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Mother Nature and Menvironmental Politics: Analyzing How Gendered Frames Affect Support For The Clean Air Act

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MOTHER NATURE AND *MEN*VIRONMENTAL POLITICS: ANALYZING HOW GENDERED FRAMES AFFECT SUPPORT FOR THE CLEAN AIR ACT

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Abstract:

While environmental issues are becoming more significant and frequent, concern for the environment varies. Research has shown a gender gap in environmental concern, particularly in that males see helping the environment as compromising their masculinity (Brough et al. 2016, 568). My I.S. examines whether and how gendered frames shape public support for the United States' environmental air pollution policy, the Clean Air Act. In order to connect an issue to a frame, an individual will draw upon a relevant schema and apply elements from that schema in order to understand the issue. Gender is an accessible schema that strongly shapes individuals' notions about expected gender roles and gender personalities for each sex (McDermott 2016; Winter 2008). I hypothesize, based on Nicholas Winter's (2008) implication theory, that when a frame matches the attitudes or elements within a participant's gender schema then he/she will be more supportive of the Clean Air Act. I conducted a survey on Amazon's Mechanical Turk (MTurk), where participants were asked to read a news article about the Clean Air Act. The news article could contain no gendered notions (control), notions about gender traditional roles and personalities, or notions about gender non-traditional roles and personalities. I found that an individual's gender schema does not interact with a gendered frame to produce statistically significant differences in the support for the Clean Air Act. An implication of my study is that gender notions should continue to be looked at as a means to communicate about environmental issues.

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Chapter 1: Introduction

The treatment of the environment has become a prominent political issue in American and international politics. Ice caps melting, species facing extinction, and people wearing masks due to poor air quality are all part of the bleak narrative about global environmental degradation. Especially in an age of climate crisis, in which scientists have predicted that humankind is on the brink of irreversible harm to the planet, environmental policies can promote sustainable development ("Only 11 Years" 2019). However, enacting environmental policies requires dissolving ideas of borders, partisanship, and ideology in order to create a sustainable future for generations to come. Additionally, policies can only work so well if people actually want them to succeed in making viable change.

My Independent Study seeks to understand why American citizens do and do not support environmental issues. When communicators, such as political elites, organizations, or impassioned citizens, use framing to highlight certain considerations over others in political issues, they can affect how political issues are understood. In particular, my research focuses on how an individual's attitudes regarding gender, such as their notions about proper gender roles and gender personalities, can affect the level of support for an air pollution policy, the Clean Air Act.

Research has found that American males are reported to demonstrate less concern about the environment than females (Brough et al. 2016, 567; Steger & Witt 1989, 646; Stern, Dietz, & Kalof 1993, 340). The higher levels of environmental concern may be because females are traditionally socialized to have "communal characteristics," such as "affectionate, helpful, [and] gentle" while males are socialized to have "agentic characteristics," such as "assertive, controlling, [and] independent" (Eagly & Karau 2002, 574). Gendered socialization has also

impacted individuals' environmental gendered behaviors, as research has found that males have avoided green behaviors, such as recycling or carrying a reusable bag, for fear of challenging their masculinity (Brough et al. 2016, 568).

Gender is an important part of people's identities and an important mechanism through which people can understand the world. Nicholas Winter (2008) asserted that gender is a "psychologically prominent" "organizing principle" in understanding "social reality" (28). Ridgeway (2009) also noted that people use gender as a "primary frame" for "making sense of themselves and others" and to "organize their choices and behaviors accordingly" (157). People store their ideas about gender within their gender schemas and can use those ideas to understand new information about the world.

I posit throughout my Independent Study that gender schemas contain attitudes about proper gender roles and about proper gender personalities for each sex. I created my definition based on Winter's (2008) research regarding gender roles and McDermott's (2016) research regarding gender personalities. I classify individuals as having a traditional or nontraditional gender schema. A traditional gender schema contains attitudes about traditional gender roles and conforming gender personalities for each sex, like males should be masculine breadwinners and females should be feminine mothers. Individuals who believe that males and females do not need to have separate gender roles nor do they need to conform to distinct gender personalities have a non-traditional gender schema. Overall, when a person is trying to understand new information, they can use the schemas that they have stored in order to process that information. For example, individuals learning information about a new policy can activate their gender schema when the information is discussed around gendered notions, such as gender roles and gender personalities of each sex.

When information is presented, it is typically framed to highlight some considerations over others. The considerations or elements that are chosen can affect an individual's understandings and opinions about the information. In particular, political elites can mobilize support for policies based on how information is communicated. Political issues can be framed in gendered ways. The issue of education is a feminine issue area because it reflects the gendered expectations of society, in that the field of education is about caring for children and displaying compassion (Lizotte 2017, 52). However, issue areas that are not inherently gendered can still be framed in ways that bring out an individual's gender schema. Winter (2008) developed the group implication theory, the primary theory of my Independent Study, that asserts that individual's attitudes about gender can be "applied to political issues that do not involve" gender inherently (19).

Therefore, my Independent Study focuses on how an individual's gender schema affects his/her support for air pollution policies when air pollution is framed in gendered ways. My hypothesis argues that if an individual receives a frame that is "congruent" to their gender schema, or elements of their gender schema resonate with elements in the frame, then he/she will be more supportive of the Clean Air Act (Winter 2008, 26). For example, if an individual who believes in gender non-traditional roles, such as females being assertive and dominant leaders, reads an article about the Clean Air Act that highlights such gender non-traditional considerations in the discussion, then that individual will be more supportive of the Act. I expect that if an individual believes that their views on gender roles and gender personalities are reflected in the discussion of the issue of air pollution, then they will see air pollution as relevant and will be more supportive of policies addressing air pollution. Conversely, my

hypothesis also argues that if an individual receives a frame that challenges the notions in their gender schema, then that individual will not be as supportive of the Clean Air Act.

Before testing my expectations, I review literature about factors that contribute to gaps in attitudes about environmental issues in Chapter 2. Within Chapter 2, I look at how gendered socialization can contribute to a gender gap in environmental concern, particularly as females are socialized to think about the well-being of others while males are socialized to think more independently (Stern, Dietz, & Kalof 1993). In this literature review, I discuss what framing is and why it is an important tool in affecting individuals' understandings of political issues. I then introduce schemas and how they are accessed when an individual is learning new information. I then transition to looking at literature on gender schemas and how attitudes about gender roles and gender personalities contribute to an individual's schema. I conclude the chapter by reintroducing my research question and my theoretical framework, the implication theory.

In Chapter 3, I discuss the research methodology used in my Independent Study. I created a Qualtrics experimental survey to distribute on Amazon's Mechanical Turk (MTurk). The survey asked 340 participants to read an article purported to be from *The Columbus Dispatch* that discussed the benefits and the limitations of the Clean Air Act. There were three treatment groups: group one read the article with no gendered framing (control), group two read the article that framed the Clean Air Act with gender traditional roles and gender conforming personalities, and group three read the article that framed the Clean Air Act with gender non-traditional roles and nonconforming gender personalities. The frames serve as the independent variable in my Independent Study. The dependent variable is the level of support for the Clean Air Act, which I operationalized through asking questions about individuals'

support for the principles of the Act. My conditional variable is an individual's gender schema. An individual's gender schema is drawn upon when a frame introduces considerations that are present within their gender schema (attitudes about gender roles and gender personalities for each sex). I operationalized the gender schema through asking participants to agree or disagree with questions about gender roles for each sex and by answering how applicable gendered traits are to their own gender personalities. In this Chapter, I present an arrow diagram depicting the relationship between the variables. I end the Chapter by discussing my hypothesis and expectations as well as the analytic technique I will use to test both.

In Chapter 4, I share the results from my survey experiment data collected on MTurk. I provide an overview of the demographics of my participants to better understand if my participants are similar to common MTurk samples. I then ensure that there is random assignment of factors that I noted in my literature review (age, sex, political affiliation, and location) that could affect my dependent variable. I then present a series of ANOVA models to test for the interaction of the treatment and gender schema in affecting policy support for the Clean Air Act. I find that the interaction between the treatment and an individual's attitudes on gender roles do not present significant differences in level of support for the Clean Air Act. I also find that the interaction between an individual's gender personalities and the treatment do not produce significant differences in level of support for the Clean Air Act.

In Chapter 5, I offer the implications of my survey results. I look at how factors such as question wording or social desirability bias could have affected my results. I also discuss the strengths and weaknesses of my overall study, particularly how a lack of variation in my dependent variable (i.e. my participants were largely supportive of the Clean Air Act) and a lack of variation in my conditional variable (i.e. my participants were egalitarian in their gender

role attitudes and nonconforming in their gender personalities) impeded my ability to test my hypothesis. I end the chapter by discussing potential avenues for future research, such as how researchers could test the gendered framing of other environmental issues.

Chapter 2: Literature Review

My Independent Study asks how an individual's gender schema affects his/her support for air pollution policies when air pollution is framed to highlight gender considerations. In order to address this question, I begin my literature review with focusing on factors that explain differences in attitudes about the environment. I will also look at what issues are present within the concept of "the environment" and what issues seem to be of the most concern to people. I will then transition into discussing what environmental issues lead to gender gaps between males and females. After discussing research on the gender gap in environmental concern, I will look at what framing is and how framing can interact with the gender gap in environmental attitudes. In general, I will explore the effects that framing can have on individuals and why framing the environment matters. I will also explore the frames that have been used to discuss environmental issues and analyze the types of attitudes that developed after exposure to the frames.

After looking more into the significance of framing, I will examine literature on the importance of gender and how gender attitudes can relate to the environment via my primary theory for my Independent Study, the group implication theory. As a part of this, I will also investigate the common gender schemas that people hold. In my discussion on gender schemas, I will introduce the two components that factor into my definition of gender schemas: gender roles and gender personalities. I will review why implicit framing is important in connecting frames to gender schemas. Lastly, I will end the chapter with identifying the larger implications of my research question, particularly with how my research can address gaps in the literature.

Gaps in Environmental Attitudes

Helping the environment is often categorized as a universal issue, as the environment interacts with people's everyday lives. Concern for the environment can be a predictor of one's attitudes toward different environmental issues. Sebastian Bamberg (2003), in his study about the relationship between environmental concern and pro-environmental behaviors, defines environmental concern as "a general attitude, which centers on the cognitive and affective evaluation of environmental protection" (21). Displaying concern for the environment involves being aware of the delicate relationship between humanity and nature. Fransson and Garling (1999) noted that environmental concern is "an evaluation of, or an attitude towards facts, one's own behavior or others' behavior with consequences for the environment" (370). Overall, people can demonstrate care for the environment by recognizing the relationship between human activities and how those activities are sourced and supported by nature.

In discussing environmental attitudes, many authors (Fransson & Garling 1999, 370; Steger & Witt 1989, 629; Stern, Dietz, & Kalof 1993, 326; Zelezny, Chua, & Aldrich 2000, 444;) mentioned the New Environmental Paradigm created by Riley Dunlap and Kent Van Liere in 1978. In updating the New Environmental Paradigm's parameters, Dunlap et al. (2000) argued that the basic premise of the Paradigm is to assess if people agree or disagree with statements about "humanity's ability to upset the balance of nature, the existence of limits to growth for human societies, and humanity's right to rule over the rest of nature" (427). Overall, the Environmental Paradigm illustrates how environmental concern involves humankind acknowledging the complex relationship between nature and human behavior.

In thinking more about the relationship between humankind and nature, there is no political consensus about how humans should treat nature and nature's resources. Anderson

(2017) analyzed the results of a Pew Research poll that showed that 90% of Democrats and those who leaned Democrat believed in protecting the environment at all costs. 52% of Republicans and those who leaned Republican believed the same to be true (Anderson 2017). To further explain why right-leaning individuals may not demonstrate as much concern for the environment, Dunlap (1975) argued that "Republican politicians and supporters, compared to their Democratic counterparts, have adopted a more pro-business stance [and] greater opposition to innovation," which stands in contrast to environmental policies that often have characteristics of calling for "control of the private sector, drastic change, and extension of government activities" (432). Overall, the divide between Democrats and Republicans in helping the environment is based on changing or maintaining the status quo. Political ideology will be an important factor to consider when evaluating individuals' attitudes about the environment.

In the same Pew Research poll that Anderson (2017) analyzed, age was another factor that was observed in regard to attitudes toward helping the environment. Concern for the environment was higher for those under the age of 30 than for those 65 and older (Anderson 2017). Young adults are concerned about the environment because environmental degradation affects the scope of the decisions they can make about their futures (Anderson 2017). Arnocky, Dupuis, and Stroink (2012) found in a sample of Canadian university students that concern for the effect that pollution had on their personal health influenced the intentions of the college students to have families later in their lives (289). However, there have been studies that complicate age correlating with environmental concern. In asking people from the Silent Generation, Baby Boomers, Generation X, and Millennials, Gray et al. (2019) found that people from younger generations were not more concerned about the environment than people

of older generations (399). Carnes, Staats, and Willcox (2014) discussed how older adults develop concern because they are more at risk from environmental issues, like air pollution, poor water quality, and extreme temperatures because of "slower" immune systems (1089). In addition, older people are similarly likely to participate in civic engagement regarding global warming. For example, 37% of Millennials are willing to contact government officials about global warming while 30% of Boomers and the 28% of the Silent Generation say the same (Ballew et al. 2019). People of all ages have concern for the environment. However, in looking at the recent global climate strikes that have been led by children and young adults, it is apparent that environmental concern is especially present in the minds of younger generations.

Another consideration that factors into an individual's attitude toward the environment is where a person lives, in particular if an individual lives in a rural or urban area. Van Liere and Dunlap (1980) discuss how "urban residents are more likely to be environmentally concerned than rural residents" due to factors like more exposure to pollution in urban areas and less likelihood to possibly abuse nature through acts like farming and mining (184). Rural residents are said to care more about the "local environmental quality" while urban residents are said focus on more big picture environmental issues, like ozone depletion (Foster & McBeth 1996, 388). The divide between rural and urban residents is one where urban residents are given more attention and more say into how the world should work. Rural residents in Foster and McBeth's (1996) survey believed that rural communities needed to decide for themselves on how to help the environment rather than listen to what people in cities said was best to do (395). Political attitudes about the environment can be different depending on the issues relevant to a community a person lives in and the level of political efficacy a person feels they can achieve based on the resources around them, such as access to politicians.

Overall, this section identified and analyzed various factors that lead to differences in attitudes about a variety of environmental issues. I will control for political affiliation, age, and location in my study, as they can affect level of support for environmental policies, my dependent variable.

Gender and Environmental Concern

Past research has uncovered gender gaps in regard to American citizens' concern for local environmental issues, providing context for understanding how gender can connect to environmental attitudes. Mohai (1997) studied data from the University of Michigan's 1990 Detroit Area Study to analyze females' level of environmental concern across five categories of environmental issues: "resource conservation, nature preservation, pollution, global environmental problems, and neighborhood problems (153). Mohai (1997) concluded that females saw "immediate local crises, such as contamination of the local water supply," the "construction of a nuclear powerplant or waste facility," or "too much trash in the neighborhood" as the most pressing and concerning environmental issues (167). In addition, while "females expressed greater concern than men over most dimensions," males saw more general issues, such as air pollution, water pollution, hazardous wastes, and acid rain as the more concerning than local environmental issues (153).

Blocker and Eckberg (1989) also studied the gender gap in environmental concern by interviewing 300 households about the level of seriousness they assigned to general environmental issues, like how the economy was affected by pollution, and the seriousness they assigned to more local environmental issues, such as "local burning solid-waste disposal" (588-589). The main finding of the study was that local environmental issues are more concerning to females than males, which furthered the original hypothesis of Blocker and

Eckberg (1989) that local environmental concerns are considered "women's issues" (586). On average, while females had significantly higher mean levels of concern than males for local environmental issues, females still reported more concern than males regarding general issues, such as the intersection of the economy and the environment (Blocker & Eckberg 1989, 590). Overall, environmental issues, particularly those local in scope, tend to present a gender gap in environmental concern.

Gender gaps are also present in attitudes about other political issue areas. Issues become gendered when they reflect the characteristics that are associated with the two sexes. Mary-Kate Lizotte (2017) found in her analysis of the American National Election Study that women care more about childcare and government spending on education than men (60-61). Women are less likely to want to divert government funds to support the military and military intervention because women are socialized to be compassionate and nurturing (Lizotte 2017, 54). Such traditional female characteristics match with the adjectives assigned to the feminine fields of education and childcare. Men are socialized to be "assertive and aggressive," which aligns with the adjectives used to describe the masculine fields of military intervention and conflict (Lizotte 2017, 55). In reviewing the legislative behavior of male and female legislators, female legislators are more likely to focus on welfare issues. Females focus on such issues in order to mitigate the potential for a backlash effect, in which females may face consequences, like losing one's constituency support, by taking on leadership roles in masculine fields (Frederick & Jenkins 2017, 206-207). Gender gaps are present in the issues that males and females focus on, both as everyday citizens and as elected elites. The existence of gender gaps can point to larger systemic factors, like the gendered socialization of males and females into adhering to distinct roles and acting in certain ways.

Generally, females are socialized to care about their children and to be involved in helping their local community. Blocker and Eckberg (1989) found that the while fathers of young children saw preserving the economy as more important than protecting the environment, mothers of young children believe the opposite to be true (591). Mohai (1997) discussed how the socialization of women into roles as mothers, "nurturers" and "caregivers" translated into more concern about environmental issues that can directly affect their loved ones (153). Mohai (1997) and Blocker and Eckberg (1989) demonstrated that women can use their motherhood status as lens for their concern about the environment. In contrast, males are often given the opportunity to think "big picture" and to sit at the decision-making table by considering issues like the intersection of the economy and protection for the environment. Overall, these studies begin to demonstrate the emergence of traditional gender norms impacting the type of environmental concern males and females exhibit.

Socialization also leads to gender differences in perceptions of vulnerability and agency. In their piece, "Gender Differences in Environmental Orientations" authors Steger and Witt (1989) analyzed if there was a gender difference in environmental beliefs and if the difference affected how much males and females supported or attempted to shape environmental policies about nuclear power and acid rain. The study found that females perceived more risks from acid rain pollution, were more fearful of nuclear power, and expressed higher levels of interest in political participation than males (Steger & Witt 1989, 638). However, males had more of a grasp on specific policies and technologies related to nuclear power and acid rain than females (Steger & Witt 1989, 646).

A reason why females may feel more risk could be because of a lack of trust in institutions. In looking at the gender gap in environmental concern, Davidson and Freudenburg

(1996) reviewed different hypotheses that contribute to the gap, such as the "Institutional Trust Hypothesis" that argues that males have more trust in institutions, like "science, technology, and the government" than females (319). Stereotypically, males are often in charge of handling risks and benefiting the most from those risks while females are expected to be compliant with the decisions of males. While Davidson and Freudenburg (1996) found evidence that the Institutional Trust Hypothesis contributes to different levels of concern about environmental risks between males and females, Xiao and McCright (2015) established that the hypothesis does not "mediate the relationship between gender and environmental concern" (17). Xiao and McCright (2015) do argue that socialization, such as different levels of risk felt by males and females, needs to be studied to look at the relationship between gender and environmental concern (33). The gender gap in concern for environmental risks points to a larger system of socialization, in which females may not grasp environmental policies because they are excluded from creating them (Steger & Witt 1989; Davidson & Freudenburg 1996).

Overall, women tend to have a more "pro-environmental stance," as Stern, Dietz, and Kalof (1993) found in their survey, because females are socialized to consider "potential harm to themselves, others, and other species" (324, 330). Environmental concern creates a gender gap because males and females are socialized to think in different ways and to adopt characteristics that match their sex type. Stern, Dietz, and Kalof (1993) argued that females have a "stronger altruistic orientation, as they are more concerned about and affected by consequences" (329). Zelezny, Chua, & Aldrich (2000) confirmed Stern, Dietz, and Kalof's findings (1993) by observing that female primary and secondary students had a stronger concern for the environment, more of a sense of "personal responsibility," and were more

interested in programs to practice such responsibility, like recycling, than their male counterparts (Zelezny, Chua, & Aldrich 2000, 448).

Although there may be a gender gap in environmental concern, males and females can continue to learn more about the scope and severity of environmental issues. However, in learning more about environmental issues, individuals will be exposed to a variety of arguments that introduce moral, cultural, or economic considerations in the discussions. My next section will transition into discussing how the framing of the environment, through such considerations, can affect an individual's understanding and support for an issue.

How Framing Can Affect an Individual's Considerations of An Issue

The main focus on my Independent Study is to understand how framing the discussion of air pollution to highlight gender considerations can affect an individual's support for air pollution mitigation policies. How the issue of the environment is depicted could affect a person's concern about the environment. For example, if communicators discuss the environment in terms of traditional male interests, such as the economy, males could be more interested in the discussion. The same could be said about females, in that if the environment is discussed in ways to cater to the concerns of females, such as community and family welfare, a female could become more concerned about the environment (Lizotte 2017, 54-55). Communicators have the ability to affect how individuals understand and consider political issues through using a persuasive technique called framing. Overall, this section will define framing and how framing can affect public opinion. This section will also discuss frames that have been used to discuss the environment and will also examine how gender has been framed in other research.

In defining framing, many authors cite William Gamson and Andre Modigliani's (1987) piece about "The Changing Culture of Affirmative Action," which introduced the different frames that are associated with affirmative action. The authors defined a frame as "a central organizing idea or story line" that "suggests what the controversy is about, the essence of an issue" (376). By using specific frames, communicators are simplifying an issue to the considerations that they think are the most important in describing the issue. Framing is a persuasive process that involves an exchange of ideas from a communicator to a listener or viewer. Chong and Druckman (2007), in their review of what framing theory is, argued that framing plays on the basic idea that issues "can be viewed from a variety of perspectives" and that framing simply acts as "a process where people develop a particular conceptualization of an issue" that can then "reorient their thinking" about that issue (104). Since the world is a chaotic place where information about controversial issues can seem contradictory and overwhelming, framing, as Winter (2008) stated, is about taking an issue and putting it into a "set of considerations" that create a logical story about "how the issue should be evaluated, which considerations are relevant, and which considerations are immaterial" (21). In creating a story that describes the key actors and perspectives that are pertinent to an issue, people can begin to simplify the issue into relevant factors and develop a perspective as to why the issue matters.

Framing is an important tool in the political sphere because frames can generate public opinion about issues. Nelson and Kinder (1996) argued that "every public issue is contested in a symbolic arena, where advocates attempt to impose their own meaning on the issue" via news programs, talk shows, newsletters, cartoons, etc. (1057). In order to see if frames affected support for welfare policies, Nelson and Kinder (1996) used a "freeloader frame" that said that

the government rewarded people who do not work and a "budget deficit frame" that said the government needed to cut welfare programs to help the economy (1061-1062). By being exposed to the different frames, there was a difference in the opinions of participants about what the government should do about welfare and social programs (Nelson & Kinder 1996, 1063). Frames, therefore, can become an important tool for political elites to communicate to constituents about the relevancy of issues. Nelson, Oxley and Clawson (1997) argued that frames can "mediate" information between elite discourse and the public's understanding of an issue (223-224). By closing the gap between political elites' discussions and the everyday citizen, framing can allow for people to feel involved in the conversation about critical political issues. Politicians want to "mobilize voters behind policies by encouraging them to think along particular lines," such as ideological, partisan, or moral considerations (Chong & Druckman 2007, 109). Through placing political issues into specific frames, communicators can persuade and socialize people into developing specific considerations over others.

Communicators have used gender as a persuasion tool to convince people to care about a variety of issues. For example, Terkildsen and Schnell (1997) analyzed weekly print media coverage from the 1950s until the 1990s and found five different frames that talked about women's rights. The authors analyzed how a transition from using frames in the 1950s that emphasized women's lesser roles, known as the "traditional gender roles frame," to frames in the 1980s that focused on economic equality, affected people's support for women's equality (Terkildsen & Schnell 1997, 884, 886). Overall, Terkildsen and Schnell (1997) demonstrated how issues, such as women's rights, can be framed to highlight certain aspects of the issue over others and affect people's opinions. By using different frames, different understandings can develop about the essence and the relevance of an issue. Carlson and Goss (2017) identified

that in discussing an inherently non-gendered issue, such as the Second Amendment of the Constitution, communicators incorporated gender through a "'chivalrous governance"' frame to discuss how males created "and defended the rights and duties of citizenship" in starting this country and still have a right to do so when they carry arms (104). By using a frame that emphasized how males have been protectors and risk-takers in defending the principles of the United States, those with more gender traditional views could support the Second Amendment. Individuals with less gender traditional views, such as those who think males and females are equal and should not be socialized to traditional roles of providers and nurturers might find the "chivalrous governance frame" as a reason not to support the Second Amendment (Carlson & Goss 2017,104). Overall, communicators can use gender as a frame to discuss the significance of inherently gendered and non-gendered political issues, such as women's rights and the Second Amendment.

Environmental issues have also been framed in a variety of different ways in order to affect the attitudes of recipients. For example, Nisbet (2009) argued that the issue of climate change can be framed in extremely different ways for different audiences. For example, in order to appeal to religious leaders, communicators can emphasize "the moral and religious dimensions of climate change" (Nisbet 2009, 17). If a communicator wants people to doubt climate change, he/she could use the frame of "scientific uncertainty" to highlight gaps in scientific research and emphasize the economic implications of changing the status quo amidst uncertainty (Nisbet 2009, 19). Even in choosing the phrase "climate change" instead of "global warming," Jang and Hart (2015) found that people from "red states" preferred "global warming" to "climate change" and that "global warming" was more associated with "hoax" frames that question "scientific evidence" (11-12). Just using a simple phrase can change the

considerations that people have about the environment. The environment is complex and does not have a simple way to be defined. Communicators have to understand that one frame does not fit all issues and that any frame can affect the attitudes and understandings that people develop about an issue.

What Makes Frames Effective?

Framing is a strategic process that requires research by communicators about what considerations are most significant in order to affect the attitudes of recipients. Communicators have to be strategic in the frames they choose because not all audiences will agree with the same factors that are highlighted about a political issue. Reese (2001) argued that accepting the frames that are introduced by the media "depends on what understandings the reader brings to the text to produce negotiated meaning" (15). Communicators can frame issues in a specific way, but recipients of the frame may not always acknowledge the frame in the intended way. Nisbet (2009) asserted that not only do frames "need to be relevant or applicable to the audience's interpretations" to be effective, but also that communicators should engage in significant research in order to "tailor messages to the existing attitudes and perceptions of different audiences" as a means "to make policy debate relevant and personally important" (14,17). By making frames appear applicable to people and to their understandings of the world, communicators have a better chance at getting across the aspects that they believe should be meaningful to the recipient. With a world that is full of complex issues and a variety of perspectives, communicators have to be strategic in getting across the relevance of an issue.

Since one frame does not satisfy all audiences, one source type is also not satisfactory in appealing to all audiences. Something that Nisbet (2009) touched on, that many of the other articles on framing do not explicitly mention, was how framing can "reinforce perceptual

divides" about the significance of environmental issues like climate change (18). Democrat and Republican political elites are becoming more polarized and are transferring their polarization down into the masses. As a result, citizens trying to understand more about politics will be selective in choosing the news sources that reaffirm their ideologies and will ignore sources that challenge their ideologies. For example, someone who leans more liberally may discount information from a conservative news source. In an analysis of different climate change frames, Feldman et al. (2012) found that those who watched more conservative news sources, like Fox News, tended to be less accepting of global warming and were more likely to align their political views to the news outlets they watched (3). Individuals who watched more liberal news sources tended to become more accepting of global warming, particularly as the study found that "80 percent of CNN and MSNBC interview broadcasts featured climate believers than doubters*"* (Feldman et al. 2012, 14). Fox News, on the other hand, had only 31% of broadcasts that interviewed more believers in climate change than doubters (Feldman et al. 2012, 14). "Perceptual divides" can be reinforced if people self-select certain news types over others and avoid listening to the information provided by other sources (Nisbet 2009, 18). Communicators have to acknowledge that politics is becoming more and more polarized and, therefore, people are becoming more skeptical about the reliability of information based on their political orientation.

The credibility of a source is a significant factor in affecting people's considerations of issues. Sung- Bum Kim and Dae-Young Kim (2014) argued that creating a credible source is just as critical as choosing what frame to employ (64-65). To illustrate this, Druckman (2001) performed an experiment where he created two frames to talk about welfare programs. The two frames he created were a humanitarian frame, to highlight the moral aspects of welfare

and helping those who need it, and a governed spending frame, to discuss increasing spending for the programs (1047). In using the frames, Druckman (2001) created fictious statements about welfare programs that were delivered from either Colin Powell or from comedian Jerry Springer. The results showed that the statements from Colin Powell were perceived as more credible than those by Jerry Springer. Also, the statements by Colin Powell did affect the overall considerations that people had about assistance programs. When the frames were used in the statements by Jerry Springer, they "failed to affect overall opinion or belief importance" than those offered by Colin Powell (1052). Druckman (2001) was able to demonstrate that focusing on the credibility of the source can be critical first step in getting the information across to recipients (1045). By having a trustworthy source, communicators can make a message stronger and the frame can more likely affect the attitudes and behaviors of recipients (Kim & Kim 2014, 64).

This section serves as a guide for when I create my own stimulus materials, as I will focus on creating material from a credible source. Since I will be discussing air pollution in gendered ways, I argue that gender is a relevant consideration for many people. Ridgeway (2009) asserted that people use gender as a "primary frame" for "making sense of themselves and others" and to "organize their choices and behaviors accordingly (157). However, as discussed above, not all people will accept frames because people have different "understandings" that can produce negotiated meaning" (Reese 2001, 15). Individuals hold their "understandings" of gender within their gender schema (Reese 2001, 15). Overall, my Independent Study focuses on identifying what happens if I frame air pollution in ways that reinforce or challenge the relevant considerations within an individual's

gender schema. By analyzing the relationship between frames and schemas, I will be able to understand in what ways the relationship affects an individual's attitudes about air pollution.

What are Schemas?

Frames can affect an individual's attitude by connecting with the various schema that an individual possesses. In this section, I will review what schemas are and how critical they are in affecting the opinions of individuals. I will then transition into talking about gender schemas, which condition the relationship between my independent and dependent variables.

When a person is exposed to new information, he/she will draw on information already at their disposal in order to develop a judgement. Schemas are the "cognitive structures that represent knowledge about a concept" (Fiske & Taylor 1991, 98). Schemas help people organize the world around them. When a person is trying to understand new information, they can use the schemas that they have stored in order to process that information. Winter (2005) argued that schemas "play an active role in perception by filling in missing information and by suggesting bases for evaluation" (455). As people are trying to organize the world around them, they use relational thinking to connect "congruent" elements from a frame to a schema (Winter 2008, 26). Winter (2008) argued specifically for the term, "analogical reasoning," to describe how a person links a schema to a frame and "attempts to understand [the issue] in terms of some context [he/she does] understand" already (24). For example, Spellman and Holyoak (1992) found that in an experiment where they made the analogy between the Gulf War and War World II, particularly between the behaviors of Saddam Hussein mimicking those of Hitler, survey participants found the Gulf War to be more of concern than before exposure to the analogy because they had such negative understandings already of World War II and Hitler

(925). Frames are the blueprints that help people understand the complex world while schemas are the instructions to relate the issue back to stored knowledge.

Gender Schemas

It is important to define what gender schemas are and identify why they are important in assessing political issues, like the environment. Gender, in particular, is one lens that people use to make sense of the world based on their preexisting knowledge of gender roles and gender personalities. Winter (2008) asserted that the gender schema "affects people's appearances, behavior and relationships with each other" and that "the right political discourse should be able to piggyback on these implications to motivate opinion on political issues" (3).

Gender schemas develop differently for males and females based on socialization. Sandra Bem (1983), a famous psychologist who introduced the concept of gender schemas, argued that by the time children are four or five, "girls and boys have come to prefer activities defined by the culture as appropriate for the sex" (598). Females are socialized to act feminine and to stay in the household while males are socialized to be masculine and to act as breadwinners. As males and females are expected by society to remain in these two opposing fields of masculinity and femininity, the views of males and females about gendered and nongendered issues can subsequently develop in conjunction with these expectations.

In my Independent Study, I draw heavily from Nicholas Winter's (2008) definitions and conceptualizations of gender schemas. The main elements of Winter's (2008) gender schema are gender traditional and gender egalitarian, or non-traditional, role attitudes. Gender traditionalism is defined as "seeing gender hierarchy as a natural, necessary, and positive outgrowth" (Winter 2008, 41). In looking at gender traditionalism, there is a perceived "difference between individuals" in which "there are appropriate roles and spheres of activity

for males and females" (Winter 2008, 41). Winter (2008) further explained that gender differences exist because of a difference in the relative power that males and females hold (42). People can see a difference in power between the two sexes in everyday life through the institution of the family. Goldner et al. (1998) argued that gender "is deeply embedded in the politics of family relations" (556). The family defines the "appropriate roles, behavior, and power within the family sphere" as well as the public sphere (Winter 2005, 457). Women are expected to stay in the private sphere as submissive mothers while men are expected to participate in the public sphere by providing for their families. On the opposite end of gender traditionalism is the concept of gender egalitarianism, or gender non-traditionalism as I define in my Independent Study, that argues that "gender differences are socially constructed and that hierarchy is inappropriate" (Winter 2008, 45). According to gender nontraditional thinking, there should be no difference in the power relations between males and females and each sex can hold whatever roles in society that they desire.

To examine how a gender schema can affect an individual's opinions about non-gendered issues, Winter (2008) implicitly introduced gender traditionalism in his self-designed articles about Social Security and other political issues. Winter (2008) created a fictional article about Social Security that implicitly framed the issue in gender traditional ways. Winter's (2008) article discussed the implications of privatizing Social Security through phrases like, "I've provided for my family since I got married as a young man,"' and phrases that questioned why "'some bureaucrat in Washington can decide better than you how to invest your nest egg"' (55). These statements are representative of gender traditionalism because males have typically been assigned the role of taking the fate of their families into their own hands. Winter (2008) found in his analysis that individuals with more traditional gender schemas, which contain

distinct roles for males and females, were more likely to support privatization of Social Security because dependence on the government was "emasculating" and "limit[ed] men's autonomy" (55).

In appealing to gender non-traditional schemas, which do not contain distinct gender roles for each sex, Winter (2008) discussed the issue of grandparent visitation rights. Winter (2008) framed the issue in terms of "families and parenting," as the visitation of grandparents to children they have a "significant relationship with" implied "nontraditional family structures" (53). Winter (2008) found that gender non-traditionalists supported grandparent visitation more than gender traditionalists (70). Gender traditionalism and gender non-traditionalism contribute to an individual's gender schema and can have an effect on support for issues, such as grandparent visitation rights or Social Security.

Another example of gender traditionalism and non-traditionalism at work is the divided levels of support for Hillary Clinton when she ran for president in 2008. Clinton drew a divide among gender traditionalists and non-traditionalists because she focused on her political accomplishments outside of her status as the First Lady. Gender traditionalists did not support Clinton as they generally saw her "sacrificing traditional marital roles" (Tesler & Sears 2010, 115). On the other hand, gender non-traditionalists saw Clinton as paving the way to gender equality in the political sphere (Tesler & Sears 2010, 115). Winter (2005) also brought up Clinton as a figure that challenged gender prescriptions, especially as she led a task force to reform the healthcare industry in the 1990s. In his study, Winter (2005) found that feelings about healthcare became "associated with feelings about Hillary Clinton," in that changing the healthcare industry was not favored among gender traditionalists (470). Gender schemas are invoked in discussing issues that may not directly relate to gender. Hillary Clinton was a

symbolic representation of gender non-traditionalism. When an individual's gender schema is challenged in discussing an issue, such as conflating Clinton with healthcare reform, then that individual may not be as supportive of the issue.

Overall, I will use Winter's (2008) work on traditional and nontraditional gender schemas as inspiration in creating my experimental stimulus materials. By understanding that individual's respond differently to gendered frames based upon their gender schemas being challenged or reinforced, I hope to be able to affect the level of support in my discussion of air pollution. In particular, I will seek to incorporate Winter's (2008) discussion of traditional and nontraditional gender role attitudes into my definition of gender schemas.

Gender Personality

Winter's (2008) gender schema focused on how gender was manifested in the gender roles of males and females in various institutions and relationships. One problematic aspect of Winter's (2008) schema was that he did not consider the relationship between an individual's sex and their personal gender expressions, such as their gender personality. For example, if an individual strays from the gender personality that is congruent with their biological sex, such as males being feminine or females being masculine, then such incongruence could affect how an individual understands societal gender roles and personalities for each sex.

Monika McDermott's (2016) book, *Masculinity, Femininity, and American Political Behavior*, discussed how an individual's gendered personality can affect their gender schemas. McDermott's (2016) book was groundbreaking in political science, as she argued that an individual's gender personality was a separate and more powerful influence on "individual political attitudes" than an individual's biological sex (26). Personality, McDermott (2016) argued, can "influence attitudes and decision making," such as an "political preferences,"

"political engagement," and "opinion's about which sex is better suited for politics and which for home life" (7, 27).

In looking into the gendered roles that people believe are appropriate for each sex, McDermott (2016) studied how conforming an individual's gender personality was to their sex. One of the main hypotheses of McDermott's (2016) book was that "the more sex and gender personality conforming an individual is, the more traditional his or her sex role attitudes will be than the less conforming's attitudes are" (144). McDermott (2016) studied her hypothesis by measuring if respondents agreed or disagreed to statements such as, "women are better suited for taking care of the home and family" (145). In addition, McDermott (2016) was able to classify the gendered personalities of individuals as conforming or nonconforming based on how respondents agreed or disagreed to traditionally masculine personality traits, such as "willing to take risks," and traditionally feminine personality traits, such as "gentle" (McDermott 2016, 177). The results demonstrated that sex-conforming individuals, both males and females, believed in gender traditional concepts like a "woman's place is in the home" and did not support females taking on masculine roles, such as becoming political leaders (McDermott 2016, 155). On the other end, individuals whose personality did not conform to their sex, such as females acting masculine, were "substantially less supportive of traditional sex roles" than those who were gender-conforming (McDermott 2016, 154).

Overall, McDermott's (2016) study demonstrated that sex and gender do not have to be inherently related. How males and females hold themselves, in terms of the personality traits that they deem appropriate for themselves, can affect the societal gender roles and gender personalities that they deem as appropriate. Throughout my Independent Study, I will continue

to use McDermott's (2016) terminology of conformity or nonconformity to determine if an individual conforms or not with the traditional personality traits of their sex.

As McDermott (2016) found, those whose gender personality traits conformed to their sex believed in more gender traditional roles and gender personalities for others. Sandra Bem (1981), who developed the gender schema theory, argued that "sex-type individuals are seen as processing information in terms of and conforming to whatever definitions of masculinity and femininity the culture happens to provide" (356). The United States socializes males and females to fulfill the gender roles of their sexes and to act masculine or feminine in relation to their sex. As females try to take on leadership positions, gender traditionalism dictates that females do not have the appropriate traits to take on such tough and demanding work. Females that run for office are forced into a '"double bind,"' in which they are expected to display the masculine traits that are inherently associated with politics, like assertiveness, but not to the extent that they forget the traits associated with their sex, such as compassion and gentleness (McDermott 2016, 155). While gender traditionalism may seem to harm the abilities of females to overcome gender stereotypes, Bosson and Michniewicz (2013) argued that gender traditionalism has also affected negatively males, as the gender dichotomy has led males to feel a greater sense of psychological threat to their overall identity when they do not maintain their masculinity (425). Males, therefore, are socialized to adhere to gender traditionalism by conforming their gender personality traits and behaviors to their sex.

Brough et al.'s (2016) work, discussed earlier, posited that males worried about trespassing from gender traditionalism by engaging in feminine behaviors, such as helping the environment, due to a concept called the "green-feminine stereotype" (568). The "green-feminine stereotype" argues that males see environmental concern as feminine and, therefore,

seek to avoid appearing feminine by hurting the environment, such as by refusing to buy organic products or using reusable bags (Brough et al. 2016, 568). In general, females are more concerned about environmental issues, particularly local issues, because females are socialized to be communal and to think of the well-being of others (Stern, Dietz, & Kalof 1993; Blocker & Eckberg 1989). Brough et al. (2016) proposed that males resist engaging in green behaviors because of the "stereotype that green consumers are often more cooperative, altruistic, and ethical than their non-green counterparts" (568).

Overall, Brough et al. (2016) and McDermott (2016) argued that conforming to one's gender personality of their sex can have implications for political issues and the behaviors of individuals. In particular, environmental concern can be seen as a feminine political issue area. Individuals who support traditional gender roles and gender personalities may believe that helping the environment means trespassing into a female's territory and adopting feminine traits, such as being more relationally oriented.

Nicholas Winter and Implication Theory

Thus far, the authors that have written about framing and schemas have talked about framing issues in a way that makes the recipients feel like the information is relevant and in line with their perspectives. I have reviewed how frames can be chosen for a specific purpose to get across a specific message and how audiences can accept or reject such frames when developing an opinion. However, what if some frames resonate more with some individuals than others because they are more accessible and relevant? What if some schemas are more frequently than other ones? While political affiliation is a significant part of people's way to reason through the political information provided by elites and the media, people are multifaceted and use other aspects of their identity to comprehend information.

As I have noted through this literature review, gender is an important facet of people's identities that often has an impact on the way that people look at the world. Winter (2008) demonstrated that both gender and racial schemas have a significant effect on the evaluations that people have of issues unrelated to gender and race. He argued that for some, the race or gender schemas "are psychologically prominent and serve as central organizing principles for much of social reality" (Winter 2008, 29). Winter (2008) further noted that people, in general, have "rich developed understandings of both" which "condition our experience of social life and play huge roles in structuring… political discourse and public policy" (Winter 2008,18).

Winter (2008) created an innovative theory to discuss how gender and race schemas can be connected to political issues that do not explicitly deal with race or gender. "Group implication" refers to the "process through which ideas about social groups—specifically race and gender—can be applied to political issues that do not involve either directly" (Winter 2008, 19). Winter (2005), in an earlier article about gender and the US healthcare system, also wrote that gender implication, specifically, is "the process by which opinions on political issues becomes entwined- in political discourse and in citizens' minds- with considerations of gender" (Winter 2005, 454-455). Group implication theory is able to connect the moments when an individual receives a gendered frame of a nongendered issue, processes the frame by drawing on their gender schema, and develops an opinion about the information. As discussed earlier in this literature review, Winter (2008) coined the term "analogical reasoning" to discuss how nongendered issues, such as Social Security, can be connected to an individual's gender schema when a frame "leads people to understand political issues by analogy with their cognitive understanding of gender" (19).

To see "analogical reasoning" in action, Winter (2008) chose three political issues and created artificial newspaper articles about each issue that invoked the gender schema: grandparent visitation rights, Social Security, and government involvement in the economy (23, 50). The reason he chose these three distinct issues is because they "do not explicitly deal with gender, are subject to moderate levels of political debate, and they are complex to allow multiple frames" (Winter 2008, 50). For example, in discussing grandparent visitation rights in his fictitious article, Winter (2008) introduced gender by focusing on "nontraditional relationships between children and adults" and "nontraditional family structures" (52-53). Winter (2008) did not explicitly mention gender in his discussion, although he alluded to gender through the discussion of the family. As mentioned earlier, Goldner et al. (1998) argued that gender "is deeply embedded in the politics of family relations" (556). By implying that gender is a thoughtful consideration in the discussion of a non-gendered issue, communicators can connect to a relevant and "accessible" schema (Winter 2008, 29).

The intent of my research is to look into Winter's (2008) theory of group implication and how his use of implicit gender frames can impact other inherently nongendered issues. My Independent Study draws from a wide range of theoretical frameworks. I consider Sandra Bem's (1981) gender schema theory, which posited that an individual can understand the world by defining proper gender personalities and gender roles (354). I also incorporate Chong and Druckman's (2007) framing theory, which highlighted how certain issue considerations are prioritized over others in affecting public opinion (104). However, there have not been theoretical frameworks that have discussed the connection between gender schemas and the gendered framing of non-gendered issues. Group implication theory and Winter's (2008) rationale for why he chose his three non-gendered issues serves as a basis for my research

question. I argue that air pollution is an issue that "does not explicitly deal with gender," is "subject to moderate levels of political debate," and is "complex to allow multiple frames" (Winter 2008, 50). As a nongendered issue, a communicator can still frame air pollution in implicitly gendered ways and connect to the elements within an individual's gender schema.

Implicit Framing

In order to connect "group implication" theory of gender to the issue of air pollution, I need to implicitly invoke gender schemas (Winter 2008, 19). Beail and Longworth (2013) argued that if a frame is implicit and "natural," "critiquing the relevance of the frame becomes almost impossible" (8). Winter (2008) noted that "frames may be more effective when those promoting them do not emphasize the fact they are engaged in persuasion" as an implicit frame "leads people to evaluate an issue through the schema without realizing it" (23). For example, Hurwitz and Peffley (2005) wanted to see if white participants used racial stereotypes, without mentioning "race" or "black," to affect their support for programs to catch inner-city criminals (99). By using the word inner-city, white participants implicitly invoked traditional stereotypes about the association between black citizens and inner-city crime (99). All of the authors (Beail & Longworth 2013, 7; Winter 2008, 23; Hurwitz & Peffley 2005, 109) conclude that implicit appeals can hide the persuasive pursuits of the communicator and can have a more powerful persuasive effect on the judgements of the recipients than an explicit appeal.

In Winter's (2008) study, he found that when he framed government involvement in the economy in more explicit gender terms, such as by saying that "intervention promotes equity and sustains the economic expansion," "respondents did not evaluate the issue through their gender schemas" (57, 72). When Winter (2008) framed Social Security in implicit terms by integrating a quote that said, "'I've provided for my family since I got married as a young

man,"' Winter was not explicitly talking about gender or gender roles (55). Instead, Winter (2008) was alluding to gender notions about males working to provide for the family. The difficulty, however, is making sure that a gendered frame is not too explicit or too implicit, as individuals may not use their gender schemas if they do not find the issue to have relevant gender considerations. Implicit framing is a key strategy that I will use in my Independent Study to activate gender schemas. By not explicitly mentioning gender, but, instead, discussing gender in symbolic ways, I can communicate to participants that they should see gender as a consideration in understanding the issue of air pollution.

Conclusion

My Independent Study asks how an individual's gender schema can affect one's support for air pollution policies. In asking this question, I have brought together and reviewed literature from a variety of fields. Before studying gaps in environmental attitudes, I identified varying interpretations of environmental concern. Environmental concern, generally, is recognizing the relationship between humankind and nature and understanding that "one's own behavior can have consequences for the environment" (Fransson & Garling 1999, 370). In looking at the types of people that have more environmental concern, I synthesized different literatures on political ideology, age, and location of residence. The research suggested that Democrats were more supportive of protecting the environment (Anderson 2017), that urban residents were more concerned about general environmental issues, and that rural residents were more concerned about local issues (Foster & McBeth 1996). While environmental issues, such as climate change, have become an issue of concern to all ages, young adults are more concerned about the future impacts of environmental issues than older people (Arnocky, Dupois, & Stroink 2011).

In addition to age, political ideology, and location, gender is another factor that produces gaps in environmental concern. For example, I found that local environmental issues, such as "contamination of the local water supply" or too much trash in a neighborhood, were seen as more concerning to females than males (Mohai 1997, 167). While males did demonstrate concern about general environmental issues, particularly the intersection of the economy with environmental protection, females generally demonstrated more concern for environmental issues both large and small (Blocker & Eckberg 1989, 591; Steger & Witt 1989, 638; Stern, Dietz, & Kalof 1993, 324). I attributed the difference in environmental concern about local issues to the gendered socialization of males and females. Females are socialized to care about issues that can directly impact their families' and their own wellbeing (Blocker & Eckberg 1989, 587). On the other hand, males are socialized to be breadwinners and to address big-picture issues, such as the economic impacts of environmental protection (Blocker & Eckberg 1989, 591).

In transitioning from my discussion of the gender gap in environmental concern, I explored how I can frame the discussion of environmental issues in gendered ways. I found that a common definition of framing from authors Gamson and Modigliani (1987): "a central organizing idea or story line" that "suggests what the controversy is about, the essence of an issue" (376). I discussed how a variety of issues, such as women's rights, the Second Amendment, and welfare programs can be framed to highlight certain considerations over others (Terkildsen & Schnell 1997; Carlson & Goss 2017; Nelson & Kinder 1996).

I then discussed how environmental issues have been framed. For example, the media and political elites have communicated about the issue of climate change in a variety of ways. How the issue of climate change is framed, such as by highlighting moral considerations or the

uncertainty surrounding climate science, can affect how people understand climate change (Nisbet 2009, 17, 19). In my discussion of framing, I bring up the notions that a frame's relevance to its audience and the credibility of a source are two factors that can impact the effectiveness of framing on public opinion. Framing involves strategy, as communicators have to understand that messages interact with the "existing attitudes and perceptions of different audiences" (Nisbet 2009, 14,17). While some people may see a frame as relevant, others may deny the information that is being framed. I will take into consideration relevancy and credibility as I create my stimulus materials.

In discussing framing, I shifted into talking about the role of schemas as psychological structures to help people organize the world and make sense of new information. I focused on Winter's (2008) book, *Dangerous Frames*, to discuss how schemas can connect to frames via "analogical reasoning," which can allow a person to "attempt to understand [the issue] in terms of some context [he/she does] understand" already (24). I narrowed my discussion on schemas to the gender schema and the understandings that are generally present within the schema. Winter's (2008) understanding of the gender schema is that people are socialized by their culture to hold beliefs that align more with gender traditionalism or gender egalitarianism/gender non-traditionalism.

Gender traditionalism and non-traditionalism focus on the appropriate roles for each sex, such as males as breadwinners and females as mothers or vice versa. While Winter's (2008) discussion on framing and the gender schema are significant in my Independent Study, I also incorporate McDermott's (2016) innovative work on gendered personalities. McDermott (2016) argued that the type of gendered personalities that males and females believe is appropriate for their sex can affect conceptions of gender traditionalism and non-

traditionalism. Those who are more conforming to the traditional personality of their sex are more likely to believe that males and females should have distinct societal roles based on their sex (McDermott 2016, 155). Individuals who believe in more gender egalitarianism or gender non-traditional ideals, such as females as assertive political leaders, were less likely to conform to the gender personality of their sex (McDermott 2016, 154). Overall, Winter (2008) and McDermott's (2016) books serve as a framework for my definition of gender schemas, which I define as containing notions about the appropriate gender roles and gender personalities for each sex.

To tie back into the environment, I analyzed Brough et al.'s (2016) article about how males refuse to buy green products or act eco-consciously for fear of appearing feminine (568). In referencing Brough et al.'s (2016) study, McCarthy (2018) argued that toxic masculinity was not just "harmful to men and society as a whole" but it was also "harmful to the planet" as men see helping the environment as becoming more feminine. By reinforcing traditional gender norms through masculine branding, which I allude to as being analogous to framing to a traditional gender schema, Brough et al. (2016) found that males would be more likely to help the environment (579).

Although there are gendered implications in Brough et al.'s (2016) article about acting eco-friendly, most environmental issues are not framed to discuss gender or gender gaps. Winter's (2008) implication theory serves as the glue in connecting gendered frames about the environment to an individual's gender schema. Overall, implicit framing is more effective than explicitly stating to audiences what kind of considerations they should see as relevant (Beail & Longworth 2013, 7; Winter 2008, 23; Hurwitz & Peffley 2005, 109).

My Independent Study is unique in nature, as it is bringing together multiple fields of research regarding schemas, framing, the environment, gender roles, and gender personalities. My Independent Study will be a refreshing addition to the field of political science, as I have not found any scholarly research that has surveyed individuals about the issue of air pollution in an implicitly gendered way. I have also not seen research that has tested Winter's (2008) implication theory to understand more about the connection between gender schemas and implicit gender framing of inherently non-gendered issues/policies.

Environmental issues are important to address because they not only affect the very fate of the world, but they also challenge the roots of democracy. The issue of air pollution affects everyone, as polluted air in one city can travel to the air in a neighboring small town. In order to make sure the environment is protected, significant changes to the personal lifestyles, cultural norms, and standard operating procedures of the economy will be required. As one of the most polluting countries and one of the richest countries in the world, the United States has an obligation to lead the transition into sustainable development. However, the reason I am motivated to do my Independent Study is because half of the population of the United States is socialized to take a back seat to political change. Female participation in politics is seen as inappropriate and not ascriptive to traditional gender norms. As this literature review has noted, females demonstrated more concern about the environment than males (Mohai 1997; Blocker & Eckberg 1989; Brough et al. 2016; Stern, Dietz, & Kalof1993). While gender inequality is a persistent issue in the United States, I argue that such inequality can be used for some good. By appealing to gender traditional notions, such through reinforcing a male's masculinity, I hope to be able to affect the level of support for environmental policies. Therefore, I am normatively interested in understanding if I have to

reinforce gender norms in order to communicate why air pollution is an important and relevant issue. In wanting to increase the level of support for air pollution policies in the United States, I argue that gender is a valuable frame in the larger conversation about environmental protection.

Chapter 3: Research Methods and Design

At the core of my Independent Study is how an individual's gender schema can affect support for the Clean Air Act when the Clean Air Act is framed to highlight gender considerations. Frames and schemas are connected when an individual identifies "congruent" elements between a frame and the information stored in a schema (Winter 2008, 26). Through "analogical reasoning," an individual can draw connections between the frame and schema, thus affecting opinion and overall evaluation of the information being framed (Winter 2008, 19). Winter's (2008) implication theory asserted that a nongendered issue, such as the environment, can become gendered if there are implicit frames used to discuss the environment (19). By framing the environment in gendered ways, an individual can draw from their gender schemas.

I draw from Winter's (2008) work on gender schemas and gender roles as well as Monika McDermott's (2016) work on gender personalities in order to create my definition of gender schema. I argue that an individual's gender schema contains notions about proper gender roles and gender personalities in regard to an individual's sex. I create two categorizations of an individual's gender schemas based on Winter (2008) and McDermott's (2016) works: traditional and non-traditional.

If an individual is more supportive of traditional gender roles and conforming gender personalities, such as males acting assertively and females acting compassionately, then I define he/she as having a traditional gender schema. If an individual is more supportive of unrestricted gender roles and nonconforming personalities between the sexes, such as males acting as nurturing fathers and females acting as strong leaders, then I define he/she as having a non-traditional gender schema. An individual's gender schema serves as my conditional

variable, which affects the relationship between my independent variable (the frames used to discuss an air pollution policy, The Clean Air Act), and my dependent variable (level of support for the Clean Air Act).

In order to measure level of support for the Clean Air Act, I will be conducting a survey experiment through Amazon's Mechanical Turk (MTurk). I will create a survey on Qualtrics, where I will design three fictitious *The Columbus Dispatch* articles that discuss the merits and shortcomings of the Clean Air Act. This survey will be included, in entirety, in Appendix B at the conclusion of my Independent Study. Approximately 80 participants will be assigned to each group to read a news article, with a total of 240 participants across the three treatment groups. After reading the news article, participants will be asked to answer questions about their support for the Clean Air Act, their demographic information, and their attitudes about different political issues.

In this Chapter, I will discuss more information about the Clean Air Act and why air pollution is the chosen environmental issue for my Independent Study. I will then introduce my arrow diagram and how it explains my research question. In discussing my arrow diagram, I will conceptualize and operationalize my dependent, independent, and conditional variables. As part of this discussion, I will present my survey materials. I will introduce ideas of reliability and validity in using an experimental survey. Finally, I will introduce my expectations and how they support my theory, group implication.

Air Pollution and The Clean Air Act

I am modeling my research methods based upon Winter's (2008) book, in which he studied how race and gender schemas can affect support of his chosen policies. I drew on Winter's (2008) rationale for selecting an issue that is appropriate for gendered framing. I argue

that air pollution is an issue area that "does not explicitly deal with gender," "is subject to moderate levels of debate," and is "complex to allow multiple frames" (50). Climate change would not be a good issue to frame as it is extremely complex to discuss and has significant levels of debate about its very existence. I specifically chose air pollution as my issue because there has not been as much research about gender gaps in concern. There has also been more research about the gender gaps, i.e. females generally demonstrate more concern, in other environmental issue areas, such as nuclear power (Solomon, Tomaskovic-Devy & Risman 1989; Steger & Witt 1989; Norrander 2008) and acid rain (Steger & Witt 1989; MacDonald & Hara 1994). In regard to air pollution, Norrander (2008) suggested that there are certain environmental questions that evoke a gender gap, including "how dangerous air pollution caused by industry is" (24). However, in Mohai's (1997) study, males saw the issue of air pollution as more concerning than females (157). I am normatively interested in seeing if there is a gender gap in concern between males and females regarding the issue of air pollution.

The Clean Air Act of 1963 and its subsequent amendments "seek to protect human health and the environment from emissions that pollute ambient, or outdoor, air" by establishing "minimum national standards for air quality" (McCarthy et al. 2011, 1). The Clean Air Act works to improve human health by involving state governments and the private sector. State governments are "responsible" for developing "procedures to attain and maintain air quality standards" (McCarthy et al. 2011, 4). For example, if states want to build new highways, they need to "obtain construction permits to show the anticipated emission will not exceed the limits" of standard air quality (McCarthy et al. 2011, 3). In terms of the private sector, the Clean Air Act asks that car industries develop "cleaner fuels and cleaner engines" for cars, trucks, and buses ("Plain English Guide" 2007, 8). The Clean Air Act also requests

that businesses that may emit pollutants will apply for permits that state "information on which pollutants are being released and what kinds of steps are required to reduce that pollution" ("Plain English Guide" 2007, 19). By encouraging businesses to apply for permits, a stigma exists that businesses cannot be profitable and be environmentally sustainable. However, studies have found that environmental regulation, such as asking for permits, has not taken a significant toll on the economy (Zichal 2011 a; "The Benefits and Costs" 2011, 3). The EPA noted that the Clean Air Act is able to "improve the health and productivity of the US work force" ("The Clean Air Act and the Economy" 2019). Overall, the Clean Air Act establishes that national and state governments, as well as the private sector, have to contribute to a healthier environment.

The Clean Air Act also specifies protecting children's development and health from toxic air pollutants. Children are found to be more "susceptible and at greater risk" for developing diseases from air pollution (Ross, Chmiel, & Ferkol 2012, 782). The Obama administration put out a statement to say that the Clean Air Act is instrumental in providing the "necessary tools to protect our families from a number of harmful pollutants" and children from "asthma and lung disease" (Zichal 2011 b). Along with the government and businesses making sacrifices to create cleaner air, families can make choices to reduce air pollution in their homes. For example, suggestions by the Clean Air Act ask people to "conserve energy," "washing clothes with warm or cold water," "shop with a canvas bag," "choose products that have less packaging," and "keep fireplaces well maintained" ("Plain English Guide" 2007, 22). The Clean Air Act is focused on creating a sustainable and healthy environment for families and children.

The Clean Air Act has gendered implications about the roles of males and females in creating a clean environment for children. Mothers are often designated for creating a healthy environment for their children, which indicates gendered implications about the Clean Air Act. For example, "washing clothes with warm or cold water" illustrates a duty that is typically assigned to a mother in the private sphere as she takes care of the home ("Plain English Guide" 2007, 22). Concern for the health of others is also demonstrative of a traditional feminine trait, as females are socialized to embrace taking care of others (Blocker & Eckberg 1989, 591; Gustafson 1998, 808; Mohai 1997, 153; Stern, Dietz, & Kalof 199, 330). Reducing air pollution by "choosing products with less packaging" and "shop with a canvas bag" add to the "green-feminine stereotype" put forth by Aaron Brough et al. (2016) about how engaging in green behaviors appears feminine to gender traditional men ("Plain English Guide" 2007, 22; Brough et al. 2016, 568). Overall, despite the gender-neutral goal of eliminating air pollution, the practice of mitigating pollution has gendered implications.

Other gender implications that I can use to frame the Clean Air Act include regulation of the economy and the increasing regulations by state governments. Since males are traditionally assigned to be the head of households and to provide for their families, bringing up economic implications of changing industry standards can be another way to introduce gender implicitly (Zichal 2011 a; "Clean Air Act and the Economy" 2019). In addition, states are becoming more involved in the national effort to monitor air pollution levels. Winter (2008) found that when he discussed the privatization of Social Security and allowing the government to "make decisions about retirement," gender traditional males were more supportive, as depending on the government made them feel "emasculated" (55). Similarly, with state implementation plans serving as an important part of the Clean Air Act, males may feel

emasculated and vulnerable to government regulation. All of these considerations are important in conducting my study, where I will implicitly frame gender traditional or gender nontraditional concepts in a discussion about the Clean Air Act.

Theory

My study seeks to understand if reinforcing or challenging an individual's gender schema, which contains attitudes about proper gender roles and gender personalities of each sex, can affect the level of support for the Clean Air Act. I am interested in understanding how gender schemas can play a role in affecting our understanding of issues that are not inherently gendered, like the environment. According to the group implication theory by Winter (2008), an issue that is not inherently gendered can connect with a gender schema when a frame "engages a person's ideas about social categories," such as gender, "to shape public opinion" (4).

My theory would predict that if an individual with a traditional gender schema read an article discussing the Clean Air Act in a way that reinforced gender inequality, he/she would feel like the Clean Air Act was relevant for him/her. The group implication theory would also predict that if discussion of the Clean Air Act was framed to highlight more gender non-traditional ideas, then an individual who holds a more non-traditional gender schema would be supportive of the Clean Air Act. The theory would also argue for the opposite, in that if an individual read an article that framed the Clean Air Act in a way that challenged their gender schema, he/she would still be drawing a connection between the gendered framing and their gender schema. However, because the article is challenged the attitudes in their gender schema, that individual would not support the issue.

The group implication theory serves to connect my dependent variable, the frames used to discuss the Clean Air Act, my conditional variable, an individual's gender schema, and the dependent variable, an individual's level of support for the Clean Air Act after connecting the frames to the schema. Since this experiment is implicit—I am hoping to affect the considerations of people at a subconscious level by talking about gender tacitly—I cannot say with certainty that people will pick up on the gendered framing. Implicit frames are powerful in that an individual can begin establishing relations between the frame and their schema at a subconscious level (Longworth 2013, 8). Although it will be difficult to make sure that my study is not too implicit, I have found that gender is considered an "accessible" and common frame that many people use to make sense of the world and others (Winter 2008, 29).

Arrow Diagram

After introducing my variables, I will illustrate in my arrow diagram, Figure 3.1, the relationship between each variable. IV stands for independent variable, which is the frame that I will use in my articles. I will create three news article about the Clean Air Act. Participants will be divided into three groups to read one of the articles. The three groups will be a control group, with no gender framing in the article, a gender traditional group, which will discuss the Clean Air Act by incorporating gender traditional roles and personalities, and a gender non-traditional group, which will discuss the Clean Air Act by incorporating gender non-traditional roles and personalities. After reading the articles, participants will answer questions about their support for the Clean Air Act (my dependent variable or DV). I discuss in the following sections the conceptualization and operationalization of my IV, DV, and CV (my conditional variable or an individual's gender schema).

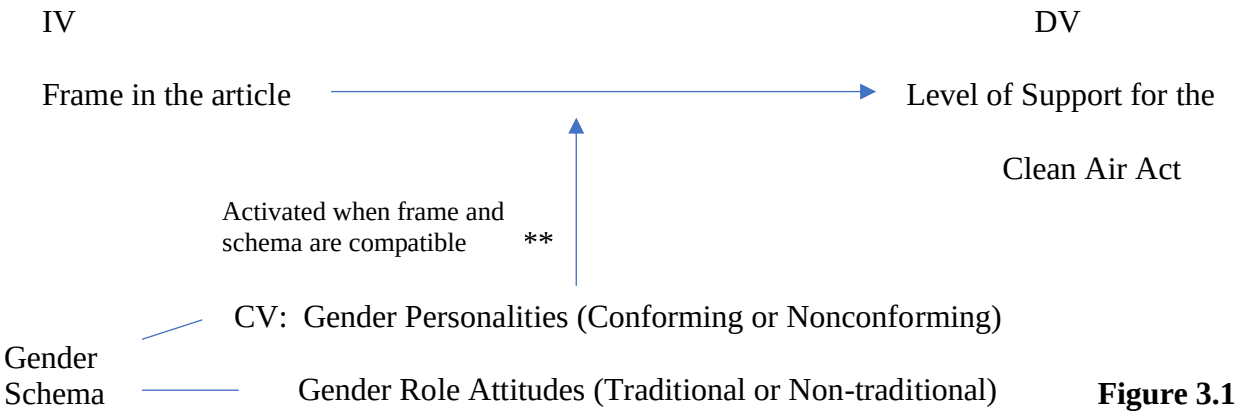


Figure 3.1

**As discussed in Chapter 2, when an individual is exposed to a frame, the frame has to be "congruent" to the gender schema in order for an individual to apply information from their gender schema to the issue being framed (Winter 2008, 26). Winter (2008) argued that implicit frames, in which a communicator engages in persuasion in a "natural" way, without explicit statements about how an issue should be perceived, is the most effective way to discuss issues (23). For example, I mentioned a study by Spellman and Holyoak (1992) in Chapter 2 that discussed George H. W. Bush comparing Saddam Hussein to Adolf Hitler so that everyday people could understand the severity of Iraq's invasion of Kuwait (925). Winter (2008), who mentioned Spellman and Holyoak's (1992) study, noted that people can see a "set of relations" between Hitler and Saddam's personality traits and the impending threat that if the US did not respond to Saddam, it would be like Hitler's imperialist expansion in Europe (27). Such an example demonstrates how a schema, such as one about notions about gender roles and personalities, can be applied to a new issue, like air pollution, if the schema and frames have compatible elements.

Conceptualization and Operationalization of Independent Variable

My independent variable is the frames I create in my fictitious *The Columbus Dispatch* articles. I use Gamson and Modigliani's (1987) definition to conceptualize framing. The authors' definition of framing is "a central organizing idea or story line" that "suggests what the controversy is about, the essence of an issue" (Gamson & Modigliani 1987, 376). In order to expose my participants to frames, I will embed the frames in an experimental survey design. Experiments are an effective means at answering causal questions (Kinder & Palfrey 1993, 11). Causal questions ask, "why things happen the way they do," with "things" translating to "patterns in the political world" (Howard 2017, 66). An experiment can demonstrate high internal validity, as a researcher can create changes to a dependent variable, such as the type of gender implications in a frame, and also control for other considerations (Howard 2017, 96).

Participants will be randomly assigned to a treatment group. All of the treatment groups will contain an article by *The Columbus Dispatch* about how the state of Ohio is discussing the value of the Clean Air Act in helping the environment and human health. In order to make sure my experiment is valid, I made my articles as nonbiased as possible, in terms of not advocating for or condoning the Clean Air Act. In this way, I present a neutral position about the Clean Air Act in order to highlight the gender implications of my articles. I use *The Columbus Dispatch* as my source because it is a credible source of news, rather than a personal blog or a statement from an impassioned citizen (Kim & Kim 2014).

In addition, my articles contain a significant amount of conjecture about the value of the Clean Air Act, rather than definitive statements or research on the value of the Act. The best way for me to implicitly frame gender is through using quotations from everyday people. I chose to use quotations and statements from everyday citizens, researchers, and public

officials, in order to humanize the issue, make it more understandable, and implicitly tie gender into the conversation.

All of the articles will be titled "Ohio House of Representatives, Ohio Residents, and Columbus City Council meet to discuss the Clean Air Act." I based the design of my articles off of articles on *The Columbus Dispatch* website. Underneath the title of all of the articles will be a picture of a smokestack by a body of water (Erikson 2018). I captioned the title in treatments two and three as "Ohio Oil Company nearby a local pond in Grove City" because treatments two and three discuss the historical Ohio Oil Company later in the article. In treatment groups two and three, I also include a picture of a hazy Downtown Columbus skyline from a real *Dispatch* article in order to break up the text (Burger 2019). All three articles are located in Appendix C.

The first treatment group is a control group that will be exposed to a short article with no gender implicating frames about the Clean Air Act. The article will provide background information and will present a neutral position on the Clean Air Act by discussing the benefits and shortcomings of the Clean Air Act. The function of the control group is to give a base assessment of the support for the Clean Air Act and the general attitudes about gender roles and personalities. The control group serves as a means of comparison with the other two treatment groups.

The second treatment group will read a longer article that expands upon the basic information provided by the control group. In this group, the participants will be exposed to testimonies from local, state, and national political leaders as well as technical experts that introduce gender implicitly. The treatment for this group is to frame the Clean Air Act in a gender traditional way. For example, all of the leaders and experts are males, which

demonstrates that males are in control of the decision-making. The testimonies of everyday citizens are from females and they largely present females as unaware of decision-making about the Clean Air Act and largely interested in helping others, such as their family.

The third treatment will read a variation of the article that the second group reads. However, this the article will frame the Clean Air Act in gender untraditional ways. I implicitly suggest gender non-traditional ideas through switching the names of males and females from the gender traditional framed article. For example, Marcy Kaptur has served the state of Ohio for 36 years in the House of Representatives (Gray 2019). Since the idea of females in office can be considered non-traditional, as women are usually seen as unfit for the masculine world of politics, I placed Kaptur's name in the gender non-traditional article to highlight her divergence from the traditional role of females as mothers. I used her name as a replacement of the Congressional Representative from Ohio, Richard Brown, that was used in the gender traditional frame treatment group.

I provide more information in Table 3.2 that shows the difference between treatment groups two and three. Overall, I am creating the articles in order to relay information about the Clean Air Act in an interesting and succinct manner. I am creating articles that will have implicit gender notions about the roles and personalities of each sex, which will aid me in assessing the level of support a participant has for the Clean Air Act.

Table 3.2 - Gender Traditional and Gender Nontraditional Frame Groups

Treatment Group Two (Traditional)	Treatment Group Three (Nontraditional)
Authors Alan Craig then Jennifer Stanley- show how a male is a leader and a female is secondary	Authors Jennifer Stanley then Alan Craig- show how a female can be a leader and a male can be secondary

Donald Roberts- representative of the EPA is a male	Gina Stevens- representative of the EPA is a female
Donald Roberts- Discusses how he and his team, with another male (Russ Jones) have been working to make Ohio families safe and healthy- they are serving as the changemakers and protectors of Ohioans lives	Gina Stevens- Discusses how she and her team, with another female (Dr. Louisa Stewart), have been working to make Ohio families safe and healthy- they are serving as changemakers and protectors of Ohioans.
Representative Richard Brown- Elected Congressional Representative is in the masculine world of politics. He is discussing manufacturing jobs- a traditionally masculine domain	Representative Marcy Kaptur Brown has been a Representative for Ohio for 36 years. The world of politics is often seen as a masculine domain. She is discussing manufacturing jobs- a traditionally masculine domain.
Gina Stevens-assistant position to a male, talks about the small things she can do at home (a traditional domain for a female) while her boss is engaging in bigger efforts to help air pollution	Donald Roberts- assistant position to a female, talks about how he is making small changes at home (a traditional domain for a female) while his boss is engaging in bigger efforts to help air pollution
Emmanuel Remy- Chair of Environment Committee is a male. Discusses how he and others are leading the way to make Ohio a healthier place.	Louisa Remy- Chair of Environmental Committee is a female. Discusses how she and others are leading the way to make Ohio a healthier place.
Louisa Stewart- discussing the home as a female, a traditionally feminine domain, talking	David Stewart- discussing the home, a traditionally feminine domain, talking about

about how her father had a good paying job in the manufacturing sector.	how his father had a good paying job in the manufacturing sector.
Emma Smith- schoolteacher (education is a feminine issue area), discusses her small contributions to help with air pollutions	Russ Smith- schoolteacher (education is a feminine issue area), discusses his small contributions to helping with air pollution
Russ Byers- male involved in the automotive industry (traditionally masculine area), prefers to choose his cars and to have a strong engine rather than helping the environment	Emma Byers- female involved in the automotive industry (traditionally masculine area), prefers being able to choose cars that have strong engines than sacrificing to help environment

Conceptualization and Operationalization of Dependent Variable

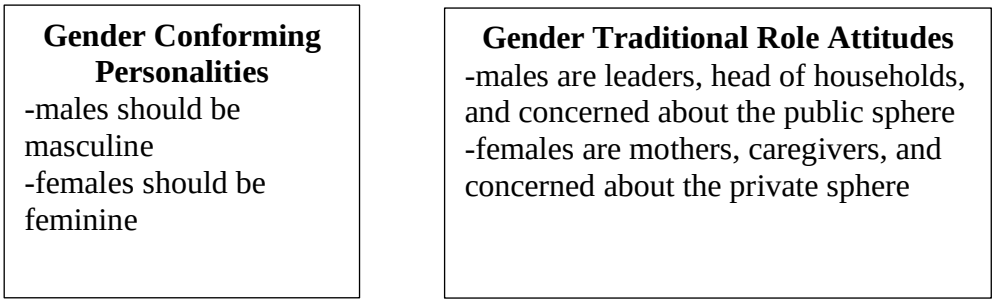
My dependent variable is level of support for the Clean Air Act. I define level of support as how much an individual agrees with the goal of the Clean Air Act: " to seek to protect human health and the environment from emissions that pollute ambient, or outdoor, air" through establishing "minimum national standards for air quality" (McCarthy et al. 2011, 1). I will measure level of support through asking three questions right after participants are exposed to the articles. The questions will be demonstrative of if an individual agrees with the goal of the Clean Air Act: Do you believe the Clean Air Act is helping the people of the United States to live healthy lives? Do you believe the Clean Air Act cleans the environment? Do you want the Clean Air Act to be discussed in your state? An individual will answer agree or disagree. The three items will be combined into a scale representing support for the Clean Air Act. By asking these questions immediately after participants have read the articles, I will

improve my internal validity in measuring my relationship of interest between frame exposure and level of support for the Clean Air Act.

Conceptualization and Operationalization of Conditional Variable

Following the questions that ask for an individual's support of the Clean Air Act, I begin to ask questions related to gender roles and personalities. My conditional variable is the gender schema. I define the gender schema as the information that an individual holds about proper gender roles and personalities of males and females. I observe the gender schema in two ways: traditional or non-traditional. The gender schema contains two aspects that I based on Winter (2008) and McDermott's (2016) works: gender personalities and gender roles of each sex. The traditional gender schema includes attitudes that support gender conforming personalities and gender traditional roles. The nontraditional gender schema includes attitudes that support nonconforming personalities and gender non-traditional roles. I define both of these schemas below in Figure 3.3.

Traditional Gender Schema **Figure 3.3**



Nontraditional Gender Schema **Figure 3.3 cont.**

Gender Nonconforming Personalities	**Gender Non-traditional Role Attitudes**
-individuals do not have to act in accordance to their sex	-males and females should be treated as equals and can assume whatever roles they want

I will measure gender role attitudes, in terms of an individual's support for gender traditionalism or gender egalitarianism, based on Winter's (2008) use of the Sex Role Egalitarianism Scale (SRES). The SRES is a "comprehensive" scale designed to measure "attitudes towards women and men in both traditional and nontraditional roles" (McHugh & Frieze 2016, 8). Winter (2008) argued that the SRES has "the advantage, unlike many measures of gender predispositions, of focusing on men's *and* women's roles, rather than one or the other" (60).

I will ask participants to agree or disagree with five statements from Winter's (2008) survey: "Women ought to have the same chances as men to be leaders at work"; "a husband should be the head of the family" ;"women can handle job pressures as well as men"; "the entry of women into traditionally male jobs should be discouraged" ;"a husband's job is to earn money; a woman's job is to look after the home and family," and "housework should be shared equally when men and women work outside the home" (196).

The statements will be coded as gender egalitarian or gender non-traditional. For example, if a participant agrees with a statement, such as "women ought to have the same chances as men to be leaders at work," then that means that person is favorable toward gender non-traditional roles (Winter 2008, 196). A reverse coded statement would code disagreeing

with gender traditional statements as gender non-traditional. For example, if a participants disagreed with the statement, "a husband should be the head of the family," then that means the individual does not believe in gender traditional roles and is supportive of gender egalitarianism (Winter 2008, 196). I am reverse coding in order to make sure my participants read the questions carefully.

After the questions from the SRES, I transition to asking demographic questions. Such questions are meant to draw attention away from my interest in learning more about individuals' attitudes on gender roles and personalities. Additionally, I will learn more about factors that I identified in my literature review as affecting level of support for environmental policies, such as age, location, sex, and political affiliation. I also asked for an individual's race and ethnicity. I based the questions of race and ethnicity off of the response options in the US Census ("About" 2018).

I will then measure gender personality in terms of an individual's conformity or nonconformity to the gender personalities of their sex. Based off of McDermott's (2016) hypothesis, I argue that an individual's own gender personalities, whether they conform or do not conform to the traits of their sex, will impact societal attitudes about the proper gendered personalities for males and females (144). I base my survey questions off of Monika McDermott's (2016) survey, which is informed by the 1974 Bem Sex Role Inventory (BSRI). McDermott (2016) cited the BSRI as "one of the most influential" and widely used tests of gender personalities (35,37). McDermott (2016) asked participants to "rate yourself on the following items" from twenty traits (176). Ten of the traits are considered traditionally masculine and ten of the other traits are considered traditionally feminine. The prompt in my

survey will read: “The questions below are single personality traits. Please rate how well each trait applies to you.”

Participants will be expected to answer from “never true, rarely true, neutral, occasionally true, and always true” (McDermott 2016, 183). In order to cut down the length of my survey, I reduced the traits used by McDermott (2016) to only twelve, with six traits classified as traditionally masculine and six traits classified as traditionally feminine. I used the twelve traits from Carver et al.’s (2013) study of the BSRI in Brazil. I did not use the traits “sensitive to the needs of others” or “has leadership abilities” because they were repetitive to the other traits that were included (Carver et al. 2013). Instead, I used “compassionate” and “individualistic” as feminine and masculine trait replacements, respectively (McDermott 2016, 37).

Following the BSRI questions, I asked participants to signal their attitudes to a variety of statements about American politics. The statements included, “The government of the United States should do more to help the environment,” “The economy needs to be prioritized before the government,” “The United States is a politically polarized country,” “The United States needs to focus on its own problems before looking at the problems of other countries,” and “Voting is an effective way for me to be involved in the political process.” Participants were asked to answer with their general feelings regarding each statement, with choices from “Like a great deal,” “Like a moderate amount,” “Like a little,” “Neither like nor dislike,” “Dislike a little,” Dislike a moderate amount,” and “Dislike a great deal.” I asked these questions to get a better sense of the political attitudes of my audience and to draw attention from the gendered questions asked before.

Overall, I want participants to not fully understand that this is a survey interested in understanding their attitudes on gender roles and personalities. Instead, I want the discussion questions about gender to be tied to questions about political attitudes and demographics. I end my survey with a debriefing about the intentions of research, which is included in Appendix B. Since I will be using human subjects and will be committing mild deception by creating fictitious articles, I had to submit an application to the College of Wooster HSRC (Human Subject Research Committee) detailing what participants will do in my study. I include my HSRC approval in Appendix A.

MTurk and External Validity

In measuring my variables, I need to ensure my experiment is externally valid. External validity refers to the ability to "extend the findings to some larger population of cases" and indicates that the "results of the study will hold true for other cases" (Howard 2017, 95). I will be using MTurk to recruit 240 participants for my Independent Study. On MTurk, the first 240 participants to sign up for my survey will be selected to participate in my study. Although I will have no knowledge of who these participants are, I will commit selection bias, for the sake of convenience, by "taking whoever happens to volunteer" and not selecting a sample that is representative of the population (Howard 2017, 123-124). In order to help increase the representativeness of my survey, I will intentionally create a broad description on MTurk to describe my survey. The general description that will appear on MTurk will say, "You are being asked to participate in a research study that aims to understand how your political attitudes affect your support for policies." I will only pay participants $1.00 if they have completed the survey entirely. One requirement I establish is that participants be located in the United States. Participants will also only be allowed to participate in my survey if they have a

HIT (Human Intelligence Tasks) approval rate of 90% or higher, which means their work completing HITs has not been rejected more than 10% of the time.

Although my study may not be entirely externally valid, MTurk is an excellent resource to recruit participants for experiments. In general, MTurk is said to be more "demographically diverse than standard Internet samples" and more diverse "than typical American college samples" (Buhrmester, Kwang, & Gosling 2011, 3). MTurk is reported to have workers from "very diverse backgrounds, spanning a wide range of age, ethnicity, socio-economic status, language, and country" (Mason & Suri 2012, 3). Of note, while MTurk workers tend to be diverse, they are "not representative of the population" as they are "younger (about 30 years old), overeducated, underemployed, less religious, and more liberal than the general population" (Paolacci & Chandler 2014, 185). Based on a study conducted over 28 months with 40,000 participants, Difallah, Filatova, and Ipeirotis (2018) found that 55% of US participants were female and about 45% were male (3). MTurk, in general, is a platform that is beneficial for my research, in that I can reach a more diverse sample of people than taking a convenience sample at the College of Wooster. In addition, I can collect a large sample of participant responses at a quick rate and at a low cost (Cunningham, Godinho, & Kushnir 2017, 1).

Hypothesis and Expectations

Now that I have discussed the goals of my study and the variables that I am conceptualizing and operationalizing, I will introduce my research hypothesis. My hypothesis argues that if an individual receives a frame that is "congruent" to the attitudes of their gender schema, or elements of their gender schema resonate with elements in the frame, then he/she will be more supportive of the Clean Air Act (Winter 2008, 26). For example, individuals with

more traditional gender schemas will have higher levels of support for the Clean Air Act if the issue is framed to complement their schema by including traditional gender roles and personalities of each sex.

In the same note, my hypothesis also argues that if an individual receives a frame that challenges the notions in their gender schema, then that individual will not be as supportive of the Clean Air Act. For example, individuals with more nontraditional gender schemas will have lower levels of support if the issue is framed around ideas of traditional gender roles and conforming personalities of each sex. I argue, however, that individuals will still connect to their gender schemas, even if their gender attitudes are challenged, because gender considerations are being introduced into the discussion. I highlight my expectations below in Table 3.4 on how exposure to the traditional or nontraditional frame will interact with an individual's gender personalities and an individual's gender role attitudes.

Expectations Table- Table 3.4

	Nonconforming Gender Personalities	Conforming Gender Personalities
Traditional Frame (Group 2)	Not Supportive	Support
Nontraditional Frame (Group 3)	Support	Not Supportive

	Traditional Gender Role Attitudes	Non-Traditional Gender Role Attitudes
Traditional Frame (Group 2)	Support	Not Supportive
Nontraditional Frame (Group 3)	Not Supportive	Support

Analytic Technique

In order to measure how my independent variable, the frame used, will have an effect on my dependent variable, level of support for the Clean Air Act, I have to factor in my conditional variable, an individual's gender schema. The conditional variable serves as a moderator variable, in that it "tempers or moderates the magnitude of the effect of an independent variable on a dependent one" (Judd 2015, 672). The gender schema affects the relationship between my independent and dependent variables by identifying the "conditions under which, or the type of participant for whom, the effect is likely to be particularly large or particularly small" (Judd 2015, 672). For example, I argue that the "effect" that the gender schema has on my participants is larger when elements of an individual's gender schema are present within the frame (Judd 2015, 672).

In order to measure my variables, I will download the responses from Qualtrics into an Excel sheet. From there, I will import the data into Stata, a statistics software. I will calculate the average level of support for each individual and develop a scale for supporting the Clean Air Act based on if a person agrees or disagrees to the three questions that follow immediately after the article. Individuals' responses will be coded as a "2" for agreeing with each statement or a "1" for disagreeing with each statement. I will average the answers to the three questions to calculate an individual's level of support by creating a scale in Stata that combines individuals' responses to the three questions.

I will code the answers to the six questions that make up the Sex Role Egalitarianism Scale (SRES) as a 2 for agreeing with each statement and a 1 for disagreeing with each statement. However, agreeing with some of the questions indicates support for gender

traditionalism while agreeing with others, the reverse coded questions, means supporting gender non-traditionalism.

In order to average an individual's level of gender non-traditionalism, I created a scale in which a respondent's agreement with a gender egalitarian statement indicates a 2. If an individual agrees with a gender traditional statement, then that indicates a 1. After adding up participants' responses to the six questions, I will use a median split to divide the responses into high and low gender non-traditionalism. A lower average mean demonstrates more support for more gender traditionalism, while a higher average mean demonstrates gender non-traditionalism.

In order to see how an individual's level of gender non-traditionalism interacts with the treatment that they were randomly assigned, I assigned a number to each treatment in Stata. A "1" means the individual is in the control group, a "2" means he/she is in the gender traditional group, and a "3" means he/she is in the gender non-traditional group. I will then generate the level of support for the Clean Air Act in regard to each condition and by an individual's high or low gender non-traditionalism. In order to do this, I will use a two-way ANOVA test to determine if the interaction is significant. An ANOVA test is used to analyze data from experiments and is often used to test the difference "between the means of two or more groups" ("ANOVA" 2018). I will apply a two-way ANOVA, in which I will look at the "effect of two independent factors on a dependent variable," in order to observe the interaction between an individual's level of gender non-traditionalism (in terms of responses to the six gender role statements) and the treatment he/she received in producing significantly different mean levels of support for the Clean Air Act ("ANOVA" 2018).

In regard to the other component of my conditional variable, gender personalities, participants will respond to 12 personality traits based on McDermott's (2016) survey and Carver et al.'s (2013) study. For feminine traits, I coded each answer from 0 to 4 with 0 being "Never True," 1 being "Rarely True," 2 being "Neutral," 3 being "Occasionally True," and 4 being "Always True." For masculine traits, I did the reverse and coded a response of 4 as "Never True," 3 as "Rarely True, 2 as "Neutral, 1 as "Occasionally True, and 0 as "Always True." A higher average will indicate highly possessing feminine traits while a lower average will indicate highly possessing masculine traits.

I will create a scale that adds up the answers to all 12 of the gender personality questions and divide by 12. In looking at the average level of responses, I will compare a respondent's answer to the question of "what is your sex," in which the answers are male or female, in order to see if a male or female participant conforms to the traits of his/her sex. I will rank the top 25% of values as feminine, as the responses were coded for the feminine traits. I will rank the bottom 25% of traits as masculine. If an individual identifies as male and his average answers are equal to or below the bottom 25% of the averages for the gender personality questions, then that individual is considered conforming. If an individual identifies as female and her average answers are equal to or above the top 25% of average answers to the gender personality questions, then that individual is classified as conforming. Individuals whose sex does not correspond with the top 25% or bottom 25% gender personality averages are considered nonconforming. I will run another two-way ANOVA test to see the interaction between the dependent variable, level of support, with the independent variables of treatment and conformity (based on an individual's sex and response to the gendered behavior questions). In

the ANOVA test, I will test if the interaction between conformity and treatment produces significant differences in level of support.

While both the SRES and BSRI are helpful in identifying an individual's gender schema as being more traditional or nontraditional, I do want to make note that these measures are not perfect. For example, there are only six statements for the SRES and some are reverse coded. An individual might not read a question carefully and could indicate agreement with a statement when they might actually disagree. With only six statements, I have a very limited measure of an individual's attitudes of proper gender roles for each sex. However, for the sake of lowering the amount of time to complete the experiment and, in regard to the amount I am paying my participants, I will only ask the six questions.

On a similar note, the BSRI is not a perfect measure. I am also making sure to lower the amount of time my participants spend completing my survey in order to ensure they are not overwhelmed with questions. While originally the BSRI used by McDermott (2016) asked twenty questions (176), I am asking my participants only twelve questions that are largely based on Carver et al.'s (2013) study. In using the BSRI, I also did not include the other two classifications, beside conforming and nonconforming, of androgynous, which translates to "high levels of both masculine and feminine traits," or undifferentiated which indicates an individual is "low on masculine and feminine traits" (McDermott 2016, 51, 113). Although leaving out these two classifications may rigidly categorize individuals as conforming or nonconforming, I only need to assess if an individual has high or low levels of masculine and feminine traits in relation to their sex.

Conclusion

In this chapter, I discussed my issue area, air pollution. I argued that air pollution is an appropriate non-gendered issue to frame based on Winter's (2008) criteria of "does not explicitly deal with gender," "is subject to moderate levels of debate," and is "complex to allow multiple frames" (50). I acknowledged that there is not a significant amount of research on gender gaps in environmental concern about air pollution. Research that has looked at air pollution has had mixed results, in terms of males demonstrating more concern or females demonstrating more concern about air pollution (Mohai 1997; Norrander 2008). I then discussed my air pollution policy of choice, the Clean Air Act. I looked at how the Clean Air Act interacts with the private sector, the economy, state governments, and individual households ("Plain English Guide" 2007;; Clean Air Act and the Economy" 2019; Ross, Chmiel, & Ferkol 2012; Zichal 2011a). With my discussion of the Clean Air Act, I introduced how the non-gendered issue could become implicitly gendered.

After discussing the various elements of the Clean Air Act, I conceptualized and operationalized my dependent, independent, and conditional variables. I reinforced how Winter's (2008) theory, group implication, tied my variables together. The group implication theory focuses on how non-gendered issues, such as air pollution, can be framed in implicitly gendered ways and connect to an individual's gender schema. When an individual's gender schema, which contains attitudes about gender roles and personalities for each sex, finds similar elements in the gendered frame of an issue, then that individual will use his/her schema to affect his/her judgement of the issue (Winter 2008).As part of this discussion of my theory, I presented my arrow diagram to illustrate the relationship between my variables. I then began to conceptualize and operationalize each variable.

My independent variable, the frames used to discuss the Clean Air Act, is imbedded in an article from *The Columbus Dispatch* about the merits and shortcomings of the Clean Air Act. My first group, the control group, serves to give me a better understanding of the base level of support for the Clean Air Act without any gendered framing. My gender traditional and gender non-traditional treatment groups contain implicit gendered framing that is intended to connect to an individual's gender schema and affect the level of support for the Clean Air Act. The gender traditional group will read an expanded version of the control group's article discussing the Clean Air Act but will read about traditional gender roles and personalities of males and females. The gender nontraditional group will read the same article as the gender traditional group but will read about non-traditional gender roles and personalities of males and females.

After looking at my independent variable, I discussed my dependent variable, level of support for the Clean Air Act. I will ask three questions and average the answers of these questions to create a mean level of support for each participant. Following this, I began to review how I will conceptualize and operationalize my conditional variable: the gender schema. I note that an individual's gender schema contains attitudes about the proper personalities and roles for each sex. In order to measure an individual's gender schema in order to see how it affects the relationship between the independent and dependent variables, I discussed how I will use the SRES and the BSRI. The SRES will measure an individual's attitudes about gender roles for each sex. I will ask individuals to agree or disagree with statements about gender roles for males and females (Winter 2008, 196). For the BSRI, I will ask an individual to answer how applicable a trait is to his/her own general personalities (McDermott 2016, 176; Carver et. al 2013). Overall, I will measure how an individual's

answers to the SRES and BSRI questions interact with the treatment group he/she is randomly assigned in affecting the level of support for the Clean Air Act.

I ended my discussion by introducing my hypothesis and expectations tables. To reiterate, my hypothesis argues that if an individual receives a frame that is "congruent" to the attitudes of their gender schema, or elements of their gender schema resonate with elements in the frame, then he/she will be more supportive of the Clean Air Act (Winter 2008, 26). Even if an individual has differing attitudes about proper gender roles and personalities of each sex, I argue that their gender schema will still connect to the gendered framing in the article. However, an individual will be less supportive of the Clean Air Act if the ideas in their gender schema are challenged. If an individual reads an article about gender traditional roles and personalities, such as females acting as subservient mothers to their breadwinning husbands, and that individual supports more gender non-traditional notions, then that individual will not see the Clean Air Act as a policy that is considered relevant to him/her. My expectations table highlights the important relationship between frames and schemas in affecting support for policies. In the next Chapter, I will disseminate my survey and begin analyzing the results.

Chapter 4: Results and Analysis

In order to study participants' attitudes about the Clean Air Act, I created a survey on Qualtrics and uploaded it to Amazon's MTurk. Within my survey, I created three different treatments. The three treatments were different variations of *The Columbus Dispatch* news article called "Ohio House of Representatives, Ohio Residents, and Columbus City Council meet to discuss The Clean Air Act." The three treatments use gendered frames of a non-gendered issue, air pollution, to help me assess whether the gendered frames interact with an individual's gender schema to influence policy attitudes regarding the Clean Air Act.

The first treatment is a control, as there are no gendered frames. The control group will allow me to see individuals' base levels of support for the Clean Air Act. The control group is the shortest article, as it does not include conversations from Ohio residents, political elites, and researchers discussing the pros and cons of the Clean Air Act. My other two treatment groups use the same language as the control group but have more quotations from residents, researchers, and politicians. In my second treatment group, the article references more traditional gender roles and gender-conforming personalities for each sex while discussing the Act. In my third treatment group, the article references more gender non-traditional roles and gender non-conforming personalities for each sex while discussing the Act. Compared to the control, my second and third groups allow me to explore whether and how individuals connect gendered frames to their gender schemas when there is framing of a non-gendered issue.

In the following sections, I discuss the results of my survey experiment. I first share the demographics of my participants including age, political affiliation, location, and sex that were mentioned in the literature review as affecting environmental concern. Next I test whether random assignment distributed each factor across the different treatment groups. After

ensuring random assignment, I look at the level of support in regard to treatment and assess support in relation to an individual's attitudes toward the proper gender roles of each sex. After analyzing the results compared to my expectations, I will examine the questions about gender personalities. By looking at an individual's gender schema through the measures of gender role attitudes and an individual's gender personalities, I will see if the gender schema conditioned the relationship between the treatment and the level of support for the Clean Air Act.

Basic Demographic Information of Participants

In January 2020, I released my survey on MTurk. I had 240 participants complete my survey, with 80 participants randomly assigned to each treatment group (control, gender traditional, and gender non-traditional). At the end of my Qualtrics survey, a randomly generated code was supplied that allowed participants to enter the code into MTurk to verify they completed the survey. As the survey was created on Qualtrics, I was able to compare the codes generated by Qualtrics to the codes entered into MTurk. 4 participants did not enter the correct code, which meant that their responses were not included in the final analysis. I narrowed down the remaining 236 participants through a manipulation check. The manipulation check was based on three questions about the content of the articles in the survey. I created the questions in order to make sure that participants read through the assigned article carefully. The questions were "What was the environmental problem discussed in the article?," "What city was featured in the article?," and "What did city residents do in the article?" Each person had three responses to choose from for each question. I coded each question with a 1 for the correct response and a 0 for the two incorrect responses. I then created a scale that showed the number of responses that participants got right. 181 participants answered all 3 questions correctly and 37 participants answered 2 questions correctly. Therefore, 218

participants answered 2 or 3 questions correctly, while 18 answered only 1 question correctly. Those 18 participants who answered only 1 question correctly were removed from the final analysis. My final n, or number of participants, for my Independent Study is 218.

I began my analysis with looking at the demographic makeup of my 218 participants. Participants did not have to answer every question. The average age of participants in the survey was 36.47 years, with the minimum age being 19 years old and the maximum age being 73 years old. In regard to ethnicity, out of 216 responses, there were 6 Asian participants, (2.8%), 29 African American participants (13.4%), 175 White participants (81%), and 6 participants who answered as "other" and inserted their own responses (2.8%). Based on 218 responses, 29 participants identified as Hispanic (13.3%) while 189 participants identified as Non-Hispanic (86.7%). Out of 218 responses, 52 participants answered they lived rurally (23.8%), 81 participants said they lived in the suburbs (37.2%), and 85 participants said they lived in an urban area (39%). In terms of partisan affiliation, out of 218 responses, 96 participants said they were Democrats(44%), 67 participants said they were Republicans (30.7%), 52 participants answered as Independents (23.9%), and 3 participants classified themselves as "Something Else" (1.4%). Out of 216 responses, my survey had 134 participants answer as male (62%) and 82 participants answer as female (38%).

In my discussion of MTurk in the previous chapter, I mentioned that MTurk workers tend to be "younger (about 30 years old), overeducated, underemployed, less religious, and more liberal than the general population" (Paolacci & Chandler 2014, 185). While I did not ask questions about religion or employment, I did notice that, generally, there were more Democrats than Republicans, Independents, or "Something Else." Also, the average age was 36.47, which was close to the age of 30 provided by Paolacci and Chandler (2014). The most

frequent ages included 19 participants who were 30 years old, 14 participants who were 28, 10 participants who were 25, 10 participants who were 32, and 10 participants who were 34.

Although there is not a clear consensus of US male and female participation on MTurk, a study by Difallah, Filatova, and Ipeirotis (2018) found more participants were females than male (3). The answers from my survey indicate a different answer from this study, in that male participants doubled the number of female participants.

Overall, these data allow me to begin thinking about how the sample I observed might influence my results. In particular, I found in my literature review that younger people were more concerned about environmental issues (Grey et. al. 2019; Anderson 2017) and that people who were Democrats or leaning toward Democrat were more supportive of environmental policies (Anderson 2017; Dunlap 1975). In regard to sex, females expressed more environmental concern, particularly in regard to local issues (Blocker & Eckberg 1989; Mohai 1997). Another factor that I identified in my literature review that can affect level of support for the Clean Air Act is an individual's location, as those who live in urban areas are more concerned about larger environmental issues, like air pollution and climate change, while those who live rurally are more concerned about issues that affect their own lives, like contamination of nearby water sources (Foster & McBeth 1996). In looking at the level of support for the Clean Air Act, it is important to recognize other factors that may affect the level of support other than my independent and conditional variables. For example, since my sample is younger and more democratic my sample may skew toward more support for the Clean Air Act (Anderson 2017).

Ensuring Random Assignment

In order to ensure that there was random assignment of the factors that could affect level of support (age, sex, political affiliation, and location), I checked for even distribution of these factors across treatment groups. This is an important step to rule out that these documented demographic factors explain any effects on Clean Air Act policy attitudes I observe. For age, I generated the mean age by condition. After getting a summary of the different ages present in each treatment, I did a one-way ANOVA test to look for statistically significant differences between mean age and treatment. One-way ANOVA tests are commonly used to analyze data from experiments by testing the difference "between the means of two or more independent groups" ("ANOVA" 2018). To document that random assignment worked, I am seeking insignificant results to rule out that treatment and age are dependent.

I use a p-value of < 0.05 to identify statistically significant results. The ANOVA test of potential differences across different treatment groups showed that there were not statistically significant differences between treatment groups ($f=1.21$, $p=0.3017$) when interacting with age Therefore, this demonstrates that age and treatment are not dependent. I then ran chi^2 tests to see if sex, political affiliation, and location were evenly distributed across treatments. In analyzing to see whether male and female participants were distributed evenly across treatment groups ($chi^2= 0.1016$, $p=0.950$), there was no statistical significance. In looking at if an individual's location was evenly distributed across treatments, ($chi^2=4.8171$, $p=0.307$), there was no statistical significance. Lastly, in seeing if political affiliation was evenly distributed across treatments, ($chi2=4.5455$, $p=0.603$), there was no statistical significance. Overall random assignment worked and the factors of age, sex, location, and political affiliation were distributed across treatment groups.

Level of Support Results

After looking at the demographics of my participants and ensuring random assignment, I began my analyzing the average level of support (my DV). I averaged the responses for the three questions asking about supporting the Clean Air Act, where the highest response could be a 2 and the lowest a 1. The average response was a 1.6667. For the question about if the Clean Air Act is helping the people of the United States, 207 participants agreed while 10 disagreed. For the question about if the Act helps the environment, 208 agreed and 10 disagreed. Last, for the question about if the Clean Air Act should be discussed in his/her state, 199 participants agreed and 19 disagreed.

Overall, participants were largely very supportive of the Clean Air Act. The control group, which served as a way to compare the levels of support in the different treatment groups, had an average support for the Clean Air Act of 1.6712. Without consideration of how the treatment interacted with an individual's attitudes on gender roles and personalities, the traditional treatment had a mean support of 1.6713 and the non-traditional treatment group had a mean support of 1.6528. I detailed the means of all the treatment groups below in Table 4.1. The means for the three groups are very similar and demonstrate an overall support for the Clean Air Act. In using a one-way ANOVA, I tested the interaction between treatment and level of support and found that the interaction was not significant ($f=0.69$, $p= 0.5012$). Overall, the different treatments do not produce statistically significant differences in level of support.

Table 4.1- Average Level of Support (Out of Possible 2) Based On Treatment

Control	1.6712
Traditional	1.6713
Non-traditional	1.6528

Based on the responses of 217 participants (possible 218 but some one participant did not answer all the support questions).

Before testing whether and how an individual's gender schema interacts with the treatment to affect level of support for the Clean Air Act, I examined how level of support varied based only on an individual's sex. Based on my literature review, I found that males were generally less concerned about the environment than females (Blocker & Eckberg 1989; Brough et al. 2016; Mohai 1997; Stern, Dietz, & Kalof 1993). However, in looking at research, I did not find a consistent gender gap about concern for air pollution (Mohai 1997; Norrander 2008). In my sample, I found that the level of support for individuals who identified as male was 1.68. The level of support for individuals who identified as female was 1.65. In running a one-way ANOVA, I found that an individual's sex did produce significant differences in levels of support ($f=3.97$, $p=0.0477$). By having males in my sample that were more supportive of the Clean Air Act, my results are counter to prior research about males demonstrating generally less concern for the environment.

Gender Role Attitudes and Level of Support for the Clean Air Act

After looking at average level of support, I created a scale for the responses to the gender roles questions. I coded responses as gender non-traditional, in that agreeing to a statement that is gender non-traditional equates to a "2" and disagreeing to a statement that is gender traditional also equates to a "2." Agreeing to a gender traditional statement, therefore, equates to a "1" and disagreeing with a gender non-traditional statement equates to a "1." I created a scale that added the six responses together and divided by six. Out of the 213 responses, based on those who provided a response to all six statements, 110 participants (51.64 %) had an average response of a "2," meaning they agreed with all gender non-traditional statements. Only 2 participants could be considered highly gender traditional, as they disagreed with all

gender non-traditional statements. The mean for all responses was a 1.823 out of 2. Table 4.2 presents the different means and what such means translate to in terms of supporting gender traditional or non-traditional roles.

Table 4.2- Average Support for Gender Role Statements

1- Agreed with all 0 gender non-traditional statements, Agreed with 6 gender traditional statements	2 participants- 0.94%
1.66667- Agreed with 1 gender non-traditional statement, Agreed with 5 gender traditional statements	3 participants- 1.41%
1.333333- Agreed with 2 gender non-traditional statements, Agreed with 4 gender traditional statements	8 participants- 3.76%
1.5- Agreed with 3 gender non-traditional statements, Agreed with 3 gender traditional statements	26 participants- 12.21 %
1.166667- Agreed with 4 gender non-traditional statements, Agreed with 2 gender traditional statements	24 Participants- 11.27%
1.833333- Agreed with 5 gender non-traditional statements, Agreed with 1 gender traditional statement	40 Participants- 18.78 %
2- Agreed with 6 gender non-traditional statements, Agreed with 0 gender traditional statements	110 Participants- 51.64%

Overall participants were extremely support of gender non-traditional roles. Based on this, I split responses to the gender role questions in half by using a median split. Since 51.64% of participants, or over half, were extremely gender egalitarian, I coded their responses as a 1 (or high egalitarianism). I coded the other 48.36% as low egalitarianism or a 0. With this scale, I able to see that 103 participants were less egalitarian (0) and 110 participants were more egalitarian (1). Again, the 103 participants that were less egalitarian were still largely supportive egalitarian gender roles, as over 40% answered in support of at least half of the gender non-traditional statements, i.e. he/she agreed with at least 3 out of the 6 statements.

Next I explore how the average level of support for the Clean Air Act relates to an individual's gender role attitudes (Table 4.3). In terms of gender non-traditional role attitudes, the results of a frequency table indicate that those with higher levels of gender non-traditional role attitudes (higher egalitarianism) have more support for the Clean Air Act than those who have more gender traditional role attitudes (lower egalitarianism). However, my results, overall, heavily lean towards gender non-traditionalism/ egalitarianism. Therefore, even those that are classified as having lower gender egalitarianism are still quite gender egalitarian and have nearly the same level of support at those who are more gender egalitarian.

Table 4.3- Average Support (Out of Possible 2) Based on Gender Role Egalitarianism

Lower egalitarianism (more gender traditional)	1.6601
Higher egalitarianism	1.6697

Based on the response of 213 participants (out of possible 218, but 5 participants did not answer all in response to the gender non-traditional and traditional statement.

Below, in Table 4.4, I have included one part of my expectations table that I created in the previous chapter. I show the mean level of support based on the frame an individual saw and an individual's gender role attitudes. The highest means should be when an individual's schema is most similar to the frame. However, the mean level of support is almost the same across the treatment groups and the interaction with the level of gender egalitarianism. Therefore, my results do not demonstrate that a frame can reinforce an individual's attitudes about gender roles and increase the average level of support for the Clean Air Act. Also, my results do not demonstrate that an individual subjected to a frame that disagrees with the notions in his/her gender schema would have the least average level of support for the Clean Air Act.

Table 4.4 -Mean Support from Interaction of Gender Role Attitudes and Frames

	Traditional Gender Role Attitudes	Non-traditional Gender Role Attitudes
Traditional Frame (Group 2)	1.6667 ** Expected this to be one of the highest means	1.6752
Nontraditional Frame (Group 3)	1.6481	1.6528 **Expected this to one of the highest means

I then ran a two-way ANOVA, which "examines the effect of two independent factors on a dependent variable" and identifies if "the independent variables [influence] the values of the dependent variable" in statistically significant ways ("ANOVA" 2018). My two independent factors would be treatment and gender role attitudes and my dependent variable would be level of support. Table 4.5 presents the results of the interaction between treatment, gender role attitudes, and level of support.

As support is the dependent variable in my study, I can see that the interaction of gender role attitudes (level of gender non-traditionalism-high or low) and level of support (f=0.13, p=0.7218) did not produce significant differences in average level of support. Also, the interaction between treatment and support does not produce significant differences in level of support (f=0.32, p=0.7231). Most importantly, in looking at the interaction between treatment and level of gender egalitarianism, I am able to see that when these two elements interact, they do not produce significant differences in average level of support (f=0.00, p=0.996). Therefore, I am able to see that this one component of an individual's gender schema (an individual's gender role attitudes) does not interact with treatment to produce statistically significant differences in level of support for the Clean Air Act.

Table 4.5 ANOVA Output of Treatment, Gender Role Attitudes, and Support

```
anova support_scale treatment egal_hi_low trtXegal
```

```
                   Number of obs =       212    R-squared     =  0.0082
                   Root MSE      =  .110912    Adj R-squared = -0.0159
```

Source	Partial SS	df	MS	F	Prob>F
Model	.02093159	5	.00418632	0.34	0.8880
treatment	.00798838	2	.00399419	0.32	0.7231
egal_hi_low	.00156429	1	.00156429	0.13	0.7218
trtXegal	8.925e-06	2	4.463e-06	0.00	0.9996
Residual	2.5340995	206	.01230145		
Total	2.5550311	211	.01210915		

Gender Personality and Level of Support for the Clean Air Act

In my survey, I asked individuals to answer how well a gendered trait applies to him/her through the response of "Never True," "Rarely True," "Neutral," "Occasionally True," and "Always True." I based the twelve personality traits off of McDermott (2016) and Carver et al.'s (2013) studies about the BSRI (Bem Sex Role Inventory). Six of the traits are traditionally masculine (dominant, defends beliefs, makes decisions easily, leader, individualistic, strong personality) and the other six traits are traditionally feminine (warm, tender, sympathetic, individualistic, compassionate, gentle). The responses were coded as feminine, so that the feminine traits are coded as a "Never True=0," "Rarely True=1," "Neutral=2," "Occasionally True=3," and "Always True=4." Masculine traits are reverse coded, or responding with "Never True" equals a 4," "Rarely True = 3," "Neutral=2," "Occasionally True =3," and "Always True=0."

I then added a participant's responses to all twelve traits and divided by twelve. A higher average would indicate highly feminine gender personalities while lower average would indicate highly masculine gender personalities. I ranked the lowest 25% of values (below

1.8333) as masculine, and the top 25% of values (above 2.5) as feminine. In order to see if an individual conformed to the personality of their sex, I created a scale, labeled congruity, that combined answers to the gender personalities questions and the answers to "what is your sex?." Of note, I asked individuals to answer to as "male," "female," or "other," in which participants could choose to write in. No participants chose "other."

In short, I created a scale where if an individual answered above/equal to 2.5 and were a female (a 2 in my coding) then he/she could be classified as conforming (or a 1). If an individual answered below/equal to 1.8333 and were a male (a 1 in my coding) then he/she could be classified as conforming (or a 2 in my scale). The participants who answered above 1.8333 and were male were classified as a 0, or nonconforming. The participants who answered below 2.5 and were female were classified as a 0, or nonconforming. 146 participants (70.53%) were classified as having nonconforming personalities in relation their sex, 34 female participants (16.43%) conformed to the feminine personality traits, and 27 male participants (13.04%) conformed to the masculine personality traits. Although my n=218, only 207 were classified as conforming or nonconforming because participants had to respond to the question about their sex and to all twelve of the gender personality trait questions in order to be considered in the scale.

Below, in Table 4.6, I have included the other part of my expectations table that I created in the previous chapter. In this table, I show the mean level of support based on the intersection between frame and an individual's conforming or nonconforming personality. I expected that the highest level of support would be when the frame was "congruent" with an individuals' gendered personality (Winter 2008, 26). My expectations were somewhat true, as the gender conforming males had higher support for the Clean Air Act when exposed to the

traditional frame treatment. However, gender conforming females had lower mean levels of support than individuals with nonconforming gender personalities when looking at a traditional frame. Overall, the means for all treatment groups and for gender conforming and nonconforming personalities were relatively similar to one another. Therefore, my results, before running an ANOVA test for significance, do not demonstrate that a frame can reinforce an individual's attitudes about gender personalities and increase the average level of support for the Clean Air Act. Also, my results do not indicate that an individual subjected to a frame that disagrees with the notions in his/her gender schema would have the least average level of support for the Clean Air Act.

Table 4.6- Mean Support From Interaction of Gender Personality and Frames

	Nonconforming Gender Personality	Conforming Gender Personality
Traditional Frame (Group 2)	1.6715	Conforming males- 1.7333 Conforming females-1.6429 ** Expected this to be one of the highest means
Nontraditional Frame (Group 3)	1.6667 **Expected this to one of the highest means	Conforming males-1.6296 Conforming females-1.6000

After looking at the mean level of support based on the interaction between treatment and an individual's gender personality, I conducted a two-way ANOVA, reported in Table 4.7, to look for significant results. Table 4.7 shows that there was not a significance difference in level of support based on treatment, congruity (the conformity or nonconformity of an individual to the gender personality traits of their sex), or interaction between treatment and congruity. The treatment randomly assigned to individuals did not produce significant

differences in average levels of support, based on the standard for p-value < 0.05 (f=0.06, p= 0.9391). An individual's congruity (conformity or nonconformity to the gender personality of their sex) did not produce significant differences in level of support (p=0.53, f=0.5892). Most importantly, the interaction between congruity and treatment did not produce significant differences in level of support (f=0.80, p=0.5271). Overall, an individual's conformity or nonconformity did not have a significant interaction with level of support based on the frame that was seen. Therefore, my hypothesis was not supported in that an individual's gender personality would interact with a frame in a way that affected level of support for the Clean Air Act (less support if their schema was challenged or more support if their schema was matched).

Table 4.7- ANOVA Output of Treatment, Gender Personality, and Support

```
. anova support_scale treatment congruity congXtrt

                   Number of obs =       206    R-squared     =  0.0356
                   Root MSE      =  .111837    Adj R-squared = -0.0035

          Source | Partial SS         df         MS        F     Prob>F
-----------------+----------------------------------------------------
           Model |  .09104715          8   .01138089     0.91   0.5093

       treatment |  .00157255          2   .00078627     0.06   0.9391
       congruity |  .01326874          2   .00663437     0.53   0.5892
        congXtrt |   .0399759          4   .00999397     0.80   0.5271

        Residual |  2.4639687        197   .01250746

-----------------+----------------------------------------------------
           Total |  2.5550158        205   .01246349
```

Conclusion

Overall, my results depict that participants largely agreed with the three statements about the Clean Air Act. With a lack of variation in my dependent variable and my sample supporting gender non-traditional roles, I found that there was not a significant relationship

between treatment, an individual's attitudes about gender roles (the high or low gender egalitarianism scale), and level of support. My survey failed to confirm both my expectations: that when an individual is exposed to a frame that confirms his/her attitudes about gender roles, then he/she will be most supportive of the Clean Air Act and when an individual is exposed to a frame that challenge his/her attitudes about gender roles then he/she will be less supportive of the Clean Air Act.

Similarly, I did not find a significant relationship between treatment, gender personality, and level of support. Even with most of my participants leaning toward nonconforming gender personality, I did not confirm that such nonconformity, when interacting with the nontraditional frame, would lead to more support. I also did not confirm my other expectation that individuals whose schemas are challenged, such a nonconforming individual reading an article that depicted individuals conforming to the traits of their sex, would have less support. Overall, my study did not demonstrate that an individual's gender schema, which contains attitudes about proper gender personalities and gender roles, can significantly interact with a frame to affect level of support for the Clean Air Act. In the next Chapter, I will discuss the implications of my results and future areas of research.

Chapter 5: Conclusion

After conducting a survey experiment on MTurk to test my research question, the results of my survey do not support my proposed hypothesis. My hypothesis argued that if an individual received a frame that is "congruent" to the attitudes of their gender schema, or elements of their gender schema resonate with elements in the frame, then he/she will be more supportive of the Clean Air Act (Winter 2008, 26). Similarly, the other part of my hypothesis argued that if an individual received a frame that challenged the notions in their gender schema, then that individual will not be as supportive of the Clean Air Act. In this chapter I will further explore the explanations for and implications of the results. In the discussion, I will introduce different aspects, such as question wording, social desirability bias, and the length of my stimulus materials that could have limited my ability to test both aspects of my hypothesis. I will also discuss how the lack of variation in my dependent and conditional variables contributed to my inability to observe my hypothesis. I will end the chapter by discussing areas for future study and the broad takeaways from my research.

Implications of Policy Support Question Results

In looking at the control group, which received no gendered framing, I saw that the base level of support is almost identical to the individuals who saw the traditional and non-traditional treatment groups. While having a high level of support for the Clean Air Act, regardless of treatment, makes me hopeful that people are interested in helping the environment, I have a couple of concerns as to why the results are the way that they are. For example, I am concerned about social desirability bias, in that participants may feel a "tendency to underreport socially undesirable attitudes and behaviors and to over report more desirable attributes" (Latkin et al. 2017). Helping the environment has become a more salient issue, as

64% of US adults in a February 2020 poll said that helping the environment was the top public policy priority, in comparison to 67% who said the economy was the top priority ("As Economic Concerns" 2020). Participants that may have disagreed with the Clean Air Act may have wanted to say they agree to each statement in order to appear more socially acceptable. However, it is also important to note that with a statistic like 64% see the environment as a top policy concern, my results of high support for the Clean Air Act could be demonstrative of society's current attitudes ("As Economic Concerns" 2020). Additionally, my MTurk respondents were younger and more Democratic, which are two factors that can increase levels of environmental concern (Anderson 2017; Paolacci & Chandler 2014, 185). Also, males in my study demonstrated significant differences in levels of support for the Clean Air Act than females, which is counter to prior research that males demonstrate less concern for the environment than females (Blocker & Eckberg 1989; Brough et al. 2016; Mohai 1997; Stern, Dietz, & Kalof 1993). More research can be done to continue understanding gender gaps in environmental concern about air pollution, either through the use of framing air pollution in gendered ways or by directly asking males about their attitudes regarding air pollution.

Lastly, in looking at the lack of variation in my dependent variable, I could have added more response options to the questions about the Clean Air Act instead of making participants agree or disagree with statements. Adding a Likert Scale of responses for participants could capture when participants have an attitude that does not fully agree or disagree with a statement. The dependent variable, therefore, may have had more nuance if people had more response options. I could have also seen more nuance in responses if I asked participants questions about adopting specific behaviors in accordance to the Clean Air Act. For example, I could have said "The Clean Air Act asks for all people to participate in helping address air

pollution. Please answer if you would be willing to the following things to lower your air pollution impact: 'plant trees around you home to offer shade in the summer and light in the winter,' pay more for gas to offset the air pollution produced, fill out a mandatory monthly report about your contribution to air pollution" ("Plain English Guide" 2007, 22). By asking people to commit to addressing air pollution by tailoring their own actions, I may have been able to get more of a variety in levels of support for the Clean Air Act.

Gender Role Attitudes and Support Implications

After looking at the level of support for each treatment, I will now look at the implications of my results when my conditional variable is factored in, gender schema. In running my two-way ANOVA, I found that the interaction between an individual's attitudes about gender roles (via my scale of high or low gender egalitarianism) and with the treatment received did not produce statistically significant differences in the mean level of support ($f=0.00$, $p=0.996$).

In looking at results, one concern I have is if my conditional variable did affect the relationship between the frames and the level of support. I expected that if elements from an individual's gender schema were reflected in the frames used to discuss the Clean Air Act, then that individual would be more supportive of the issue. However, in looking at the average mean support across treatments and across levels of high and low gender egalitarianism, I notice that the means are largely the same. Unlike Winter's (2008) study of using gendered frames to discuss non-gendered issues, like Social Security, I did not introduce gender primes before participants read the assigned article. In Winter's (2008) study, he introduced a priming statement that noted "on the average, women are more likely than men to care of children, and men are more likely to work outside the home" (195). Winter (2008) followed the statement

with questions like "do you think these differences are because women are biologically better-suited to care for children, while men are better-suited for paid work?" (195). Winter (2008) cited that using primes can "ensure the relevant schema was cognitively accessible" to participants (59). However, one of the reasons I chose not to use primes was because when Winter (2008) tested the effects of priming on a variety of nongendered issues, priming did not seem to increase level of support for the issues being framed (75). For example, when Winter (2008) used gender priming on his treatment group and no priming in his control group in his discussion of environmental spending, there was a marginal difference in level of support between the two groups (75). Overall, I could have used priming to fully ensure that participants accessed his/her gender schema before reading an article about the Clean Air Act that is framed in gendered ways.

Another reason why my study may not have allowed the connection to occur, between frame and gender schema, is the length of my article and my use of quotations. In comparison to Winter's (2008) articles, my articles were over a page longer. Winter (2008) created an article on Social Security that was two pages long and that primarily provided background information about Social Security and a couple of quotes from everyday people (185-185). Most of my article was discussing the pros and cons of the Clean Air Act primarily through the perspectives of people of different backgrounds. I think that if I had included more background information about the Clean Air Act and limited the number of quotes and comments by people, the article would have been shorter and more comprehensible. Participants may have stopped paying as much attention after reading four pages. Also, because my articles were mostly quotations and less focused on the facts of the Clean Air Act, participants may have been skeptical about the legitimacy of the article as a source of news

with so many different perspectives included. A way to improve the connection between schema and frame would be to include less appeals and a shorter article, in order to ensure that participants are engaged with the reading.

Lastly, social desirability bias could have factored into how participants answered the gender role questions (Latkin et. al 2017). Participants may have felt it would appear undesirable to disagree with statements that are more gender traditional. However, in looking at the field of politics, women are largely expected to be caretakers, to serve as mothers, and to renounce from work outside the home that could challenge such roles (Dittmar, Sanbonmatsu, & Carroll 2018, 79). Therefore, while my sample may appear to lean toward supporting gender egalitarian roles, such attitudes are not reflective of the cultural and social reality of the United States. Social desirability bias may have also contributed to an individual agreeing with the gender non-traditional statements, as gender non-traditionalism has become prominent with developments like the Women's March, same sex marriage, new waves of feminism, and the changing nature of the workplace as more women occupy jobs outside the home. Although race and racial bias has somewhat transitioned overtime, such as the development of the Civil Rights Movement or Black Lives Matter Movement, scholars have worked to developed nuanced measurements of modern "racial resentment" that use "subtlety and less social desirability bias" in order to understand "the complex ways race is enmeshed in modern political rhetoric" (Winter 2008, 97-98). Gender attitudes are not transitioning overtime to reflect societal changes. Therefore, scholars may need to reconsider developing more complex measurements that test the strength of gender role attitudes, particularly in how the endurance of those attitudes can affect judgement of non-gendered political issues and policies.

Scholars could also try to add more radical gender egalitarian items to see at what point individuals are more supportive of gender traditional roles. A researcher could flip the gender traditional statements I provided, like instead of saying "a husband should be the head of the family," they could say a "wife should be the head of the family" (Winter 2008, 196). By flipping a gender traditional statement to a gender egalitarian notion and then asking participants how they feel about the statements, there is the potential for more nuanced responses.

Gender Personality, Treatment, and Level of Support Results and Implications

In this section, I will look at why the interaction of treatment and an individual's conformity or nonconformity to the gender personalities of his/her sex did not produce significant differences in level of support for the Clean Air Act. What is interesting is that I had more male participants in my study (134), than female participants (82), but more female participants conformed to the gender personalities of their sex than male participants. While not all male and females were included into the scale of gender personality conformity, the larger theme is that females are typically expected to conform to the personalities of their sex. Females that run for office, for example, are expected to conform to feminine personality traits, but are also asked to display some masculine traits in order to demonstrate their worthiness in the masculine political sphere (McDermott 2016, 155).

One of the reasons why a significant relationship may not have developed between conformity or nonconformity to gender personality traits, treatment, and level of support is because of the prompt for the gendered traits. In looking back, I did not clarify to participants that he/she should rate the traits on how he/she typically feels, not how he/she may feel in the moment. I asked participants to "rate how well each trait applies to you" based on the prompt

use by McDermott's (2016, 177). No individual replied, "always true" or "never true" to each trait because traits rarely apply to how a person feels all the time or none of the time. The highest response average for participants was a "2" which meant he/she answered "neutral" to every question, which means that individual felt the traits applied sometimes. I based my response options off of McDermott's (2016) study. She gave participants the option of choosing from responses ranging from a 1 being "never or almost never true" to a 7 being "always or almost always true" with the responses in the middle (2-6) being blank (183). Rather than participants answering twelve questions with seven options, I decided to ask twelve questions with five choices and label each choice in order to increase internal validity.

McDermott (2016) based her questions off of the well-known BSRI (Bem Sex Role Inventory) created by Sandra Bem. In her reasoning behind choosing the BSRI, McDermott (2016) cited that desirability could play a factor into how respondents answer (38). Pedhazur and Tetenbaum (1979) found that when participants rate the "desirability" of the traits used in the BSRI, feminine traits were seen as more undesirable than masculine traits (996). The results of Pedhazur and Tetenbaum's (1979) study demonstrated how masculine traits, such as leadership or individualistic, can demonstrate strength and respect, while feminine traits, like warm and gentle, can equate to weakness. In looking at how respondents answered to feminine versus masculine traits in my survey, responses were not consistent. For the trait of "gentle," for example, the mean was 2.96, which means that participants answers fell between the responses of "neutral" and "occasionally true." In addition, the mean for compassionate was 2.92 and the mean for affectionate was 2.83. For the trait of "strong personality," the mean was 1.02 and "defends beliefs" as 0.84. Since the traits were considered traditionally masculine and all of the traits were coded as feminine, a mean of 1.02 indicates leaning toward "occasionally

true." While such a small snapshot may show that participants shows the selected feminine traits as occasionally true and neutral and the selected masculine traits as falling more toward occasionally true, I cannot rule out that social desirability bias may have factored in participants' responses. More modern research can be done to build off of Pedhazur and Tetenbaum's (1979) critique of the BSRI.

In building off of social desirability bias, no individuals in my survey answered as "other," when asked "what is your sex?" Participants may have been turned off by the binary that I proposed by offering only male, female, and "other" as options. Participants may have felt uncomfortable with writing in the space provided under the response "other" and decided to choose male or female or abstain from answering the question all together (2 respondents refrained from answering). If given more time, it would be interesting to do a study that provided more response options than "other" to individuals and to see how answering outside the binary would interact with gendered framing of non-gendered issues.

Another weakness of my study of gender personalities is that I measured participants as either conforming or not conforming to the gendered traits of his/her sex. In the original study by McDermott (2016), she had the classification of conforming but branched off to include three classifications of nonconforming: cross-typed (males are above average on feminine traits and females are above average on masculine traits), androgynous (above averages of masculine and feminine traits for both males and females), and undifferentiated (below averages on masculine and feminine traits for both males and females) (51). McDermott (2016) hypothesized that "gender-conforming and undifferentiated individuals will be the most supportive of traditional sex roles, cross-typed with be less supportive, and the androgynous will be least supportive" (145). As I wanted to primarily focus on creating a

rigid dichotomy in how participants conform or do not conform to the gendered traits of each sex, my study could have added more categorizations of nonconforming in order to see if there is a significant relationship with support. In reality, many individuals do not fully conform to the gender personality of his/her sex. People are multi-faceted and complex, with certain traits, like "makes decisions easily" being present at some of the time while traits such as "compassionate," can be present at other times (McDermott 2016, 186).

Concluding Remarks and Future Research

The observations in my Independent Study rejected my hypothesis that if an individual receives a frame that is "congruent" to the attitudes of their gender schema, or elements of their gender schema resonate with elements in the frame, then he/she will be more supportive of the Clean Air Act (Winter 2008, 26). I also rejected the other component of my hypothesis: if an individual receives a frame that challenges the notions in their gender schema, then that individual will be less supportive of the Clean Air Act. I was not able to see significant differences in level of support based on the interactions between treatment and an individual's gender role attitudes or treatment and an individual's gender personality. Since I had a lack of variation in my dependent variable, as participants were strongly supportive of the Clean Air Act, there was difficulty in understanding how an individual's gender schema interacted with the gendered framing in the treatment groups. While my survey participants demonstrate support for gender egalitarian roles and gender nonconformity, I would be interested in understanding how much of that lack of variation is due to social desirability bias and/or is reflective of the changing gendered expectations of American society.

While my study did not find a significant interaction between an individual's gender schema and a gendered frame, gender is still a relevant discussion in conveying the significance

of environmental issues and policies. Additional work could be done to test Winter's (2008) implication theory regarding the gendered framing of environmental issues. Future research has the opportunity to frame different environmental issues, besides air pollution, to see if they interact with an individual's gender schema in significant ways. As I found in my literature review, females were more concerned about local environmental issues because females are traditionally socialized to think about issues that can directly affect the wellbeing of their loved ones and their community (Stern, Dietz, & Kalof 1993; Blocker & Eckberg 1989). Future studies could frame local environmental issues or policies in gender traditional ways to draw upon this gap in environmental concern. A researcher could look at Brough et al.'s (2016) study to see if the "masculine branding" of issues, or the reaffirming of males' masculinity through incorporating gender traditional personalities and roles, can also persuade males to be as interested in local environmental issues as females (580). Additionally, future studies could look more into the basis of apathy toward environmental degradation. While my study did not look at this consideration, it would be interesting to understand why Americans, in particular, are not using their representative democracy to engage in critical discussions about impending environmental issues.

Lastly, I intended to create a quantitative study that surveyed individuals from a gender unequal country and a more gender equal country about an international environmental policy. I wanted to understand the strength of individuals' gender schemas in different societal contexts, particularly when they interacted with frames that challenged or confirmed the considerations within the schemas. Also, I normatively wanted to see if the United States had more participants with gender traditional schemas and if the chosen gender equal country had more gender non-traditional schemas. However, in attempting to narrow down which countries

would be best to provide a survey, I found that more gender equal countries were also typically more sustainable too ("Global Gender Gap Report" 2018; "2018 EPI Results" 2018). Therefore, I may have had a lack of variation in my dependent variable, level of support for the chosen policy, and a lack of variation in my conditional variable, an individual's gender schema. Overall, future research could analyze if there are gender differences in environmental concern in gender equal countries. Also, future studies could see if citizens from more gender equal countries consider gender as a valuable part of conversations about non-gendered issues.

Environmental issues affect the livelihoods of everyone. Americans, in particular, have the opportunity to communicate with their representatives about the dire need to address critical environmental concerns. In order to begin addressing environmental issues, such as air pollution, people have to internally acknowledge that the issues are important. How political issues are framed can affect how people understand the issues, develop attitudes, and pursue actions. Communicators have to acknowledge that because each individual is multi-faceted in their beliefs, attitudes, and experiences, there will not be the same understandings of political issues. Similarly, the environment is a multi-faceted issue area that intersects with economic, cultural, and social considerations, to name a few. By using frames to highlight certain considerations over others and by considering the perspectives of the targeted audience, communicators have the opportunity to inspire political engagement. As the environment continues to degrade, individuals need to be empowered to push policymakers to develop environmental policies that could change the planet's bleak trajectory.

Appendix A- HSRC Approval

College of Wooster IRB *Approval Notification*

To: Grace Montgomery
From: Grit Herzmann, HSRC Chair
Subject: Protocol #2019/11/34
Date: 12/09/2019

The protocol **#2019/11/34, Mother Nature and "Menvironmental" Politics: How an individual's gender schema affects support for the Clean Air Act** has been approved by the Human Subjects Research Committee on **12/09/2019**.

The approval of your study is valid through 12/08/2020, by which time you must submit an annual report either closing the protocol or requesting permission to continue the protocol for another year. Please submit your report by **11/10/2020** so that the HSRC has time to review and approve your report if you wish to continue it for another year.

If you have any questions, feel free to contact me.

Grit Herzmann,
HSRC Chair
gherzmann@wooster.edu

Appendix B: Survey Questions

Support for Environmental Pollution Policies
Principal Investigator: Grace Montgomery

Purpose
You are being asked to participate in a research study that aims to understand how your political attitudes affect your support for environmental pollution policies.

Procedures
If you decide to volunteer, you will be asked to read an article about an air pollution policy. You will then be asked to answer questions about your level of support for the air pollution policy. You will also be asked questions about your demographics, such as your age, sex, and political affiliation. To read the article and answer the questions should take no longer than 15 minutes to complete.

Risks
There are no risks to participating in the survey.

Benefits
There are no direct benefits to you for your participation. An indirect benefit is the researcher's appreciation for your contributions to the study.

Compensation
Participants will be rewarded $1.00 to their MTurk account to read the article and answer questions afterward.

Confidentiality
Any information, such as your Worker ID, will be confidential and will not be traced back to you.

Costs
There is no cost to you beyond the time and effort required to complete the procedures described above.

Right to Refuse or Withdraw
You may refuse to participate in the study. If you decide to participate, you may change your mind about being in the study and withdraw at any point during the survey.

Questions
If you have any questions, you can email me at jmontgomery20@wooster.edu or my advisor, abos@wooster.edu.

Consent
By clicking the arrow at the bottom of the page, you consent to participate in the study, certify that you have read and that you understand the information provided above, and that

you are at least 18 years of age.

This survey has been approved by the Human Subjects Research Committee at the College of Wooster HSRC (2019/11/34)

You will be asked to read a Columbus Dispatch Article about the Clean Air Act, an air pollution policy. Please read the article carefully, as there will be a few questions asked about what you read. If you are reading on a mobile device, please make sure to scroll all the way over to read each sentence. You will also be asked to answer questions about your demographic information and your political attitudes.

Insert Randomly Assigned Treatment

Please answer agree or disagree to the questions below. Keep in mind the mission of the Clean Air Act : "To protect human health and the environment from emissions that pollute ambient, or outdoor, air by establishing minimum national standards for air quality."

1. Do you believe the Clean Air Act is helping the people of the United States to live healthy lives?
    -Agree
    -Disagree
2. Do you believe the Clean Air Act helps clean the environment?
    -Agree
    -Disagree
3. Do you want the Clean Air Act to be discussed in your state?
    -Agree
    -Disagree

The Clean Air Act focuses on how men and women are affected by air pollution in the home and in the workplace. Please answer if you agree or disagree with the following statements.

4.Women ought to have the same chances as men to be leaders at work.
    -Agree
    -Disagree
5. A husband should be the head of the family
    -Agree
    -Disagree
6. Women can handle job pressures as well as men.
    -Agree
    -Disagree
7. The entry of women into traditionally male jobs should be discouraged.
    -Agree
    -Disagree
8. A husband's job is to earn money; a woman's job is to look after the home and family.

-Agree
-Disagree

9. Housework should be shared equally when men and women work outside the home.
-Agree
-Disagree

Please answer, to the best of your ability, the following few questions about the article you read.

10. What was the environmental problem being discussed in the article?
-Water Pollution
-Air Pollution
-Oil Spills

11. What city was featured in the article?
-Cleveland
-Dayton
-Columbus

12. What did city residents do in the article?
-Wrote a petition
-Attend a meeting held by City Council
-Participated in a rally

Please answer the following demographic questions.

13. Please enter your age in years.
(Insert Response)

14. What is your race?
-Hispanic or Latino
-Not Hispanic or Latino

15. What is your ethnicity?
-Alaska Native
-American Indian
-Asian
-Black or African American
-Native Hawaiian and other Pacific Islander
-White
-Other (Insert Response)

16. What is your sex?
-Male
-Female
-Other (Insert Response)

17. Check the answer that best describes where you live.
    -Rural
    -Urban
    -Suburban

18. What is your political affiliation?
    -Democrat
    -Republican
    -Independent
    -Something Else

The questions below are single personality traits. Please rate how well each trait applies to you.

19. Warm
    -Never True
    -Rarely True
    -Neutral
    -Occasionally True
    -Always True

20. Dominant
    -Never True
    -Rarely True
    -Neutral
    -Occasionally True
    -Always True

21. Defends Beliefs
    -Never True
    -Rarely True
    -Neutral
    -Occasionally True
    -Always True

22. Makes Decisions Easily
    -Never True
    -Rarely True
    -Neutral
    -Occasionally True
    -Always True

23. Tender
    -Never True
    -Rarely True

-Neutral
-Occasionally True
-Always True

24. Sympathetic
-Never True
-Rarely True
-Neutral
-Occasionally True
-Always True

25. Leader
-Never True
-Rarely True
-Neutral
-Occasionally True
-Always True

26. Affectionate
-Never True
-Rarely True
-Neutral
-Occasionally True
-Always True

27. Individualistic
-Never True
-Rarely True
-Neutral
-Occasionally True
-Always True

28. Strong Personality
-Never True
-Rarely True
-Neutral
-Occasionally True
-Always True

29. Compassionate
-Never True
-Rarely True
-Neutral
-Occasionally True
-Always True

30. Gentle

-Never True
-Rarely True
-Neutral
-Occasionally True
-Always True

Now we would like to ask you to respond, to the best of your ability, with your attitudes about American politics. Please answer your general feelings regarding each statement.

31. The government of the United States should do more to help the environment.
-Like a great deal
-Like a moderate amount
-Like a little
-Neither like nor dislike
-Dislike a little
-Dislike a moderate amount
-Dislike a great deal

32. The economy needs to be prioritized before the government.
-Like a great deal
-Like a moderate amount
-Like a little
-Neither like nor dislike
-Dislike a little
-Dislike a moderate amount
-Dislike a great deal

33. The United States is a politically polarized country.
-Like a great deal
-Like a moderate amount
-Like a little
-Neither like nor dislike
-Dislike a little
-Dislike a moderate amount
-Dislike a great deal

34. The United States needs to focus on its own problems before looking at the problems of other countries.
-Like a great deal
-Like a moderate amount
-Like a little
-Neither like nor dislike
-Dislike a little
-Dislike a moderate amount
-Dislike a great deal

35. Voting is an effective way for me to be involved in the political process.
    -Like a great deal
    -Like a moderate amount
    -Like a little
    -Neither like nor dislike
    -Dislike a little
    -Dislike a moderate amount
    -Dislike a great deal

Your responses have been recorded. Thank you for your participation. Please copy the code below into the survey code box provided by MTurk.

Thank you again for participating in this study.

At the beginning you were asked to read an article from the Columbus Dispatch about the Clean Air Act. While the article was created to appear like articles by the Columbus Dispatch, the content of the article was fictional. That is, the Ohio State Legislature, Ohio EPA, and the Columbus City Council are not currently considering the value of the Clean Air Act in Ohio. It was necessary to create the news articles to discuss the benefits and shortcomings of the Clean Air Act in the United States.

The news article you read may have contained fictitious testimonies from Ohio citizens, researchers, politicians, and representatives from the Ohio EPA. We are testing if people are more supportive of issues that are framed in gender traditional or nontraditional ways. Some participants read statements about the Clean Air Act from females and males who assumed nontraditional gender roles and behaviors., such as females acting as strong, political leaders. Some participants read statements about the Clean Air Act from males and females who assumed traditional gender roles and behaviors, such as males acting as assertive, leaders and females acting as concerned mothers.

Thank you for your time and participation. If you have any questions about the purpose or procedures involved in this study or are interested in the results, please contact Grace Montgomery. If you have further questions, you may contact my advisor, Professor Angie Bos, at abos@wooster.eduor her phone number of (330)- 263- 2411. Further questions or concerns regarding your rights as a study participant, you may contact the Human Subjects Research Committee at the College of Wooster at https://www.wooster.edu/info/hsrc/.

Thank you.

Grace Montgomery
Jmontgomery20@wooster.edu

Appendix C: Treatment Groups

Control Group- Group 1

The Columbus Dispatch

Ohio House of Representatives, Ohio Residents, and Columbus City Council meet to discuss value of the Clean Air Act

By Alan Craig and Jennifer Stanley

Posted December 12 at 11:50 AM

On Tuesday, the Ohio House of Representatives revisited Ohio's commitment to the Clean Air Act. The discussion was prompted by calls from the EPA to ensure that Ohio is cleaning the air of pollutants that are harmful to human health.

In 1963, the Clean Air Act was passed in order to improve the air quality of the United States. According to the EPA's website, The Clean Air Act requires the EPA to develop National Ambient Air Quality Standards (NAAQS) in order to control pollutants that are "considered harmful to public health and the environment." These pollutants include carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particle pollution. States monitor pollutant levels and submit reports to the EPA about the state's air quality.

After listening to testimonies from the Ohio EPA, the Ohio House concluded that more work could be done to improve Ohio's commitment to clean air and to a healthy environment. Since 1970, the Act has reduced the common air pollutants by 73%. Most recently, in 2018, the EPA awarded the Ohio EPA a $1.6 million grant to promote the implementation of more clean air programs.

In continuing the discussion from Tuesday at the State House, about 100 Columbus residents met at the Columbus City Council chambers last night to discuss the effectiveness of the Clean Air Act. Some residents complained of a local oil refinery, operated by the Ohio Oil Company in the suburb of Grove City, causing asthma and lung cancer.

Since the participants seemed to want to continue discussions about the Clean Air Act at the close of the meeting, another meeting has been scheduled in January at the Columbus City Council chambers to continue the discussion. To learn more about the Act visit https://gispub.epa.gov/air/trendsreport/2018/#naaqs.

The Columbus Dispatch

Ohio House of Representatives, Ohio Residents, and Columbus City Council meet to discuss The Clean Air Act

By Alan Craig and Jennifer Stanley

Posted December 12 at 11:50 AM

Ohio Oil Company nearby a local pond in Grove City (Photo taken by Alex Johnson).

On Tuesday, the Ohio House of Representatives revisited Ohio's commitment to the Clean Air Act. The discussion was prompted by calls from the EPA to ensure that Ohio is cleaning the air of pollutants that are harmful to human health.

In 1963, the Clean Air Act was passed in order to improve the air quality of the United States. According to the EPA's website, The Clean Air Act requires the EPA to develop National Ambient Air Quality Standards (NAAQS) in order to control pollutants that are "considered harmful to public health and the environment." These pollutants include carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particle pollution. States monitor pollutant

levels and submit reports to the EPA about the state's air quality.

Donald Roberts, a representative from the Ohio EPA, testified on the House floor that the Clean Air Act has been a successful project, but more work could be done.

"Since 1970, the Act has reduced the common air pollutants by 73%. Most recently, in 2018, we were awarded by the EPA a $1.6 million grant to continue the implementation of our program. My colleague, Dr. Russ Jones, has been helping me lead a team of researchers to monitor pollution levels in urban areas around Ohio. We want to make sure Ohio families are safe and healthy. "

While the Clean Air Act has shown success, there is still work that needs to address the intersection between air pollution and the economy. Representative Richard Brown, a Democrat from District 20, discussed the progress Ohio has made while he was in Columbus looking at the new national headquarters for Home Depot.

View of Downtown Columbus amongst smog in 2011(Photo taken by Alex Johnson).

"The Clean Air Act can grow the economy by ensuring that workers have higher safety standards in their place of work. I have personally sought to talk and visit with different refineries and businesses around Ohio to see how we could continue profits and also continue to monitor air quality."

After the discussions on the House Floor, an assistant for Donald Roberts, Gina Stevens, was asked about what everyday people can do to help with air pollution.

"Mr. Roberts always wants people to feel like they can make a difference. At home, I try to reduce my electricity consumption and use fewer air fresheners to clean the house. We can all feel included in the conversation about air pollution by doing small, simple things like this. Mr. Roberts is planning a forum with the City Council in a couple of days for everyday citizens to talk about air pollution and what they can do to help too."

About 100 Columbus residents met at the Columbus City Council chambers last night for two hours to discuss the effectiveness of the Clean Air Act.

Emmanuel Remy, the Chair of the Environment Committee for the Columbus City Council, opened discussions with the significance of the event.

"The goal of this meeting is to give you all the opportunity to bring up concerns about air pollution. My councilmembers, the Ohio EPA, and I want to understand how we can work with the state legislature to push your concerns forward and to make Ohio a healthier place to live."

Some residents complained of a local oil refinery, operated by the Ohio Oil Company in the suburb of Grove City, causing asthma and lung cancer.

Louisa Stewart, a native of Columbus, opened up comments by talking about how air pollution is an issue that hits close to home.

"When I was younger, my family used to live by the Ohio Oil Company Refinery. I could see the clouds from the smokestacks as they slowly headed toward our house. I wish we didn't have to live by there for as long as we did, but my father had a good-paying job at that refinery. A lot of families, like mine, had to accept the health consequences of living near a refinery and the benefits, like good-paying jobs, that came with the presence of the Ohio Oil Company."

Donald Roberts noted that the Clean Air Act is a way to ensure that the economy and human health can thrive.

"We are working to make the manufacturing sector a healthier profession. The Clean Air Act is ensuring that workers are more productive by working in healthier conditions. We have seen the economy grow 70% with the presence of the Clean Air Act. By improving the technology of the manufacturing sector, we are making sure the United States is competitive globally."

One of the central themes of the meeting was to look at how individual contributions matter in creating better air quality.

"When I drive to work, I try to make sure that I limit my use of air conditioning. I also do not spray my car with air fresheners like I used to," said Columbus City Schools teacher, Emma Smith.

Local automotive technician, Russ Byers, also brought up the role of the automotive industry.

"While I think it is important that we understand the impact that humans have on the environment, I do not like the idea of how helping the environment can limit my choices. I have started working on so many more green cars in my shop, like Prius'. After working on them, I just do not want to compromise or feel ashamed that I prefer driving my reliable, strong Ford 150 over the low-horsepower of those green cars."

Remy commented in response to Byers about the automotive industry.

"The goal is not to shame people to help the environment. We are living in an age where our decisions impact others. Technology is developing to the point where we can still have control of decisions, like what cars we buy, without having to sacrifice our personal desires."

The meeting ended with participants wanting to continue discussions about the Clean Air Act. Another meeting has been scheduled in January at the Columbus City Council chambers to continue the discussion. To learn more about the Act visit https://gispub.epa.gov/air/trendsreport/2018/#naaqs.

The Columbus Dispatch

Ohio House of Representatives, Ohio Residents, and Columbus City Council meet to discuss The Clean Air Act

By Jennifer Stanley and Alan Craig

Posted December 12 at 11:50 AM

Ohio Oil Company nearby a local pond in Grove City (Photo taken by Alex Johnson).

On Tuesday, the Ohio House of Representatives revisited Ohio's commitment to the Clean Air Act. The discussion was prompted by calls from the EPA to ensure that Ohio is cleaning the air of pollutants that are harmful to human health.

In 1963, the Clean Air Act was passed in order to improve the air quality of the United States. According to the EPA's website, The Clean Air Act requires the EPA to develop National Ambient Air Quality Standards (NAAQS) in order to control pollutants that are "considered harmful to public health and the environment." These pollutants include carbon monoxide, lead, nitrogen

dioxide, ozone, sulfur dioxide, and particle pollution. States monitor pollutant levels and submit reports to the EPA about the state's air quality.

Gina Stevens, a representative from the Ohio EPA, testified on the House floor that the Clean Air Act has been a successful project, but more work could be done.

"Since 1970, the Act has reduced the common air pollutants by 73%. Most recently, in 2018, we were awarded by the EPA a $1.6 million grant to continue the implementation of our program. My colleague, Dr. Louisa Stewart, has been helping me lead a team of researchers to monitor pollution levels in urban areas around Ohio. We want to make sure Ohio families are safe and healthy. "

While the Clean Air Act has shown success, there is still work that needs to address intersection between the economy and air pollution. Congressional Representative Mary Kaptur Brown, a Democrat from District 9 that has served Ohio for 36 years, discussed the progress Ohio has made while she was in Columbus looking at the new national headquarters of Home Depot.

View of Downtown Columbus amongst smog in 2011 (Photo taken by Alex Johnson).

"The Clean Air Act can grow the economy by ensuring that workers have higher safety standards in their place of work. I have personally sought to talk and visit with different refineries around Ohio to see how we could continue profits and also continue to monitor air quality."

After the discussions on the House Floor, an assistant for Gina Stevens, Donald Roberts, was asked about what everyday people can do to help with air pollution.

"Ms. Stevens always wants people to feel like they can make a difference. At home, I try to reduce my electricity consumption and use fewer air fresheners to clean the house. We can all feel included in the conversation about air pollution by doing small, simple things like this. Ms. Stevens is planning a forum with the City Council in a couple of days for everyday citizens to talk about air pollution and what they can do to help too."

About 100 Columbus residents met at the Columbus City Council chambers last night for two hours to discuss the effectiveness of the Clean Air Act.

Ellen Remy, the Chair of the Environment Committee for the Columbus City Council, opened discussions with the significance of the event.

"The goal of this meeting is to give you all the opportunity to bring up concerns about air pollution. My councilmembers, the Ohio EPA, and I want to understand how we can work with the state legislature to push your concerns forward and to make Ohio a healthier place to live."

Some residents complained of a local oil refinery, operated by the Ohio Oil Company in the suburb of Grove City, causing asthma and lung cancer.

David Stewart, a native of Columbus, opened up comments by talking about how air pollution is an issue that hits close to home.

"When I was younger, my family used to live by the Ohio Oil Company Refinery. I could see the clouds from the smokestacks as they slowly headed toward our house. I wish we didn't have to live by there for as long as we did, but my father had a good-paying job at that refinery. A lot of families, like mine, had to accept the health consequences of living near a refinery and the benefits, like good-paying jobs, that came with the presence of the Ohio Oil Company."

Gina Stevens noted that the Clean Air Act is a way to ensure that the economy and human health can thrive.

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Local automotive technician, Emma Byers, also brought up the role of the automotive industry.

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