentially outline the same process. Hall and Said both argue that this discursive formation was created from an "archive" that constructed an Other; the ideas in this archive came from classical philosophers such as Plato and Aristotle, religious and biblical sources, mythology, and tales from travelers themselves (Hall 1996:206-7; Said 1983:41-2). Eventually, the descriptions and images used during the Middle Ages gave way to a discourse that valued accuracy and factuality over other types of knowledge (Hall 1996:208). However, this new way of thinking about the Other was not immune to idealization or fantasy; foreign places and peoples were often represented in travel narratives as living in an "Earthly paradise," simple and innocent, lacking civility and social organization, living in a more pure state strongly associated with nature, and having much freer sexual norms and practices (Hall 1996:209-10). These themes first appeared hundreds of years ago, yet the discourse of study abroad continues to draw from this discursive archive while replicating representations of the Other from long ago.

The study abroad discourse, like all discourses, does not exist in a vacuum. The languages and images used to represent the experiences being sold frame the ways in which students perceive and experience their study abroad program (Bruner 1991; Crawshaw and Urry 1997; Galani-Moutafi 1999; Giddens 1991; Goffman 1974; Heidegger 1977; Rojek 1997). Goffman and Heidegger both provide useful ideas in conceptualizing how study abroad is framed. Goffman's theory of frame analysis posits that human beings organize and structure their experiences and perceptions into frameworks that they have adopted in order to guide their perceptions of reality

(1974:21). In the context of study abroad, organizations and students utilize certain frames when discussing, representing, and even thinking about their experiences, which are shaped in part by the study abroad discourse. Heidegger's theory of enframing is similar to Goffman's, which suggests that technology creates specific methods of constructing a worldview for those who use it and that individual users frame their perspective of the world through mediated interactions with technology (1974:326). These mediated messages act to reveal certain perspectives over others (Heidegger 1974:327).

Students who encounter these messages through social media, organizations' websites, mass media, or other outlets are influenced and draw from them, as well as the study abroad discourse, to construct their own identities. These forms of media also impact the expectations students have for their study abroad experience. Giddens outlines this process in what he calls "personalized versus commodified experience" (1991:200). In this complex process, Giddens argues, the mass media produce stories and narratives with which the audience can identify (1991:199). These stories are models for the construction of narratives of the self (Giddens 1991:201). Thus the discourses and frames available to students who participate in study abroad are utilized in the process of identity construction.

However, the transformation of self commonly associated with travel or study abroad may be overstated (Bruner 1991:242). Bruner argues that while tourism is often marketed as a transformative experience, the tourist self is changed very little. Tourists may spend only a few days or weeks in a location and move so rapidly that there is little or no opportunity for substantial interactions with local people. In addition, tourists may not speak the language, and, through the infrastructure of the tourist industry, they may be isolated from direct interaction with local people and spend most of their time with other tourists. Bruner also argues that tourists are rarely radically challenged during their time abroad, as the events and sites presented to them generally confirm their existing perceptions and expectations. Rather, the consequences for the "native self" are much more profound, as it is often the "native's" landscape,

occupation, or performance that must be changed in order to adhere to tourists' demands (Bruner 1991:242). While Bruner focuses mainly on tourism, many study abroad programs make similar claims about the transformative nature of travel (Dolby 2004:151). Perhaps, then, the discourses and frames available to students who study abroad influence not only how they perceive the Other, but also how they perceive themselves as well as their experiences.

In a study entitled "The Rhetoric of Study Abroad: Perpetuating Expectations and Results Through Technological Enframing," Sarah C. Bishop examines the ways in which the rhetoric of universities with study abroad programs "enframes" the study abroad experience. These websites emphasize "firsthand" cultural immersion, transformative experiences, racial difference, and aspects of cultural homogeny (2013:398). In addition, program administrators perpetuate a certain type of experience by encouraging the alumni of these study abroad programs to provide a particular kind of testimonial to be uploaded to their websites (Bishop 2013:398). Bishop argues that the online rhetoric used by these websites may ideologically frame students' travel experiences, as well as their perceptions of their own identities and their positions within cultures other than their own (2013:400). Thus, the ways in which study abroad programs frame the study abroad experience can influence and shape student perceptions and expectations of the program, the host culture, and themselves.

One of the common narratives used by travelers to solidify a sense of identity is the "risk and adventure narrative" (Elsrud 2001:598). In a study entitled "Risk Creation in Travelling: Backpacker Adventure Narration," Torun Elsrud used in-depth interviews with long-term budget travelers to examine this narrative (2001:597). Elsrud argues that risk and adventure narratives are used as identity claims and can be understood as manifestations of a dominant "grand narrative of travel" in which independent travel to places perceived as "underdeveloped," "primitive," "poor," or occupying that place considered the "Third World" is seen as both risky and rewarding (2001:598). Although my research does not focus on solo traveling but rather students who travel with groups of their peers, and I do not necessarily focus solely on countries

perceived to be of the "Third World," the risk and adventure narrative is pervasive, relevant to the stories people tell about their experiences abroad, and part of the dominant travel discourse people draw from when representing their study abroad experiences.

Discourse about the Other can be found embedded within movies and television shows about travel, post cards, brochures, guidebooks, and travel writing in magazines, on blogs, or in other mediums (Bruner 1991; Caton and Santos 2009; Galani-Moutafi 1999; Rojek 1997). Within the context of study abroad, however, most research focuses on websites, posters, flyers, and pamphlets produced by a study abroad organization (Bishop 2013; Caton and Santos 2009; Lyons et al. 2011; Raymond and Hall 2008; Simpson 2004). These promotional materials frame study abroad experiences in particular ways, such as through the use of images that emphasize cultural, racial, or ethnic difference; student testimonials that predominantly feature personal growth; rhetoric that relies on vague and generic descriptions of the benefit of travel; and the use of language that presents the Other as exciting, exotic, pure, authentic, or relying on other stereotypes (Bishop 2013; Caton and Santos 2009; Lyons et al. 2011; Raymond and Hall 2008; Simpson 2004).

The result of using the study abroad discourse, as well as images in which cultural, racial, or ethnic differences are emphasized, is to produce and reproduce notions and mythologies of the Other (Bishop 2013; Caton and Santos 2009; Holdsworth and Quinn 2012; Lyons et al. 2011; Raymond and Hall 2008; Simpson 2004). Promotional materials are based on simple dualisms and essentialized conceptions of the Other, and homogenous descriptions of peoples and cultures are used in order to produce evocative and recognizable imagery for the intended audience (Bishop 2013; Caton and Santos 2009; Holdsworth and Quinn 2012; Lyons et al. 2011; Raymond and Hall 2008; Simpson 2004). Thus, while cross-cultural understanding is often stated as a goal of study abroad experiences, the discourse it draws from may instead reinforce and reproduce widely held stereotypes.

Caton and Santos analyzed the representation of the cultural Other in Semester at Sea promotional materials in their study

entitled "Images of the Other: Selling Study Abroad in a Postcolonial World" (2009). They found that, while Semester at Sea emphasizes cross-cultural understanding and global citizenship, the program still draws from and reproduces hegemonic depictions of non-Western peoples and cultures (Caton and Santos 2009:191). Using qualitative content, semiotics, and discourse analysis, these authors analyzed the promotional materials of the study abroad program and found that the program's representation of the Other essentialized hosts and the cultural differences between hosts and students (Caton and Santos 2009:198). The images and text used by Semester at Sea promoted and asserted a "Western superiority ideology" by creating binary oppositions such as modern-traditional, technologically advanced-backward, and master-servant (Caton and Santos 2009:191). In addition, the promotional materials of Semester at Sea tended to over-simplify the globalization process by depicting the non-West as exotic, pristine, and full of happy natives (Caton and Santos 2009:191).

When examining travel discourse, it is also important to consider Foucault's conception of the gaze (1973). Foucault applied the term to his genealogy of the clinic to describe the ways in which doctors and other professionals in scientific fields see, isolate features, identify similarities and differences, and classify objects (1973:89). In this way, the object of knowledge and the subject of the gaze is constructed, sorted, and classified; that which is subjected to the gaze becomes known (Foucault 1973:89). Therefore, the power to know and to obtain knowledge is achieved at the expense of those who are subjected to the power of the gaze. The gaze describes the power to watch, judge, and classify, as well as the power of those who subject others to the gaze to make statements and judgments that are taken as truth by the outside world (Foucault 1973:88). Tourists and travelers alike gaze upon and construct an imagined Other when visiting foreign locations, and study abroad professionals produce statements and classifications that the outside world and students who participate in the programs interpret as truth.

John Urry provides important insights into the ways in which tourists and the tourism industry utilize the gaze. Using

the term "the tourist gaze," Urry posits that the gaze is constructed through signs and that tourism involves the collection of these signs (1990:3). These signs become singularly representative of entire countries and cultures, and tourists become semioticians looking for and collecting the signs associated with particular groups of people. Professionals in the tourism industry work to construct and reproduce new objects and signs for the tourists' gaze and consumption. Thus, tourists take as truth what professionals construct as authentic and real signs of a culture or people. Although many would make a distinction between students studying abroad and tourists on holiday, I argue that such distinctions are not so simple to make. While study abroad does differ from vacation by virtue of its academic nature, study abroad experiences share similar characteristics with the holiday, such as staying for a short time in locations and traveling to see certain landmarks and sites deemed important.

IV. Advertising the Other: How Study Abroad Organizations Represent Foreign Destinations

The ways study abroad organizations market and advertise programs have important implications for both students and foreign destinations. In the constantly plugged-in atmosphere of higher education, students often utilize study abroad websites to learn about and apply to study abroad programs (Bishop 2013:399). These websites are often the first interactions students have with study abroad programs, and the images, discourses, and ideologies they encounter can frame the ways in which students interpret and represent their experiences and tell their stories. In this section, I examine the ways study abroad organizations appeal to students through the use of imaginaries, synecdochal signs, and imagined geographies, as well as the ways these programs are legitimized through their use of the gaze. In addition, I argue that the student testimonials and photo competitions used by study abroad organizations reproduce and privilege certain perspectives over others.

The study abroad organizations I examined often appealed to students through the use of imaginaries, or what N.B. Salazar describes as "socially transmitted representational assemblages that

interact with people's personal imaginings and are used as meaning-making and world-shaping devices" (2012:864). Imaginaries of travel are built through a compilation of culturally constructed images and signs from a variety of sources, including movies and documentaries about travel, museum exhibitions, photographs, blogs and websites, guidebooks, literature, magazines, news coverage and more, and are a component of the discursive archives built around travel (Salazar 2012:866). Imaginaries are powerful, in part, because of their taken-for-granted nature; while the precise ways in which imaginaries operate are hidden from view, these imaginaries become tangible when manifested in institutions, such as study abroad (Salazar 2012:866). Travel imaginaries may allow students to picture themselves in foreign destinations, but can also act to influence the ways students perceive different cultures and places.

Promotional materials for study abroad programs often display easily identifiable monuments, historical sites, prominent geographical features, or even people, typecast to fulfill a culturally constructed motif, who more often than not, in the case of non-Western countries, are almost always portrayed as stagnant and existing within a distant and archaic past. These archetypal representations intentionally evoke recognizable landmarks and features to pander to imaginaries of travel that have existed for centuries and draw from discourses of an exotic, romanticized Other or a modern yet historical superior caste (Hall 1996:206; Said 1978:41). Whole countries and cultures are thus reduced to representations of a handful of iconic landmarks and symbols to be packaged and sold; Italy becomes associated with food and romance, France with art and fashion, Australia with idyllic natural landscapes populated by wise, suffering Aboriginals, and so on.

Study abroad organizations are not ignorant to the ways in which their representations draw from these imaginaries. Travel agencies, study abroad programs, travel blogs, and even governments work within the frameworks of imaginaries and master narratives to appeal to potential consumers and travelers (Bruner 2004:22). Several of my participants mentioned the ways in which their study abroad organizations framed destinations.

For example, Selena, a student who studied abroad for

a semester in a country in Africa, described an instance during her time abroad in which a team of filmmakers arrived to make a promotional video about the program: "They weren't really there to get the real story…they were there as a promotion video for Stony Brook…to try to get new students." When prompted further, she described the way in which the filmmakers framed their promotion: "Instead of just catching [slash and burn agriculture] on video and […] instead of portraying why slash and burn agriculture was used, it's more they depicted it as, look at how the natives are destroying the little bit of rainforest we have left." These filmmakers thus drew from imaginaries of conservation and travel, and positioned "natives" and their agricultural practices as detrimental to the environment in order to compel students to visit this country in Africa and "save" the rainforest. In addition, Selena was aware of the way these filmmakers framed the study abroad program.

Similarly, Cora, a student who studied abroad for a semester in Northern Ireland, recalled a trip her study abroad program sponsored: "We'd go to the dark hedges, which is where these big trees grow together, and there's a whole lot of Game of Thrones filmed in Northern Ireland, so they sort of did a Game of Thrones tour and showed like this scene was shot here and this scene was shot there." Cora's statement reveals that imaginaries of travel are not just used in advertising programs to students but also during their time abroad. This particular tour appeals to conceptions of Northern Ireland in relation to its fantastical, mythical past. Both students and study abroad organizations are thus aware of the ways in which imaginaries are used to frame study abroad destinations.
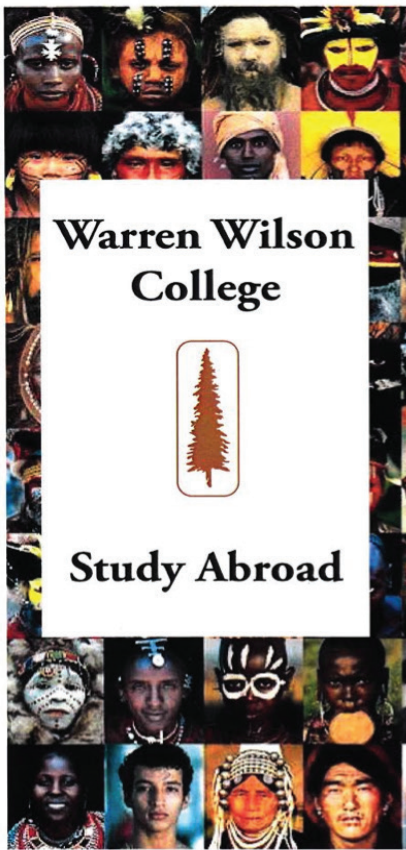
International Programs Office (Warren Wilson College) brochure

The image here, a brochure used by Warren Wilson College's International Programs Office to promote and advertise study abroad, is a good example of the ways study abroad organizations utilize imaginaries. It displays the faces of non-Western people ornamented with face paint, colorful headdresses, and large piercings. This image is used to appeal to a Western, mostly white audience precisely through its depiction of difference and foreignness; none of the people pictured are even vaguely connected to the present but instead portrayed in "traditional" garb not generally represented in Western societies. This depiction of the Other as a static, unchanging, timeless entity allures to a Western audience fascinated by an exotic Other that can be gazed upon, discovered, and ultimately known. Indeed, study abroad organizations often advertise and gain legitimacy through their claims to academia, as well as privileged Western knowledge and ways of knowing.

These images and identifiers become what Edward Said termed imagined geographies, used to describe the ways in which places begin to be perceived by the images, texts, or discourses used to represent them (1978:55). It is important to note that the word "imagined" is not meant to denote false or untrue claims, but it is instead used to convey how people perceive Other spaces (Said 1978:55). The process of imagined geographies ascribes physical spaces with imaginative values and cultural meanings, thus producing spaces with specific culturally constructed inscriptions. These

imagined geographies not only influence perceptions, but also the ways in which space is performed (Gregory 1999:116). Derek Gregory calls this process "scripting," in which spaces are "serialized," constructed as visible, and organized "into a hierarchy of cultural significance"; spaces are thus transformed into "sites" and signposted so that tourists can locate them within an "imaginative landscape" that then becomes a meaningful "sight" (1999:116).

The scripting process may even influence how and what students see and do during their study abroad experiences. According to Edward Bruner, tourists and travelers begin each trip with some preconceptions of their destination, which is what he calls a "pre-tour narrative" (2005:22). This pre-tour narrative, present in the traveler's mind, thus structures their actual travel experience as their "quest for stories" directs their experiences toward encounters that will form the foundation of the stories they tell about their travels (Bruner 2005:24). Thus, space becomes a performance of preconceived geographical ideas and locations.

Another way in which to conceptualize how study abroad organizations advertise locations is through the use of synecdochal signs. These are signs that constitute "part of something standing in for a whole, or a whole representing a part. Thus the city of Paris is often represented by a picture of one part of it, the Eiffel Tower: the image of the tower is a synecdochal sign of Paris as a whole" (Rose 2007:87). Using the concept of synecdochal signs to understand the ways in which study abroad organizations advertise locations can help us understand the power relations inherent in representation. By asking questions such as "Whose perspectives do these representations depict, and how?" and "Whose perspectives are being left out?", we can begin to understand the ways in which imaginaries and discourses shape study abroad experiences.

These representations not only simplify and distill locations into preset categories, but they also act to reproduce what John Urry calls the tourist gaze (1990). According to Urry, "places are chosen to be gazed upon because there is an anticipation, especially through daydreaming and fantasy, of intense pleasures, either on a different scale or involving different senses from those customarily encountered" (1990:3). Study abroad organizations thus use images

and text that feature characteristics of both the pleasurable and the different over other alternatives to appeal to fantasies of the Other.

Online informational brochure (CIEE) for Paris study abroad

      Above, images of the Eiffel Tower and the Alexander Bridge in Paris, France are used in an online promotional brochure by the Council on International Educational Exchange (CIEE) along with the caption "Paris: City of Light, Inspiration." The brochure describes Paris as "one of the world's leading centers for art, cuisine, and fashion," as well as the charming "pedestrian-only haven[s] of cafés, markets, tantalizing sweets, and so much more" found in the city. The images and descriptions of Paris used in this advertising emphasize the pleasurable, including activities students can take part in, as well as the opportunity to "tour some of the city's cathedrals of culture," such as the Louvre.

Poets and Dictators: Art, Politics, and Philosophy in Germany

International Programs Office (WWC) online brochure for Germany study abroad

      Study abroad representations of Western locations also emphasize cityscapes and modernity. These representations of foreign Western destinations are often accompanied with language that emphasizes the long-standing claims these cities have over art and culture. The trip advertised above, for example, describes the study abroad location of Berlin as a "contemporary urban center," while also describing the program's focus on the "rich…cultural and intellectual developments of modern Germany" from the 19th century to the present. Emphasizing the claims Western cities have over art, culture, and even ideas legitimates a particular kind of privileged canonical Western knowledge, as well as the study abroad program itself.

Promotional image used on the SIT website for Vietnam study abroad

By contrast, study abroad programs to non-Western countries generally emphasize the opportunities to engage in a different yet enriching cultural experience, as well as ancient traditions. Accompanying photographs such as the one above on their website with textual descriptions, the School for International Training (SIT) includes explanations of "educational excursions" such as, "You will experience Vietnamese indigenous cultures and observe local music, dress, embroidery, and other crafts…During excursions, you may witness firsthand activities of a Red Dao shaman and the indigo dying by Hmong women, and you may interact with local students." By using this type of imagery and discourse, SIT positions cultural difference as something to be experienced by students, as well as scientifically observed and witnessed from an academic distance. While study abroad programs traveling to Western locations represent them as bastions of intellectualism and culture, programs traveling to non-Western locations emphasize opportunities for students to scientifically gaze upon and empirically measure cultural difference.

Monkey Chants & Ancient Dance: Art and Social Change in Bali and Java

International Programs Office (WWC) online brochure for Indonesia study abroad

While programs to Western locations emphasize ties to the classical and the pleasurable, study abroad programs to non-Western locations use a particular word, "ancient," to represent destinations. Although the word ancient is historically rooted in archeological descriptions, meant to define and categorize societies within a certain time period, the meaning of this word in the use of study abroad marketing is perhaps lost and instead invokes conceptions of the Other as static, exotic, and unchanging. While this particular study abroad program also advertises examining social change, what is ultimately conveyed is an imagined timeless Other. In addition, the use of this word is generally used to describe places like China, Vietnam, Indonesia, and Armenia, although locations such as Italy and Greece have just as much of a claim to ancient history. Words like ancient, used in tandem with images like the one above, clearly delineate the use of the tourist gaze to emphasize difference between Western and non-Western locations. Difference is thus stereotyped, with complex differences collapsed into simple categories and projected onto subjects or places (Hall 1996:215).

Organization	Destination	Use of the word "ancient"
Warren Wilson College	Armenia	"Armenia is an ancient culture, steeped in tradition and rich in natural beauty."
Warren Wilson College	China	"We will study and examine what has changed and what has not changed in this ancient country."
Warren Wilson College	Indonesia	"Students will have opportunities to explore the ancient roots of Javanese and Balinese art."
SIT	Vietnam	"Highlights of the excursion include visits to the ancient town of Hoi An and to Hue."

The table above displays the different ways the word ancient is used in study abroad programs my participants went on. These quotes emphasize the static and unchanging nature of foreign cultures, as well as the opportunity for students to gaze upon, explore, and examine them and their natural beauty. In contrast, destinations such as Italy, Cuba, Mexico, Ireland, and the Bahamas are described in relation to history and historical pasts. Use of the word ancient is thus used to portray an exotic and essentialized version of a distant and foreign Other, which appeals to white Western imaginaries of travel.

Study abroad organizations thus draw from imaginaries, imagined geographies, and synecdochal signs when marketing their programs to students. These representations reproduce simplistic dichotomies between Western and non-Western destinations, and drawn from and ultimately reinforce a tourist gaze that is focused on difference and pleasure. In addition, study abroad organizations draw from a discursive archive of travel that positions Western foreign locations as historically superior and emphasizes their roles as cathedrals of culture, while non-Western locations are depicted in relation to their static, "ancient" roots and exotic differences. These representations have important implications for the ways students perceive and experience study abroad, as well as how students themselves represent their experiences.

In their marketing materials, study abroad organizations

utilize an official discourse and ideologies of academia to legitimize programs. This discourse often draws from antiquated discursive formations of Western secular scientific knowledge in order to classify and analyze not only other cultures, but also human beings. Michel Foucault refers to this compulsion to classify as "the gaze" (1973). This kind of knowledge production, claimed by study abroad organizations, implies that the Western student, as an observer, is elevated above the foreign entities they seek to examine, explore, or know (Ashcroft et al. 2000:207). In addition, the use of this discourse creates a fixed identity in which the student is the observer and the producer of knowledge, while the local becomes an object to be examined and observed. The use of this discourse and the ideology of superior Western knowledge in study abroad marketing reproduces and naturalizes power relations and complexes between Western and non-Western places. When examining this discourse, one must ask the following: how much can students really learn from study abroad programs framed with these ideologies and discourses?

> 66 When I arrived in Vietnam I found a country with the friendliest people, richest culture, and most astounding natural beauty I've ever come across. Moreover, Vietnam's development in the last few decades has been an incredible feat, and I feel lucky to be witnessing firsthand the vast changes it continues to undergo. My hope is that more Americans get the chance to see Vietnam the way I have. 99

—Emily Dawes, Washington University in St. Louis

Image from CIEE website

The use of such discourse is apparent on the Council on International Educational Exchange's (CIEE) website, whose slogan is "The world is our classroom. Join us." CIEE thus positions itself, as well as its students, in a locus of power to interpret and understand the world. This type of claim can only be made by an institution entitled to gaze upon Others by virtue of Western superiority. Indeed, the use of this discourse on study abroad organizations' websites, in concert with images of the exotic, constitutes a process of Othering

in which the subject defines and positions itself in relation to an object (Ashcroft et al. 2000:155). In this case, study abroad organizations define themselves and their students as knowers and surveillers, while foreign destinations, or even the rest of the world, are defined as places to be discovered, explored, and known. Disturbingly, students encounter this process long before they ever even leave the country.

Study abroad organizations also utilize this discourse to describe specific courses. For example, SIT employs this discourse when describing "educational excursions" students can participate in. One educational excursion, an Aboriginal camping trip, is described as such: "Acquire traditional ecological knowledge in the quest for sustainability...While at Minyami students make traditional Aboriginal artifacts, learn traditional hunting and gathering skills, experience Aboriginal customs, and hear stories that contain lessons on how to care for and live in the environment." A Stony Brook University study abroad course in a country in Africa also uses this language, stating: "Excursions to other parts of the country introduce students to the diversity of [redacted]'s environments, biodiversity, and cultures." Additionally, the CIEE homepage encourages "cultural discoveries," encouraging students to "explore the best cultural offerings available in your host city." These statements position students as the active experiencers of different cultures while simultaneously erasing the members of these cultures through the use of language that obscures their existence. The emphasis in these descriptions remains instead on the students and the experiences available to them.

Indeed, a focus on the self is a decidedly prominent feature foregrounded by study abroad organizations. Study abroad organizations often emphasize the transformative nature of their programs, as well as travel in general. Students are thus not only expected to gain global perspectives during their study abroad experiences, but also significant insights into themselves. While I cannot reasonably assess how transformative study abroad experiences are for students, I can examine the ways in which this emphasis is portrayed through marketing, as well as how it influences student representations of their time abroad.

SIT and CIEE in particular emphasize students' focus on the self. The CIEE homepage features phrases such as "Meet your city--Socialize with other students while you get to know your host location" and "CIEE Insider--Pursue your own interests and activities with the help of study center staff." In their description of the Paris study abroad program, CIEE says: "This summer, make Paris your own. Whether you want to improve your language skills, explore classic literature, fine art and cinema, or study Francophone culture, we'll help you find what you're looking for in Paris." Similarly, SIT describes its study abroad course to Australia as a way to empower students to make a positive contribution in building more sustainable societies.

> You will witness and investigate practical alternatives to the current economic system, which is degrading our environment and leading to increasing inequality, and will be inspired by the incredible natural beauty of Australia's World Heritage areas. You will learn how to apply the principles of sustainability, not only in your personal life, but in any career you choose.

These descriptions not only utilize the discourse of academia but also emphasize the student as the ultimate focus of the program. These experiences are thus portrayed as insular American-centered experiences as opposed to opportunities to engage with communities. If we are to take these descriptions at face value, it would appear that students spend more time with each other and study abroad staff members than their host communities. In addition, these descriptions encourage students to make cultures their own and to "find what [they're] looking for," which may act to reinforce the imaginaries students travel abroad with rather than challenge them. Ultimately, these statements do not challenge students to move beyond their existing perceptions or beyond themselves as the focus of their programs--a reality that was reflected in student narratives.

Study abroad organizations thus position themselves and their students as producers of knowledge and active experiencers of difference while simultaneously erasing the agency of those

they seek to know by writing them out or writing them down. In addition, through their use of this discourse, study abroad organizations emphasize a focus on the self, which necessarily depends upon an Other to define oneself against. By encouraging students to find what they're looking for or make cultures their own, study abroad organizations do little to challenge students to look beyond themselves or their own expectations and assumptions. This reality was reflected in both student narratives and social media posts and raises questions about what students can learn from study abroad experiences when organizations frame programs using these ideologies and discourses.

Study abroad organizations feature student testimonials and photographs on their websites to increase the legitimacy of their programs. While these testimonials and photographs can provide insights into what a study abroad program is like, they also act to reproduce and privilege certain perspectives. In addition, organizations and institutions may encourage students to produce certain types of testimonials. Students who subsequently encounter these testimonials may be influenced by the framework used to represent the program, and the cycle starts anew.

This process constitutes what Giddens calls "personalized versus commodified experience," in which the mass media, or in this case study abroad organizations, produce stories and narratives with which audiences can identify (1991:200). These stories and narratives then become models for narratives of the self, which audiences personalize and tailor to their own experiences. In the case of study abroad testimonials, students may personalize the narratives and stories presented to them before they even embark on their travels.

The reproduction of discourses and ideologies used by study abroad programs to represent Other places is evident in student testimonials such as the one above. Emily, a student who traveled with SIT to Vietnam, draws from the discursive formations used by study abroad organizations to describe foreign destinations, stating that she "found a country" full of friendly people, rich culture, and breathtaking natural beauty. Emily's testimonial not only reproduces an imperial gaze, but also draws from tropes of

140

the "friendly native," abundant and unspoiled "natural beauty," and culture that, by virtue of its difference, acts to enrich and transform the Westerner who comes into contact with it. These tropes are juxtaposed with the rapid changes in development and technology Vietnam has experienced. Emily closes her testimonial by stating that she hopes more Americans get the chance to see Vietnam the way she has, thus reinforcing the ways in which her study abroad organization represents the Other.

Photo contest winners from International Programs (WWC) Clock-wise from top left: Armenia (Best Architecture/Structure), China (Best Cross-Cultural), Mexico (Best Portrait), Alaska (Best Land-scape/People's Choice)

Institutions also utilize photo contests to promote and legitimize study abroad programs. Warren Wilson College recently held its own contest, with categories such as "Best Architecture or Structure," "Best Cross-Cultural," "Best Landscape or Nature," and "Best Portrait." Students who studied abroad in 2015 were eligible to win, and each category had several submissions. The winning photographs in each of these categories tended to emphasize differ-ence and exoticism in their own ways, which drew from tropes of unspoiled, abundant natural beauty; unchanging, timeless people;

and the literal consumption of difference through food. Students are thus encouraged to reproduce the visual representations of the Other they encounter through study abroad organizations.

It is clear that study abroad organizations have a vested interest in appealing to imaginaries of travel, using the tourist gaze, imagined geographies, and synecdochal signs to represent locations in a way that invokes well-established discursive constructions of travel. Study abroad organizations could just as easily emphasize contemporary urban centers and modern features of non-Western countries as they do ancient cultures and traditional practices; however, these representations do not fit within constructions of Other places, and thus study abroad organizations instead emphasize the differences tourists expect. By contrast, Western destinations are represented as metropolitan sites of pleasure and leisure. These representations have important implications for how students perceive, experience, and represent their time abroad. Additionally, study abroad organizations encourage students to focus on themselves by doing little to challenge them to move beyond their own assumptions, expectations, and perceptions. Thus, while study abroad is often heralded as a tool for eradicating stereotypes and creating greater global awareness and understanding, organizations' own representations of other places may instead reinforce widely held stereotypes and biases. In addition, students encounter these representations in mainstream media as well. Students both reproduce and challenge these representations in complex and engaging ways.

Conclusion

Study abroad organizations and mainstream media reproduce discursive formations of the Other through their use of travel imaginaries, imagined geographies, and synecdochal signs. Their representations of foreign destinations are often based on simple dichotomies that emphasize pleasure or exotic difference, thus reproducing the tourist gaze. Study abroad organizations utilize the gaze in order to emphasize their legitimacy as academic institutions, thus positioning themselves and their students as producers of knowledge and active experiencers of difference, while the Other is relegated to being observed and known. In addition, study abroad organizations encourage students to focus on the self by doing little

to challenge them to move beyond their assumptions and by urging students to make destinations their own and find what they're looking for. Additionally, students may be encouraged to reproduce these types of representations through institutionally sanctioned student testimonials and photo competitions. These practices not only encourage students to reproduce the representations of their study abroad organizations, but also privilege certain perspectives over others.

The representations of foreign destinations used by study abroad organizations reinforce widely held stereotypes of people, places, and cultures through their use of discourse and images that romanticize and exoticize difference. These depictions privilege certain perspectives and are targeted mainly to white, Western audiences. It is thus important to ask whose perspectives are being depicted and how, as well as whose perspectives are missing. Students interact with these representations in complex ways, and attempt to challenge or subvert them. However, the extent to which these challenges are successful is questionable, as students may ultimately reproduce the stereotypical depictions they encounter. In order to break this cycle, we must continue to ask ourselves: how much can students learn when their study abroad experiences, and travel in general, are framed using these ideologies and representations? Study abroad organizations and institutions of higher education should encourage students to think critically, not only about how destinations are represented, but also about how students themselves represent their experiences abroad.

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Acknowledgments

This thesis was made possible in no small part by the faculty of the Sociology/Anthropology Department. In particular, I am indebted to Dr. Siti Kusujiarti for her masterful questions and comments, and to Dr. Ben Feinberg, without whom this research would not exist in the first place. Above all, I am indebted to my parents, Mary and Mark Edwards, whose continuous love and support is my only constant.

"Not Just Doing Manual Labor Blindly": Comparing Warren Wilson Student Experiences Volunteering in Latin America and the Triad's Integrated Work and Service Programs

Abstract: Warren Wilson College student experiences volunteering abroad in Latin America fit into a historical context of international humanitarianism, as well as an embedded power hierarchy of the Global North over the Global South. Through twenty-one semi-structured interviews with Warren Wilson students, I assess the motivational factors for Warren Wilson students to participate in volunteer tourism; the extent to which students find their involvement in Warren Wilson's Points of Engagement & Growth (PEG) community engagement model to be meaningful and effective; and the potential for service to deconstruct uneven power dynamics between the Global North and South. I conclude that while Warren Wilson students express having mixed service experiences in both volunteer tourism and the PEG system, the incorporation of critical education and the redistribution of power in service partnerships can make international and domestic volunteerism more reciprocal, meaningful, and socially just.

Eliza Stokes | Global Studies and Creative Writing
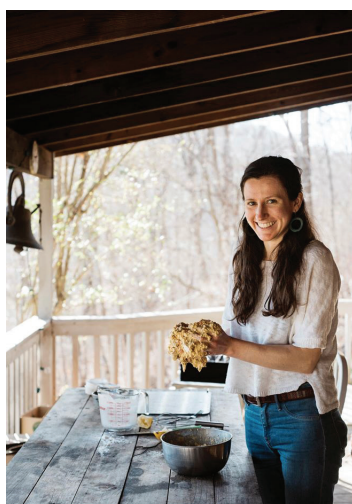
Eliza Stokes graduated in May 2016 with degrees in Global Studies and Creative Writing. Eliza became interested in this thesis topic after having mixed experiences volunteering in Ecuador and Guatemala before college and wanting to research how global volunteer programs could be improved. Since graduation, Eliza has worked as a home builder (and demolisher), a barista, a freelance editor, and a writer for Mountain Xpress. She currently tutors English for non-native speakers with the Buncombe County Literacy Council and is the Assistant Director of the Warren Wilson Writing Studio.

I. Introduction

For young people with the financial means to do so, volunteering abroad in a foreign country is currently the easiest it has ever been. The search query "volunteer Latin America" on Google yields over thirty-three million results, including many organizations that promise to take travelers on an incredible journey. United Planet's page claims to offer the "most authentic, most immersive experiences for people who want to do something important,"[1] while Cross-Cultural Solutions boasts that it allows volunteers to "see and experience Latin America like only the locals do… A volunteer trip abroad will change you. Change the way you see other cultures. Maybe even change what you do with your life."[2] The language is clear: these programs promise to be simultaneously "off-the-beaten path," accessible to the authentic viewpoints of locals, and life-changing. Young people scrolling through these websites can select any number of social issues they'd like to volunteer for—typically working with children or animals, doing basic infrastructure repair, or environmental restoration projects—and can be assured an immediate connection to an accessible and safe experience abroad.

Volunteer tourism, or "voluntourism," is an increasingly popular form of travel that involves volunteering in other countries in exchange for arrangements ranging from basic room and board to a significant payment. There exists a wide diversity of organized volunteer tourism opportunities, which most commonly include non-governmental organizations or non-profits, study abroad trips at the high school and college level, and religiously-affiliated trips. Many volunteers also opt out of organized group excursions to participate in non-institutionalized volunteer tourism, which often has its own subculture in which volunteers travel cheaply for a long period of time, using volunteer organizations as bases throughout a

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[1] "About United Planet," *United Planet,* accessed April 14, 2016, http://www.unitedplanet.org/about.

[2] "Change Their World. Change Yours. Volunteer In Latin America," *Cross-Cultural Solutions,* accessed April 14, 2016, https://www.crossculturalsolutions.org/.

foreign country.[3] For the purposes of this paper, volunteer tourism includes all of these aforementioned examples of institutionalized and non-institutionalized volunteer tourism: any form of travel abroad that incorporates deliberate volunteer work or service.

As of the 2008 Tourism Research and Marketing (TRAM) survey, which is the last time volunteer tourism was specifically quantified as its own category, it was a 1.7-2.6 billion dollar industry. TRAM estimated that 1.6 million volunteer tourists were going abroad per year, 90% of whom were traveling to Latin America, Africa, or Asia. A remarkable 70% of these tourists were between ages twenty and twenty-five.[4]

Theoretically, volunteer tourism could be imagined as an apolitical and ageless phenomenon. However, these statistics indicate that volunteer tourism is actually a perpetuation of embedded global power dynamics and privilege. There are distinct political, economic, and social forces that allow young people from the United States, Europe, and more developed parts of Asia[5] to volunteer easily in Africa, Asia, and Latin America. Once there, these same factors make it seem acceptable for volunteers to take on major roles in foreign communities without necessarily having cultural competence, training, or even much of a plan. Further, the embedded power dynamics that make it so easy for the former of these populations to volunteer abroad are the same ones that make the reverse scenario almost impossible—for instance, stricter

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[3] Christian Schott, "Young non-institutionalised volunteer tourists in Guatemala: exploring youth and self-development," in *Volunteer Tourism: Theoretical Frameworks and Practical Applications,* ed. Angela M. Benson (New York: Routledge, 2011), 54.

[4] Tourism Research and Marketing, "Volunteer Tourism: A Global Analysis," *Association for Tourism and Leisure Education and Research,* 2008, http://www.atlas-webshop.org/Volunteer-tourism-A-global-analysis.

[5] Japan is the only non-European descendant country outside of the Global North that I found to have a percentage of volunteer tourists anywhere close to those from European-descendant countries. Typically, volunteer tourism has had a more nationalist focus in Japan; for more on this dynamic, see Rebecca Forgash, "Touring Tohoku, Serving the Nation: Volunteer Tourism in Post-Disaster Japan," *The Applied Anthropologist* 31, no. 1 (2011): 30-36.

immigration laws in the United States and Europe, as well as more rigorous standards for education and construction certification.

As a result, I argue that volunteer tourism is a phenomenon of the Global North and South divide—a term referring to the uneven distribution of wealth and quality of life across the world based on geographical location. One of my Warren Wilson student interview subjects touched on this hierarchy when describing the ease with which she was given a volunteer teaching position in Panama for three months: "I was literally just dropped off in a classroom with about eighty students from [ages] six to fourteen," she said. "It was interesting to think of the reverse situation: how well it would go down if a Panamanian eighteen-year-old were brought to teach a Spanish class in the U.S. with that range of students, [and] that level of flexibility and trust [was] given to the teacher?"[6]

As the popularity of volunteer tourism has grown, so have the critiques against it in both popular culture[7] and academia. Many leisure and tourism scholars have questioned the supposedly altruistic motives of volunteer tourists, and studies by Daldeniz and Hampton,[8] Schott,[9] Simpson,[10] and others have revealed that young people's motivation to volunteer abroad tends to be more concerned with attaining personal growth, cultural capital, and résumé enhancement rather than the service aspects of their experiences. Others question the widespread placement of

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[6] Anonymous student interview subject in discussion with the author, April 4, 2016.

[7] Tom Burson, "'Savior Barbie' Surprisingly Captures What's Wrong with 'Voluntourism' in Africa," *Paste Monthly,* April 20, 2016, http://www.pastemagazine.com/articles/2016/04/white-savior-barbie-pokes-fun-at-voluntourism.html.

[8] Bilge Daldeniz and Mark P. Hampton, "VOLUNtourists versus volunTOURISTS: a true dichotomy or merely a differing perception?" in *Volunteer Tourism: Theoretical Frameworks and Practical Applications,* ed. Angela M. Benson (New York: Routledge, 2011), 30-41.

[9] Schott.

[10] Kate Simpson, "Dropping Out Or Signing Up? The Professionalisation of Youth Travel," *Antipode* 37, no. 3 (2005): 447-469, doi: 10.1111/j.0066-4812.2005.00506.x.

unskilled and untrained volunteers into expert roles in foreign communities,[11] narcissistic portrayals of volunteer experiences in social media,[12] and the shortsightedness and inefficacy of programs that lack attention to the structural and political sources of poverty.[13] In response, many of these scholars are calling for the incorporation of social justice pedagogy in volunteer tourism.

I build on this scholarship by looking to volunteer tourism experiences among Warren Wilson students participating in the college's Triad of integrated academic, community engagement, and work programs. After attending Warren Wilson for four years, I have found volunteer tourism to be both a popular experience and a topic of debate in our student body. By the time I arrived here as an eighteen-year-old, I had spent two summers in short-term volunteer programs in Latin America; one taking care of animals at a wildlife rescue center in Guatemala, and another teaching English and environmental education in a fishing village in Ecuador. During my orientation week at Warren Wilson, I seemed to meet students who had traveled to Latin America everywhere I went, many of whom had volunteered in some capacity during their travels. My volunteer experiences, which were anomalous at my public high school in Baltimore, were suddenly as common as the sticks of incense and Pink Floyd posters that could be found in every Warren Wilson dorm.

Since Warren Wilson's community engagement program, at least in theory, can be considered a response to the call for social justice pedagogy posed by volunteer tourism scholars, this paper is asking a number of questions: First, what is it about Latin America that attracts so many Warren Wilson students? Might students immersed in Warren Wilson's Triad approach service in Latin America and Appalachia differently, and perhaps more critically, than students in previous literature on volunteer tourism

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[11] Ibid., 462.

[12] Mary Mostafanezhad, "Volunteer Tourism and the Popular Humanitarian Gaze." *Geoforum* 54 (2014):111-118, doi: http://dx.doi.org/10.1016/j.geoforum.2014.04.004.

[13] Simpson, 466.

and service learning? To what extent do Warren Wilson students find that their community engagement through the college's Points of Engagement & Growth (PEG) model has been meaningful and effective? And finally, based on Warren Wilson student experiences volunteering in Latin America, does it seem possible for residents of the Global North to volunteer in the Global South in a way that deconstructs embedded power hierarchies rather than perpetuating them?

II. Contextualizing the Study

i. Origins of Volunteer Tourism: Humanitarianism

In order to understand the current popularity of volunteer tourism among young people in the Global North, we must briefly look to the historical context of travel in the United States and Europe. The roots of travel as a form of leisure have historically been in the hands of wealthy countries—as a way to fill in the footsteps of colonialism, as well as a response to technological and infrastructural innovation.[14] One of the earliest examples of leisure travel was the Grand Tour, through which young, wealthy American and European men traveled to the Mediterranean in order to explore new cultures and enjoy a transitional period of their lives before the onset of adult responsibilities.[15]

The instinct of humanitarian travel traces back to religious ideas. In the 17th century, the Latitudinarians of Britain claimed that God had "implanted in our very Frame and Make a compassionate Sense of the Sufferings and Misfortunes of other People, which

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[14] Rob Skinner, and Alan Lester. "Humanitarianism and Empire: New Research Agendas," *Journal of Imperial and Commonwealth History* 40, no. 5 (2012): 729-747, doi: http://dx.doi.org/10.1080/03086534.2012.730828.

[15] Edward Brodsky-Porges, "The Grand Tour: Travel As An Educational Device 1600-1800," *Annals of Tourism Research* 8, no. 2 (1981): 171-186, doi: 10.1016/0160-7383(82)90074-3. 177-178.

disposes us to contribute to their Relief."[16] As this sentiment developed into charity for others, religious groups tended to focus on removing the suffering of individuals, rather than the greater political circumstances creating their conditions.[17] Theorist Mary Mostafanezhad states that popular humanitarianism, as defined as "how the West understands and acts out a sense of moral responsibility toward the impoverished parts of the world and their threatened inhabitants," came into being in the eighteenth century.[18]

      The spirit of volunteerism became more prominent in the 1830's, as the Great Awakening prompted renewed interest in community service among young people. Missionaries, doctors, and teachers began to link the moral spirit of humanitarianism toward other parts of the world with the travel and global scope viewed as necessary to alleviate it.[19] The century to follow saw a rise in civil society volunteer responses after the Great Depression in the form of efforts such as soup kitchens and volunteer bureaus, and the governmental institutionalization of hands-on labor and volunteerism was also evident in efforts such as Service Civil International in Europe, the Peace Corps in the US, and John F. Kennedy's call for hands-on labor to improve society both domestically and internationally.[20]

      Some of the counter-cultural undertones of non-

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[16] Richard Fiddes, *Fifty-Two Practical Discourses on Several Subjects: Six of Which Were Never Before Published* (Printed for John Wyat [and 3 others], 1720), quoted in Karen Hulttunen: "Humanitarianism and the Pornography of Pain in Anglo-American Culture," *The American Historical Review* 100, no. 2 (1995), 303-334, doi: 10.2307/2169001. 304.

[17] Rob Skinner and Alan Lester, "Humanitarianism and Empire: New Research Agendas, " *Journal of Imperial and Commonwealth History* 40, no. 5 (2012): 729-747, doi: 10.1080/03086534.2012.730828.

[18] Mostafanezhad.

[19] Angela M. Benson, "Volunteer Tourism: Theory and Practice," in *Volunteer Tourism: Theoretical Frameworks and Practical Applications,* ed. Angela M. Benson (New York: Routledge, 2011).

[20] Daldeniz and Hampton.

institutionalized volunteer tourism can be traced back to the 1960's, as "hippie" youth in the United States linked their outrage toward global injustices perpetuated by the United States with their own ability (and means) to be part of a solution.[21] Additionally, an unofficial travel route known as the Hippie Overland Trail from Western Europe toward Pakistan, India, and Nepal became hugely popular among hippie youth. Travel conventions as part of the Hippie Overland Trail operated as a blueprint for later volunteer networks—for instance, efforts to travel as cheaply and lightly as possible from the Global North to South, and to focus on the self-growth component of the journey. The towns along the trail responded by developing hotels and restaurants catering almost exclusively to these travelers.[22]

ii. Origins of Community Engagement at Warren Wilson College

The religious roots of community engagement at Warren Wilson College were also established through the college's founding by Presbyterian missionaries. As Presbyterians spread their ideals around the world in the second half of the 19th century, they also made domestic efforts to aid Americans considered, "as one Church leader stated, 'with us but not of us'; particularly Native-Americans, Mormons, Hispanics, and Southern Appalachian mountaineers.'"[23] Despite the diversity and range of lifestyles in Appalachia at the time, these missionary efforts emphasized aid to a specific cultural stereotype of "quaint" mountain people, who were typically described in a rather folkloric and exaggerated fashion. David E. Whisnant explains that Presbyterian mission work in this region must, then, be recognized as "systematic cultural intervention: a vehicle to normalize and correct the apparently backwards culture

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[21] Daldeniz and Hampton.

[22] Agnieszka Sobocinska, "Following the 'Hippie Sahibs': Colonial Cultures of Travel and the Hippie Trail," *Journal of Colonialism and Colonial History* 15, no. 2 (2014): 1-87, doi: 10.1353/cch.2014.0024.

[23] Mark Banker, "Warren Wilson College: From Mountain Mission to Multicultural Community," *American Presbyterians* 73, no. 2 (1995): 111–123. 111.

of Appalachia in some specific way that the intervenor thinks desirable."[24]

Over the century since its founding, Warren Wilson College has undergone enormous changes in its ideology and student body demographics. New Presbyterian leaders (including Warren Wilson himself) came to distance themselves from the school's evangelical missionary origins, and missionaries discovered unexpected diversity and value in the mountain people they encountered. Gradually, the school moved away from its "Appalachian-only" admissions policy, and also enrolled many international students who were recruited by Presbyterian missionaries in the Global South.

As Warren Wilson became more ideologically and financially distant from the Presbyterian Church, it also saw a decline in international students. And as tuition continued to rise over the past half century and federal assistance and vocational programs came to fill more of the needs of poor Appalachia, Warren Wilson has attracted more affluent students nationwide.[25]

In 2011, Warren Wilson's long-time 100-hour community engagement model was reevaluated due to critical feedback from students and community partners. Students were often unmotivated and disengaged by community engagement that felt like a "checkbox," while community partners felt that students who were simply finishing up their hours did not seem productive or invested in their arrangements. In contrast, community partners thought that Warren Wilson students who committed to sustained, consistent community engagement with their organizations were the most helpful.

The Center for Community Engagement spent the 2011/2012 school year building a new community engagement model and launched the Points of Engagement & Growth, or PEG system, in Fall of 2012. As a developmental community engagement model, the PEG system encourages more active and intentional

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[24] David Whisnant, *All That Is Native and Fine: The Politics of Culture in an American Region* (Chapel Hill: North Carolina Press, 2009), 13.

[25] Banker.

158

community engagement choices within the student body. PEG 1, or "Self-Knowledge," calls on students to "explore and clarify interests, passions, skills and values" through a combination of community engagement during Orientation Week, in First Year Seminars, and independently throughout the community. PEG 2, "Understanding of Complex Issues," focuses on an interest that students develop after gaining a deeper understanding of their community engagement interests in PEG 1, and calls for twenty-five hours of engagement that "examine why a social/environmental issue exists and how service addresses it" in the form of student-led workshops, service-learning classes, or committed community engagement to a single partner organization. PEG 3, "Collaboration for Community Impact," doubles the required community engagement hours to fifty and asks students to demonstrate "initiative and communication" with an issue or community partner; and, though reflection is built into all of the PEGS, PEG 4 reflects on the student's community engagement experience as a whole, either through written or verbal reflections that approach the topic through various themes. For instance, in spring 2016, a workshop on the role of spirituality in community engagement was led by Chaplain Brian Ammons, and a PEG 4 workshop relating community engagement to the job search process was run by the Career Development Center. PEG 4 allows students to plan how community engagement will remain a part of their lives after graduation.[26]

        The community engagement efforts of Warren Wilson students are unmatched by any other college in the country. With only 784 students in the 2014-2015 school year, Warren Wilson students accomplished 58,065 hours of community engagement on top of their academic expectations and minimum 15-hour per week work commitments. While the core hour requirement of community engagement through the PEG system is still one-hundred hours, students routinely go far beyond this number. In 2016, over fifty Warren Wilson seniors—a quarter of the graduating class—had participated in over 250 hours of community

[26] "Community Engagement Commitment," *Warren Wilson College*, accessed March 4, 2016, https://www.warren-wilson.edu/service/commitment.

engagement in their time at the college, while five seniors had accomplished over 1,000 hours of community engagement each.[27]

The mission of Warren Wilson's Center for Community Engagement is also explicitly focused on a perspective of social justice.[28] In an interview, the Center's Director of Student Engagement, Shuli Archer, said, "I'm very committed to moving students from what might be called a 'helping' orientation to more of a 'justice' orientation…and usually the majority of our crew are first-generation college students or come from working class families,[29] and so the idea of shifting to that justice orientation is very personal for them."[30] Along this same line of social justice, the program's definition of community engagement has expanded since the implementation of the PEG model in 2012; Dean Cathy Kramer explains, "[We used to recognize only] direct service with a 501(c)3 non-profit, and that was service. And now, really what we want is for students to engage in the community, and there are grassroots organizations that have not gotten that status but are doing amazing community organizing. There's advocacy work, there's activism work. We want to recognize all of that."[31]

III. Literature Review

There is currently a large body of literature on volunteer tourism abroad, as well as on domestic service learning. Generally speaking, the viewpoints in the literature can be categorized into three main schools of thought. The first claims that volunteer tourism maximizes intercultural understanding through direct access to geographically disparate populations, reduces cultural

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[27] Misha Perez in discussion with the author, March 31, 2016.

[28] "The Mission of Warren Wilson College," *Warren Wilson College*, 2016, https://www.warren-wilson.edu/about/mission.

[29] While Warren Wilson's student body as a whole has generally become more affluent in the past half century, students who work at the Center for Community Engagement typically come from a greater range of economic backgrounds in line with the center's inclusion in the national Bonner's Leaders civic engagement program.

[30] Shuli Archer in discussion with the author, April 7, 2016.

[31] Cathy Kramer in discussion with the author, April 5, 2016.

stereotypes, and creates authentic connections across the Global Northern/Southern divide. Scholars of this viewpoint include Stephen Wearing, whose book Volunteer Tourism: Experiences That Make a Difference (2001) has been foundational in the field. Wearing argues that volunteer tourism minimizes the amount of "othering" that traditional, mass tourism has been criticized for by allowing volunteers to see the "real, authentic" country rather than resorts.[32]

In their article "Understanding Voluntourism: A Glaserian Grounded Theory Study," Zoe Alexander and Ali Bakir apply engagement theory to volunteer travel: "Students optimize their learning by being meaningfully engaged in activities through interactions with others and doing worthwhile tasks."[33] This perspective encompasses the importance of hands-on activities in order to stimulate learning, and suggests that social issues are best approached through direct action.

Scholars have also researched the viewpoints of communities who host volunteers, who often attest to the increased authenticity of volunteer tourism as opposed to conventional mass tourism. Nancy McGehee found that in a survey distributed to 260 community members of the volunteer organizations Los Niños and Esperanza in Tijuana, Mexico, 67% answered that they "benefited quite a bit" or "a great deal" from volunteer tourism, and "98% wanted to have at least some contact with volunteers visiting the community."[34] McGehee notes that residents were most likely to support volunteer tourism when they felt it benefited them personally, especially by providing a source of sustainable income

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[32] Stephen Wearing and Simone Grabowski, "Volunteer tourism and intercultural exchange: exploring the 'Other' in the experience," in *Volunteer Tourism: Theoretical Frameworks and Practical Applications,* ed. Angela M. Benson (New York: Routledge, 2011), 53-70.

[33] Alexander, Zoe and Bakir, Ali. "Understanding voluntourism: a Glaserian grounded theory study." *Volunteer Tourism: Theoretical Frameworks and Practical Applications.* Ed. Angela M. Benson, (New York: Routledge, 2011), 9-29.

[34] Nancy Gard McGehee and Kathleen Andereck, "Volunteer tourism and the 'voluntoured': the case of Tijuana, Mexico," *Journal of Sustainable Tourism* 17, no. 1 (2009): 39-51, doi: 10.1080/09669580802159693. 48.

through volunteer room and board fees.

But a second, more critical school of thought warns that non-reciprocal service arrangements can reinforce preconceived cultural stereotypes and fulfill exotifying portrayals of communities in need. Mostafanezhad believes these dynamics are perpetuated through volunteers' photographed intimacy with their host communities as part of what she calls the "popular humanitarian gaze." Volunteers' pictures typically focus on images of poverty, or position local children around the volunteers as if they were accessories. Of this process, Mostafanezhad writes, "Photographic surveillance in the volunteer tourism encounter aestheticizes the poverty that the volunteer tourists seek to ameliorate" and "perpetuates postcolonial relations of power between the gazer and gazee."[35]

Still others question the widespread placement of unskilled and untrained volunteers into expert roles in foreign communities[36] and the shortsightedness of programs that lack attention to the structural and political sources of poverty.[37] Ivan Illich, a Roman Catholic Priest in Mexico during the 1960's, famously gave the scathing address, "To Hell With Good Intentions" to a group of American volunteer tourists who traveled to Mexico in 1968. Illich criticized the belief that positive intentions were enough to make the volunteers' service relevant to Mexico, and identified volunteer tourism as a reiteration of colonialism. Illich urged the Americans to volunteer at their homes, where he believed they would have the cultural competency and skill set to carry out effective service. He declared: "I am here to suggest that you voluntarily renounce exercising the power which being an American gives you. I am here to entreat you to freely, consciously and humbly give up the legal right you have to impose your benevolence on Mexico."[38]

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[35] Mostafanezhad, 115.

[36] Simpson.

[37] Mostafanezhad.

[38] Ivan Illich, "To hell with good intentions," in *Conference on Inter-American Student Projects. Cuernavaca, Mexico. Accessed March 3, 2016, http://www. swaraj. org/illich_hell. htm*. 1968.

Others claim that while cross-cultural service can reproduce harmful power dynamics, there are identifiable factors that can make these connections more meaningful. Simpson,[39] Conran,[40] and McGehee and Andereck[41] call for revisions to volunteer efforts, and recommend that social justice be incorporated into the pedagogy of international volunteerism. On a domestic level, d'Arlach, Sánchez, and Feuer argue that service works best when community partners share leadership roles and participate alongside volunteers as experts. In their study "Voices from the Community: A Case for Reciprocity in Service-Learning," d'Arlach et al. reveal that a community of Latino immigrants paired with English-speaking American college students in a service-learning class felt invested in this arrangement because they could help "co-create" knowledge due to their Spanish fluency, as well as their personal experience with social issues that came up in dialogue with the American students.[42]

Other scholars committed to improving volunteer tourism have created online resources to help potential volunteers navigate the industry, [43] and Fee and Mdee (2011) created a guide to over eight-hundred volunteer tourism companies ranking programs as effective, ineffective, or exploitative.[44] This tool is meant to help potential volunteers to make informed decisions about volunteer organizations, while recognizing that volunteer tourism is probably here to stay.

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[39] Simpson, *Dropping Out or Signing Up?*

[40] Mary Conran, "THEY REALLY LOVE ME!: Intimacy in Volunteer Tourism," *Annals of Tourism Research* 38, no. 4 (2011): 1454-1473.

[41] McGehee and Andereck.

[42] Lucía d'Arlach, Bernadette Sánchez, and Rachel Feuer, "Voices from the Community: A Case for Reciprocity in Service-Learning," *Michigan Journal of Community Service Learning* 16, no. 1 (2009): 5-16. 5.

[43] "Voluntourism." *Via International*, 2014, accessed April 7, 2016, http://www.viainternational.org/community-engagement/community-voluntourism.

[44] Liam Fee and Anna Mdee. "How does it make a difference? Towards 'accreditation' of the development impact of volunteer tourism," in *Volunteer Tourism: Theoretical Frameworks and Practical Applications,* ed. Angela M. Benson (New York: Routledge, 2011), 224-238.

IV. Theoretical Framework

With this scholarship in mind, I propose several lenses through which to analyze volunteer tourism as a disparity of cultural, political, and economic power between the Global North and South.

i. Mills, Norms of Space (1997)

Mills' theory on racialized norms of space contrasts European landscapes designated as "safe" and "home" against the unknown and "strange" world outside of it. Inherent to this concept is the belief that spaces beyond the European home require taming; Mills writes, "This space is our space, a space in which we (we white people) are at home, a cozy domestic space…[In] non-Europe… both space and its inhabitants are alien. So this space and these individuals…are both defective in a way that requires external intervention to be redeemed."[45]

Many volunteer tourism programs follow Mills' logic of spatial norms, as the Global South's perceived strangeness transforms it into a playground for the self-development and adventure desired by Global Northerners. Mills' discussion of non-Europeans as defective also evokes Whisnant's discussion of cultural intervention in early Presbyterian missionary work in Appalachia. In the context of volunteer tourism, this "defectiveness" suggests that the perceptively less developed, and therefore inferior, Global Southern societies require the aid of well-intentioned volunteer programs.

Mills also describes the "geography of monstrosity" in early European cartography, which drew the European world and then mapped "Where there Be Dragons": parts of the world outside of European space that were considered untamed, unknown, or even in need of conquering. This same colonialist sentiment is

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[45] Charles W. Mills, *The Racial Contract* (Ithaca: Cornell University Press 1997), 42.

evident in contemporary volunteer tourism, as there is even a Gap Year program called Where There Be Dragons that sends young Global Northerners to the Global South, and often includes volunteer tourism in its programming. The main page of their website portrays a man looking over a vast and desolate mountain abyss, with a rotating caption featuring phrases like "Discover the Unknown." The organization's "About" caption draws from neocolonialist language, describing itself as "a community of bold educators and intrepid adventurers" who "guide travelers to the map's edge."[46] Such language points out the eurocentric line where known and comfortable European space ends, and the "deficient" and "dangerous" non-European world—in need of volunteer tourism—begins.

ii. Campbell, The Hero's Journey (1949)

Volunteer tourists often fill the archetype of explorer or hero through their use of travel as a means for personal development. This concept has a long history in Western literature, dating back to the first published accounts of experiences in the Orient by European authors in the 1800's. In laying out the colonial history of travel networks and counterculture today, historian Agnieszka Sobocinska points to the book First Overland: London-Singapore by Landrover (1957), a published account of a trip by six men from Oxford and Cambridge to travel to Asia on a grant. With its engaging, action-packed, and ironic style, Sobocinska writes that the story "poked fun at the Expedition's pretentions to adventure even as it established them, thus updating the colonial adventure genre for a self-consciously sophisticated, modern audience."[47] In more explicit terms, Richard Neville's Play Power: Exploring the International Underground (1970) encouraged American youth to leave their mundane, conventional Western lives and escape to the exotic East in order to grow spiritually while confronting global

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[46] "Where There Be Dragons: Student," *Where There Be Dragons*, accessed May 1, 2016, https://www.wheretherebedragons.com/student/.

[47] Agnieszka, 37.

political divides. Such a personal transformation made symbolic use of "exotic cultures," as young people accumulated material goods that proved their worldliness—and thus, their counterculture enlightenment. Neville writes:

"[Where Alf had left home in] school blazer and golfing shoes, flag sewn neatly to rucksack," [he returned in] a Moroccan djellaba and Indian sandals, a gold earring   through his ear and a Turkish carpet bag…Alf would never be the same again.[48]

Based on the Western world's long-time attraction to adventure stories—in which a desire to know (and conquer) the unknown is deeply embedded—it comes as no surprise that this tradition has continued on to a new generation of volunteer tourists. I would go a step further to suggest that this classic volunteer tourism experience demonstrates many components of Joseph Campbell's "Hero's Journey" wheel:
[49]
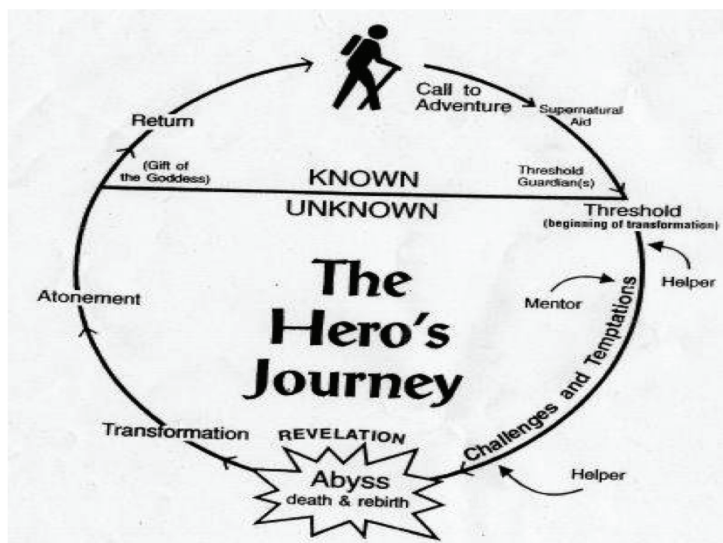
[48] Richard Neville, *Play Power: Exploring the International Underground* (New York: Random House, 1970), in Sobocinska, 54.

[49] "Science Fiction Writers' Workshop: Joseph Campbell's Hero's Journey," *KU Gunn Center for the Study of Science Fiction, accessed March 3, 2017, http:// www.sfcenter.ku.edu/Workshop-stuff/Joseph-Campbell-Hero-Journey.htm.*

The opportunity to volunteer abroad presents a call to adventure— a chance to leave the "known" Global North (or according to Mills, the safe, European-descendant space) in order to cross the threshold of transformation through service. The personal transformation that occurs by moving from the "known" to the "unknown" world is more than just a plotline; it is often a stated objective of volunteer tourism companies such as Where There Be Dragons, and even of service learning programs. I do not mean to indict all service as egocentric or necessarily based on a "hero's complex," but rather to show that this process fits into an old pattern of Western culture.

Even when volunteers are not aiming to be heroes, then, they might discuss the lure of the Global South as an attractive place to grow and learn due to its stark cultural contrast with the Global North. This desire comes up frequently in the research on volunteer tourism motivation, as volunteers often frame their trips as purposeful "challenges" to "see what [they are] made of."[50] This is especially notable given the transitional life stage of many volunteer tourists—again, 70% of whom were between ages 20 and 25 in the 2008 TRAM survey. As such, these trips often occur during two simultaneous transitions: from the known to the unknown geographical worlds, as well as the personal known to unknown in the transition into adulthood.

The literature shows that many young volunteer tourists participate in non-institutionalized travel to escape boring or undesirable aspects of Global Northern culture, or to be more than "just tourists." Therefore, the intimate emotional and tactile experiences that volunteers gain by staying in the homes of community members presents volunteer tourism as a more authentic and meaningful form of travel.[51] The volunteer tourism industry redeems itself by presenting as an alternative to mainstream travel—and within this niche, independent volunteers may distance themselves from pay-to-volunteer programs in a similar fashion.

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[50] Schott, 55.
[51] Conran, 1460.

iii. Morton, Community Service Paradigms (1995)

I base my definition of social change-oriented community engagement on Keith Morton's theory of three community service paradigms: charity, project, and social change. Charity is a "giving of the self" that lacks sustainability or long-term results, such as a fundraiser or phone-a-thon. Project service pairs with community partners for extended community engagement without deconstructing the structural sources of inequality. Finally, social change, or transformation, service is based on the "empowerment of the systematically disenfranchised." It requires a depth of relationship with community partners, commitment to the education of volunteers, and a "clear understanding of the root causes of problems and effective strategies for addressing them.[52] More implicitly, Morton's approach creates a spectrum from the apolitical "helping" of individuals through charity, toward dismantling the roots of injustice in the social change paradigm.

Morton's service paradigms inform how Archer guides the goals of the Center for Community Engagement, and thus, the ideology of community engagement at Warren Wilson. In an interview, Archer says that the PEGs are often more of an example of "project" service, but that highly motivated Warren Wilson students who engage in long-term community engagement fall more into the social change paradigm.

Even when Warren Wilson students' community engagement experiences do not create social change, the PEG model itself has many characteristics that provide strong potential for Morton's conception of social change: namely, the educational and reflective components that are built into the PEGs, that community engagement is moving increasingly toward extended community partnerships through classes and internships, and the fact that our Center for Community Engagement connects to structural inequality through involvement in voter registration,

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[52] Keith Morton, "The Irony of Service: Charity, Project and Social Change in Service-Learning," *Michigan Journal of Community Service* 2, no. 1 (1995): 19-32. 23.

social justice marches and demonstrations, and what Morton would call "root causes" of inequality both on and off the clock.[53]

V. Methods

With these theories in mind, I created open-ended interview questions to gauge how Warren Wilson student experiences compare to those of students in previous volunteer tourism research. I collected research from twenty-one Warren Wilson students who have attended the college for at least one semester and have previously participated in volunteer tourism in Latin America. I conducted thirteen interviews in person, and received written interview responses from eight students via email. Interview respondents were recruited through personal contacts, class announcements from Warren Wilson's Spanish department, and a mass email to Warren Wilson's student body.

The interviews began with simple quantitative questions about student demographics. These were followed by qualitative questions designed to assess student motivation for their volunteer experiences and enrollment at Warren Wilson, as well as the tangible and abstract outcomes of their experiences. I focused on the top factors that motivated students to come to the college, and their experiences in community engagement here. I touched on the Work program mainly to see how it has affected students' work ethics and perceptions of community engagement, and closed with general questions about the ethics of community engagement and tourism. These questions were placed at the end of the survey with hopes of discouraging bias; I didn't want to sway students toward a more critical perspective on their volunteer experiences as they discussed them.

All students were asked the same questions, but I asked follow-up questions when in need of clarification or elaboration. Interviews ranged from approximately 20 to 45 minutes long. Pseudonyms have been used to protect the identities of students, and some interview responses have been edited for clarity.

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[53] Shuli Archer in discussion with the author, April 7, 2016.

VI. Results

The 21 Warren Wilson students from my research had volunteer experiences in 10 Latin American countries. The most popular destinations were Ecuador (six students), Guatemala (four students), and Costa Rica (four students).
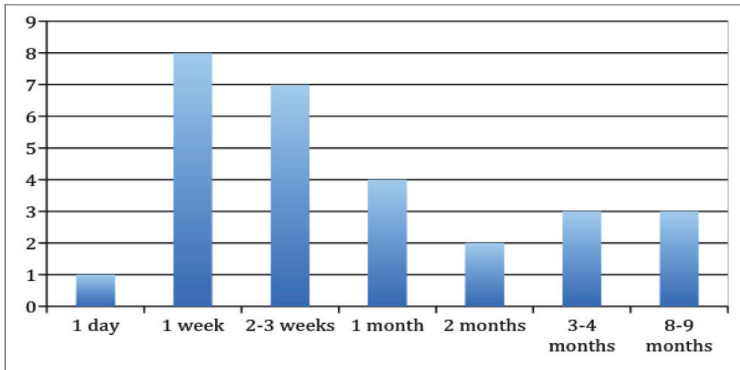

Fig. 1. Lengths of Warren Wilson Student Volunteer Tourism Experiences

Over half of students' volunteer tourism experiences lasted from one day to three weeks long, although many students also volunteered for three or more months in Gap Year programs.
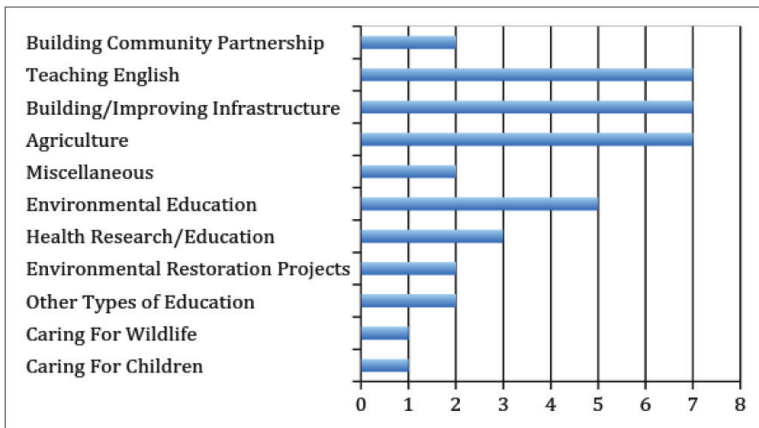

Fig. 2. Types of Community Engagement Accomplished by Warren Wilson Students in Latin America

Over half of students participated in educational community engagement, usually teaching English or doing environmental or health education and research.
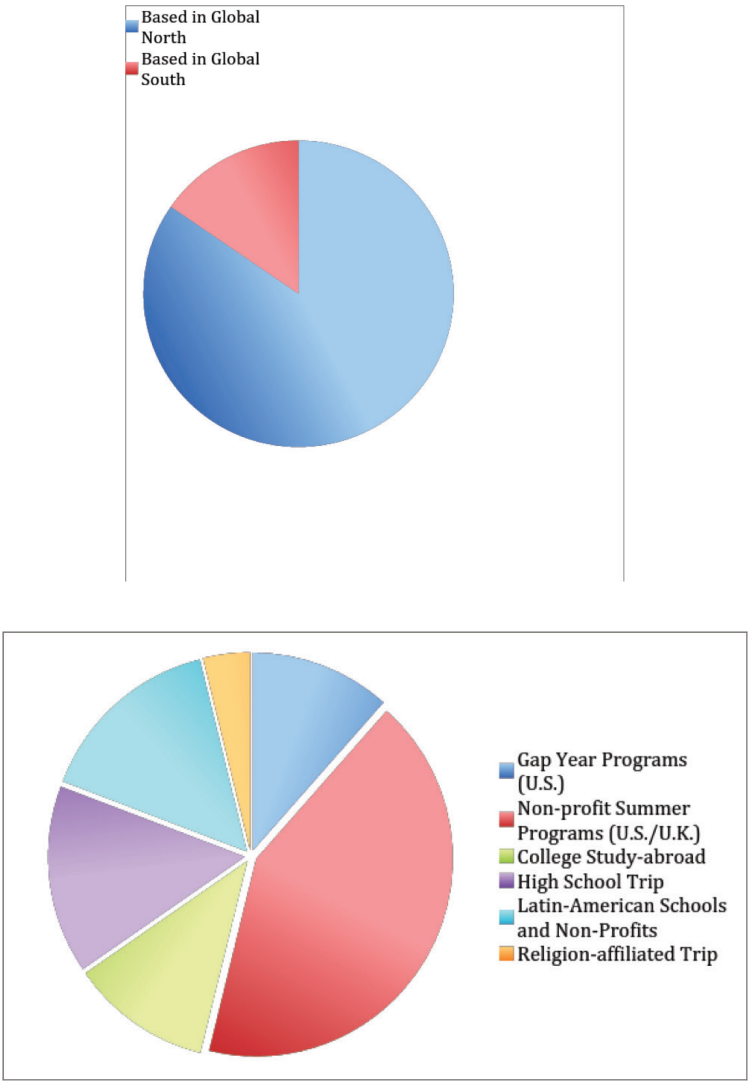

Fig. 3 & 4. Categories of Volunteer Tourism Accomplished by Warren Wilson Students

Most students also volunteered through organizations that were based in the Global North, meaning that organizational headquarters, funding, and Boards of Directors were based in the US or UK while volunteers were sent on excursions southward to Latin America.
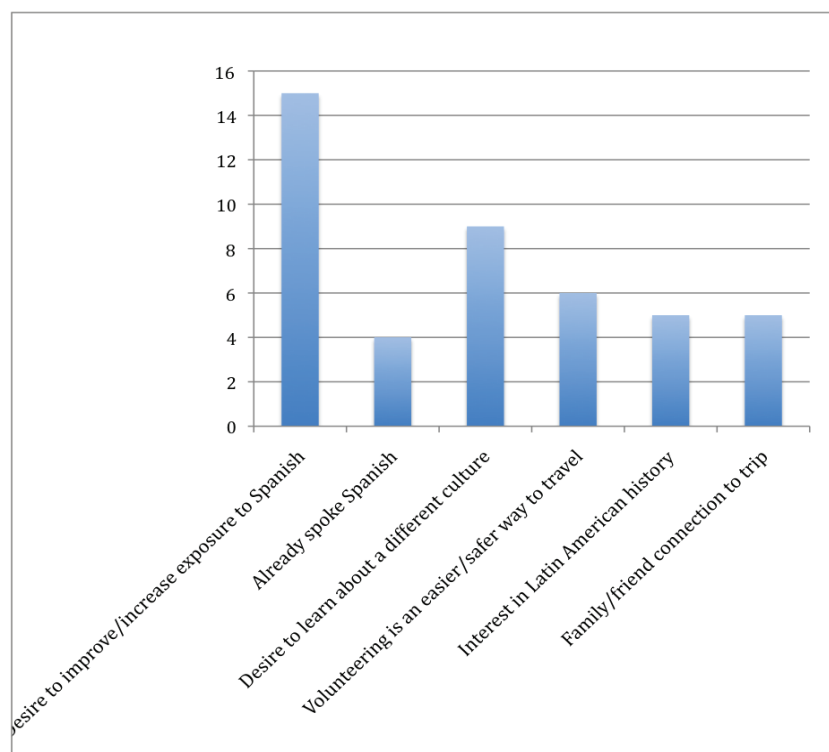

Fig. 5 Volunteer Tourism Motivation Among Warren Wilson Students

The vast majority of Warren Wilson students—19 out of 21—described Spanish as a primary factor in their decision to volunteer in Latin America. This motivational factor came either out of a desire to learn Spanish (or, if they already knew it, to gain exposure to new dialects of the language,) or the fact that already speaking Spanish made it easier for students to travel in Latin America. Students also described being motivated to learn about a different culture, often with a specific interest in the history of

social justice movements in the region. Students generally viewed volunteer tourism as a safe and easy way to travel, on par with visiting a friend or family member. And among the four students in the study who had Latin American heritage, three out of four stated a desire to connect to their cultural backgrounds as a primary motivation for their trip.
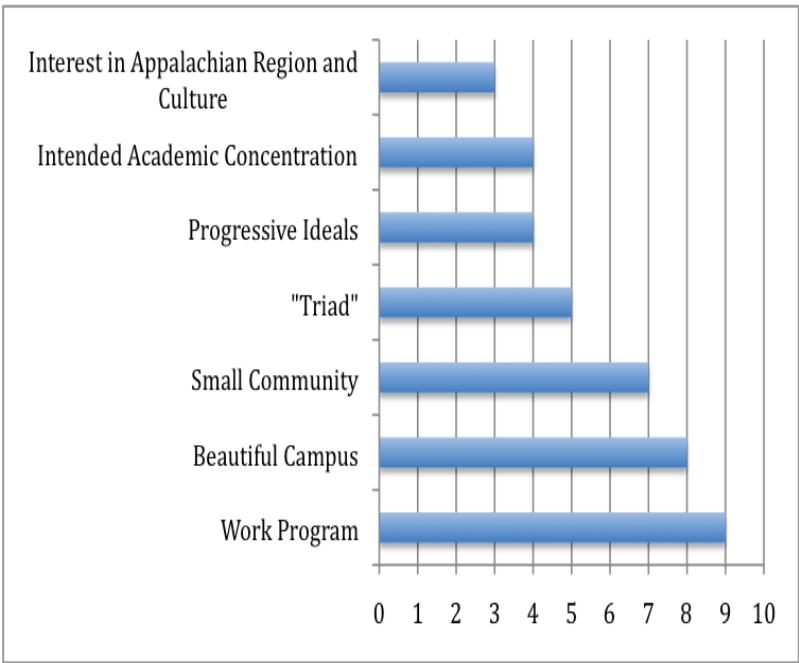

Fig. 6 Top Motivational Factors For Attending Warren Wilson

The top reason that Warren Wilson students decided to come to the college was the work program. Eight out of twenty-one students mentioned the beautiful campus, seven out of twenty-one were attracted to Warren Wilson's small size and intimate community, and five students referred to the Triad model as an integrated whole.

VII. Discussion

i. White Savior Complex

One of the most notable trends in the data was how frequently Warren Wilson students, especially white students, brought up the white savior complex. About a third of students used the phrase "white savior complex" directly in their responses without prompting, and about two thirds of them discussed whiteness, colonialism, and/or oppression in relation to their volunteer tourism experiences in some capacity.

White students often referenced the white savior complex to express discomfort with their whiteness within their service arrangements:

> "I would never wanna consider myself a volunteer again when I travel, because I don't wanna be a part of the white savior kinda thing."

> "I think about white volunteers coming into non-white spaces and displacing people who might be doing that service, or coming in with very specific ideas about how service is supposed to be done, and that classic paradigm of doing something on behalf of somebody...I think about structures of domination and power dynamics."

> "There was a big battle between the indigenous people and the Spanish colonizers, and the indigenous survivors escaped into these same caves [where I volunteered], and they were eventually starved out and beheaded by the Spanish as they came out. When I went to Ecuador, that was just a story that I heard and I was like, 'Whoa, that's intense.' And I think if I went there now I'd be... seeing more [of] my connection as a white male going there, to that story."

For many students, the role of their whiteness in community engagement was a consideration they did not have until coming to Warren Wilson, and was described as occurring to them through components of their academics and community engagement in the Triad that opened their minds to potentially problematic dynamics:

> "Some issues are so complex that only a well-designed service program or college course can address [them.] My Critical Race Theory class shoves my white male privilege under my nose like only a good college course can do."

> "[The Warren Wilson Center for Community Engagement] has put an emphasis on understanding the difference between working with the community and reaching down to the community, kind of the savior complex kind of thing. I feel like Cathy Kramer has been very vocal…putting emphasis on that…as well as the students on the crew repeating that at the beginning of service project[s]."

Other students began to interrogate the role of their whiteness during their trips to Latin America, either through the volunteer work itself or through critically reflective trainings that occurred before their field placements.

> "I actually have a lot more [hesitations about volunteering in Latin America] now after my program, because a big part of training that we did actually, was the white savior complex. They really warned us against that, and we talked a lot about white people coming in and thinking that they know what's right, and then leaving, and then that falling apart… I'm much more aware of it now, and I really, really try to distance myself from that."

Students of color offered additional nuance to perspectives on the white savior complex abroad, as well as how their racial identities were constructed differently within Latin American communities in comparison to the United States. Chris, an African-American volunteer who was placed in an Afro-Ecuadorian community through the Gap Year program Global Citizen Year, said:

> "People [in other parts of Ecuador] who would [be] called mestizo[54] would be referred to as white in that community, because they functionally were [in terms of power and status.] It was the first time I'd ever had to assert my blackness, 'cause all of a sudden I looked like everyone else who wasn't black. So I had to really be like 'No! This is a picture of my father!' (laughs)… It was strange, 'cause I was seen as this thing that I'm not, and the thing that I was being held as superior to was the thing that I am, to blackness."

Sandra was a Dominican-American Warren Wilson student who participated in service-learning through the CIEE study abroad program in the Dominican Republic. She shared a similar experience of her perceived power in the Dominican Republic to be far beyond its limited role in her status as an oppressed minority within the United States. Further, Sandra's Dominican identity exposed her to frustrating dynamics with white students in her service-learning internship, and accentuated to her the problematic

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[54] *Mestizo* is a term for racial identity in Latin America referring to mixed American Indian and European descent. The mestizo community has historically been subjugated and oppressed by white Spaniards in Latin America, but here, Chris explains that *mestizos* in Salinas had greater power and status in comparison to Afro-Ecuadorian residents. Therefore, Chris's perceived power as an African-American caused residents to associate him with *mestizos* rather than Afro-Ecuadorians.

aspects of the white savior complex and the popular humanitarian gaze:

> "The other three [girls in my internship] you know were white, upper-middle class, and they would always have very insulting, very close-minded things to say about the people and the culture, and they didn't really understand the fundamentals of the Global South…so I would always find myself having to be the educator and overall knowledge holder for them, and that became a burden after a while, because I was also treated as the token Dominican that knew everything, and spoke the best Spanish, and would help them understand everything culturally, and I wasn't there to do that. That's why they were in the country in the first place, so they could learn for themselves."

iii. The Community Expert, The Guest

Related to this discomfort was the common perspective that students were placed as unskilled community experts, to borrow a phrase from my literature review.

> "I taught 9th or 10th grade history and English…I was seventeen, so [I was] a junior teaching sophomores, which was interesting."

> "I realized that I feel that throwing an inexperienced high schooler into a community to organize a bunch of adults is insulting."

> "[The cacao farmers] saw me in this authoritative position of 'Here's this very smart woman from the United States, and I can ask her all of my cacao tree questions.' Which was not the situation at all, because I'd never farmed cacao before, I'd never

farmed in that climate ever. And so, I was like 'I don't know anything about this, I just know how to recognize a couple of diseases.'"

These examples indicated that student volunteer tourism experiences perpetuated uneven power dynamics between the Global North and South by prioritizing undeveloped outsider knowledge over community understandings of their own needs.

Another trend that arose was when volunteers were treated as community guests rather than being put to work. Chris arrived in Ecuador for a Gap Year program with a strong work ethic and a genuine interest in assisting his host community through volunteer work. Instead, when he arrived, he found that the community felt uncomfortable putting him to work, especially once they learned how young he was. Chris explained that his host community preferred to take him on day trips:

> "They were like, '[You're] eighteen? You're just a baby. Why did you go away from home? We'll take care of you.' You know? Buying me food, and taking me places, like a baby."

Chris's example provides an interesting repositioning of aid within volunteer tourism. Despite purportedly receiving volunteers for assistance, the host community became the main provider in the relationship upon his arrival. At the same time, the community interpreted taking care of Chris to be a more valuable form of connection than putting him to work.

iv. Romanticizing Poverty

Many students said that their volunteer experiences expanded their worldviews by exposing them to income inequality, poverty, and a direct connection to political turmoil. Students described personal transformations occurring as part of this process, but were also conscious of generalizations about impoverished people in their responses.

Brooke, a 21-year-old Warren Wilson student, had intended to do manual labor at a Nicaraguan farm for three weeks with two friends from Warren Wilson in 2015. However, after arriving to find that local Nicaraguan men had been hired to do the work instead of them, the students were asked to design a map of the farm instead. Brooke and her friends decided to leave after five days. The owner of the farm, who Brooke describes as "rich by American standards," was a Nicaraguan diplomat who then took the girls to his enormous house in Grenada—the first time they'd had access to air-conditioning on their entire trip. Instead of learning Spanish or volunteering on the farm, Brooke's main takeaway from the experience was her discomfort with staying in this man's luxurious home and driving past extreme poverty within his expensive, air-conditioned car:

> "In that moment I was mad at him for living in this as a rich man, but then I realized that I had the luxury of being rich and not seeing the poverty every day living in America. So that was a big thing I'm still struggling with, because people always say, people in Latin America don't have much but they're so vibrant. And that's a huge generalization, but parts of those places, they're so happy because they don't have as much, and I wonder, are they content with what they have?"

v. Who Defines Community Engagement?

It was also common for students to question whether community partners, as opposed to volunteer tourism programs and Warren Wilson's Center for Community Engagement, were initiating volunteer work. Many students reported that English lessons were frequently requested by host community partners in Latin America, whereas environmental education and restoration projects often seemed to be imposed by volunteers from outside of these communities. Students spoke to environmental education being either a low priority or an impractical pursuit given the

limited resources of these communities:

> "[There was a] struggle of me…bringing in environmental education and school gardens because that's something that I enjoy, and that's something I see surface level when I come in. I see people burning trash and throwing trash on the side of the road and not really understanding the repercussions of that. I saw that as a big problem, whereas that's not a problem to the people that live there, the problem they saw was their children not speaking English."

vi. "Necessary" versus "Glamorous" Community Engagement

One of my respondents created a dichotomy between what he called "necessary" and "glamorous" community engagement. He described "necessary" community engagement as the less photogenic, behind-the-scenes work that is still crucial for the functioning of an organization, while "glamorous" community engagement was described as more instantly-gratifying and tangible, but less needed.

Another student spoke to this dichotomy when describing her PEG 3 internship with an organic garden in Asheville. The student felt that she and her community partner had a meaningful partnership, but she was more critical of a weekly Warren Wilson service-learning class that volunteered at the same garden:

> "I would be there for six hours on Friday afternoons, and then the Warren Wilson service   trip would come for an hour and a half. And so my supervisor would give me these big projects and then she'd be able to walk away for a long time because she knew that I'd be doing it for however long. But I felt like a lot of the time, before the [other] Warren Wilson students came in she'd say 'shoot, I have to find something for them to do on top of everything

else that I'm already doing…'. The people who were
only there for an hour and a half, they wanted to do
the dirty work, like plant seeds, the fun stuff, and I
remember one time my supervisor asked one of the
students to sweep and she just didn't want to. She
said she'd rather do garden work. And so I swept for
her."

This quote speaks to some of the most positive elements of Warren
Wilson's PEG model—and arguably, ways that this student's
community engagement falls into Morton's social change paradigm.
She has extended involvement with her community partner and
can be trusted to take on relevant projects while the community
partner attends to other tasks. At the same time, this example
shows that Warren Wilson's community engagement is still falling
short: large groups, especially when they lack sufficient context for
the organization's mission, can overwhelm community partners.
And in this pursuit of the "glamorous" garden work rather than
the "necessary" service of sweeping, a student directly refused the
community partner's needs.

VIII. Conclusion: What Works?

My research found that the most meaningful and effective
forms of community engagement for students were extended
community partnerships with strong communication, like the
student's PEG 3 internship at the organic garden in Asheville.
However, the quality of partnerships appeared to be more
important than the length of student engagement. This was
especially noticeable in that many of the students with the least
satisfying volunteer tourism experiences also volunteered for
the longest amounts of time through gap year programs. For this
reason, it is important for community engagement to provide
opportunities to reflect upon and reconsider agendas during the
volunteer work itself—not only before or after it.

Most of the students I interviewed indicated that their
volunteer tourism experiences in Latin America perpetuated a
hierarchy of the Global North over the Global South through the

white savior complex and the placement of young volunteers as unskilled community experts. However, some students believed that their volunteerism helped deconstruct these embedded power dynamics through a combination of education and the redistribution of power between community partners and volunteers. Typically these occurred in a few main ways: when critical reflection and training were built into programs; when community partners were able to define their own needs (for instance, the desire to be taught English rather than environmental education) and to request volunteers, rather than volunteers being imposed on them; when expert roles could be shared by both parties, such as in language or cultural exchange programs; and when volunteer organizations have the humility to do the "necessary" as well as the "glamorous" community engagement.

The clearest instance of social change-oriented volunteer tourism was articulated by Melissa, a first-year student who participated in three summer trips to El Salvador through a sixteen-year-long partnership between her Unitarian Universalist Church and a grassroots Salvadoran organization. Melissa was one of the only students who still stood behind and believed in her volunteer experience in Latin America at the time of the interview. This was not only due to the depth and length of her congregation's community partnership, but also its educational and political components; the Salvadoran organization taught American youth about the devastating impacts of US involvement in the Salvadoran Civil War through exposure to formal war testimonials, and co-organized a volunteer project alongside the volunteers in order to repair schools that were bombed by US weapons during the war. Melissa expressed that the physical labor to build the school was not a vital need provided by her American group; however, she still considered their engagement to be beneficial because it built meaningful relationships across the Global North and South divide, and provided necessary financial assistance to a Salvadoran community:

> "I wanted to be part of initiatives where people came in to work with them. I mean, they didn't need

help building that school. They were much more competent than we were in terms of construction, they had people with tons of special skills...I guess they needed more people, but we were there to help them financially as well. And I think in a lot of ways they helped us, more than we helped them."

Melissa's quote speaks to another unexpected finding of my research, which was that volunteer tourism cannot be condemned as a single, one-size-fits-all example of hegemony or neocolonialism. For one, some host community partners had different cultural ideas around the role of hosting guests that made them uncomfortable putting volunteers to work. Additionally, volunteer tourism provided a sustainable source of income for hosts. This was clearly important to these communities when they were directly asked about their views on volunteer tourism, like in McGehee's research in Tijuana. Thus, if the scholarship is truly interested in breaking down the Global North and South divide, it must recognize that volunteer tourism can provide a form of economic assistance that is often otherwise unavailable to communities.

While the dynamics of service were proven to be complicated and problematic in many student experiences—both through volunteer tourism in Latin America and community engagement through the Warren Wilson PEGs in Appalachia—it was still able to create valuable and longstanding relationships, cross-cultural understanding, and sometimes, social change.

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<div style="text-align: center;">**Additional Sources**</div>

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Interviews

Cathy Kramer in discussion with the author. April 5, 2016.

Misha Pérez in discussion with the author, March 31, 2016.

Shuli Archer in discussion with the author. April 7, 2016.

Anonymous student interview subjects in discussion with the author, March-April 2016.

Acknowledgments

I'm enormously grateful to many people for helping me complete my thesis, especially:

My interview subjects: 21 Warren Wilson students, Cathy Kramer, Shuli Archer, Mara McLaughlin-Taylor, Brooke Millsaps, ARCAS Guatemala's Administrative Director Colum Muccio, and Ecuador Volunteer Director Francisco Pastor. Thank you for sharing your stories and perspectives with me.

Julie Wilson (Julie Wilson, Julie Wilson!) for many long Writing Studio sessions of listening and guided revision, and for being my greatest source of encouragement.

Heather Stewart Harvey for your incredible research assistance.

My thesis advisor Rima Vesely-Flad for your wisdom and direction.

Ben Feinberg, Jeff Keith, and David Abernathy for helping me get to this point over the years.

My friends Ben Surface and Bo Dossett for the constant love and support.

Untitled (wall hanging) by Isabelle Coppinger, 2016. Earthenware
5 x 5 ft.

Artist Statement: Isabelle Coppinger

My work examines the beauty and fragility in the natural world. My sculptures are informed by my natural surroundings. While hiking, traveling, exploring, I am captivated by a sense of place, memories inspired by the ephemeral that can be easily overlooked. I am interested in the study of form, weight, place, material, lights and shadows, and the simplicity of repetition.

There is a fine balance amid strength and fragility. Precisely, the balance comes when attaching a tendril to the outside of a thrown bowl, to cutting out intricate designs in a thin slab of clay. In a broader context, the fine balance between nature's delicate vulnerability as well as its constant and overwhelming beauty. Nature's perseverance and resilience despite being damaged. Nature's steady delicate growth changing into a powerful force. Nature's ability to sprout up through a crack in the concrete sidewalk, and if it is allowed to grow, flourishes. Playing with this natural medium, I find this fine balance between resilience and vulnerability, between strength and fragility, and see how far it can be pushed.

Artist Statement: Iris Rountree

Iris Rountree is an emerging artist who has recently become interested in the craft of papermaking. She is drawn to using natural materials in her paper such as herbs, berries, and garden veggies to add texture and color to the paper pulp. By working closely with the natural environment she is forced to become more observant with her surroundings and notice the peaks and ripeness of plants and flowers. Once the paper is made she transforms it into three dimensional shapes and uses the pieces created for installations.

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