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## Anthropocentrism, the other face of patriarchy: an investigation into patriarchal attitudes and perceptions of non-human nature

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ANTHROPOCENTRISM, THE OTHER FACE OF PATRIARCHY:  
AN INVESTIGATION INTO PATRIARCHAL ATTITUDES AND PERCEPTIONS OF  
NON-HUMAN NATURE

An Abstract of a Thesis  
Submitted  
in Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts

Christian Kremer-Terry  
University of Northern Iowa  
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## ABSTRACT

Attitudes about gender and ethnicity are a critical dimension for understanding how human behaviors impact the climate. Plumwood (1997) argued that conceptually humans relate to the environment is ideologically connected to the way dominant and oppressed groups interact. Past research has found that exposure to nature decreased negative body image and other mental health issues that are connected to oppressive ideologies (Gidlow et al., 2016; Goldenberg & Soule, 2015; Holloway et al., 2014). The current study explicitly tested the link between patriarchal attitudes and connectedness to nature among a student group. It was found that higher levels of patriarchal attitudes predicted lower levels of connection to nature. Additionally, environmental and financial factors were found to have a moderating affect. Although this study found support for the relationship between patriarchal attitudes and connection to nature, more work needs to be done in diverse populations in order to control for systematic differences that may also be important. This study was able to account for a portion of variance in attitudes but it is clear that many other variables need to be examined.

*Keywords:* Patriarchal attitudes, connection to nature, climate change, androcentrism, anthropocentrism

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Entitled: ANTHROPOCENTRISM, THE OTHER FACE OF PATRIARCHY: AN  
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Master of Arts

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DEDICATION

For Ramona McKinney, a role model in every way

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## CHAPTER 1

### INTRODUCTION

Headlines heralding consequences of climate change providing a new trajectory for the Earth's probable future are appearing with increasing regularity. The scientific consensus is that the Earth has entered a new geological period, the Anthropocene, where human activity has become the single most powerful force contributing to change on earth (Carrington, 2016). Slowing the development of climate change requires that many behaviors be changed, certain conveniences be sacrificed, and even entire value systems be reassessed. Thus, research is needed to further understand the social forces that both help and hinder sustainable behaviors. Ultimately, ecologically destructive behaviors are the effects of an enabling ideological system. Ecofeminists have argued that both gender-based oppression and ecological destruction are linked through underlying hierarchical ideological assumptions that designate the moral status of entities (Plumwood, 1997).

Western culture has been fundamentally shaped by the forces of anthropocentrism, the primacy of humans needs over others, and androcentrism, the primacy of men over others. Under anthropocentrism, the earth as well as the non-human animals that inhabit it have been treated as mere resources to be exploited for human projects and whims (Plumwood, 1997). This uncontrolled proclivity for consumption has endangered hundreds of species, decimated landscapes, and even called into question the very future of human life on earth (McKibbern, 2010). Conversely, the ideology of androcentrism that produces of gendered hierarchy seems small by comparison to the planet-shaping force of anthropocentrism; however, the ecofeminist paradigm has proposed that

these concepts are inextricably linked in their constructions of the oppressed other (Plumwood, 1997). The ecofeminist position recognizes the oppressive cultural ideologies that mediate the human relationship with the natural world, as well as further recognizing that the degradation of the environment in turn contributes to the oppression of people. As non-contaminated productive land and clean water become scarcer, like any other commodity they will be distributed in favor of a privileged few (Smith, 1997). Thus, ecofeminism argued that stopping human oppression is inextricably linked to the protection of the earth and its natural resources.

Both gender-based oppression and the abuse of the environment rely on a principle of abjection. Kristiva (1982) argued that the abject has only one property of the object – that it is not (p.1). The process of abjection defines one group as not the other. In terms of gender, this means that men are men because they are not women. Thus, the fundamental rule for the maintenance of gender ideology is that classes within sex and gender are defined in opposition to each other; while the content of the identity of those classes is secondary. I extend this to the relationship between human beings and the environment, humans have been defined by the abjection of non-humans. The separation of humans from the rest of nature is a fundamental step in the enabling of environmental abuse.

The Marxist concept of alienation is the result of abjection. In the time Karl Marx wrote, the bourgeoisie were those who were not workers. The workers as the abject other were deployed as instruments for the benefit of the bourgeoisie just as the environment is deployed as an instrument for human desires. Marxist alienation in the context of ecofeminism has two sides: first, when subjects fail to see themselves as part of the

environment they are acting on (i.e. when it is not part of their self-concept), and second, when human action is perceived as discontinuous from the environment rather than continuous with it. The effects of these two aspects are that human-made objects are seen out of the context of nature, and human activity is falsely perceived as separate from nature. The origin of this problem lies in the self-replicating process of alienation (Vogel, 1988).

The marriage of convenience between anthropocentrism and androcentrism produces oppressive hierarchy that justifies oppression based on gender, sex, ethnicity, and species. In this marriage, white men act as heads of household where, through the act of abjection, the status of all other members of the household is determined. For example, women may be oppressed by men in the androcentric sense, but they join men in the anthropocentric oppression of the environment (Plumwood, 1997; Resurreccion, 2013).

Both abuse of the environment and gender-based oppression are driven by a tendency to construct an abject other upon whose oppression the privilege of the oppressor is founded. This system is driven by the complicity of many groups that benefit on different levels. Anthropocentrism defines the person in a state of abjection from nature, which distances them from the value of nature. Just as the abjection of women makes them seem more appropriate targets of oppression and violence, the abjection of nature makes nature an ostensibly more acceptable target for abuse (Ergas & York, 2012). Ultimately, however, the abject masses of the human race will suffer alongside the abject earth.

The abjection of nature from human identity may have harmful consequences not only in how it encourages policies with disastrous effects on humans and the earth alike,

but it also deprives people of the benefits of a relationship with the natural environment. If androcentrism and anthropocentrism contribute to the harmful ways that humans interact with the earth, then it might also be that positive exposure to nature can reduce both of these attitudes. The field of adventure and wilderness therapy is based upon the premise that spending time in the natural environment can have positive therapeutic effects. Verbeek and De Waal (2002) proposed humans have innate cognitive schemas passed down through evolution that facilitate a therapeutic relationship with nature. In fact, Johnsen and Rydstedt (2013) found that images of pleasant natural environments increased positive mood and may facilitate better emotional regulation. Similarly, organized outdoor adventures have been found to increase self-efficacy (Goldenberg & Soule, 2015), reduce depressive symptoms (Bowen, Neill, & Crisp, 2016), and improve body image (Swami, Barron, Weis, & Furnham, 2016) and self-confidence among college women (Holloway, Murray, Okada, & Emmons, 2014). The psychological benefits of adventure therapy may represent the effects of de-alienating and reconnecting with nature. The very symptoms that adventure therapy has helped reduce may be the effect of a patriarchal social system that dictates unrealistic body images and diminishes the worth of women and other marginalized groups.

The psychological benefits that humans experience from nature exposure may also suggest that there is harm in the lack of exposure. Furthermore, if the ecofeminist argument is correct, then there is an ideological link between the way people interact with the environment and anthropocentric attitudes. The current study endeavored to explicitly test the link between the person's relationship with nature and patriarchal attitudes.

## CHAPTER 2

### ECOFEMINIST THEORY AND THE CONCEPTUAL RATIONAL OF THE CURRENT INVESTIGATION

If feminism is a theoretical orientation that is in opposition to all forms of domination (hooks, 2000), then ecofeminist theory provides a rationale for understanding the intersection of patriarchal cultural ideologies and the natural environment. Although early forms of ecofeminism were distorted by essentialist assumptions, later forms, informed by broader theory and empirical research, emerged and drew strong links between patriarchal culture and the ways that humans locate themselves within and interact with nature (Warren, 1997).

Warren (1997) argued that a subject matter is feminist if it helps to further explain the plight of women cross-culturally. Water, trees, plants, animals and other entities in the environment are marked by the same patriarchal relations that oppress women (p. 4). Although the scope of Warren's feminism is limited, I use it as starting point for the understanding of feminism and ecofeminism that informs the current study. The system of patriarchal oppression refers to the complex networks of ideological assumptions that not only contributed to the oppression of women, but to the marginalization of countless groups of people (hooks, 2000). Although the term *patriarchy* literally denotes the domination of men over all (Launius & Hassel, 2015), patriarchy more broadly refers to the complex hierarchies that cannot simply be reduced to men over women. I do not intend to de-center the issue of women's oppression, due not only to its prevalence but also in that it serves as an indicator of other forms of oppression.



Additionally, Warren's feminism is only provisionally intersectional. The concept of intersectionality is the theoretical approach that recognized that no single path nor category of analysis is sufficient to understand social phenomena (Launius & Hassel, 2015). Crenshaw (1991) argued that Black women's experiences of oppression could not be sufficiently explained by their sex nor their membership to an ethnic group, rather their experience of oppression must be understood as an intersection of gender, sex and ethnicity. Therefore, the concept of ecofeminism underlying the present project will examine the environment for the common markers of patriarchal oppression, but unlike Warren (1997) I will consider patriarchal oppression to be more than a women's problem. In the next sections I discuss the two of the foci that ecofeminist research follows: namely, the focus on differential impacts and the focus on interrogating ideology. I then construct the framework of this study using elements of both foci.

#### Ecofeminism as a Study of Differential Impacts

One direction of ecofeminist study proposed by Warren (1997) is to examine the differential impacts of environmental degradation along the axis of gender. However, given that the environment is closely interconnected with resource consumption and economic activity, it is impossible to not also consider socioeconomic status. In developing nations, women because of their gender roles have had a very different perspective on the environment compared to men; thus, it would not be essentialist to use the phrase "woman-nature connection." In rural India, women gather fuel wood, wood for things such as basket making, and the fruits of trees for food. Over many generations, rural Indian women also developed a sense of how to care for the land to ensure its

continued health. When the lumber industry began felling trees, it was the women who had to walk farther to gather various things from trees and it was women who first noticed how deforestation impacted the water supply. On the other hand, the men tended to seek employment in the cities and the very lumber companies that were felling the forests (Warren, 1997). Not only did the woman-nature connection uniquely position women to notice the impacts of deforestation, but the destruction of the environment also became an attack on women.

The Kenyan Green Belt recognized the link between women in the developing world and the environment in the form of the “power-over” and “power-to” relationships. The concept of power-over referred to the typical mode of patriarchal domination where the domination of one group is instrumental to the achievement of some other goal such as economic success. Power-to refers to the empowerment of individuals to affect positive changes in the world around them without use of tactics of domination. The goal of the Green Belt movement was to counter the politics characterized as power-over that manifested themselves in the form of unsustainable agriculture and deforestation. The environment was the abject other, existing for androcentric and anthropometric ends (Hunt, 2014).

In the privileged West, many of the first ecofeminist arguments appeared in the 1970s connecting the “rape of the earth” with the patriarchal oppression of women (Cuomo, 1998, p. 24). Prior to the more mainstream ecofeminist theory, ecofeminist consciousness emerged among Native Americans in response to colonial appropriation of land. This was not a typical form of ecofeminism in that gender did not take the forefront. Rather, Native

American and indigenous activism was organized around the intersection of ethnicity, capitalism, and colonialism. Due to the lack of recognition of native people among mainstream American Feminism, Native women were forced to reject alliances or risk marginalizing themselves on the grounds of ethnicity. Despite this, Native women experienced first-hand the connection between the colonial-patriarchal system that denied them or destroyed Native lands, and the patriarchal relations that had infected their domestic lives resulting in Native women being disproportionately impacted by domestic violence (Smith, 2013).

#### Ecofeminism as Interrogating Ideology

Another direction of ecofeminist research exemplified by Plant (1997) examines the ideological links between the patriarchal oppression and the way that human beings interact with the environment. While the direction of ecofeminist research lends itself well to empirical study and has benefited from a great deal of scholarly work, the second focus has enjoyed much theoretical development and much less empirical work. The ideologies that drive and inform sexism, racism, classism, and other forms of oppression and those that inform the way humans perceive and interact with the environment share ideological relatives.

Kristeva (1982) proposed the concept of abjection as the primary means by which people locate themselves in relation to other things. She argued that it is less important or even helpful to understand what a person is or claims to be as opposed to what they claim to not be. If a person claims to be a Democrat, one might ask: do you mean a social or a centrist democrat. This positive form of identity—which is opposite to abjection—lends

itself to generality and ambiguity if only because it can be such an unwieldy exercise.

Whereas the negative process of identity that characterizes abjection potentially provides more specific information on what a thing or person *is*, by stating concisely what not. Put simply, the biggest difference between a person and an ice cream sandwich is that a person *is not* an ice-cream sandwich. Often people are quick to say what they are not, lest they be confused with something declared undesirable.

Abjection is fundamental to the way that gender is understood. Where a positive approach to identity would require considerable leg work in listing the various traits that construct an identity. Gender constructed by abject statements often consists of matters people feel most strongly about. Kristeva likened the abject to “waste” and “excrement” as those facets of identity that are often defined in the abject are those that one might feel it is imperative they not be associated with. For example, a man might say “I am not a woman” as if to be such would be the highest of insults, yet the same man would have no need to say, “I am not an ice-cream sandwich.” Furthermore, that man feels no need to differentiate himself from an ice-cream sandwich because the idea of being mistaken as one is entirely absurd, but then again is he very much more likely to be mistaken as a woman? This is why those aspects of identity that are posited in the abject are those that are perceived as most important to the individual or group.

The process of abjection is a key element in the formula of androcentrism or the belief that the needs, priorities, perceptions, desires, and beliefs of men should take priority over all others (Plumwood, 1997). In an androcentric worldview, the focus is what men are not, which leaves women and all other genders as abject other. Simone de

Beauvoir (2011) argued that “woman embodies no set concept” (p. 163); woman is the undefined underlying substance that man draws himself out of and then differentiates himself from (p. 163). The central difference between men and women is not one of absolute substance, but that man has asserted that he is not woman. While women could be said to be not-men, this understanding of the process of abjection accounts for men’s socio-cultural dominance which created a system where abjection is systematically exercised against women. Much as in Kristeva’s account of the abject, the only difference between men and women is the self-perpetuating claim that one is not the other. However, even that claim is in doubt given repeated findings by social psychologists that there are more differences within genders than between them (Rudman & Glick, 2008).

The positing of women as other renders them a resource whose role will be only what men are not. For example, in the United States during WWII many women joined the paid workforce for the first time to fill the jobs that were left vacant by the enlisted men (Zinn, 1999). Women’s social movement flowed into domains vacated by men and in turn women vacated those social locations in response to men’s return. The abjected other does not consist simply of women, but is a complex fluctuating category that interacts with class, gender, ethnicity, sex, and other socially relevant categories. I have thus far discussed the abject as referencing men as the dominant group. Those groups or entities rendered other wax and wane with regard to the dominant group.

What has been characterized as white feminism or western-centric is the tendency of one group within the feminist community to believe their experiences are universal and the subsequent repression of other views and values. I have drawn this definition from

Muaddi Darraj's (2002) experience of her views as an Arab feminist being delegitimized by her western classmates. Her experiences were not rendered other by men, but by other feminists who became patriarchal in their character. Matsuda (2013) discussed the implicit patriarchal assumptions that can be held by feminist activists. It was not men who were directly responsible for the micro aggression, but a failure of some members of the conference to understand how they were shaped by a phallo-centric culture. Thus, concepts such as androcentrism, especially as it relates to abjection I am referring to the patriarchal character of dominance that is not only performed by people regardless of gender.

The abject is properly understood as a relationship between the visible and those who have been cast aside, whose interests and existence have been marginalized by the dominant. Thus far I have accounted for this process in the context of the androcentric, but this relationship is not limited to human parties. Plumwood (1997) defined anthropocentric as the tendency to make human needs and desires the center of analysis. Anthropocentrism, just like androcentrism, is premised on the principle of abjection. In this case, it is the environment and non-human animals that are the abject others. The domain of both either expands or contracts based upon human consumption (Ressurreccion, 2013; Taylor, 1997). A feminist position on ecology must also include a critique of androcentrism as feminism is a philosophy that stands in opposition to all forms of domination (hooks, 1985). Through the process of abjection, gender based oppression and environmental oppression are linked and thorough going opposition to one must include opposition to the other.

The Marxist theory of alienation, like abjection, gives attention to the relationship between the dominant and those rendered other. In the context of labor and class conflict, Marxist alienation describes the process where the worker has converted their own labor into a product that they do not own. This product is then controlled and sold by a business owner who not only owns the product but dictates the value of the worker's labor. It is thus that the worker becomes alienated from both their labor and the products of it (Vogel, 1988). The typical Marxist analysis is what Hartmann (2003) referred to as "sex blind (p. 394)" where issues of gender inequality were assumed to be a subset of class conflict and would naturally be fixed by the same means as other forms of class conflict. Hartmann (2003) explained,

Capitalist development creates a place for a hierarchy of workers, but traditional Marxist categories cannot tell us who will fill which places. Gender and racial hierarchies determine who fills the empty places. Patriarchy is not simply hierarchical organization, but hierarchy in which particular people fill particular places. (p. 396-397)

Marx failed to understand that unlike the forms of inequality he witnessed with regards to wage labor, gender based inequality had its own etiology that only partially overlapped with that of wage labor inequality. Although Marxism recognizes persons of all genders as part of the working class, it fails to recognize gender based hierarchies and collapses the interests of different gendered classes into a single class (Hartmann, 2003).

Despite the weaknesses in Marx's basic assumptions of class that are inherent in his understanding of alienation, the concept is still a useful tool for the topic of this investigation. At its core alienation deals with the othering of a group in relation to a system. Where abjection entails a dominant group abjecting or casting out another,

Marxian alienation provides an additional dimension for situations where persons can participate in their own alienation through their role in a socio-political system. For example, by participating in a wage labor system, a worker participates in their own alienation from the product of their labor, and reinforces the abject relation that has made them other in relation to those who own the means of production (i.e., the factory owners). By extending Hartmann's (2003) empty spaces argument for the way in which capitalism creates openings for hierarchal oppression, I argue that socio-political systems in general have the tendency to — as an existential hazard — create empty spaces that can be filled by oppressive hierarchal systems. Hartmann assumed that capitalism is the system that facilitated patriarchal oppression, but it is patriarchy that is arguably more historically prevalent than the specific economic system of capitalism. Thus, it is patriarchy that creates spaces to be filled by capitalism, not the other way around. Both, however, operate through the method of abjection.

The effect of reducing a group of people to the status of another regardless of gender/sex is evident when considering that 90% of adult rape victims are female (Rape Abuse & Incest National Network [RAINN], 2016). The other are those whose agency is diminished by their expulsion from those who are named. In a similar way humans conceptualize the world by focusing on what humans have created. Particularly in the West this way of conceptualizing the environment is related to the colonialist tradition, which dictates that land has no value and no purpose apart from that which humans impart upon it through cultivation. This ideology assumes that the earth is an abundant source of resources for human consumption. The result of this is that human consumption



exceeds rather than harmonizes itself with the productive capacities of the Earth (Smith, 1997).

#### But...Where are the Numbers?

While there is a strong philosophical foundation for the link between androcentrism and anthropocentrism, a worthy reader is no doubt wondering where the empirical evidence is. There is no empirical research directly connecting androcentrism with anthropocentrism; however, psychological research has suggested there may be a link between artifacts of patriarchal culture and the way that people relate to nature (Bowen et al., 2016; Holloway et al., 2014; Swami et al., 2016). Gallagher (1993) argued the physical surroundings of a person impacts their perceptions, emotions, and actions. Aspects of a person's surroundings provide cues on how to think and act. Some of these susceptibilities to external surroundings may be influenced by evolution. Humans evolved regulating themselves through the natural cycles, sleeping at night and waking at dawn, and moving or at least preparing in response to the changing seasons. Recently in our evolutionary history we have shifted towards primarily indoor environments and with the advent of cheap abundant light sources, the cycles of day and night no longer hold the same sway. A person's behavior in an isolated wilderness differs from their behavior in a home or an office building. Over time the assumptions and tendencies connected to different environments become what I'll refer to as an ideology of place. These ideologies are formed intentionally and unintentionally.

Developmental psychologists have found that the extent to which a child is able to spend time in green spaces and undeveloped environments as compared to urban and

suburban environments influences the extent to which they intrinsically value nature. Children who were raised in an area where they lived more intimately with nature tended to display more biocentric reasoning compared to those who lived in environments with less greenspace (Verbeek & De Waal, 2002). The term *biocentric*, defined by Verbeek and De Waal (2002), “refers to an appeal that the natural environment has moral standing that is at least partly independent of its value as a human commodity” (p. 97). While there is most certainly a role for social conditioning in this relationship, evolutionary theory proposes that our pre-human ancestors would have developed a positive response to certain types of outdoor spaces. Green spaces indicate the presence of food and water as compared to a desert space. This concept of biophilia has been found in primates who have a specific psychological response to the frequency of light given off by green plants. Thus, it may be the case that humans have inherited the positive psychological response to certain natural environments that once helped our primate ancestors find food, water, and shelter (Verbeek & de Wall, 2002).

The idea that a person’s surroundings can impact the way a person thinks and acts is the basic assumption of adventure therapy. This therapeutic approach is centered around nature as a facilitator for experiential learning (Bowen et al., 2016). Such activities include rock climbing, brush walking, hiking, backpacking, and rafting. Through these activities in a natural setting participants have been found to build increased competence, increased sense of mastery, lower anxiety, and fewer depressive symptoms (Bowen et al., 2016). A meta-analysis by Bowen and Neill (2013) of 197 adventure therapy studies found a moderate short-term improvement in several aspects of mental health. The short-

term improvement serves to emphasize the role of place. It may have been that after the intervention the effect diminished if the participants did not continue to seek out comparable experiences.

The outcomes of adventure therapy can be seen as coming from the natural place itself and the activities that the participants did in those places. It is likely both are integral to the outcome of the therapy. As Gallagher (1993) pointed out, people take behavior cues from the environment. The wilderness setting used in many adventure therapy programs may help by removing the participant from the environment that is cuing certain negative behaviors. Adventure therapy interventions have been found to decrease certain negative attitudes that can be linked back to systems of patriarchal oppression, such as body image issues and disempowerment in women and other marginalized groups (Gidlow et al., 2016; Peters, Stodolska, & Horolets, 2016; Soga, Gaston, Koyanagi, Kurisu, & Hanaki, 2016; Swami et al., 2016).

Swami et al. (2016) examined the relationship between nature exposure and a psychological sense of connection to nature, as well as happiness, body image, and self-esteem. Greater connection to nature was positively associated with positive body image. In addition, exposure to nature was also linked to more positive body appraisals. Similarly, Holloway et al. (2014) found that wilderness experiences increased body image positivity and a sense of empowerment among women graduate students.

Research generally suggested a restorative effect of being in nature (Gidlow et al., 2016; Soga et al., 2016) that is further supported by arguments from evolutionary psychology and biology (Verbeek et al., 2002). Soga et al. (2016) and Gidlow et al.

(2016) found that connection to nature predicted the participants' frequency of contact with it. Overall, it seems that natural environments and green spaces have certain benefits possibly as a function of some evolutionary reaction or simply their ability to transport people out of their socially constructed worlds where various constructs such as patriarchy are rooted.

### The Current Study

The process of abjection that underlies the gendered as well as ecological hierarchy relies on the formation of one identity group through the expulsion of another, which then uses biases as self-confirming prophecies to maintain the status quo. In order to examine whether abjection is at work in androcentric and anthropocentric ideologies, the current study will look at the individual's beliefs in the perceptual separateness of themselves from nature and the biases that are used in the maintenance of these relations of abject otherness with regard to social attitudes. However, given that the patriarchal ideology is an expansive system that varies by socio-historical context (hooks, 1985) the current study, to be intersectional, had to examine several different domains to even partially assess to complexity of the androcentrism and anthropocentrism.

One such domain is the primary physical environments of the participants that shaped their attitudes and perceptions (Gallagher, 1993). For example, a rural environment might facilitate more exposure to nature than an urban one. While knowing where people have spent most of their time can allow inferences to be made about their experiences, it is limited.

Marxist theory emphasizes the role of material social circumstances in the shaping the individual (Vogel, 1988). Thus, another domain that should be addressed is socio-economic class. A poor urban dweller might have very different experiences than a poor rural town dweller. Lastly, part of understanding patriarchal attitudes and how they shape a person's perceptions of nature involves understanding racist and sexist biases, it also involves understanding the person's own gender and ethnicity given that patriarchy impacts differently people in different ways (hooks, 1985).

## CHAPTER 3

### METHOD

#### Participants

This study used a convenience sample collected from the student population at the University of Northern Iowa (UNI) and from staff members of the area Girl Scout council. The UNI sample consisted of 91 graduate and undergraduate students (38 males, 53 females,  $M$  age = 20.7, age range: 18 – 45). The ethnic composition of the sample (Caucasian = 81, Black = 5, Asian = 4, Hispanic & Latino = 1) was roughly representative of the UNI student population although small  $n$ 's on all non-white groups prevented between-group comparisons. The types of communities (urban = 19, suburban = 28, rural town = 33, rural farm = 10) where participants reported having spent most of their lives were assessed to factor in life-style differences. Additionally, 33 participants in this sample reported having experienced financial hardship in the past three years while 58 had not.

The Girl Scout sample consisted of 23 staff members of a Midwestern council (20 females, 2 males, 1 intersex,  $M$  age = 41.5, age range: 23 – 62). The sample was ethnically homogenous (21 Caucasians, 2 Asians). Five reported having experienced financial hardship in the last three years, while 18 did not. The types of communities the participants reported having spent most of their lives were 3 urban, 12 suburban, 6 rural town, 2 rural farm.

## Measures

### Connectedness to Nature

Connectedness to nature is the extent that an individual considers nature as separate from their self-concept and the degree that they understand things produced by humans to be a continuation of nature rather than a discontinuation if it (Mayer & Frantz, 2004). It will be operationally defined by both the participants' self-reports of how central nature is to their self-concept as measured by the Connectedness to Nature Scale (CNS; Mayer & Frantz, 2004) and by their behaviors in relation to nature as measured by the General Ecological Behaviors scale (GEB; Kaiser, Woelfing, & Fuhrer, 1999). These measures will be referred to as the *connection to nature* measures. Higher score on each of these measures as well as the scores computed from both indicate greater connection to nature while lower scores indicate alienation from nature in the participant's self-concept.

The CNS is a 14-item scale that examines the individual's sense of connection to nature on a trait level (see Appendix A). It assesses the second aspect of alienation, where human-produced items may be perceived as discontinuous from nature (Vogel, 1988) by addressing how the participants see their own actions in the context of nature.

Participants respond to the measure with a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Initial testing of the *CNS* produced consistent Cronbach's Alpha reliability coefficients of .8 or greater. Examples of items include "I have a deep understanding of how my actions affect the natural world" and "I often feel kinship with plants and animals." Higher scores on this measure indicate stronger emotional connections with the natural world.

Pro-environmental behaviors will be measured with 30-items from the General Ecological Behavior Scale (Kaiser et al., 1999), which assesses various behaviors such as recycling, littering, and household practices (see Appendix B). Each item is answered with either “Agree” or “Disagree.” Examples of items are “I collect and recycle used papers,” “If there are insects in my apartment I kill them with a chemical insecticide,” and “In supermarkets, I usually buy fruits and vegetables from the open bins.” Kaiser et al. (1999) reported Cronbach’s Alpha scores of .73 - .84. Scores on each measure will be converted to z-scores and composited.

#### Patriarchal Attitudes

Patriarchal attitudes will be operationalized as the worldview that includes both sexist and racist beliefs. The Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996) is a 22-item measure that assesses both hostile and benevolent sexism (see Appendix C). Responses are scored from 0 (disagree strongly) to 5 (agree strongly). The *ASI* includes items such as “Most women interpret innocent remarks or acts as being sexist” or “A good woman should be set on a pedestal by her man.” Glick and Fiske (1996) reported Cronbach’s Alpha scoring of  $m = .6$ .

The Symbolic Racism Scale (SRS; Henry & Sears, 2002) is an eight-item measure of racism in the United States (see Appendix D). The response format varies by the question to avoid response sets. The scale is designed to measure subtle forms of racism. An example scale item is “How much of the racial tensions in the US today do you think blacks are responsible for?” The response options are all of it, most, some, not much at



all. The scale was found to be reliable and valid. A composite score for patriarchal attitudes will be calculated with z-scores from each of the previously discussed measures.

### Gender

Gender will be assessed with the Personal Attributes Questionnaire (PAQ; Spence & Helmrich, 1978). This measure consists of 24 items that are each presented as two polar extremes and the participant rates where they fall between the two points on a scale of “A” to “E.” The questionnaire consists of items that measure the level of a trait that is either masculine or feminine (see Appendix E). For example “Not at all emotional A..B..C..D..E Very emotional” is an items that measures the level of emotionality, which is stereotypically coded as feminine. The item “Not at all competitive A..B..C..D..E Very competitive” measures a trait stereotypically coded as masculine. The measure also uses items where one extreme is stereotypically coded as feminine and the other as masculine, such as “Very submissive A..B..C..D..E Very Dominant.”

### Additional Demographic Measures

To account for access to economic resources, the participants were asked to self-report the frequency that they experienced financial hardship during the last three years, or not. To assess the impact of lifestyle, the participants were asked to self-report if they have lived primarily in an urban, suburban, or a rural environment as per their own perceptions. The lack of definition of the living environments is because a person who lives in a city of one million may feel that a city of 30,000 is rural, while its own inhabitants may define themselves as urban and suburban. This item is meant to assess

the lifestyles attached to residing in these various types of locations, not the locations themselves.

### Procedure

The participants accessed the survey through the Sona Systems research participation software, which directed them to a Qualtrics survey. On Sona Systems the participants were shown four links to the study. The first link will have the study title, the next three will have the title with a note that it is for either African-American, Asian, or Hispanic and Latino participants. On the letter to the participant on the three-targeted links, a brief explanation of the targeting was provided ensuring them that the purpose of the special link is to obtain a sample that is representative of the UNI student body. Each of the four links directed the participants to an identical Qualtrics survey. Once the participant was informed of the purpose and potential risks of the study, they were directed to the demographics page, which asks for sex, ethnicity, the financial hardship item, and the life-style item. They then completed the survey.

### Hypotheses

Hypothesis 1. Scores on the measures of *Connection to nature* will predict those of *patriarchal attitudes*.

Hypothesis 2. The relationship between patriarchal attitudes and *connection to nature* will be significantly mediated by whether they primarily reside in an urban, suburban, or rural area. The physical environment where a person resides frames their attitudes and perceptions (Gallagher, 1993). The findings of adventure therapy further support the link

between mental states and the external environment (Goldenberg & Soule, 2015; Swami et al., 2016).

Hypothesis 3. Financial hardship will significantly moderate the relationship between *patriarchal attitudes* and *connection to nature*. The purpose of measuring financial hardship was to account for the material circumstances as emphasized by Vogel (1988) of the participants and to ensure that the study was intersectional.

Hypothesis 4. Gender will mediate or moderate the relationship between patriarchal attitudes and connection to nature. Gender is an unstable category which acts as a site for knowledge. While simply comparing men and women will likely lead to essentialist claims (Butler, 1990), the current study examined the specific aspects of gender rather than simply looking at the typical binary. Additionally, the gendered traits of the participants may provide additional insight into the primary analysis of the relationship between patriarchal attitudes and connection to nature.

Hypothesis 5. The participant's ethnicity will either significantly mediate or moderate the relationship between *patriarchal beliefs* and *connection to nature*. De Beauvoir's (2011) feminine other focuses on the way women are rendered other in relation to men, however, these concepts are not limited to gender. Race and ethnicity have considerable overlap in terms of the mechanisms of oppression (hooks, 2000).

## Analysis

### Preparation

Compositing. The scores on the measures of patriarchal attitudes were combined to make a single composite score where higher scores indicate higher levels of patriarchal attitudes. Connection to nature will be measured by creating a composite score with the measures of inclusion of self in nature and ecological behaviors measure, where higher scores will indicate lower levels of alienation from nature.

Connectedness to nature. Previous research has suggested that the extent to which the person includes nature in their self-concept should predict their levels of pro-ecological behaviors. In order to verify this assumption, Pearson's correlation coefficient will be used to test the relationship between the CNS and the GEB scale. Next a simple regression will be used to further test the ability of the connectedness to nature composite score<sup>1</sup> to predict ecological behaviors. Lastly, the mean inter-item correlation will be assessed to measure the validity of the scale.

Patriarchal Attitudes. The composite score for patriarchal attitudes was calculated by combining the standardized score of the SRS and ASI measures.

### Analysis

Hypothesis 1. Pearson's Correlation coefficient was used to test the relationships between the dependent variables of *patriarchal attitudes* and *connection to nature*. To test the predictive power of the patriarchal attitudes on alienation from nature a simple

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<sup>1</sup> The acronym CNS refers to the Connectedness to Nature Scale, while "connectedness to nature" refers to the composite score calculated with the CNS and GEB measures.

regression analysis was used.

Hypothesis 2. To test the mediating effect of lifestyle on the relationship between *patriarchal attitudes* and *connection to Nature* the mediation analysis proposed by Barron and Kenny (1986) was used. (1) A regression analysis tested the link between *patriarchal attitudes* and *connection to nature*. (2) A regression was used to test the relationship between *patriarchal beliefs* and *lifestyle*. (3) A regression was used to determine if *lifestyle* predicts *connection to Nature*. (4) A multiple regression will be used to determine whether *patriarchal beliefs* and *lifestyle* predicts *connection to nature*. As long as one or more of these relationships are not found to be non-significant then it can be concluded that *lifestyle* mediates or moderates the relationship between *patriarchal attitudes* and *connection to nature*.

Hypotheses 3 - 5. Financial hardship, sex, ethnicity, and gender will mediate or moderate the relationship between patriarchal attitudes and connection to nature.

## CHAPTER 4

### RESULTS AND DISCUSSION

There were not enough participants in the Midwestern Girl Scout council sample to conduct the analysis. As a result, all findings are from the student sample.

#### Student Sample

##### Reliability

Except for the GEB, all measures preformed at or above reliability levels from previous studies. Table 1 contains a complete listing of Alpha reliability score for all measures except the Personal Attribute Questionnaire as it was not appropriate to assess its reliability by that measure. Although the GEB preformed lower than expected ( $\alpha = .366$ ), it did correlate significantly to the Connectedness to Nature Scale (CNS)  $r(91) = .362, p < .0$ , which suggests a degree of convergent validity. A possible explanation for the low reliability of the GEB was that many of the items assessed things that some people may not know the environmental implications of doing. While the measure allowed participants to answer “maybe” when they were uncertain, it is possible that some might have guessed randomly when faced with a question that they did not fully understand. For example, the item “I use phosphate-free laundry detergent” may confuse some participants and result in them guessing at random.

Table 1

*A summary of Cronbach's Alpha Reliability Coefficients for Each applicable scale.*

	Alpha	Number of Items
GEB	.366	30
CNS	.740	14
ASI	.871	22
SRS	.794	8
Patriarchal Attitudes Composite	.893	30
Connectedness to Nature Composite	.728	44

*Note.* Patriarchal composite scores include ASI and SRS items. Connection to Nature composite scores include GEB and ASI.

A one-way ANOVA and comparison of means was conducted to determine whether there were significant differences between the groups on lifestyle, sex, or financial hardship that may have skewed the results other than the grouping variables themselves. The test found no systematic significant differences in the mean scores of the participants by these groupings on any of the scales except for the PAQ

Hypothesis 1: Scores on the measures of *patriarchal attitudes* will be significantly negatively correlated with scores of *connection to nature*.

Results. Among all students sampled there was a significant negative correlation between patriarchal attitudes and connection to nature  $r(91) = -.232, p = .01$  using a two-tailed test. A subsequent regression analysis revealed that patriarchal attitudes significantly predicted less of a connection to nature,  $b = -.214, t(90) = -2.25, p < .05$ .

Discussion. The results support the first hypothesis and indicate that patriarchal attitudes predict connection to nature. Specifically, those who have higher levels of patriarchal attitudes are more likely to have lower levels of connection to nature. The findings of this study support the ecofeminist arguments that link patriarchy and anthropocentrism (Hailwood, 2015; Plumwood, 1997; Taylor, 1997; Warren, 1997).

Additionally, these findings also provide an additional explanation for Holloway et al.'s (2014) qualitative findings that linked improved body images with time at an outdoor retreat among women graduate students. If patriarchal attitudes do predict connection to nature then it may be that being located at a nature retreat helped to increase connection to nature and thereby decrease patriarchal attitudes.

Hypothesis 2: The relationship between patriarchal attitudes and *connection to nature* will be significantly mediated or moderated by whether they primarily reside in an urban, suburban, or rural area.

Results. Due to low numbers of participants within the lifestyle groups, conclusions could only be drawn about the suburban and rural town participants living in a rural town significantly moderated the relationship between patriarchal attitudes and connection to nature. The rural town lifestyle was found to moderate the relationship between patriarchal attitudes and connectedness to nature,  $b = -.381$ ,  $t(32) = -2.727$ ,  $p < .01$ , where among those from a rural town their environment accounted for a portion of the variation,  $R^2 = .193$ ,  $F(1,31) = 7.473$ ,  $P < .01$ . Among suburbanites, lifestyle was also significant moderator,  $b = -.357$ ,  $T(27) = -2.186$ ,  $p < .05$ , which also accounted for 15% of the variation,  $R^2 = .155$ ,  $F(1, 26) = 4.78$ ,  $p < .05$ . Both urban and rural farm groups failed to meet statistical significance.

In addition to the regression analysis, correlations were tested between the composite scores and the scales which were in turn broken down by lifestyle. A significant negative correlation was found in suburban and rural town groups. A full summary of these results are reported in Table 2.



Table 2

*A summary of correlations grouped by the student's lifestyle.*

Urban ( <i>n</i> = 19)	1	2	3	4	5	6
Patriarchal Attitudes	_____	.221	.173	.207	.686**	.796**
Connection to Nature		_____	.886**	.8**	.041	.268
GEB			_____	.432	-.087	.308
CNS				_____	.192	.124
ASI					_____	.108
SRS						_____
Suburban ( <i>n</i> = 28)	1	2	3	4	5	6
Patriarchal Attitudes	_____	-.394*	-.553**	-.074	.849**	.918**
Connection to Nature		_____	.872**	.816**	-.193	-.468*
GEB			_____	.428*	-.41*	-.553**
CNS				_____	.128	-.211
ASI					_____	.571**
SRS						_____
Rural Town ( <i>n</i> = 33)	1	2	3	4	5	6
Patriarchal Attitudes	_____	-.440*	-.343	-.373*	.944**	.919**
Connection to Nature		_____	.761**	.863**	-.485**	-.32
GEB			_____	.329	-.447**	-.168
CNS				_____	-.359*	-.335
ASI					_____	.736**
SRS						_____
Rural Farm ( <i>n</i> = 11)	1	2	3	4	5	6
Patriarchal Attitudes	_____	.407	-.034	.682*	.969**	.929**
Connection to Nature		_____	.808**	.828**	.427	.329
GEB			_____	.338	.057	-.167
CNS				_____	.627*	.684*
ASI					_____	.807**
SRS						_____

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

Additional analysis of the lifestyle indicated that suburban and rural town locations were significant moderators, but the scores on the individual measures within the composite scores showed that the although the same overall relationship occurred it was constituted differently in both cases. A regression was preformed to see if patriarchal attitudes predicted scores on the both the CNS and GEB. In both rural town and suburban participants patriarchal attitudes significantly predicted scores on the GEB, but only

among rural town subgroups did patriarchal attitudes significantly predict scores on the CNS. A summary of these results can be found in Table 3.

Table 3

*A summary of regression results where patriarchal attitudes where was the dependent variable.*

Suburban ( $n = 28$ )	B	SE B	$\beta$	$t$	$P$
CNS	-.151	.399	-.074	-.378	.7
GEB	-.955	.282	-.553	-.397	.002
Rural Town ( $n=33$ )	B	SE B	$\beta$	$t$	$p$
CNS	-.628	.304	-.373	-.2239	.03
GEB	-.741	.364	-.343	-.2034	.05

Discussion. Although the number of participants in the urban and rural farm group did not allow for sufficient data to make conclusions, the significant findings in the rural town and suburban subgroups suggests that a person's location does affect their attitudes. The regression results indicated that the negative relationship between patriarchal attitudes and connection to nature was stronger among rural town ( $b = -.381$ ) and suburban participants ( $b = -.357$ ) as compared to the sample as a whole ( $b = -.214$ ). These findings support the hypothesis, however, as rural town and suburban locations only accounted for 20% and 15% of variation in the data respectively, it is highly likely that there are other unaccounted for variables.

The results support the conclusion that there is something about rural towns and suburban that acts to increase the strength of the relationship between patriarchal attitudes

and connection to nature, although it is beyond the ability of this study to empirically argue what it might be. There are things beyond the location itself that must account for a greater portion of the variance. Future studies might begin to look more closely at other sources of ideology as well as more specifically examine lifestyle variables. The current study allowed the participants to place themselves in the lifestyle group they felt they belonged, but did not give any guidance about what constitutes a rural town compared to a small suburb, for example.

The findings of the study also highlighted an interesting difference between the suburban and rural town participants. While in both cases patriarchal attitudes negatively predicted connection to nature, there were different tendencies on the subscales within each group. Among rural town participants, patriarchal attitudes negatively predicted scores on both the CNS and GEB measures of the connection to nature variable. In the case of suburban participants, patriarchal attitudes only significantly predicted scores on the GEB. It may be the case that suburban participants did not have an overall trend in the way they conceptualized themselves in regard to nature. There may also be another mediating variable at work.

Hypothesis 3: Financial hardship will mediate or moderate the relationship between patriarchal attitudes and connection to nature.

Results. To determine the whether those who had reported experiencing financial hardship systematically varied, a t-test was conducted, but it revealed no significant difference in the two group means. Then to test the differential impact of financial hardship on males compared to females, another test was conducted; which, did not find

significant results. Although among those who reported financial hardship, males were the only group to account for a large or significant difference in the relationship between patriarchal attitudes and connection to nature, the current study was unable to account for what made those males different from the other groups. There were no significant differences in the means on any other measure.

The experience of perceived financial hardship significantly moderated the relationship between patriarchal attitudes and connection to nature,  $b = -.569$ ,  $t(31) = -3.483$ ,  $p < .01$  where financial hardship accounted for a portion of variance,  $R^2 = .288$ ,  $F(1,30) = 12.134$ ,  $p < .01$ . When the same test was again broken down by sex patriarchal attitudes in males most significantly predicted connection to Nature,  $b = -1.236$ ,  $t(7) = -6.242$ ,  $p < .001$  and it accounted for a large proportion of variance,  $R^2 = .867$ ,  $F(1,6) = 38.963$ ,  $p < .001$ . There were no significant findings among males who had not experienced financial hardship nor females in either group. Correlations were calculated between all of the measures and separated into those who had and had not experienced financial hardship. A full summary can be found in Table 4.

Table 4

*A summary of correlational findings of those who had experienced financial hardship and those who had not.*

	1	2	3	4	5	6
Patriarchal Attitudes	_____	-.537**	-.383*	-.5**	.864**	.867**
Connection to Nature	-.109	_____	.852**	.818**	-.631**	-.3
GEB	-.272*	.825**	_____	.350*	-.541**	-.125
CNS	.09	.829**	.367	_____	-.496**	-.37*
ASI	.905**	.01	-.171	.187	_____	.499**
SRS	.905**	-.209	-.321*	-.025	.635**	_____

*Note.* Participants who experienced financial hardship are located above the diagonal ( $n = 32$ ) and those who did not are below ( $n = 59$ ). \*  $p < .05$  \*\* $p < .01$

Discussion. The experience of financial hardship in the last three years significantly increased the strength of the relationship between patriarchal attitudes and connection to nature as well as accounted for 28% of variation in the data. The consideration of financial hardship in the context of this study was important as one's access to resources is a large constraint on their decisions. A person with a more limited income may by necessity choose low cost or ease over ecologically sustainable. Thus, while a person may be forced by necessity to act in ways that are not sustainable, it may not necessarily be linked directly or solely to patriarchal attitudes. Given that the strength of the regression increases when accounting for financial hardship, it can be argued that it has the tendency to increase the overall effect. Interestingly, when the data was separated by sex the relationship was only significant among males, which may suggest that males impacted differently than females.

Hypothesis 4: Gender will mediate or moderate the relationship between patriarchal attitudes and connection to nature.

Results. A multiple regression model generated from all the PAQ items did not significantly predict the connectedness to nature composite variable. Further breakdown showed that the model failed to significantly predict either scores on the CNS or the GEB. Although the PAQ did not significantly predict patriarchal attitudes, it is worth noting that it predicted a large portion of variation at a level approaching significance,  $R^2 = .375$ ,  $F(24, 63)$ ,  $p = .08$ . No specific item of the PAQ predicted scores on the connectedness to nature composite variable. The PAQ item measuring the participants level of independence was found to significantly predict scores on the patriarchal attitudes composite variable,  $b = .575$ ,  $t(87) = 2.432$ ,  $p < .05$ . Thus, the overall measure of gender provided by the PAQ failed the moderation test.

To further account to the effects of gender, the regression analysis was run while also sorting the participants by lifestyle location. For those from rural towns, several PAQ items acted as significant moderators. The most predictive items from the multiple regression can be found in Table 5.

Table 5

*Summary of significant multiple regression results where PAQ items predicted Connection to nature composite among those who have resided primarily in a rural town (n = 33).*

Item	<i>b</i>	SE	<i>B</i>	<i>t</i>
Not at all emotional: Very Emotional	-1.853	.553	-1.569	-3.474*
Very passive: Very active	-.681	.253	-.581	-2.695*
Not able/ able to devote oneself to others	1.137	.386	.933	2.943*
Not at all/ very competitive	.553	.154	.471	3.601**
Indifferent/ needing the approval of others	-1.421	.421	-1.177	-3.378*
Feelings easily/ not easily hurt	1.286	.391	1.265	3.292*
Aware/ not aware of the feelings of others.	-1.915	.385	-1.475	-4.77**
Cries/ never cries	-.836	.208	-.684	-4.02**
Confident/ not confident	-.986	.269	-.845	-3.663*
Not/ very understanding of others.	2.282	.447	1.925	5.109**
Very cold/ very warm in relations with others.	1.604	.406	1.342	3.950**
Very little/ very strong need for security	.935	.206	.853	4.534**
Goes to pieces/ stand up well under pressure.	2.046	.542	1.579	3.778**
Not at all/ very kind	-.924	.334	-.67	-2.769*
Feels very inferior/ superior.	2.669	.430	2.125	6.201**

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

The PAQ did not significantly predict patriarchal attitudes among rural farm, urban, or suburban dwellers. Thus, the analysis of gender and lifestyle location failed to mediate the relationship between connectedness to nature and patriarchal attitudes.

The multiple regression analysis was recalculated grouping the results by sex to further clarify the analysis of the PAQ results. For males, the PAQ was a significant predictor of patriarchal attitudes accounting for a larger portion of variance in patriarchal attitudes,  $R^2 = .891$ ,  $F(24,12) = 4.106$ ,  $p < .01$ , while the PAQ was not a significant predictor in females. Among males four items as shown in Table 6 were especially

significant predictors, while no specific PAQ items were found to be significant predictors among females.

Table 6

*The most significant PAQ items predicting patriarchal attitudes among males.*

Item	<i>b</i>	<i>SE</i>	<i>B</i>	<i>t</i>
Not at all/very independent.	1.250	.34	.665	3.677**
Very passive/ very active.	-.82	.307	-.592	-2.671*
Not at all/ very competitive.	-.873	.251	-.587	-3.478**

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

Thus, gender failed to mediate or moderate the relationship between patriarchal attitudes and connection to nature when participants were grouped by sex.

Discussion. The PAQ items with a few exceptions contributed little to understanding the relationship between patriarchal attitudes and connection to nature. While the PAQ demonstrated some ability to predict aspects of patriarchal attitudes and connection to nature, it failed to pass mediation test. The initial assumption of the study was that since the most salient aspects of gender are socially constructed then a tool that examines many possible domains of gender would be most effective. It is possible that the PAQ was effective in itself but the participant's individual gender simply did not mediate or moderate the relationship between patriarchal attitudes and connection to nature.

Butler (1990) argued that while gender and sex are conceptually different they never occur without one and other. There can be experience of gender without a sex and no sex without a gender. Given this consideration and the ineffectiveness of the PAQ in the



analysis, the same analysis was performed but with the participants grouped by sex. This more focused analysis revealed that among males the item for independence, passivity, and competitiveness predicted connection to nature, but not patriarchal attitudes. None of the PAQ items proved to be significant mediators or moderators among female participants. This may suggest that the relationship is actually due to acceptance of hegemonic masculine norms.

Males who lived in the rural town who rated themselves as less independent were more likely to have lower levels of connection to nature as opposed to those who rated themselves as more independent. One interpretation of this is that the more independent males also spend more time outdoors. Increased self-reliance is one of the common outcomes of adventure therapy (Gidlow et al., 2016; Goldenberg & Soule, 2015; Swami et al., 2016). It might be that those males have spent more time in nature and as a result have become more independent and more connected. Interestingly, the item assessing the range of behaviors from very passive to very active had the opposite tendency. Males who were very passive were more likely to be connected to nature than those who rated themselves as very active. It is not clear how the participants differentiated between independence and activeness. Lastly, males who were more competitive were more likely to have higher levels of connection to nature. Given the connection between activity and connection to nature, if one has to be active to be competitive it might make sense that competitiveness is related to connection to nature. Given that most of the participants were first and second year college students, then it might be that these males in question played sports in high schools which helped them to develop activeness and competitiveness in

high school while facilitating the opportunity to view the outdoors in a positive way. This would be consistent with Gallagher's (1993) argument that the environments that people spend the most time in shape their attitudes and perceptions. However, this does not fully explain the how all three of these findings fit together-

Hypothesis 5: Ethnicity will mediate or moderate the relationship between patriarchal attitudes and connection to nature.

Results. Since the number of non-white students in each group did not meet the minimum requirements for statistical power, there was no analysis on the basis of ethnicity.

#### General Discussion

The current study provided empirical support for the link between androcentrism and anthropocentrism. Additionally, the findings suggest that the relationship between patriarchal attitudes and connection to nature are complicated by a complex array of factors. While the results of this study were promising, due to the small non-random sample, more research is required to understand the relationship between patriarchal attitudes and connection to nature. The findings for each hypothesis have been discussed previously, however, an interesting inconsistency emerged with regard to sexist beliefs and gender.

This study suggests that location is a key variable that moderates the relationship between patriarchal attitudes and connection to nature. Due to small sample size the study was not able to make conclusions about urban and rural town dwelling participants, the findings did highlight the role of the rural town and suburb in shaping attitudes. In both

rural town and suburban subgroups not only did patriarchal attitudes predict connection to nature, but the location itself contributed to an increase in the strength of the relationship above the baseline score from the entire student sample.

These findings support Gallagher's (1993) argument that a person's physical location has an impact on their attitudes and perceptions. The urban and rural town locations each have their own sociocultural conditions that shape the experience of those who inhabit them. For example, a suburban environment may tend to expose its inhabitants to human made versions of nature in the form of landscaped yards and parks. This may implicitly suggest human dominance over the environment, where it is not correct or adequate unless it is also managed. In the case of rural towns things such as hunting or agriculture may exert an influence. Even though those participants might be exposed to less developed nature compared to suburban participants, the overt act of dominance implied in each action might increase the strength of the relationship between patriarchal attitudes and connection to nature. This relationship of dominance or power-over discussed by Hunt (2014) is foundational to both androcentrism and anthropocentrism

The participants' attitudes about gender in the form of sexist beliefs contributed to the connection between patriarchal attitudes and connection to nature, but their own gendered attributes did not moderate the relationship. It is possible that the PAQ did not measure the relevant domains of gender. Since the patriarchal attitudes did not predict any of the PAQ items it maybe that sexism (and racism as well) is equally likely across all of the gender traits measured.

Access to resources emerged as a moderator between patriarchal attitudes and connection to nature. The compromises born of circumstance may force individuals to choose immediate survival over long-term sustainability (Plumwood, 1997). People of color are more likely to have less sustainable consumerist habits and to live in areas with greater levels of environmental containments arguably as a function of financial limitations (Taylor, 1997). Worldwide, economically disadvantages people are also more likely to live in areas more susceptible to the effects of climate change (Bullard, 2015). In this context, financial hardship as a moderator suggest that some of relationship between patriarchal attitudes and connection to nature is born of necessity. This further supports the link between fighting poverty and protecting the environment (Denton, 2002). The current study also found that when sex was accounted for the relationship was only significant among males. Previous research has argued that not only is supporting women key to sustainable development, but also that the ideology of masculinity is related to destructive attitudes and behaviors (Jacobs, 2015; Plumwood, 1997; Resurreccion, 2013; Roach, 1991).

#### Limitations and Implications for Future Research

Since the Midwestern Girl Scout sample was not large enough to make conclusions about, this study relied exclusively on the student sample. The population of the university is relatively homogenous, which limits this study's ability to draw conclusions about the population at large. In addition, the sample was effectively a small convenience sample. In terms of lifestyle the sample was split near evenly between city and more rural environments, which may somewhat enhance the generalizability of the data.

To be able to examine the role of ethnicity and privilege and oppression it is necessary to look at closely at ethnic minorities. These groups may have systematically varied in their experiences of financial hardship and lifestyle tendencies compared to the majority of the student sample that identified as white.

One possible direction for future research is to further deconstruct the role of place on both patriarchal and environmental attitudes. Given that participants from both suburban and rural environments had different overall tendencies on the scales comprising patriarchal attitudes and connection to nature, further study might be able to isolate the aspects of these places that is driving the trends in the data.

In addition to the central argument of ecofeminism addressed by the present study another area of focus that much theoretical and sociological research has addressed is the whys in which gender interacting with the environmental factors uniquely harms certain subsets of the population, specifically, those living in the global south in economically disadvantaged nations (Gaard, 2016). While much research has demonstrated the utility of ecofeminism as a theoretical lens to examine the socio-political aspects of climate change in global south (Jacobs, 2015; Taylor, 1997; Warren, 1997), little research has – for practical reasons – examined how individual perceptions and experiences impact how people are impacted by androcentrism and anthropocentrism. This research would be of importance as it would bring the voices of people who are likely to be most impacted by climate change to the center of discourse and add to the empirical understanding of privilege and oppression.

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## APPENDIX A

## CONNECTEDNESS TO NATURE SCALE (MAYER &amp; FRANTZ, 2004)

Please answer each of these questions in terms of the way you generally feel. There are no right or wrong answers. Using the following scale, in the space provided next to each question simply state as honestly and candidly as you can what you are presently experiencing.

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Agree

1. I often feel a sense of oneness with the natural world around me.
2. I think of the natural world as a community to which I belong.
3. I recognize and appreciate the intelligence of other living organisms.
4. I often feel disconnected from nature.
5. When I think of my life, I imagine myself to be part of a larger cyclical process of living.
6. I often feel kinship with animals and plants.
7. I feel as though I belong to the earth as equally as it belongs to me.
8. I have a deep understanding of how my actions affect the natural world.
9. I often feel part of the web of life.
10. I feel that all inhabitants of Earth, human, and nonhuman, share a common 'life force.'
11. Like a tree can be part of a forest, I feel embedded within the broader natural world.

12. When I think of my place on Earth, I consider myself to be a top member of a hierarchy that exists in nature.

13. I often feel like I am only a small part of the natural world around me, and that I am no more important than grass on the ground or the birds in the trees.

14. My personal welfare is independent of the welfare of the natural world.

Note: Items 4, 12 and 14 are reverse scored.

## APPENDIX B

## THE GENERAL ECOLOGICAL BEHAVIORS SCALE

(KAISER, WOELFING, & FUHRER, 1999).

For each item please indicate whether or not you frequently participate in the following behaviors with either “yes,” “no,” or “unsure.”

1. I put dead batteries in the garbage.\*
2. After meals, I dispose of leftovers in the toilet.\*
3. I bring unused medicine back to the pharmacy.
4. I collect and recycle used paper.
5. I bring empty bottles to a recycling bin.
6. I prefer to shower rather than to take a bath.
7. In the winter, I keep the heat on so that I do not have to wear a sweater.\*
8. I wait until I have a full load before doing my laundry.
9. In the winter, I leave the windows open for long periods of time to let in fresh air.\*
10. I wash dirty clothes without prewashing.
11. I use fabric softener with my laundry.\*

12. I use an oven-cleaning spray to clean my oven.\*
13. If there are insects in my apartment I kill them with a chemical insecticide.\*
14. I use a chemical air freshener in my bathroom.\*
15. I use chemical toilet cleaners.\*
16. I use a cleaner made especially for bathrooms rather than an all-purpose cleaner.\*
17. I use phosphate-free laundry detergent.
18. Sometimes I buy beverages in cans.\*
19. In supermarkets, I usually buy fruits and vegetables from the open bins.\*
20. If I am offered a plastic bag in a store I will always take it.\*
21. For shopping, I prefer paper bags to plastic ones.
22. I usually buy milk in returnable bottles.
23. I often talk with friends about problems related to the environment.
24. I am a member of an environmental organization.
25. In the past, I have pointed out to someone his or her unecological behavior.
26. I sometimes contribute financially to environmental organizations.

27. I do not know whether I may use leaded gas in my car.\*

28. Usually I do not drive my automobile in the city.

29. I usually drive on freeways at speeds under 60 mph.

30. When possible in nearby areas around 30 km (18.75 miles), I use public transportation or ride a bike.

\* Negatively formulated items.

Scoring Instructions: Unanswered items will be counted as “no” as they indicate doubt.



## APPENDIX C

## AMBIVALENT SEXISM INVENTORY (GLICK &amp; FISKE, 1996).

Below is a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement using the following scale: 0 = disagree strongly; 1 = disagree somewhat; 2 = disagree slightly; 3 = agree slightly; 4 = agree somewhat; 5 = agree strongly.

B(1) 1. No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman.

H 2. Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality."

B(P)\* 3. In a disaster, women ought not necessarily to be rescued before men.

H 4. Most women interpret innocent remarks or acts as being sexist.

H 5. Women are too easily offended.

B(I)\* 6. People are often truly happy in life without being romantically involved with a member of the other sex.

H\* 7. Feminists are not seeking for women to have more power than men.

B(G) 8. Many women have a quality of purity that few men possess.

B(P) 9. Women should be cherished and protected by men.

H 10. Most women fail to appreciate fully all that men do for them.

H 11. Women seek to gain power by getting control over men.

B(I) 12. Every man ought to have a woman whom he adores.

B(1)\* 13. Men are complete without women.

H 14. Women exaggerate problems they have at work.

H 15. Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.

H 16. When women lose to men in a fair competition, they typically complain about being discriminated against.

B (P) 17. A good woman should be set on a pedestal by her man.

H\* 18. There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances.

B(G)19. Women, compared to men, tend to have a superior moral sensibility.

B(P) 20. Men should be willing to sacrifice their own well being in order to provide financially for the women in their lives.

H\*.21. Feminists are making entirely reasonable demands of men.

B(G) 22. Women, as compared to men, tend to have a more refined sense of culture and good taste.

Note: H = Hostile Sexism, B = Benevolent Sexism,(P) = Protective Paternalism,(G) = Complementary Gender Differentiation, (I) = Heterosexual Intimacy, \* = reverse- scored item.

### Scoring Instructions

The ASI may be used as an overall measure of sexism, with hostile and benevolent components equally weighted, by simply averaging the score for all items after reversing the items listed below. The two ASI subscales (Hostile Sexism and Benevolent Sexism) may also be calculated separately. For correlational research, purer measures of HS and BS can be obtained by using partial correlations (so that the effects of the correlation between the scales is removed).

Reverse the following items (0 = 5, 1 = 4, 2 = 3, 3 = 2, 4 = 1, 5 = 0): 3, 6,7, 13, 18,21.

Hostile Sexism Score = average of the following items: 2, 4, 5, 7, 10, 11, 14, 15, 16, 18,21.

Benevolent Sexism Score = average of the following items: 1, 3, 6, 8, 9, 12, 13, 17, 19,20,22.

## APPENDIX D

## THE SYMBOLIC RACISM SCALE (HENRY &amp; SEARS, 2002)

For each of the following items, please select from the option given the answer that best describes your feeling on various social issues.

1. It's really a matter of some people not trying hard enough; if blacks would only try harder they could be just as well off as whites.

<1> Strongly agree <2> Somewhat agree <3> Somewhat disagree <4> Strongly disagree

2. Irish, Italian, Jewish and many other minorities overcame prejudice and worked their way up. Blacks should do the same.

<1> Strongly agree <2> Somewhat agree <3> Somewhat disagree <4> Strongly disagree

3. Some say that black leaders have been trying to push too fast. Others feel that they haven't pushed fast enough. What do you think?

<1> Trying to push very much too fast <2> Going too slowly <3> Moving at about the right speed

4. How much of the racial tension that exists in the United States today do you think blacks are responsible for creating?

<1> All of it <2> Most <3> Some <4> Not much at all

5. How much discrimination against blacks do you feel there is in the United States today, limiting their chances to get ahead?

<1> A lot <2> Some <3> Just a little <4> None at all

6. Generations of slavery and discrimination have created conditions that make it difficult for blacks to work their way out of the lower class.

<1> Strongly agree <2> Somewhat agree <3> Somewhat disagree <4> Strongly disagree

7. Over the past few years, blacks have gotten less than they deserve. <1> Strongly agree <2> Somewhat agree <3> Somewhat disagree <4> Strongly disagree

8. Over the past few years, blacks have gotten more economically than they deserve. <1> Strongly agree

<2> Somewhat agree <3> Somewhat disagree <4> Strongly disagree

APPENDIX E  
PERSONAL ATTRIBUTES QUESTIONNAIRE

(SPENCE, HELMREICH & STAPP, 1973)

Instructions:

The items below inquire about what kind of person you think you are. Each item consists of a PAIR of characteristics, with the letters A-E in between. For example,

Not at all artistic    A.....B.....C.....D.....E    Very artistic

Each pair describes contradictory characteristics - that is, you cannot be both at the same time, such as very artistic and not at all artistic.

The letters form a scale between the two extremes. You are to choose a letter which describes where YOU fall on the scale. For example, if you think that you have no artistic ability, you would choose A. If you think that you are fair, you might choose D. If you are only medium, you might choose C, and so forth.

M-F	1	Not at all aggressive	A.....B.....C.....D.....E	Very aggressive *
M	2	Not at all independent	A.....B.....C.....D.....E	Very Independent *
F	3	Not at all emotional	A.....B.....C.....D.....E	Very emotional*
M-F	4	Very submissive	A.....B.....C.....D.....E	Very Dominant *
M-F	5	No at all excitable in a major crisis*	A.....B.....C.....D.....E	Very excitable in a major crisis
M	6	Very passive	A.....B.....C.....D.....E	Very active*

F	7	No at able to devote self completely to others	A.....B.....C.....D.....E	Able to devote self completely to others*
F	8	Very rough	A.....B.....C.....D.....E	Very gentle*
F	9	Not at all helpful to others	A.....B.....C.....D.....E	Very helpful to others*
M	10	Not at all competitive	A.....B.....C.....D.....E	Very competitive*
M-F	11	Very home oriented	A.....B.....C.....D.....E	Very worldly*
F	12	Not at all kind	A.....B.....C.....D.....E	Very kind*
M-F	13	Indifferent to others' approval*	A.....B.....C.....D.....E	Highly needing of other approval*
M-F	14	Feelings not easily hurt*	A.....B.....C.....D.....E	Feelings easily hurt
F	15	Not at all aware of feelings of others	A.....B.....C.....D.....E	Very aware of feelings of others*
M	16	Can me decisions easily	A.....B.....C.....D.....E	Has difficulty making decisions*
M	17	Gives up easily	A.....B.....C.....D.....E	Never gives easily*
M-F	18	Never cries*	A.....B.....C.....D.....E	Cries very easily
M	19	Not at all self-confident	A.....B.....C.....D.....E	Very self-confident*
M	20	Feels very inferior	A.....B.....C.....D.....E	Feels very superior*
F	21	Not at all understanding of others	A.....B.....C.....D.....E	Very understanding of others*
F	22	Very cold in relations to others	A.....B.....C.....D.....E	Very warm in relation to others*
M-F	23	Very little need for security*	A.....B.....C.....D.....E	Very strong need for security
M	24	Goes to pieces under pressure	A.....B.....C.....D.....E	Stands up well under pressure*

The scale to which each item is assigned is indicated by M (Masculinity), F (Femininity) and M- F (Masculinity-Femininity)

Items with an asterisk indicate the extreme masculine response for the M and M-F scales and the extreme feminine response for the F scale. Each extreme masculine response on the M and M-F scales and the extreme feminine response on the F scale are scored 4, the next most extreme scored 3, etc.