Who will save the world?
A cross-cultural study of how our social and physical environments shape climate change perspectives and behavior.

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Abstract

In the face of increasing climate change threats, the way humans decide to respond is key in mitigating and adapting to this environmental shift. By better understanding which factors encourage or discourage individuals in taking pro-environmental behaviors, we can make systematic changes to maximize our reach in ensuring a future generation of mobilized global citizens who are motivated to limit the impacts of climate change. This study seeks to extrapolate life course factors which affect a person's self-efficacy and desire to engage in environmentally responsible behaviors to mitigate climate change. There is a long history of research in environmental psychology that aims to identify factors that motivate individuals to take on pro-environmental behaviors. Our work relies on this canon, specifically on the Modified Theory of Planned Behavior (Kaiser, Wolfing, & Fuhrer, 1999). We conducted 32 semi-structured interviews with individuals from different backgrounds between the ages of 18-40 years old, as this is the generation we believed to make the biggest impact in the near future in terms of climate change mitigation and adaptation. We found four prominent factors to have the greatest effect on people's pro-environmental behaviors: education, cultural norms, socio-economic status, and cross-cultural experiences. However, none of these factors exist in a vacuum, but rather they oftentimes influence each other. The results of this study are presented in a short documentary film which aims to employ the power of personal narratives to encourage reflection and mobilization of young people to become environmentally responsible citizens.

 1. Introduction

1.1 Topic introduction

In the face of increasing climate change threats, the way humans decide to respond to this environmental shift is key to attempting to mitigate it. Country leaders, communities, individuals, minority communities and those in power, the elderly and children -- they are all reacting to climate change in varied ways. Within these groups, individuals differ significantly in firstly, their belief in the anthropogenic nature of climate change, and secondly how to respond and adapt. We must ask what are the drivers that lead some individuals to care and act upon climate change mitigation while others do not feel that they can or should?

The 17 Sustainable Development Goals are a strong path set forth by the United Nations. These efforts attempt to achieve various interlinked targets that can greatly aid in the slowing down of climate change. The goals not only set a path for pro-environmental actions but also consider the continual impact of a growing economy, maternal health, and a reduction in poverty as issues to address as a whole. The interdependent nature of these goals allow for each one of us to play a role on a small or large scale, and it can be said that strength comes from varied perspectives. The United Nation Development Program addresses this very issue of unity and brings to light the many ways in which we can inspire individuals to let go of their differences to protect what gives us life (UNDP, 2008).

While the members of this research team are from different parts of the world, the effects of climate change are widespread and affect our countries of origin on different levels and in different ways. We all have a strong affinity for the environment, which has been a direct result of either our education or what our elders inculcated within our habits growing up. Additionally, what we saw around us, whether in environmental events, the behaviors of others, or media coverage of climate change issues, has also impacted our perceptions. By further exploring such differing sources of inspiration to develop pro-environmental behaviors, we strive to develop a deeper understanding about how individuals can be motivated to make positive environmental change.

Our ability to respond to climate change is largely impacted by our agency. We recognize that there are certain factors that play a crucial role as drivers of this sense of personal agency, as well as outside factors like socioeconomic status and gender that also play an important role in how a person responds to the effects of climate change. Consequently, we have selected a small group of these factors to use as variables in order to better understand different ways climate change perspectives are determined and constructed and their relationship to pro-environmental behaviors.

1.2 Need for this research

To understand how we might create a sustainable future for all, we want to explore the factors and variables that impact our proactiveness and willingness to make change by asking the overarching question of "what factors of our life course affect our ability and willingness to be proactive about climate change?" Of the many factors that likely have an affect on climate change behaviors and attitudes, we have chosen five on which to focus: education, demographics, age of exposure, social and cultural norms, and socioeconomic status. This research also works to better understand what drives someone to commit to personal pro-environmental lifestyle choices, while others may (also) choose to engage in organized environmental advocacy. In addition, this research also attempts to further explore the factors that affect a person's self belief based on internal and external factors. For example, the questions that will be asked during our research in interviews will allow individuals to express their views on what it will take to make change in our world and what their role could be.

This research will culminate in recommendations for communicating a sense of agency to those who feel as though their actions have no effect, as people should understand that climate change mitigation requires collective action. Everyone has a different reality, but we ultimately need to come together to change our habits and reduce the effects of environmental damage humans have produced. We hope to reach people through the medium of film, and inspire a desire to change behaviors and habits. The hope of our research is that it may help to promote pro-environmental attitudes and confront apathy and indifference, and parse whether perspectives can change. In order to move forward we feel it fundamental for sustainability to be at the forefront of social action.

Studies (Hines et al., 1987; Grob, 1995 and Kaiser et al., 1999) have explored the Theory of Planned Behavior and expanded specifically on the relationship between knowledge and attitude, and which factor or factors influence one's choice to pursue pro-environmental behaviors. Based on these studies on environmental psychology and behavior, this qualitative research effort incorporates the medium of documentary film to better understand how social and physical environments shape perceptions of climate change and one's ability and willingness to be proactive about its mitigation. The medium of film showcases a story that cannot otherwise be documented in the same personal format. By choosing to conduct this study in a more visual manner, we will be able to collect personal testimonials that allow us to gain an in-depth understanding by directing the conversation but will also allow us to reflect upon our findings in real time to create a study that provides the most practical recommendations. Many stories have been told of what climate change is doing to our home. But not many have explored those who are impacted in an attempt to learn about who wants to do more and how we can give them the tools. We also want to learn about those who do not feel the need to take immediate action and how we can change their attitudes and behaviors. To ensure that this short documentary is able to impact the target audience, we will use several recent studies that inform techniques for effective messaging (Moser, 2009)

and the framing of interview questions (Lorenzoni et al. (2007), Alisat & Riemer (2015), and Larson et al. (2015)).

Various studies have been conducted to understand the role of culture and norms and values within countries in shaping an individual's likelihood to act in pro-environmental ways. Many of these are based on bi-national surveys (Lorenzoni & Pidgeon, 2005; Mancha & Yoder, 2015), and oftentimes do not compare individuals in countries that are considered to be in a different stage of development. For instance, Lorenzoni and Pidgeon (2005) provide 15 years of data regarding climate change perspectives across the United States and Europe. By including perspectives from four different nations which each rank differently in terms of economy and welfare, we will build on this research to provide more comprehensive and inclusive data.

We seek to add to the body of published research on environmental psychology, but specifically in relation to personal pro-environmental behavior change in relation to climate change. Based on the factors we hope to explore in our documentary, our understanding of the published research mentioned will greatly enhance our study and understanding on the topic.

Kaiser, Wolfing, & Fuhrer (1999) adapted the Theory of Planned Behavior, stating that "attitude includes not just the evaluation of a certain outcome but also the estimation of the likelihood of this outcome" (p. 3). Using this study, we hope to explore the concepts of self-efficacy and locus of controls that give or take agency from an individual. At the same time, they also say that "[s]alient information or factual knowledge is a necessary precondition for any attitude", which brings light to the impact of education on one's behavior. Keeping this in mind, we also learn through this theory that individuals tend to adapt their attitudes to their behavior, rather than adapting their behavior to their attitudes, particularly when a behavior seems obligatory in some way. In this case the question of causation arises as to what led to the build up of those attitudes leading to behavior change.

As for affecting behavior change, or positive environmental behaviors, Grob (1995), found that "... the most important effects on environmental behavior come from personal-philosophical values… The weakest effect was due to factual environmental awareness [knowledge], contrary to general opinion" (p. 215). In this case, the question of the chicken or egg arises as personal values are also at some level affected by knowledge passed over from generation to generation. This knowledge could be formal or informal, but finding its root could allow educators, parents and other influencing factors to nurture the growth of values. To support this, Hines, Hungerford, & Tomera (1987) found that knowledge is directly linked to environmental behavior change as they stated that "[t]hose individuals with greater knowledge of environmental issues and/or knowledge of how to take action on those issues were more likely to have reported engaging in responsible environmental behaviors than were those who did not possess this knowledge" (p. 3). As for knowledge, it is directly linked to moral norms that have been found to directly affect behavior change. Another study that relates affective reactions towards climate change is Sheppard's "Landscape visualisation and climate change: the potential for influencing perceptions and behaviour" (2005). This study looks into how landscape visualization effectively contributes towards people's perspectives on climate change and their awareness possible willingness to be proactive about it.

The perspective of climate change and individual's proactiveness to act upon it in the United States is dictated by the possible change in lifestyles, therefore seen as a threat for them and a necessity to act (Lorenzoni & Pidgeon, 2005, p. 87). This leads the study to then discuss possible instances where individuals actually want to act upon this issue and mentions that "[p]eople are not likely to support initiatives addressing climate change unless they consider the issue a very serious societal or ecological

problem, or one affecting them personally." (p. 87) The authors of the study state that perceptions of climate change are defined by varied understandings of agency, responsibility and trust. Furthermore, they mention that action is most likely to take place when individuals feel that they can make a difference and it has to do a lot with the trust in the local government as well as institutional capabilities (p. 88).

Keeping in mind these previously conducted studies, we specifically want to learn more about the role which education, learnt versus habitual teachings, and social norms play in better understanding the value of and caring for the environment. We hope to explore the interconnections of the above mentioned factors in the actions, daily or on a larger scale, that one chooses. The variables we hope to explore take into account our life course, such a:

- · Education
- · Demographics
- · Age of exposure to the concept of climate change
- · Social and cultural norms

The following research questions serve as a basis for guiding our research effort:

- Which combination of factors over the course of our lives influence our ability/willingness to take pro-environmental actions to address climate change?

> · To what extent does education affect the way an individual behaves in relation to climate change?
> · How does cultural background or social norms affect the degree to which an individual is proactive in behaviors regarding climate change?

- How do habits developed at a young age affect climate-conscious behavior in comparison to knowledge learned at a later stage in life?

- How does environment affect a person's internal locus of control and desire to engage in environmentally responsible behaviors to mitigate climate change?

> · How much of an internal locus of control do those in different socioeconomic strata feel that they have?
> · In what ways does one's social environment growing up impact one's propensity to care and ultimately take actions to address climate change?

The questions above, based on well-defined variables, will allow us to learn more about our interview subjects to gauge patterns in learning and behavior in order to put forth a set of recommendations for educators and policymakers. Our research is also a self-explanatory journey and will answer not just the overarching questions defined within the research but will answer personal questions as passionate environmentalists, activists, and advocates who hope to bring about real contextual change.

1.3 Literature review and relevant research

Various studies have shown the efficacy of using social groups to promote desirable behaviors, in particular framing one's identity in relation to the problem of climate change can result in feelings of investment and added interest. The relationship of frameworks to action and perception is one explored by Sapiains, Beeton and Walker (2016) who studied the a handful of frameworks they believed were most relevant in relating people to the issue of climate change. The four frames were; "traditional climate change", emphasizing scientific evidence, and a sense of urgency and moral obligation, "biodiversity conservation", which focuses primarily on the need to protect flora and fauna for their intrinsic, as well as their importance for ecosystem services, "identity" highlights the need to preserve the environment and in turn preserve "Australian lifestyle and culture", the final frame, "economic prosperity", stresses the importance of tackling environmental problems for the benefit of the economy. These frameworks encapsulate the primary ways researchers imagined people who believe in the reality of climate change might see as most pertinent. Using these frames, they were able to gauge which was most effective in eliciting a response for action and encourage people to become invested in making personal changes and acting on the issue of climate change.

Interestingly, and perhaps even unsurprisingly, the traditional frame of climate change proved to be one of the most ineffective likely as a result of its sense of moral duty, urgency and obligation, which ultimately resulted in pessimism and apathy. Using the frame of identity, where people related their sense of self, community and national history to the disruptive effects of climate change, proved to be most impactful. The identity framework has the ability to encourage feelings of belonging and a sense of collective identity, resulting in not just positive psychological results, but also effective and continued action.

Frameworks are not the only effective way to get individuals to think about the effects of climate change, Sheppard (2005) demonstrated the massive potential of "landscape visualisations" and how they might help to promote changes in attitude and behavior. Landscape visualizations are images of environments and landmarks that have been photoshopped to reflect the potential and estimated effects of climate change or environmental degradation. The effects of such images and models can be described as ranging from behavioral, affective, to cognitive. This is unsurprising as individuals are more likely to accept and act on things that they can understand and visualize, and in placing images of the effects of climate change or environmental degradation in neighborhoods and locations people already know, it, in a way produces a new framework.

Visualizations are also an essential strategy in getting stakeholders of a community to grasp what is at stake. In one model mentioned by Sheppard, he describes the potential loss of 80% of a forest range within the lifetime of residents of the area. If visualizations were used in communities across the country, even to highlight the ways in which potential projects like fracking, or mountain top removal will affect the landscape and the community, then we might feel more inclined to speak up against such actions. This use of these models may also allow for stakeholders to have the opportunity to adapt to potential changes over time, and prepare for the worst outcomes, for examples by projecting estimated sea level rise for a coastal town. The use of such models also highlights the idea that such outcomes are not as distant in the future as initially conceived, and might be important for creating more pressing dialogues on the realities we face, consequently aiding in shifting current perceptions and ideally then, actions and behaviors. Whether these changes in perception could be determined to be long term could not be assessed. Such research however also opens up the ethics of using such images and whether they could be misconstrued

as misrepresentation of facts. Landscape visualizations should be used cautiously and in tandem with the principle of the 3Ds; disclosure, drama, and defensibility. With a matter such as climate change, there is constant criticism and skepticism surrounding facts and data, visualizations while seemingly effective, should then of course be addressed with foresight and awareness so as not to further ferment feelings of distrust, especially considering the current political climate.

When considering other methods in which to further educate and motivate the public to act on climate change, it is also important to recognize how the diffusion or spread of such ideas occurs between individuals and larger social groups, and how socioeconomic status plays a role in action. Nawrotzki and Pampel (2013) used a massive data set of 43,310 people over 18 countries to examine 3 key components of environmental concern, cognitive, affective and conative (done intentionally). Through the use of nine survey items that reflected these stands they were able to reflect their beliefs. These statements capture an array of sentiments from: "Modern science will solve our environmental problems with little change to our way of living" to "People worry too much about human progress harming the environment" (Nawrotzki and Pampel, 2013).

 In their examination of cohorts determined that a "diffusion-of-innovation approach" was most effective in describing the relationship between education (which they also used as a primary measure for socioeconomic status) and environmental concerns. It would seem that those with status and access to resources, also indirectly influence the views of those in lower socioeconomic standing through a nonlinear way, and that in fact the positive association between class and environmental concerns is most apparent among older cohorts but that different research methods might grow to include younger cohorts as well. Perhaps then by influencing the wealthy and those in power to visibly change their habits, these shifts in attitude might then result in broader shifts across different social classes. Some of the limitations of this however are then the associations, which also currently exist, that sustainable practices are a luxury that only some can afford.

While all of these strategies for bolstering climate change awareness provide a solid basis for how scientists and environmental organizations might be able to shift the opinions of more individuals, there is still a fundamental shortcoming that presents itself as the value-action gap (Barr, 2006). Even when people know and understand the harms of certain behaviors, and the benefit of others, beneficial behaviors are not always self-evident. The range of a person's environmental actions cannot be assumed when looking at solely one behavior and assuming it to be homogenous and constant across. That is to say, an individual that recycles might not engage in other behaviors that are just as environmentally conscious. Habits do not always reflect beliefs; rather they might sprout out of convenience, societal expectations, conditioning, or any number of reasons. Furthermore while some individuals may be aware of the actions that should be taken, on the whole they are more likely to carry out an "environmentally friendly" deed if it convenient, normative, and easy. The value-action gap helps to explain and examine the discrepancies between beliefs and actions, and how in spite of knowledge on climate change and other environmental issues some people may chose still not to act. The reason for this contradictory behavior as Barr outlines is largely convenience.

Apathy and indifference in this way are just as much of an issue as lack of knowledge. Just as individual perceptions are important, building up form the micro-level and using different strategies like grassroots initiatives (Rees and Bamberg, 2014) might result in more sustained interest, as well as feelings of empowerment a desire to oppose current status quo environmental practices. This community-based collective action makes people feel more united and supported in their beliefs and practices, not only

reinforcing them but also rewarding them. As Rees and Bamberg point out there also needs to be a continued exchange between different fields like sociology, economics, psychology, ultimately climate change should be tackled across disciplines and fields.

The relationship between environmental action and social factors such as sense of identity, approval from others, and feelings of belongs are a continued theme (Rees & Bamberg, 2014; Sapiains, Beeton, & Walker, 2016) and one that we aim to explore further. The importance and potential use of theoretical frameworks to motivate changes in perceptions and actions is another key element of looking at currently relationships surrounding climate change (Sheppard, 2005; Sapiains, Beeton, & Walker, 2016; Barr, 2017). Although there is a need for further research, Sapiains et al.'s study in particular helps to cement the importance of framing in getting others to think about climate change. It is worth examining whether the frame of identity would hold true in Saratoga Springs as well. In communities that are so politically polarized, staying away from the term "climate change" might result in less bias.

While Nawrotzki is the only article to incorporate socioeconomic class, and none of the other articles mentioned here incorporate race, this capstone incorporates both of these factors in considering the level of agency that individuals have and perceive they have in acting on climate change. While sustainability is now largely seen as a "trend", it is theorized that those in lower socioeconomic positions actually contribute the least to climate change as a result of necessity in using less along with using items for longer, consequently producing significantly less waste than those in higher classes, and also reusing more.

It is undoubted however that there exists a popular conceptions of the "sustainability trend", one which makes such an idea seem inaccessible. Many people feel that sustainability in media and popular culture showcases the use of high-end products that are described as vegan and organic. These encompass everything from apparel to diet, and most prominently, lifestyle. All of which are seemingly inaccessible, as well as elitist. On the flip-side of this is the perception of those who are passionate about the environment as "crunchy granola" types, whose behaviors are also inaccessible to the layperson, and demand too much of those around them. These themselves are frames of how those who promote sustainability are seen. Perhaps in exploring the use of frameworks to motivate positive action, we should also consider the barriers in ideology and perception that already exist and detract from the goal of getting people to mobilize and act against climate change.

The significance of this research lies in the reality that climate change affects us all and consequently it will take a collective and concerted effort to combat its effects. While government awareness campaigns, regulations, agreements, and awareness are paramount, they may not always be effective in changing perspectives or behaviors. There is a lot to be said however of the effectiveness of social based strategies and the use of framing models to shift mindsets and attitudes.

While this study does not aim to tackle the issues of partisanship it is one still worth mentioning. With an increasingly polarized political climate, issues like those of the environment and climate change have also become even more polarized than they have in previous years. While it is our opinion that the issue of climate change is not a partisan issue but a human one, it would be reductionist to assume that others share this view as well. Our hope is that with this research and the use of more generalizable frameworks we can move towards a more comprehensive overhaul of systems that have proven to be detrimental.

1.3 Definitions

Agency: "an agent is a being with the capacity to act, and 'agency' denotes the exercise or manifestation of this capacity." (Stanford Encyclopedia of Philosophy, 2015).

Environmental knowledge: As we intend to use it in this capstone, encapsulates the sense of understanding and cultural associations that individuals have with their physical environments, and even their concept of the "natural" and the manmade, and the relationship these categories share.

Environmental perceptions or Environmental attitudes: "An individual's environmental preservation and utilization preferences as seen from attitudinal and behavioral points of view." (Bogner & Wiseman, 1999).

Environmental psychology: "The study of human behavior and wellbeing in relation to the socio-physical environment." (Stokols & Altman, 1987, p. 1).

Life course: "How chronological age, relationships, common life transitions, and social change shape people's lives from birth to death." (Hutchison, 2013, p. 8).

Locus of control: "People with an internal locus of control believe that their own actions determine the rewards that they obtain, and do have an effect on the environment...People with an external locus of control believe that their own behaviors don't matter much, and that rewards in life, or efforts to positively/negatively affect the environment are generally outside of their control." (Schneller, 2016).

Pro-environmental behavior/actions: "One's behaviors and/or habits in regard to conservation of natural resources and preservation/protection of nature and its biodiversity in order to reduce human impact on nature." (Schneller, 2016).

Self-efficacy: "The belief in one's capabilities to organize and execute the sources of action required to manage prospective situations." (Bandura, 1986, p. 2).

2. Methods

2.1 Population and setting

Our research focuses on which factors in individuals' socio-cultural and physical environments and in their life course shape their perceptions of and willingness to act upon climate change mitigation. We focused on different factors of life course that can potentially drive one's perceptions and actions. Our research participants were individuals born, brought up, and living in differing socio-cultural and physical environments, who were chosen to represent a varied population to give us a broad insight into people's motivations.

To select our interview subjects, we used purposive sampling and quota sampling to ensure consistency, yet diversity of our population (Creswell, 1994). The pool of interviewees included individuals in our home countries (United States, India, Ecuador, and the Netherlands), students and staff at Skidmore College, a small liberal arts college located in Saratoga Springs, New York, and young professionals in the city of Saratoga Springs. Among these individuals were United States citizens as well

as people who have been born and raised elsewhere, people living in their home culture and people living abroad, and individuals likely to care about climate change (for instance those working in the sustainability sector) and those who are not, in order to understand the exact factors that have triggered their agency.

The population we investigated was comprised of 32 individuals ranging between the ages of 18 and 40 years old. These included Skidmore students of which 11 were domestic, and 13 were international, along with 5 domestic professionals, 3 international professionals and 3 non-research participants that were children and served exclusively for the purpose of the film. We chose this generation, because they are most likely to be able to act as change makers in the present and near future in the current critical stage for climate change mitigation. We also sought to find a diverse range of perspectives that would allow for a more rich and nuanced understanding of differing life courses. Additionally, by determining an age range for our research population, we can eliminate the factor of gaps in knowledge and exposure to climate change due to generational upbringing. This could increase the usefulness of our findings by giving us a greater insight as to how we could better motivate this generation to take pro-environmental action.

About two-thirds of our population was based at Skidmore College and in its surrounding city of Saratoga Springs, New York. Skidmore College has approximately 2,500 undergraduate students, of whom 59% are female and 41% male. Among the student body, 44 U.S. states and 67 countries are represented and is home to nearly 250 or more international students, almost 10% of the student body(Skidmore College, 2017). Domestic students of color make up 23% of the student body. Of Skidmore's 304 full-time faculty members, 87% hold the doctoral or highest degree in their field (Skidmore College, 2017).

The documentary narration was provided by a local stakeholder who has a close connection to the environment and is a musician.

2.2 Instrumentation, Data Collection, and Analysis of Qualitative Data

The qualitative data for this study came from individual semi-structured interviews with our research participants. The interviews were recorded on camera and comprise the film presentation which details our findings. These audio/film recordings were transcribed for study purposes.

Before interviewing our subjects, we put forth a short question to get an indication of the individual's environmental habits and behaviors: *What habits do you carry out on a daily basis that may or may not classify as environmentally motivated?* Participants were free to write on paper as few or as many behaviors they could think of. We used the answer to this question to inform our subsequent semi-structured interview (see Appendix A for the battery of semi-structured interview questions answered by our participants). These interviews were filmed in interview rooms as well as in settings reflecting the individual's relation to nature and the environment, to create visually appealing imagery and to contextualize the film subjects to the viewer. In order to create an effective message we ensured that our interview process did not make the interviewee feel uncomfortable or targeted in any way (Creswell, 1994).

Beyond our 32 main interview subjects, we filmed individuals from widely varying ages, including children, for short answers about their pro-environmental behaviors. This footage was used for film purposes in order to appeal to a wider audience and to diversify our scenes, but not used for research purposes. To ensure respondents' consent, each respondent signed an informed consent or assent form

from the Skidmore College Institutional Review Board (IRB) which describes the previous work on this topic, as well as the parameters of this research effort.

To ensure efficiency in the analysis of our qualitative interview data, we used a coding method to identify common themes within the respondents' answers (Creswell, 1994). This allowed us to create a representative quote chart. The themes that emerged during coding included:

1. Education/Knowledge
2. Demographics/Agency based on demographics
3. Age of exposure to the concept of climate change
4. Culture

Our conclusion then focuses on the analysis of these themes to produce a set of recommendations. These recommendations focus on the factors we found to be most and least promising in furthering or enhancing one's pro-environmental actions in relation to mitigating climate change.

2.3 Limitations

The small size of our sample population of 32 individuals reduced the generalizability of our findings. A lack of balance in terms of their demographics furthers this lack of generalizability. Furthermore, our choice to use 18-40-year-olds as our research population excluded those of older generations who may have more power and agency to address climate change, which decreases our insight into what individuals are currently doing to combat climate change, and may also decrease the likelihood of older people to view our documentary.

Additionally, because the production of our documentary was a process of editing and eliminating footage it is evident that the story we tell has a bias. Our inability to completely detach ourselves from our desired outcome in the form of a short documentary prompted us to include a disclaimer at the very beginning. This ensures that the viewers understand the qualitative nature of our project.

3. Findings

Our documentary film will function as our findings.

4. Discussion

An analysis of the 32 interviews we conducted indicates that the life course factors that are most often indicated to have been the most influential in shaping one's attitude toward climate change and the environment are:

Cultural: including family, intergenerational learning, and community norms and values.
Cross-cultural: arising from travel and exposure to people from other cultural backgrounds.
Education: mostly exposure at the elementary, secondary, or university level, was mentioned in a handful of cases, but was for many not the driving factor behind their pro-environmental attitude or behavior, but rather the motivation to care or raise consciousness of environmental issues, including climate change.
Socio-economic: a factor that affected participants both positively and negatively.

For those who indicated a concern about climate change and the environment, there were differing reasons for these individuals to be more or less motivated to act upon these concerns and to

make an effort to carry out pro-environmental behaviors and to mitigate climate change in various ways. An often-cited factor in determining agency, whether the individual felt able or not to make a change, was socioeconomic status. While some felt limited by their socio-economic status, others of both high and low socio-economic status identified ways that their lifestyle allowed them to be sustainable. For some who grew up in relatively wealthy households and communities, this status of power made them want to act more as they felt that they were in a privileged position. However, more often those who came from poorer families and communities indicated that they have other greater concerns or felt that they are not the ones that *need* to make such change.

Some who were quite committed to pro-environmental behaviors on a small scale noted to have a low sense of agency preventing them from taking action on a larger scale in a more advocacy setting. These individuals often cited anxiety of climate change consequences to be a large factor in their attitude toward climate change, indicating a disconnect between attitude and subsequent behavior due to the barrier of anxiety, and perhaps an overall pessimism and sense of helplessness on the state of cultural values surrounding environmental topics. It is also relevant to mention the current political climate during the time of our interviews and the lack of interest in such topics and even the undervaluing of them by the current administration; Scott Pruitt and the Trump Administration.

For many of the participants on the higher end of our age range, becoming a parent proved to be a strong motivator for acting upon pro-environmental attitudes. Some even mentioned that the figures that have been cited surrounding the future effects of climate change feel even closer, as the estimates for global sea level rise, extreme weather events and declines in biodiversity will occur within the lifetimes of their children. Moreover, as these individuals have lived longer and have had potentially experienced more change throughout their lives, these estimates feel even more evident. These older participants are professionals and academics that have been able to realize how climate change affects their immediate environment as well as their careers.

There was also the added element of intergenerational learning for some of the older participants, as siblings or younger family members brought home environmental concepts and behaviors and produced discussion and thought when they promoted these ideas at home. This proved to be a very useful way to encourage dialogue on climate issues, and some participants admitted that this fresh perspective and new habits made them challenge, and even question, their previous behaviors. This was not however true from both sides, as younger participants expressed frustration upon facing resistance and lack of understanding surrounding their new habits, and many even felt discouraged by the lack of interest within their inner spheres.

Another important finding of our research was that education does not necessarily equate to action. Unlike the findings of Kaiser et al. which found that knowledge shapes a role in shaping behaviors and attitudes, as well as determining that behaviors influence attitudes of individuals especially if such behaviors are instilled at young ages. Our research also showed that exposure to education, or environmental knowledge, does not necessarily equate to pro-environmental behaviors. While some participants described knowing about climate change and environmental degradation, many admitted that they did not do enough to combat climate change and recognized that their actions were likely insufficient in solving the greater problem. The behaviors most people said they participated in were recycling and composting, but several still admitted to not participating in any pro-environmental behaviors, while still recognizing the reality of climate change and other related problems. Perhaps more notably still, even those who identified as pro-environmental and participating in daily sustainable habits were not

participants in larger advocacy or community led initiatives. It is difficult to say why this could be, perhaps it is cultural, stemming from a highly individualistic culture, or a symptom of a largely environmentally apathetic culture, that does not reward overt and obvious protest or discussion surrounding such topics, or it may be something else entirely, such as thinking that individual action will not affect or help to solve the broaders problem.

Our research has illustrated many of the theories advanced by Kaiser et al. (1999) and Rees & Bamberg (2014) relating to internal and external locus of control, as it seemed that on the whole many people felt that they had some sense of personal agency and contribution, but felt that it was not sufficient. Many interviewees in fact emphasized the need for greater collective action and a need for broader societal and cultural shifts. As discussed by Sapiains, Beeton and Walker (2016), interviewees seemed to align themselves with different frameworks relevant to their lives and values. For the purposes of our study, we did not focus exclusively on frameworks, but rather categories that we deemed were relevant in the creation of environmental attitudes (and resulting behavior) for individuals. These categories teased out different aspects of the interviewee's identity and background, with a focus particularly on education and exposure to environmental knowledge. Much like the Sapiains, Beeton and Walker (2016) we found that as participants began to discuss the need for pro-environmental action, many expressed a general sense of pessimism. When the perspective however was shifted to one involving family or a desire to preserve the future for generations and progeny, participants became more hopeful and assertive of their claims for the need for change. This is not surprising, as the continuation of our species is an evolutive imperative, and climate change to many represents a legitimate threat to that future.

While Nawrotzki et al. (2013) sought to illustrate how knowledge can pass from one social strata to another, through the "diffusion-of-innovation approach" it seemed that environmental apathy represented through media, politics, the wealthy, and particularly parents or other adults growing up, actually had an opposing effect. Some participants felt more energized and motivated to act in more overt ways to combat the problem, as a result of the abovementioned overt apathy. Those who grew up in environmentally conscious households felt as though they were still not doing enough. This of course may not be the case everywhere; however, higher education combined with an environment that encourages challenging oneself and personal growth may contribute to pro-environmental shifts from those of the home environment for younger participants.

Similar to Schneller and Coburn (2018), we also found that those who had the opportunity to travel and meet individuals from different parts of the world better understood the immediate need to address climate change. We classified this phenomenon as *cross cultural experiences*. Many who had strong environmental values inculcated at a younger age as a part of their culture grew to make stronger connections when exposed to environmental issues later, in different places. Their desire to connect their future careers with the issues that have surrounded them since a young age has helped create a youth that is empowered. However, there were still of course participants that did not mention or make an interconnection with climate change and other environmental issues, or simply expressed disinterest in the topic as a whole. This number of respondents makes up an important part of our research as we are trying to understand what allows individuals to make a connection with climate change that motivates them to do something, and what accounts for others who still feel that it does not and will never affect them.

5. Conclusion

In spite of the increases in media, communication and technology and other tools for spreading ideas and knowledge, the topic of climate change and environmental degradation as a whole remains one that proved challenging for changing global environmental behaviors on both individual and institutional scales. In this era we are more aware of what is happening in the world than at any other point in history, and yet we continue to put in place detrimental practices that are threatening the systems that support life on Earth. It is hard to predict how people will react in the near future to these problems, that as of now (for some) have had little noticeable effect on their lives. Further research is needed to understand why some people are not impacted by facts, anecdotes or visualization strategies, and what might be barring them from recognizing their stake in climate change, and the global impact of their actions (for better or worse).

Although our study did not consist of a significantly large sample or quantitative measures to confirm previous theories put forth by Bamberg, Nawrotzki or Kaiser we found that their theories held their validity throughout our study, and served as useful lenses through which to examine the motivations, behaviors and ideas held by many within our own community. Bamberg and Kaiser's theories surrounding impetus for individual pro-environmental behaviors provided a baseline for what such responses within the context of environmental concerns can look like. Their research along with Nawrotzki, contributed to a greater understanding of these issues as the group and societal problems that they are, and sought to find cohorts and categories that are more useful in response. Similar to what we attempted to do, by understanding the underlying issues and ways in which people gained knowledge or interest.

The dissonance and disconnect between knowledge and action would be another issue worth examining through further study. While we initially felt that perhaps ignorance or little knowledge and education on environmental topics might be one of the problems preventing pro-environmental behaviors, we saw that many people did in fact understand the threat of climate change, but still chose not to take mitigative action. Perhaps the largest question that arose from our study was; what will truly get people to mobilize against the issue of climate change, either from engagement in advocat, or through personal pro-environmental behaviors? Unfortunately, this is a question that is impossible to answer as there are so many factors to consider. Perhaps earlier education served as a means of intervention from apathy and did result in more action, if it did however, it would be extremely difficult to observe without having observed subjects from a very young age. It may be the case that catastrophe or disaster will eventually motivate collective and personal action, yet by this point, it may be too late.

As mentioned previously, several people identified the need for collective action, and even participants that demonstrated apathy still managed to convey some sort of understanding of these issues, or at least the importance of doing more (personally). Unsurprisingly, those who were exposed from childhood to these ideas described a continued need to work towards their sustainability goals. Many individuals who learned about this issue later in life seemed to be more motivated to act in more notable or radical ways, in some cases veering from the frameworks of their home cultures, these however were largely outliers and likely the result of higher education or other experiences throughout their life course. The importance of education and exposure however should not be discounted, and in fact it does seem apparent that the emphasis of environmental work and thought should include a suite of approaches such as an emphasis on institutional measures and collective goals, as well as the promotion of pro-environmental behaviors on an individual and family level. The cultural shift that would be most ideal

is one of collective goals rather than small individual actions, only then can we hope to see the change that we really need.

Appendix A.

Interview Questions:
What habits do you carry out on a daily basis that may or may not be classified as environmentally conscious?

Education/Knowledge
- Were you ever introduced to the idea of climate change and environmental degradation in school? If so, how and did it have an impact on you?
- Do you think climate change is real?
- Do you feel you have the power to make a difference? Why or why not?

Age of Exposure:
- Do you think nature is important? (If yes) At what age do you think you started to learn about/hear about the importance of nature and why we need to protect it?
- Do you think it's our responsibility to protect nature?
- Who in your life spoke to you about the environment?
- Can you recall when you first became interested in nature and the environment? Please describe the event or experience in detail. (If interviewee expressed interest)
- What inspired you it take it on as a career? (If interviewee works in the field)

Culture:
- How does your cultural background or social norms affect the degree to which you are able to be proactive in activities and behaviors regarding climate change?
- Did your home environment ever foster the idea of taking part in daily activities such as recycling or composting?
- Does your religion or culture talk about these challenges the earth is facing and what we can do about it?
- Do you feel that as an individual you have the power to make change? What gives other people and not you the power the make change?

Politics
- Do you think the way you align yourself politically reflects your environmental views as well?

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