

Senior Honors Thesis

Young adult attitudes about global climate change: Studying youth commitment to resolving
societal problems

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Abstract

In instances of political and social volatility, it often proves difficult for individuals to discuss, debate, and agree on difficult topics. Climate change is just one example of such a contentious issue. In an attempt to understand how to better unite diverse groups of individuals, the present study aims to conceptualize the role of identity, attitude, behavior as it relates to the environment and civic participation. Specifically, I examined the associations among young adults' civic identities, multiple domains of pro-environmental behavior, and the role of internal self-regulation in this relationship. French and American young adults ($N = 138$), ages 18-22, were surveyed in twelve data collections throughout Paris, France and Boston, Massachusetts. Respondents scored highest on measures of civic identity and self-regulation, with lowest scores occurring for pro-environmental behavior. In the total sample, all correlations between study variables were significant. However, the constructs did not vary significantly based on country, gender, or race. Nevertheless, these results illuminate interesting individual and group differences in civic identity, self-regulation, and pro-environmental behavior, particularly given that this study occurred during a period of political transition and social change.

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Solutions to the climate crisis are within reach, but in order to capture them, we must take urgent action today across every level of society...Now is the time for people all over the world to lend their voices to the cause and urge their leaders to take this historic first step

Albert Arnold Gore Jr.

Politician and Environmentalist, 45th Vice President of the United States

There are many important issues plaguing the society in the twenty-tens.¹ Gun control, gender equality, and racial discrimination are just a few of the divisive topics responsible for the debates taking place not only in America, but also around the world. Climate change is a pertinent issue in that it affects future generations just as much as it affects today's generations. Uniting diverse groups of people is the ultimate goal of many activists, and although our political and social environment would benefit tremendously from such unification, this goal has proven difficult to accomplish. As a Child Study and Human Development major, I am especially interested in adolescents and young adults who are on the verge of becoming active members of society. In the near future, they will become not only voters, but possibly researchers, political leaders, and policy makers as well: people who can directly effect change in society. As environmental issues become severe and climate concern continues to grow (United Nations Environment Programme, 2016), knowing how to unite future generations in climate action is critical; future leaders must be able to meet the challenges they will face.

¹ In the English-speaking world, a name for the decade 2010-2019 has never been universally accepted in the same manner as for decades such as the Eighties, the Nineties, etc. Common suggestions for referring to this decade are "Tens" or "Teens" but the most often used terms are "Twenty-tens" or "Two thousand (and) tens" (Fletcher, 2010).

Perceptions of Climate Change

Since the early 1960s, the scientific community has worked to develop an understanding of global warming and climate change (Maslin, 2004; Weart, 2008). The science of global warming has been in place for several decades, and the majority of climate scientists agree that this climate change is due to human actions. However, only recently have environmental issues started to move into the public sphere (Corfee-Morlot, Maslin, & Burgess, 2007; Häkkinen & Akrami, 2014). Unfortunately, many individuals are still reluctant to accept that these issues threaten the future of our society (Häkkinen & Akrami, 2014; Lewandowsky, Oreskes, Risbey, Newell, & Smithson, 2015; Sapiains, Beeton, & Walker, 2016; van der Linden, 2015; Whitmarsh & O'Neill, 2010).

Communication about climate change, whether it be by the government or by the scientific community, certainly affects how individuals perceive environmental issues and their impacts on society (Lewandowsky et al., 2015; Sapiains et al., 2016; Scannell & Gifford, 2013). Other social influences, such as perceived norms and actions of others, also have a great impact on individuals' beliefs about climate change (Dresner, Handelman, Braun, & Rollwagen-Bollens, 2015; Joireman & Liu, 2014; Panno, Carrus, Maricchiolo, & Mannetti, 2015; Sapiains et al., 2016). Speaking globally, cultural perspectives and cultural biases shape how individuals respond to climate change; “individualistic and fatalistic perspectives frame the environment as ‘elastic’ to justify damaging changes, [whereas] hierarchical and egalitarian perspectives frame the environment as ‘ductile’ to justify environmental conservation” (Price, Walker, & Boschetti, 2014, p. 8).

Although these global, external factors are important, perceptions of climate change are ultimately mediated by internal, or individual-level, constructs. Climate change denial is related

to ideological variables, such as social dominance orientation (one's degree of preference for inequality among social groups), right-wing authoritarianism (the extent to which individuals submit to authorities, follow established societal norms, and are aggressive towards those who violate regulations), and left-right political orientation (Häkkinen & Akrami, 2014). Emotions, such as hope, denial, worry, and guilt, are other key determinants of climate change perception, in that those who can regulate their emotions have an increased understanding of global climate change (Ojala, 2012; Panno et al., 2015). Finally, it is important to consider the role of an individual's self-identity, which can be defined as how someone would describe himself or herself and is influenced by personal motivations and social interaction (e.g., differentiating one's self from others or conforming to values, beliefs, and behaviors of social groups to which one belongs) (Whitmarsh & O'Neill, 2010). Self-identity has proven to have a significant association with perceptions of climate change (Whitmarsh & O'Neill, 2010).

Self-Identity

Existing literature differentiates an individual's self-identity into social identity (Sapiains et al., 2016; Tajfel & Turner, 2001), place identity (Proshansky, Fabian, & Kaminoff, 1983; Sapiains et al., 2016), environmental identity (Clayton, 2003; Dresner et al., 2015; L. R. Johnson, Johnson-Pynn, Sweeney, & Williams, 2009), and civic identity (M. Johnson, 2015; Rubin, 2007; Scott & Šerek, 2015; Wray-Lake, Rote, Gupta, Godfrey, & Sirin, 2015; Youniss, McLellan, & Yates, 1997). These subcategories of self-identity were of particular interest to me, because each subcategory relates to an individual's perception of climate change.

Social Identity

Social identity involves the aspects of self-image that derive from social categories to which an individual perceives himself or herself as belonging (Sapiains et al., 2016). Social

groups, which provide a sense of pride and self-esteem, are an important component of social identities (Tajfel & Turner, 2001). Social Identity Theory, which states that in-groups will often discriminate against out-groups in order to enhance their self-image, relies on the mental processes of social categorization, social identification, and social comparison (Tajfel & Turner, 2001). These processes can be applied to perception of climate change; how an individual categorizes and understands environmental issues will affect the environmental issues with which he or she identifies. By identifying with specific environmental issues, the individual is making a statement about which issues he or she deems most relevant and, therefore, most important (Sapiains et al., 2016).

Take recycling, for example. Thomas and Sharp (2013) explored the concept of “normalization of recycling behavior” and the influence that norms, habits and identities may have on recycling. One could argue that, in choosing to recycle, and thereby “identifying” with recycling as an environmental issue, an individual is making a statement: Recycling is the most relevant and important environmental issue. Thomas and Sharp’s (2013) findings would support the idea that individuals choose to recycle because it is a social norm; their identities “encompass recycling” – perhaps because it is an in-group behavior – but such individuals do not also take part in other, potentially out-group, pro-environmental behaviors (e.g., volunteering in community clean-up projects), nor do they exhibit other pro-environmental values (e.g., waste-reduction).

Gender, racial, and civic (or country) social identities will be explored as they could reveal interesting trends in the investigation of other study variables. Depending on an individual’s social identity, he or she may choose to identify or not identify with particular environmental behaviors. For example, women report stronger environmental attitudes and

behaviors than men (Zelezny, Chua, & Aldrich, 2000). Zelezny et al. (2000) also reported that these gender differences in environmentalism were found across 14 countries, although France was not included in their study. Identifying as French or American, or White or Non-White, could also influence an individual's environmental attitudes and behaviors; country and race can also be considered aspects of one's social identity.

Place Identity

Place identity consists of the knowledge and feelings developed through everyday experiences of physical spaces, and derives from the multiple ways in which "place" functions to provide a sense of belonging, construct meaning, foster attachments, and change mediation (Proshansky et al., 1983). Place identity is an important marker of the human-environment relationship and can inform an individual's experiences, behaviors, and attitudes about other places (Proshansky et al., 1983). Thus, place identity plays a large role in how individuals may recognize (or fail to recognize) environmental issues (Sapiains et al., 2016).

Country of residence is one such example of a place identity. Although there is not much recent research comparing French and American environmental attitudes and behaviors, Arbuthnot and Lingg (1975) assessed differences in such attitudes and behaviors, as well as differences in environmental knowledge. Whereas minimal differences were observed in recycling, the relationships of recycling with other variables indicated conceptual differences between cultures (Arbuthnot & Lingg, 1975). At that time, Americans' environmental attitudes were more pro-ecological, more internally consistent, and more likely to be related to environmental behavior and knowledge (Arbuthnot & Lingg, 1975). But nearly forty decades later, following the United Nations Climate Change Conference in 2015 and the subsequent Paris

Climate Accord, it seems that Europe has become more attuned to climate change and other environmental issues. It is unclear whether these differences hold true today.

Environmental Identity

Related to place identity, environmental identity is responsible for how individuals come to understand climate change (Dresner et al., 2015). Environmental identity has been defined in multiple ways. Johnson et al. (2009) define environmental identity as the extent to which an individual views the environment as an essential and/or defining aspect of himself or herself. In this way, an individual is also defined by his or her pro-environmental values. Because the environment is a part of who they are, individuals displaying prominent environmental identities are more inclined to exhibit behaviors (e.g., participating in environmental groups, supporting legislative initiatives that protect the natural environment) that exist to support and nourish their environment.

Environmental identity can also be thought of as a sense of connection to the natural environment, based on history and emotional attachment (Clayton, 2003). It can be understood as how an individual internally makes sense of his or her place within nature. Because environmental concerns are a function of the extent to which “people include nature in their cognitive representation of self” (Clayton, 2003, p. 52), those with a more prominent environmental identity tend to perceive environmental issues as more important; in the same way that the planet feels the detrimental impact of climate change, the individual, in tune with the world around them, equally feels the weight of these serious environmental issues.

Environmental identity, Clayton (2003) argues, also provides individuals with a sense of connection to those in their shared environment and facilitates a recognition of similarities between themselves and others. As such, environmental identity can have a social aspect; an

individual with a strong environmental identity feels more connected to, and similar to, his or her community. Community, therefore, may impact how an individual views and acts upon environmental issues.

Civic Identity

Civic identity is described as individual's sense of connection to, and participation in, a civic community (Rubin, 2007). A large body of research demonstrates that civic identity is an important component of self-identity (M. Johnson, 2015; Rubin, 2007; Scott & Šerek, 2015; Wray-Lake et al., 2015; Youniss et al., 1997). Despite this knowledge, there exists relatively little information pertaining to how civic identities specifically relate to perceptions about climate change. L.R. Johnson et al. (2009) found that participation in an environmentally-based program could strengthen youth's environmental identity. However, given such a relative lack of information about the role of civic identity in an individual's understanding of environmental issues, I have chosen to focus on this aspect of self-identity in this study. In learning more about the potential relationship between civic identity and pro-environmental attitudes and behaviors, I hope to better understand what influences young adults' commitment to resolving climate change.

How youth perceive and make meaning of daily experiences with civic institutions and their agents, and their connection to, and participation in, such institutions, plays a large role in the development of their civic identities. Rubin (2007) specifies four types of civic identities, based on an individual's active or passive attitudes towards civic participation and their congruence or disjuncture with societal ideals:

1. Aware (active, congruence)– an individual believes change is needed for equity and fairness

2. Empowered (active, disjuncture) – an individual believes change is a personal and community necessity
3. Complacent (passive, congruence) – an individual believes no change is necessary and that everything is going well in society
4. Discouraged (passive, disjuncture) – an individual believes that no change is possible and that their society is unfair.

These types will be used to inform my understanding of the civic identities of the young adults who participate in my research.

Whereas discussions about sociocultural issues can be related to civic identity development, there is a much stronger relationship between civic identity and social perspective taking (M. Johnson, 2015). In other words, young adults with a strong understanding of others and who actively think about their views and experiences have a stronger civic identity than those who simply have informal discussions with peers about their differences. Social perspective taking can be measured by the quality of interactions and discussions that a young adult has with his or her peers. In this way, high quality interactions and discussions among a group of young people can have a positive impact on civic identity. Such was the case in the United States following the 2016 Presidential Election.

Civic Identity, Civic Participation and the 2016 U.S. Presidential Election

The 2016 Presidential Election was a pivotal moment for many Americans. Some were overcome with pessimism about the future of democracy or the ability to engage in meaningful, civic discussions. Many other Americans were filled with “great hope and optimism” (Peters, 2018, p. 1) about their vision of what the country should be.

In the wake of the 2016 Presidential Election, both sides seem to have experienced a newfound urge to become civically engaged. The entire November 2017 issue of *Educational Leadership*, a publication of the Association for Supervision and Curriculum Development, advocates for increased education and awareness of civics and service-learning. Rehora (2017) cites the election year as the driving force behind their decision: “After long being treated as a kind of afterthought or luxury in the curriculum, civic education is having a definite moment – one in which...the stakes are high both for schools and the country” (p. 7). No matter your political stance, the 2016 election, Rehora (2017) argues, unearthed important ideas, like “civic agency” and “participatory readiness.” These ideas, in turn, provoked an increase in civic participation.

Civic participation. There is a large body of literature assessing youth civic identity (M. Johnson, 2015; Rubin, 2007; Scott & Šerek, 2015; Wray-Lake et al., 2015; Youniss et al., 1997). Because so much of civic identity is developed through civic participation, it is important to understand how youth participate in civic communities and what drives this civic engagement. Ecological assets, such as positive neighborhood climate, positive social connections, and trust in neighbors, are associated with youth civic engagement (Wray-Lake et al., 2015).

In accordance with the theory of social capital, social bonds and networks build norms of reciprocity and solidarity, fostering civic values and actions among adolescents (Wray-Lake et al., 2015). Specifically, parents and peers act as social influences on young adults in the domains of their civic and political lives; discussions about civic and political issues promote adolescents’ civic skills and inclination to get involved in civic activities (Scott & Šerek, 2015). Parents and peers who are perceived as being supportive of civic participation and involved in social causes can initiate and sustain adolescents’ civic involvement (Scott & Šerek, 2015).

Beliefs about societal “fairness” mediate civic participation in two ways. First, adolescents who believe that they live in a just and “fair” society are more likely to have affective ties to society and, in turn, are more likely to become civically involved (Wray-Lake et al., 2015). However, critical views of society motivate civic engagement, especially among marginalized youth (Wray-Lake et al., 2015).

Civic engagement is also mediated by several psychological constructs. Cognitive style is one such construct; individuals with a holistic mindset, who perceive events and objects as interconnected and who orient their attention toward the relationships among objects and their contexts, are more stable in their perceptions of climate change and in their willingness to act in favor of the environment (Sacchi, Riva, & Aceto, 2016). Individuals with an analytical mindset, on the contrary, focus primarily on one central element and its attributes, independent from its context, and tend to be less stable in their perceptions of climate change and willingness to act in favor of the environment (Sacchi et al., 2016).

Psychological distance (the extent to which events, people, or ideas are thought of abstractly, at a high level, or concretely, at a low level), attribution of responsibility (a moral judgement of liability which includes what has been done, what is being done, and what is supposed to be done), and self-efficacy (beliefs about one’s capacity to bring about change) are other psychological constructs that play a role in civic engagement (Hamilton, 1978; Sacchi et al., 2016; Scott & Šerek, 2015). These psychological constructs, along with the previously-discussed social factors, promote civic participation. Understanding what motivates young adults to engage in civic behaviors will inform how I approach my study of the relationship between young adults’ civic identities and pro-environmental behaviors.

Civic participation in the Trump Era. This civically-directed energy is a relatively new trend among the Millennial generation, or those born between 1981 and 1996 (Dimock, 2018). A pre-2016 Election study conducted at Harvard University revealed that only about 30% of surveyed United States Millennials believe it is “essential” to live in a democracy, compared to 50% of Americans born in the 1960s and 72% of Americans born in the 1930s (Foa & Mounk, 2016). This statistic, they found, holds true across the globe. “Over the last three decades, trust in political institutions such as parliaments or the courts has precipitously declined across the established democracies of North America and Western Europe. So has voter turnout” (Foa & Mounk, 2016, p. 6). At the same time, young people are increasingly less interested in politics than their older counterparts. In 2010, only 41% and 38% of American and European young adults, respectively, said that they were “interested in politics,” compared to 53% (American) and 48% (European) in 1990 (Foa & Mounk, 2016). In another pre-Election study, two-thirds of Americans could not name all three branches of the federal government, and only a third could identify the vice-president or name a Supreme Court justice (Annenberg Public Policy Center, 2015; Heim, 2016). These statistics offer an interesting perspective on the civic identities of young adults in the years leading up to the 2016 U.S. Presidential Election.

Although relatively few studies have been conducted since the election, those available do provide a more complete picture of how young adults’ civic identity and civic participation have changed. In the “Trump era,” as it has been dubbed by experts and the media, America has experienced a “rapidly changing and at times volatile political landscape” (Logan, Lightfoot, & Contreras, 2017, p. 252; Quoc Trung, Cain Miller, & Quealy, 2017). Logan et al. (2017) explored how student activists are responding to such political shifts, and found that Black and Brown activists felt forced to return to more “radical” activist “roots” following the election of Donald

Trump. They also reported that, although students did not become more activated in response to the Trump administration, and there was not an associated perception of increased campus hostility, they did find that Trump's election resulted in changes in the social issues students prioritized and in what ways their activism manifested itself (Logan et al., 2017). Whereas these strategies for engaging in activism do not necessarily speak to an increase or decrease in civic identity, it's clear that the 2016 U.S. Presidential Election produced a shift in students' ways of thinking about civic engagement.

Linda Charmaraman conducted a study of over 1600 Americans, ages 18-80+, to better understand how they felt about the election and its results. Specifically, Charmaraman (2017) looked at how the election and different types of media (e.g. social, technological, televised) impacted people's sense of social identities, including racial/ethnic, gender, socioeconomic status (SES), political attitudes, and civic engagement. Before Trump's election, she found that 45% of survey respondents identified the SES divide as one of the most important issues for the U.S. president to address, compared to 35% of respondents who identified the environment as an important issue (Charmaraman, 2017). After the election, 46% of Americans still identified the SES divide as an important issue. However, the statistic for environmental concern skyrocketed: 68% of Americans identified the environment as one of the most important issues for Trump to address (Charmaraman, 2017). Such a drastic change in environmental concern may be manifested in pro-environmental behavior, another construct being measured in this study.

Pro-Environmental Behavior (PEB)

Individuals' behaviors may be greatly affected by their attitudes (Katz, 1960; LaPiere, 2010). It follows, then, that individuals' perceptions about environmental issues may affect their pro-environmental behaviors. Pro-environmental behaviors can broadly be defined as "the range

of behaviors that benefit the natural environment, enhance environmental quality, or harm the environment as little as possible” (Larson, Stedman, Cooper, & Decker, 2015, p. 13). Pro-environmental behavior, however, is not unidimensional, but rather quite diverse and has been defined in many different ways (Larson et al., 2015). In an attempt to understand the multi-dimensional structure of pro-environmental behavior, Larson et al. (2015) identified four specific domains of pro-environmental behavior:

1. Environmental Citizenship: “tangible contributions to environmental policy and decision-making efforts” (p. 117) (e.g., voting, voicing opinions at public meetings, letter writing, petitioning, monetary donations)
2. Conservation Lifestyle: “household choices made by consumers that influence environmental sustainability on broader scales” (p. 117) (e.g., recycling, energy/water consumption, green purchasing)
3. Land Stewardship: “actions that involve more direct engagement with local ecosystems” (p.117) (e.g., wildlife and habitat conservation actions, volunteering to clean up and enhance public land)
4. Social Environmentalism: “conservation activities centered on social engagement, rooted in social relationships and interactions” (p. 117) (e.g., communication to inform or teach others about importance of conservation, working with youth to instill in them the importance of conservation)

I will use these domains to examine how attitudes translate into action in the context of environmental issues.

Little research exists to suggest how civic identity could translate into pro-environmental behavior. There is, however, extensive research documenting the relationship between the

previously-stated components of self-identity (social identity, place identity, and environmental identity) and pro-environmental behaviors. These other identity-behavior relationships will be used to inform my hypotheses, method, and analyses throughout my research.

PEB and Social Identity

Social identities may have a significant impact on the attitude-behavior relationship, particularly when attitudes and behaviors reflect the normative properties of the social group with which people identify (Dresner et al., 2015). Furthermore, a broader, more inclusive social identity can mitigate political polarization, overcome intergroup separation, and strengthen a sense of moral imperative, the strongly-felt principle that compels a person to act (Markowitz & Shariff, 2012; Sapiains et al., 2016). Such an “expanded identity,” Sapiains et al. (2016) argue, can therefore reduce destructive environmental behaviors and improve agreement about, and attention towards, environmental issues. Individuals who are less concerned about their social identities (e.g., gender, race, political attitudes, etc.) are less concerned with aligning with such identities; they can separate external and internal societal messages from a moral imperative that tells them to act on important social issues.

PEB and Place Identity

Place identity has a positive impact on pro-environmental behaviors, which is often evidenced in the way that it supports pro-environmental actions (Sapiains et al., 2016). Concurrently, place identity activates additional psychological benefits (e.g., sense of belonging, collective identity) that help overcome the separation between individuals and the environment, as well as the in-group/out-group separation that is consistent with social identity (Sapiains et al., 2016). In other words, place identity “evoke[s] a sense of belongingness to something bigger

than one's self, or the need to belong" (Sapiains et al., 2016, p. 490). If individuals are able to identify with their environment, immediate and/or global, then they are able to forego a desire to identify with a particular social group. In turn, they are more likely to engage in pro-environmental behaviors that benefit their environment.

PEB and Environmental Identity

There is a strong bi-directional relationship between environmental identity and both private and public pro-environmental behaviors (Dresner et al., 2015; L. R. Johnson et al., 2009). Pro-environmental behaviors serve as opportunities to reinforce existing environmental identities and reveal the importance of the environment in individuals' lives, thereby cultivating new environmental identities (L. R. Johnson et al., 2009). Those individuals with a strong environmental identity also present more pro-environmental behaviors than those with weaker environmental identities (Clayton, 2003).

External Factors

Finally, there are factors outside of one's identity that are associated with an individual's environmental engagement and pro-environmental behavior. A greater, localized sense of community, for example, is associated with greater pro-environmental behaviors (Forsyth, van Vugt, Schlein, & Story, 2015). The normative influences of engaging in other forms of pro-environmental behaviors and volunteering in general are well-documented, suggesting that there is a "spillover effect" in which taking up specific behaviors (e.g. pro-environmental, civic, altruistic) may lead to the adoption of other similar behaviors (Dresner et al., 2015; McDougale, Greenspan, & Handy, 2011; Whitmarsh & O'Neill, 2010). With regard to youth in particular, although parents influence youth behavior, youth environmental engagement is more greatly

influenced by adolescents' own environmental self-efficacy, environmental news consumption, political interest, and time spent online (Allen, Wicks, & Schulte, 2013).

Self-Regulation

Self-regulation is also a focus of this study because it could be a key factor in identity-attitude-behavior relationships. Bandura (1986) first described self-regulation as an important way in which individuals comprehend personal performance. He talked about self-regulation consisting of three stages: (1) *self-observation*, which includes analysis of environments, goal setting, and performance and action monitoring; (2) *self-judgement*, which includes current performance evaluation using personal standards and making comparisons with others' performance; and (3) *self-reaction*, which includes using satisfaction level assessment and evaluation of errors to create new goals and strategies (Bandura, 1986). Moilanen (2007) later defined self-regulation as:

The ability to flexibly activate, monitor, inhibit, persevere and/or adapt one's behavior, attention, emotions, and cognitive strategies in the response to direction from internal cues, environmental stimuli and feedback from others, in an attempt to attain personally-relevant goals (p. 835).

In sum, rather than being passively affected by external influences, self-regulation is one's ability to direct his or her own behaviors, thoughts, and/or actions. And, according to Bandura (1986), behavioral and environmental factors play a large part in an individual's self-regulation.

Self-Regulation and PEB

Climate change is one such example of an environmental factor affecting self-regulation. It has been shown that a change in perception of climate change results in an increase in "ecologically responsible behavior" (Panno et al., 2015, p. 858). To better understand the

antecedents of this relationship, Panno et al. (2015) examined whether an emotion-regulation strategy predicted climate change and/or pro-environmental behavior. Among both college students and non-students, individuals with higher self-regulation, typified by a habitual use of cognitive reappraisal, showed an increase in both global climate change perception and pro-environmental behavior (Panno et al., 2015). Climate change perception was also found to be a mediating factor in this relationship (Panno et al., 2015).

Self-Regulation and Civic Identity

Self-regulation may also be affected by behavioral and environmental factors pertaining to civic identity. According to Deci and Ryan's (2008) Social Determination Theory, an individual's self-regulatory style is dependent upon the degree to which the "value" of a specific behavior and the social requirements for its regulation have been internalized and integrated into the self. For example, if society or parents value voting or writing letters to politicians, an individual may become motivated – extrinsically or intrinsically – to enact that behavior. Extrinsic motivation is when civic behavior is performed to obtain an external outcome, whereas internal motivation is when civic behavior occurs because it is internally valued or inherently satisfied (Deci & Ryan, 2008). More intrinsic motivation is associated with "greater efficacy, increased belief in one's ability to make choices, an enhanced subjective well-being, becoming better integrated into one's social group, and increased resolution of identity and intimacy" (Walker & Iverson, 2016, p. 154). Furthermore, those who have internalized political attitudes into their value systems are more likely to seek political information and vote, compared to those who are politically active because they feel obligated or have adopted views of others into their own civic identity (Walker & Iverson, 2016). Walker & Iverson (2016) also found that political self-regulatory style – intrinsic and extrinsic – predicted political attitude strength, media usage,

and political orientation. These specific types of self-regulation are not the focus of this study. Nevertheless, such research supports the investigation of self-regulation and how it relates to civic identity, as well as pro-environmental behavior.

Methodological Issues

Several methodological approaches were found in the literatures concerning self-identity, civic participation, and pro-environmental behaviors. Most studies use quantitative mail or web-based surveys (Allen et al., 2013; Dresner et al., 2015; Forsyth et al., 2015; L. R. Johnson et al., 2009; Joireman & Liu, 2014; Larson et al., 2015; Panno et al., 2015; Price et al., 2014; Sacchi et al., 2016; Sapiains et al., 2016; Scott & Šerek, 2015; Whitmarsh & O'Neill, 2010; Wray-Lake et al., 2015). These surveys included structured-response questions as well as open-ended questions, which provide depth to the observed constructs. Some of these studies employed a mixed-methods approach comprised of two studies; for instance, researchers would conduct focus groups, then follow-up with a survey (Larson et al., 2015; Sapiains et al., 2016; Scott & Šerek, 2015). The discussions that resulted from these focus groups were meant to inform and develop the quantitative study. Although I will not be conducting focus groups, I have used the focus group results from such studies to inform and improve my own survey questions.

Conclusions

My study will address the aforementioned issues and gaps in the following ways. First, I will be focusing on civic identity as a component of self-identity. Whereas several other aspects of self-identity are connected to climate change perception, there is no research that indicates how civic identity may be related to an individual's understanding of environmental issues. The present study aims to identify the relationship between civic identity and pro-environmental

behavior, addressing another gap in existing research and thereby cultivating an understanding of how groups of young adults can be united in the fight against climate change. Finally, in choosing to measure self-regulation in addition to civic identity and pro-environmental behavior, I may be able to better understand how attitudes, beliefs, and values translate into action.

Research Questions

This study will examine the social influences associated with self-identity, and how self-identity may manifest itself in pro-environmental behavior. Specifically, I am interested in the relationship between civic identity and the multiple domains of pro-environmental behavior. First, I hypothesize that there is a correlation between young adults' civic identities and their environmental attitudes, which translates into environmental action. Next, I hypothesize that self-regulation plays a role in the aforementioned identity-attitude-behavior relationship. I also hypothesize that there is a relationship between my study variables (PEB, civic identity, and self-regulation) and the independent variables: country, gender, and race. Used together, these hypotheses may identify relations that are specifically related to environmental problems, as well as those relations that may be able to be generalized to other social issues. Figure 1 presents an illustration of the constructs studied in the present investigation. The social and temporal influences on, and some potential outcomes of, these constructs are also illustrated.

Method

Sample and Design

In designing this study, I was able to use my status as an American college student traveling to Paris, France to draw upon a diverse population of young adults. The total sample was projected to be 120 young adults (ages 18-22 years), surveyed in urban and suburban areas of France and the United States, evenly distributed by country, race, and gender. Although

multiple, diverse locations were chosen for data collection, this sample was selected through nonprobability sampling on the basis of convenience and availability. This sample reflects the limits of the budget and the time available.

In total, 138 young adults were surveyed in France and the United States. While in Paris, I was able to collect 61 responses from French young adults. These responses were supplemented with 77 responses from American young adults in Boston. All of the respondents were between the ages of 18 and 22 years old, and 50.7% of the respondents were Female and 67.4% of the respondents were White.

Data collection occurred in a variety of French and American locations (universities, cafés, recreational parks, markets, and other public areas), within which I solicited questionnaire responses from my target population of young adults. After receiving verbal consent, respondents answered digital surveys on Amazon Fire 8HD tablets provided to them by the researcher, using the website SurveyMonkey. Questionnaires were able to be completed in less than 10 minutes. Upon completing the online survey, respondents received a form of compensation valued at \$5 (equivalent to approximately €5 at the time of data collections).

Data collection began in February 2017 in Paris, France and its surrounding suburbs. Due to time constraints, this first phase of data collection ended in May 2017, after I had visited six sites. Sites were chosen to adequately sample the target population. Among these six sites, four were located directly in Paris, France: (1) Café Le Censier, a café and bar frequented by students during Happy Hours; (2) AntiCafé, a co-working café with several locations in Paris; (3) Université Sorbonne Nouvelle, a public university in Paris; and (4) Bibliothèque Sainte-Geneviève, a public university library in Paris. The two remaining sites were located in Parisian

suburbs: (1) Parc de la Légion d'Honneur, a park located in Saint Denis, France; and (2) the town center of Neuilly-sur-Seine, a French commune just west of Paris.

The second (American) data collection began in July 2017 and continued through August 2017. As with the first phase of data collection, six sites were visited, each providing access to a sample of the target population. Three of these sites were located directly in Boston, MA: (1) Faneuil Hall, an outdoor shopping center and marketplace in Boston's historic district; (2) the Boston Common, a central public park in downtown Boston; and (3) the Boston Public Library. The other three sites were located in Boston suburbs: (1) Felipe's Taqueria, a casual counter-serve restaurant and bar in Cambridge, MA; (2) the campus of Tufts University, a private, liberal arts and research university in Medford, MA; and (3) Assembly Row, a neighborhood of residences, outlet shops, office spaces, and restaurants in Somerville, MA. Appendix A presents a detailed description of each data collection site.

Measures

Questionnaires asked respondents about their behaviors and attitudes, as well as their knowledge of environmental issues. Measures of pro-environmental behavior (PEB), civic identity (description of defining characteristics as they relate to citizenship and civic participation), and self-regulation (ability to control behaviors, thoughts, and actions) were employed to help draw connections among environmental attitudes, personal beliefs, and demonstrated actions. I will be seeking to elucidate the relationship between young adults' civic identities and environmental engagement.

Pro-environmental behavior. A 13-item scale ($\alpha = 0.93$, for this sample) for PEB was adapted from the Larson et al. (2015) survey, which was developed to measure different types of PEB. Using data collected from the Larson et al. (2015) interviews, items covered a variety of

topics targeting self-reported participation in PEB. Larson's (2015) four categories of PEB were represented:

1. Conservation lifestyle behaviors (e.g., "Recycling paper, plastic and metal")
2. Land stewardship behaviors (e.g., "Making the yard or land more desirable for wildlife")
3. Social environmentalism (e.g., "Talking to others in the community about environmental issues")
4. Environmental citizenship (e.g., "Signing a petition about an environmental issue")

For all statements, responses were given on a Likert-type scale (1 = *very unlikely* to 5 = *very likely*). The 13 items included in the PEB scale are listed in Table 1, along with their means and standard deviations. The average score across the 13 items was 3.58 (SD = 0.88) (see Table 4).

Civic identity. Civic identity items were based on: (a) the Developmental Assets Profile (Wray-Lake et al., 2015), which measures community engagement and social responsibility; and (b) Kim, Flanagan, and Pykett's (2015) measure of civic commitment to the local community, to the nation, and to conventional politics. These measures were combined to create a 12-item scale of civic identity ($\alpha = 0.91$, for this sample). Respondents were asked to respond to statements such as "I stand up for what I believe in" and "I am helping to make my community a better place." All items in the "Civic Identity" portion of the questionnaire were short-answer, fixed-responses (with a five-point response option, e.g., 1 = *strongly disagree* [or *not at all important*] to 5 = *strongly agree* [or *very important*]). The 12 items included in the Civic Identity scale are listed in Table 2, along with their means and standard deviations. The average score across the 12 items was 3.99 (SD = 0.70) (see Table 4).

Self-regulation. Self-regulation items were based on Callina et al.'s (2017) measure of internal self-regulation. In this third section, respondents were asked their opinion on a set of statements including “When I decide upon a goal, I stick to it” and “I keep trying as many different possibilities as are necessary to succeed at my goal.” This 11-item scale ($\alpha = 0.88$, for this sample) was also measured on a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). The 11 items included in the Self-Regulation scale are listed in Table 3, along with their means and standard deviations. The average score across the 11 items was 3.93 (SD = 0.61) (see Table 4).

Demographics. In France, a central tenet of republicanism is that the only legitimate identity in the public sphere is citizenship. It is therefore unacceptable for a state agent, researcher, or other data collector to ask a person about his or her race or ethnicity. This idea traces back to the French Revolution and the *1789 Declaration of the Rights of Man and Citizen* which states in Article 1 that “men are born free and equal” and in Article 6 that “all citizens are equal in the eyes of the law, and eligible to all public positions and occupations according to their abilities” (Republic of France, 1789). Article 1 of the most recent French Constitution expands this principle, banning all distinctions based on racial identity: “[France] shall ensure the equality of all citizens before the law, without distinction of origin, race or religion” (Republic of France, 1958). Finally, in 1978, Law No. 78-17 was enacted in France, prohibiting the collection of “any information that shows, directly or indirectly, racial origins, political, philosophical or religious opinions, trade union membership, or moral principles” without either written consent of the individual or an advance recommendation of the National Commission for Information Technology and Civil Liberties (CNIL), which requires approval from the Conseil d’Etat (Republic of France, 1978).

I identified this constraint at the beginning of my study and, as such, I was able to design my survey accordingly. I was not able to ask demographic questions related to gender, race, ethnicity, religion, or age for my French survey respondents. I was, however, able to visually identify survey respondents as Male or Female and White or non-White. I knew all respondents were between 18 and 22 years of age, because they confirmed this qualification upon verbally consenting to participate in my study. Although this lack of demographic data ensured respondent anonymity, it also introduced some validity questions into my data analysis, in that I cannot ensure that my visual identification of survey respondents aligns with their own gender and racial identification.

As this constraint was not a factor in my American data collection, an additional demographics section was added to the surveys distributed to American young adults. American participants responded to questions of gender, race/ethnicity, and age. These data were then aggregated so as to align with the data collected for French young adults.

Data Analyses

To achieve a comprehensive understanding of my data set, I began with descriptive data analysis to quantitatively describe the main features of the data. Descriptive statistics, including frequency distribution, central tendency (mean), and dispersion (standard deviation) were generated using the SPSS IBM statistical software package.

Pearson product-moment correlations were computed and coefficients significant at the 0.05 and 0.01 levels were identified. Correlations were first computed between scales among the entire population of survey respondents. Data were then split into subgroups by gender, race, and country.

After these preliminary data analyses, I used analyses of variance (with Bonferroni adjusted alpha levels) to assess the potential differential role of country, gender, and race for each of the three dependent variables (pro-environmental behavior, civic identity, and self-regulation). Simple linear regressions assessed the role of country, gender, and race on the dependent variables.

Results

Zero-Order Correlations

To further elucidate the relationships among these variables, zero-order Pearson product-moment correlations among PEB, civic identity, and self-regulation were examined. Pearson product-moment correlations among all respondents are shown in Table 5. All correlations are statistically significant. The correlation between PEB and civic identity, $r(132) = 0.52$, and between civic identity and self-regulation, $r(132) = 0.50$, accounted for about 25% of the variance. The correlation between PEB and self-regulation, $r(134) = 0.35$, accounted for only about 10% of the variance.

Correlations were calculated to account for country, gender, and race. When looking at country, all correlations were significant (see Table 6). When considering *differences* among French and American young adults, z -scores were computed for correlations among the French and American data sets (see Appendix C). No correlations between variables were significantly different when comparing French and American young adults.

In regard to gender differences, correlations were significant among Males and Females, aside from correlations between civic identity and self-regulation which were non-significant among Females (see Table 7). Gender differences in the correlations among civic identity and self-regulation emerged, $z = 2.931$, $p < 0.05$ (two-tailed), as well as among civic identity and

PEB, $z = 2.815$, $p < 0.05$ (two-tailed). Correlations between PEB and self-regulation were not significantly different among Males and Females.

When taking race into account, all correlations were significant, aside from correlations between PEB and self-regulation among Whites (see Table 8). Race group differences were evident for the correlations between PEB and self-regulation, $z = 3.155$, $p < 0.05$ (two-tailed), and between civic identity and self-regulation, $z = 2.599$, $p < 0.05$ (two-tailed). Correlations between PEB and civic identity were not significantly different between Whites and non-Whites.

Simple Linear Regressions

Simple linear regressions were calculated to separately predict PEB, civic identity, and self-regulation based on country, gender, and race. Regression variables are presented in Tables 9, 10, and 11. None of the relationships were found to be significant. Simple linear regression equations can be referenced in Appendix B.

Discussion

The present study examined the relationships between the pro-environmental behavior (PEB), civic identity, and self-regulation of French and American young adults. Observed relationships were supported by measures presenting strong internal consistency, reliability, and sufficient variability. I was able to support my hypothesis that there is a correlation between young adults' civic identities and their environmental attitudes, which translates into environmental action. Furthermore, as hypothesized, self-regulation affects this identity-attitude-behavior relationship. Across a diverse sample of young adults, strong correlations were observed between all measures, with PEB and civic identity being the most strongly correlated, followed by civic identity and self-regulation, and PEB and self-regulation. These correlations suggest that individuals who are environmentally aware may also be civically engaged and

exhibit stronger self-control. Moreover, such interrelations between variables existed when distinguishing between country (French/American), gender (Male/Female), and race (White/non-White).

In comparing Male and Female correlations, it should be noted that, whereas correlations between PEB and self-regulation were not significantly different, correlations between PEB and civic identity and between civic identity and self-regulation were different among Males than among Females. Results also indicated that, in comparison to Whites, non-Whites had significantly higher correlations between PEB and self-regulation and between civic identity and self-regulation. Correlations between PEB and civic identity were not significantly different. Although such differences in correlations do exist, simple linear regression analyses demonstrate that there is no overall effect of country, gender, and/or race on study variables. These results do not support my third hypothesis.

Limitations

There are several limitations in this study. The first is sample size and representativeness. Though I was able to collect data from 138 young adults, this sample is relatively small; more respondents would have created a larger sample that could be more representative of the population, limiting the influence of outliers or extreme observations. A larger sample size would also broaden the range of possible data and form a better picture for analysis. Second, my sample was not procured through probability sampling. Although I attempted to distribute surveys in multiple, diverse locations, the fact that I employed convenience sampling means that I cannot account for all third variable influences. Past experiences, political attitudes, and perceptions of climate change (Panno et al., 2015), are all examples of variables that could have affected my results. Additionally, this survey did not ask specific demographic questions (e.g.,

age in years, self-identified race and gender, work and/or education experience, etc.) which would have also provided a more complete understanding of my results. My inability to estimate sampling error, and the likelihood of sampling bias, are likely to have an impact on my results.

Data collection occurred during a particularly volatile moment in the political climate that existed at the time of this research. As such, survey timing could be considered significant limitation in this study. French data collections, which took place during the French presidential election of 2017, occurred months before American data collections, which took place after the American presidential election of 2016. With so many extraneous influences impacting French and American young adults during these times, it is difficult to generalize the results of this study. However, this limitation could also be considered a valuable distinguishing characteristic of my study. The results of this study provide unique insights insofar as they represent the thoughts, behaviors, and actions of young adults in a time of political transition amidst important climate change discussions.

Next Steps

Although this study sought to elucidate the relationship between pro-environmental behavior, civic identity, and self-regulation among French and American young adults, I did not attempt to investigate other variables that could be associated with such constructs. Further inquiries could examine how PEB, civic identity, and self-regulation are related to other demographic variables. However, such an approach would require a much more nuanced, representative sample. Alternatively, a longitudinal study may provide insight into how such constructs change over time within an individual young adult, but also when looking at different government administrations, environmental policies, and social norms and practices. Given that this study's independent variables (country, gender, and race) were not found to predict PEB,

civic identity, and self-regulation, more research is needed to understand what other factors may be influencing these constructs. The influence of culture and upbringing, political climate, and current events should be explored.

Conclusions

There is a wealth of knowledge about the severity of climate change and how society reacts to this knowledge. An environmentally-aware society includes a government that enacts policies aimed to reduce pollution and increase “green” behaviors, as well as individuals who advocate for these initiatives and who take it upon themselves to behave in these ways, regardless of government-mandated incentives or penalties. However, little is known about how individuals’ civic identities co-vary with their pro-environmental behaviors. This study addressed this shortcoming. Specifically, I assessed if civic engagement was interrelated with environmental engagement, thereby potentially informing an understanding of how and why individuals chose to address their environmental concerns.

Although environmental concerns are not the only challenge that future generations will face, these issues serve as a way to understand how adolescents come together under a shared purpose. That is, looking at how different groups view an issue can provide insight into how such groups reach “common ground.” Whether considering environmental issues or other politicized issues, finding common ground is a critical aspect of policy making as it may ensure that policies receive adequate support. Although the scope of my research did not specifically address this issue of finding common ground, it is my hope that my findings can provide context for understanding such a phenomenon.

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Tables

Table 1. *Items Included in the Pro-Environmental Behavior Scale*

Behavior	Mean	SD
Recycling paper, plastic and metal	4.17	1.10
Conserving water or energy in the home	3.98	1.09
Buying environmentally-friendly and/or energy-efficient products	3.80	1.06
Making the yard or land more desirable for wildlife	3.29	1.20
Participating in a wildlife study	3.23	1.29
Volunteering to improve the wildlife habitat in the community	3.29	1.31
Talking to others in the community about environmental issues	3.58	1.28
Working with others to address an environmental problem or issue	3.55	1.21
Participating as an active member in a local environmental group	3.09	1.34
Voting to support a policy/regulation that affects the local environment	3.91	1.19
Signing a petition about an environmental issue	4.04	1.08
Donating money to support local environmental protection	3.44	1.12
Writing a letter in response to an environmental issue	3.04	1.22

Note. PEB items were measured on a 1-5 scale (1 = Very Unlikely; 5 = Very Likely)

Table 2. *Items Included in the Civic Identity Scale*

Statement	Mean	SD
I think it is important to help other people	4.56	0.88
I stand up for what I believe in	4.38	0.85
I tell the truth, even when it is not easy	4.03	0.94
I accept people who are different than me	4.49	0.72
I am helping to make my community a better place	3.98	0.96
I am trying to help solve social problems	3.87	1.02
I am serving others in my community	3.83	1.05
Behavior		
Helping to improve the community	3.80	1.06
Doing something to improve the community	3.80	1.02
Doing something worthwhile for society	4.08	1.05
Helping the country	3.83	1.07
Being active in politics	3.29	1.30

Note. Civic identity items were measured on a 1-5 scale (1 = Strongly Disagree, Not Important; 5 = Strongly Agree, Very Important)

Table 3. *Items Included in the Self-Regulation Scale*

Statement	Mean	SD
I consider exactly what is important for me	3.86	0.91
I keep trying as many different possibilities as are necessary to succeed at my goal	4.02	0.84
When something does not work as well as before, I get advice from my experts or read books	3.79	0.99
For important things, I pay attention to whether I need to devote more time or effort	4.21	0.76
I think about exactly how I can best realize my plans	4.04	0.95
I make every effort to achieve a given goal	4.07	0.85
When I have started something that is important to me, but has little chance at success, I make a particular effort	3.91	0.94
When I decide upon a goal, I stick to it	3.91	0.99
When things don't work the way they used to, I look for other ways to achieve them	3.99	0.82
When something doesn't work as well as usual, I look at how others do it	3.85	0.97
I always pursue goals one after the other	3.59	1.10

Note. Civic items were measured on a 1-5 scale (1 = Strongly Disagree; 5 = Strongly Agree)

Table 4. *Reliability and Descriptive Statistics for Study Variables among all Young Adults (n=138)*

Study Variables	Cronbach's Alpha	Chronbach's Alpha Based on Standardized Items	N of items	Mean	Std. Deviation
1. Pro-Environmental Behavior <i>Valid n=133</i> <i>Excluded n=5</i>	0.932	0.932	13	3.58	0.88
2. Civic Identity <i>Valid n=131</i> <i>Excluded n=7</i>	0.91	0.91	12	3.99	0.70
3. Self-Regulation <i>Valid n=132</i> <i>Excluded n=6</i>	0.88	0.88	11	3.93	0.61

Note. “Excluded” refers to missing data, where respondents did not provide a response. Pro-Environmental Behavior was measured on a 1-5 scale (1=Very Unlikely; 5=Very Likely). Civic Identity was assessed through a combination of two scales, both measured on a 1-5 scale (1=Strongly Disagree, Not at all Important; 5=Strongly Agree, Very Important). Self-Regulation was also measured on a 1-5 scale (1=Strongly Disagree; 5=Strongly Agree).

Table 5. *Zero-Order Correlations and Descriptive Statistics for Study Variables among all Young Adults (n=138)*

Study Variables	1	2	3
1. Pro-Environmental Behavior <i>n=138</i>	--	0.52**	0.35**
2. Civic Identity <i>n=134</i>		--	0.50**
3. Self-Regulation <i>n=136</i>			--
<i>M (SD)</i>	3.58 (0.88)	3.99 (0.70)	3.93 (0.61)

** Correlation is significant at the 0.01 level (2-tailed).

Note. Pro-Environmental Behavior was measured on a 1-5 scale (1=Very Unlikely; 5=Very Likely). Civic Identity was assessed through a combination of two scales, both measured on a 1-5 scale (1=Strongly Disagree, Not at all Important; 5=Strongly Agree, Very Important). Self-Regulation was also measured on a 1-5 scale (1=Strongly Disagree; 5=Strongly Agree).

Table 6. Zero-Order Correlations and Descriptive Statistics for Study Variables among French ($n=61$; above diagonal) and American ($n=77$; below diagonal) Young Adults

Study Variables	1	2	3
1. Pro-Environmental Behavior <i>French n=61</i> <i>American n=77</i>	--	0.48**	0.45**
2. Civic Identity <i>French n=57</i> <i>American n=77</i>	0.57**	--	0.52**
3. Self-Regulation <i>French n=59</i> <i>American n=77</i>	0.28*	0.50**	--
<i>French M (SD)</i>	3.64 (0.87)	3.86 (0.63)	3.91 (0.63)
<i>American M (SD)</i>	3.53 (0.89)	4.09 (0.73)	3.95 (0.61)

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Note. Pro-Environmental Behavior was measured on a 1-5 scale (1=Very Unlikely; 5=Very Likely). Civic Identity was assessed through a combination of two scales, both measured on a 1-5 scale (1=Strongly Disagree, Not at all Important; 5=Strongly Agree, Very Important). Self-Regulation was also measured on a 1-5 scale (1=Strongly Disagree; 5=Strongly Agree).

Table 7. *Zero-Order Correlations and Descriptive Statistics for Study Variables among Female (n=70; above diagonal) and Male (n=68; below diagonal) Young Adults*

Study Variables	1	2	3
1. Pro-Environmental Behavior <i>Female n=70</i> <i>Male n=68</i>	--	0.28*	0.35**
2. Civic Identity <i>Female n=69</i> <i>Male n=65</i>	0.65**	--	0.24
3. Self-Regulation <i>Female n=70</i> <i>Male n=66</i>	0.35**	0.63**	--
Females M (SD)	3.60 (0.81)	4.06 (0.54)	3.96 (0.49)
Males M (SD)	3.55 (0.95)	3.92 (0.83)	3.90 (0.72)

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Note. Pro-Environmental Behavior was measured on a 1-5 scale (1=Very Unlikely; 5=Very Likely). Civic Identity was assessed through a combination of two scales, both measured on a 1-5 scale (1=Strongly Disagree, Not at all Important; 5=Strongly Agree, Very Important). Self-Regulation was also measured on a 1-5 scale (1=Strongly Disagree; 5=Strongly Agree).

Table 8. *Zero-Order Correlations and Descriptive Statistics for Study Variables among White (n=93; above diagonal) and Non-White (n=45; below diagonal) Young Adults*

Study Variables	1	2	3
1. Pro-Environmental Behavior <i>Whites n=93</i> <i>Non-Whites n=45</i>	--	0.48**	0.15
2. Civic Identity <i>Whites n=93</i> <i>Non-Whites n=41</i>	0.62**	--	0.33**
3. Self-Regulation <i>Whites n=93</i> <i>Non-Whites n=43</i>	0.63**	0.68**	--
<i>Whites M (SD)</i>	3.57 (0.87)	4.04 (0.63)	3.98 (0.49)
<i>Non-Whites M (SD)</i>	3.59 (0.91)	3.89 (0.83)	3.83 (0.82)

** Correlation is significant at the 0.01 level (2-tailed).

Note. Pro-Environmental Behavior was measured on a 1-5 scale (1=Very Unlikely; 5=Very Likely). Civic Identity was assessed through a combination of two scales, both measured on a 1-5 scale (1=Strongly Disagree, Not at all Important; 5=Strongly Agree, Very Important). Self-Regulation was also measured on a 1-5 scale (1=Strongly Disagree; 5=Strongly Agree).

Table 9. *Summary of Simple Linear Regression Analysis for Variables Predicting PEB*

Variables	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Country	-0.11	0.15	-0.61	-0.71	0.48
Gender	0.05	0.15	0.03	0.33	0.74
Race	0.03	0.16	0.01	0.16	0.87

Table 10. *Summary of Simple Linear Regression Analysis for Variables Predicting Civic Identity*

Variables	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Country	0.23	0.21	0.17	1.93	0.06
Gender	0.14	0.12	0.10	1.14	0.26
Race	-0.15	0.13	-0.10	-1.15	0.25

Table 11. *Summary of Simple Linear Regression Analysis for Variables Predicting Self Regulation*

Variables	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Country	0.05	0.11	0.04	0.43	0.67
Gender	0.06	0.11	0.05	0.59	0.56
Race	-0.16	0.11	-0.12	-1.40	0.17

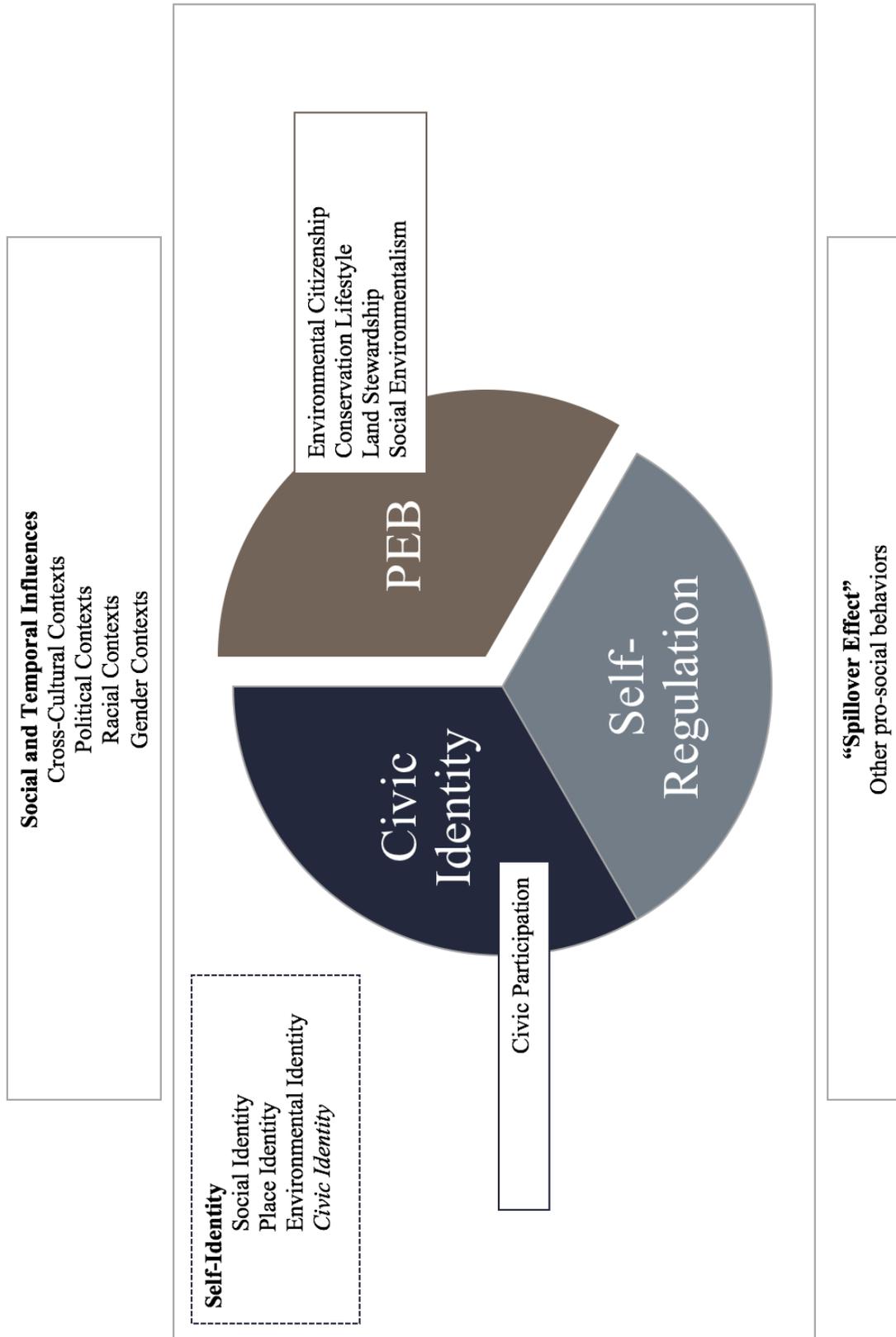


Figure 1. Illustration of Constructs Studied in the Present Investigation. Social and Temporal Influences on, and Potential Outcomes of, Constructs are also Illustrated.

Appendix A

Café Le Censier – 101, rue Monge, 75005 Paris

This data collection took place on Saturday, February 4, 2017 from 5:00pm-6:30pm during Café Le Censier's Happy Hour. Café Le Censier is a restaurant located less than a quarter-mile from the Université Sorbonne Nouvelle and is therefore a popular choice among students attending the university. Throughout the 90-minute data collection, there were approximately 30 students being served in the outdoor, enclosed heated-patio area. Given that I had two tablets, I approached pairs of young adults, explaining the purposes of my research and asking them to complete the survey. Upon completion, they were to receive one happy hour cocktail of their choice, worth up to €5. After consenting to participate in the survey, both young adults could complete the survey at the same time using the tablets I provided to them.

AntiCafé Beaubourg – 79, rue Quincampoix, 75003 Paris

My second data collection took place on Wednesday, March 15, 2017 from 3:00pm-5:00pm at AntiCafé Beaubourg. AntiCafé is a "coworking" café where customers pay by the hour for the amount of time spent in the workspace but, while there, have access to unlimited food, drinks, books, wifi, and more. There are several locations throughout Paris, however I chose the original AntiCafé, located the 3rd arrondissement among many boutiques and stores. Over the course of two hours, I had access to about 20 young adults. As young adults would enter the café (before they had begun working), I would approach them, explain my research, and ask them to complete the survey. Upon completion, I would pay for their first hour of "work time" (€5). After consenting to participate in the survey, I would give the survey respondent the SurveyMonkey link so that he or she could complete the survey with their own device.

Université Sorbonne Nouvelle – 13, rue Santeuil, 75005 Paris

My third data collection took place on Friday, March 17, 2017 from 9:30am-11:30am at Université Sorbonne Nouvelle (Paris III) during the school-week. I planned to collect data from students passing in-between classes; approximately 100 students passed through the building during this two-hour time period. To collect questionnaire responses, I approached students sitting in the hallway who were reading books, reviewing notes, or using their laptops. I would describe my research study, asking for consent and explaining that upon completing the survey they would receive a €5 gift certificate that could be used at the university café. Survey respondents were given the option to complete the survey using the provided tablet(s) or their own personal device. To ensure that I surveyed students from each discipline, I equally divided my time among each subject department area of the building.

Bibliothèque Sainte-Geneviève – 101 Place du Panthéon, 75005 Paris

My fourth data collection took place on Monday, March 20th from 2:00pm-3:00pm at Bibliothèque Sainte-Geneviève. Bibliothèque Sainte-Geneviève is a historic public library located in the Latin Quarter among many of the French public universities. One of the most popular libraries among college students, this library often has a long queue that extends the entire side exterior of the building. At the time of my data collection, there were approximately 30 young adults in line. I approached every other person in line, explaining my research and asking him or her to complete my digital survey using the provided tablet. Respondents were given two macarons as compensation for their participation in the survey.

Parc de la Légion d'Honneur – Avenue Paul Vaillant Couturier, 93200 Saint-Denis

My fifth data collection took place at Parc de la Légion d'Honneur on Friday, April 7th from 1:00pm to 3:00pm. Parc de la Légion d'Honneur is a public park located in Saint-Denis, a

northern suburb of Paris, France. Many students live in Saint-Denis due to its “vibrant multicultural atmosphere,” and although it was once considered “home to urban slums,” urban renewal has improved its reputation, giving rise to “pleasant” and “unusually affordable modern housing.” The park is known for its close proximity to the town’s famous abbey church, the Basilica Cathedral of Saint-Denis, as well as its April Tulip festival, which was being held during my visit to the park. Throughout the two-hour data collection, there were approximately 150 people in the park, one-quarter of which appeared to satisfy the requirements of my target population. I approached those who I believed were between the ages of 18 and 22 years old and, upon confirming their ages, explained my research, asking them to complete the online questionnaire using the provided tablet(s). After completion of the survey, respondents were presented with a €5 cash compensation.

Neuilly-sur-Seine

My sixth data collection took place on Saturday, May 13th, 2017 from 12:00pm-2:00pm in the town center of Neuilly-sur-Seine. Neuilly-sur-Seine is a western suburb of Paris, France which, contrary to Saint-Denis, is composed of wealthy residential neighborhoods giving it a “quiet, suburban atmosphere” (“Where to live near Paris,” n.d.). Throughout the two-hour data collection, there were approximately 150 people in the town center, one-fifth of which appeared to satisfy the requirements of my target population. I approached those who I believed were between the ages of 18 and 22 years old and, upon confirming their ages, explained my research, asking them to complete the online questionnaire using the provided tablet(s). After completion of the survey, respondents were presented with a €5 cash compensation.

Tufts University – 419 Boston Avenue, Medford, MA 02155

My seventh data collection took place on Wednesday, July 5th, 2017 from 12:00pm-2:30pm on the campus of Tufts University. Tufts University is a private, liberal arts and research university located in Medford, MA. Though this data collection took place in July, students were still on campus as it was the first day of Tufts' second summer session. However, there were not as many students as there are during the fall or spring semester. In the two hours I spent at Tufts, I approached students in the Mayer Campus Center and the Tisch Library, explaining my research and asking them to complete the online questionnaire using the provided tablet(s). After completion of the survey, respondents were presented with a \$5 Amazon gift card.

Felipe's Taqueria – 21 Brattle Street, Cambridge, MA 02138

My eighth data collection took place on Friday, July 14th, 2017 from 5:30pm to 7:00pm at Felipe's Taqueria in Harvard Square, Cambridge, MA. Felipe's is a casual, Mexican restaurant with a rooftop bar. Due to its location in Harvard Square, a busy shopping and restaurant area surrounding Harvard University, and its close proximity to the Massachusetts Bay Transportation Authority (MBTA) Harvard Square subway stop, Felipe's is a popular destination for college students and young adults. During this 90-minute data collection, I approached young adults in the restaurant and at the rooftop bar, explaining my research and asking them to complete the online questionnaire using the provided tablet(s). After completion of the survey, respondents were presented with \$5 cash.

Boston Common – 139 Tremont Street, Boston, MA 02111

My ninth data collection took place on Saturday, July 22nd, 2017 from 1:00-3:00pm at the Boston Common. The Boston Common is one of Boston's oldest and most popular public parks and, as such, is often frequented by both tourists and locals. It was warm and sunny on the

afternoon of the data collection, so there were many people at the park having picnics and walking around. According to the National Park Service, approximately 1,000 visitors would have passed through the park during this two-hour period (National Park Service, 2016), about one-tenth of which appeared to satisfy the age requirements of my target population. I approached those who I believed were between the ages of 18 and 22 years old and, upon confirming their ages, explained my research, asking them to complete the online questionnaire using the provided tablet(s). After completion of the survey, respondents were presented with a \$5 cash compensation.

Boston Public Library – 700 Boylston Street, Boston MA 02116

My tenth data collection took place on Tuesday, August 1st, 2017 from 11:00pm to 1:00pm at the Central Library of the Boston Public Library system. The Central Library comprises two buildings: the Johnson Building (the General Library) and the McKim Building (the Research Library). One hour was spent in each building. Though adults of all ages were present in the library, about one-third of the visitors appeared to be between the ages of 18 and 22 years old. Going to each of the library departments (e.g. fiction, non-fiction, media, research, etc.), I approached individuals and, explaining my research, asked them to complete the online questionnaire using the provided tablet(s). After completion of the survey, respondents were presented with a \$5 Amazon gift card.

Faneuil Hall Marketplace– 4 South Market Street, Boston, MA 02109

My eleventh data collection took place on Saturday, August 5th, 2017 from 2:00pm to 4:00pm at Faneuil Hall Marketplace. Faneuil Hall Marketplace, also known as Quincy Market, is an outdoor shopping center with many stores and restaurants, located in Boston's historic district. Approximately 700 visitors would have passed through Faneuil Hall during this two

hour period (National Park Service, 2017), about 100 of which appeared to satisfy the age requirements of my target population. I approached those who I believed were between the ages of 18 and 22 years old and, upon confirming their ages, explained my research, asking them to complete the online questionnaire using the provided tablet(s). After completion of the survey, respondents were presented with a \$5 cash compensation.

Assembly Row – 340 Canal Street, Somerville, MA 02145

My twelfth data collection took place on Thursday, August 10th, 2017 from 6:00pm to 8:00pm at Assembly Row. Assembly Row is a neighborhood of residences, outlet shops, office spaces, and restaurants in Somerville, MA. It is easily accessible by the MBTA Assembly Station subway stop and offers a variety of events throughout the summer. Its “Live Music Thursday,” providing visitors with live jazz, rock, bluegrass, and more, was taking place during this data collection. I approached individuals who appeared to meet the age requirements of my target population and, after explaining my study, asked them to complete the online questionnaire using the provided tablet(s). After completion of the survey, respondents were presented with a \$5 gift certificate to J.P. Licks, an ice cream shop located at Assembly Row.

Appendix B**Simple Linear Regression Equations: PEB**

Country: $F(1, 136) = 0.51, p = 0.48; R^2 = 0.00$

Gender: $F(1, 136) = 0.11, p = 0.74; R^2 = 0.00$

Race: $F(1, 136) = 0.03, p = 0.87; R^2 = 0.00$

Simple Linear Regression Equations: Civic Identity

Country: $F(1, 132) = 3.73, p = 0.06; R^2 = 0.03$

Gender: $F(1, 132) = 1.30, p = 0.26; R^2 = 0.01$

Race: $F(1, 132) = 1.32, p = 0.25; R^2 = 0.01$

Simple Linear Regression Equations: Self Regulation

Country: $F(1, 134) = 0.81, p = 0.67; R^2 = 0.00$

Gender: $F(1, 134) = 0.35, p = 0.56; R^2 = 0.00$

Race: $F(1, 134) = 1.95, p = 0.17; R^2 = 0.01$

Appendix C

Test for Difference Between Country Correlations Among Study Variables

PEB and SR.

Correlation of 0.45 (French) = z of **0.485**

Correlation of 0.28 (American) = z of **0.288**

$$0.485 - 0.288 = \mathbf{0.197}$$

$$n(\text{French}) - 3 = 61 - 3 = \mathbf{58} \quad 1/58 = \mathbf{0.017}$$

$$n(\text{American}) - 3 = 77 - 3 = \mathbf{74} \quad 1/74 = \mathbf{0.014}$$

$$0.017 + 0.014 = \mathbf{0.031} \quad \sqrt{0.031} = \mathbf{0.176}$$

$$0.197 / 0.176 = \mathbf{1.119} \quad 1.119 < 1.96 \therefore \text{not statistically significant}$$

PEB and CI.

Correlation of 0.48 (French) = z of **0.523**

Correlation of 0.57 (American) = z of **0.648**

$$0.648 - 0.523 = \mathbf{0.125}$$

$$n(\text{French}) - 3 = 61 - 3 = \mathbf{58} \quad 1/58 = \mathbf{0.017}$$

$$n(\text{American}) - 3 = 77 - 3 = \mathbf{74} \quad 1/74 = \mathbf{0.014}$$

$$0.017 + 0.014 = \mathbf{0.031} \quad \sqrt{0.031} = \mathbf{0.176}$$

$$0.125 / 0.176 = \mathbf{0.710} \quad 0.710 < 1.96 \therefore \text{not statistically significant}$$

SR and CI.

Correlation of 0.52 (French) = z of **0.576**

Correlation of 0.50 (American) = z of **0.549**

$$0.576 - 0.549 = \mathbf{0.027}$$

$$n(\text{French}) - 3 = 61 - 3 = \mathbf{58} \quad 1/58 = \mathbf{0.017}$$

$$n(\text{American}) - 3 = 77 - 3 = \mathbf{74} \quad 1/74 = \mathbf{0.014}$$

$$0.017 + 0.014 = \mathbf{0.031} \quad \sqrt{0.031} = \mathbf{0.176}$$

$$0.027 / 0.176 = \mathbf{0.153} \quad 0.153 < 1.96 \therefore \text{not statistically significant}$$

Test for Difference Between Gender Correlations Among Study Variables**PEB and SR.**Correlation of 0.35 (Female) = z of **0.365**Correlation of 0.35 (Male) = z of **0.365**

$$0.365 - 0.365 = \mathbf{0.000}$$

$$n(\text{Female}) - 3 = 70 - 3 = \mathbf{67} \quad 1/67 = \mathbf{0.015}$$

$$n(\text{Male}) - 3 = 68 - 3 = \mathbf{65} \quad 1/65 = \mathbf{0.015}$$

$$0.015 + 0.015 = \mathbf{0.030} \quad \sqrt{0.030} = \mathbf{0.173}$$

$$0.000 / 0.173 = \mathbf{0.000} \quad 0.000 < 1.96 \therefore \text{not statistically significant}$$

PEB and CI.Correlation of 0.28 (Female) = z of **0.288**Correlation of 0.65 (Male) = z of **0.775**

$$0.775 - 0.288 = \mathbf{0.487}$$

$$n(\text{Female}) - 3 = 70 - 3 = \mathbf{67} \quad 1/67 = \mathbf{0.015}$$

$$n(\text{Male}) - 3 = 68 - 3 = \mathbf{65} \quad 1/65 = \mathbf{0.015}$$

$$0.015 + 0.015 = \mathbf{0.030} \quad \sqrt{0.030} = \mathbf{0.173}$$

$$0.487 / 0.173 = \mathbf{2.815} \quad 2.815 > 1.96 \therefore \text{statistically significant}$$

SR and CI.Correlation of 0.24 (Female) = z of **0.234**Correlation of 0.63 (Male) = z of **0.741**

$$0.741 - 0.234 = \mathbf{0.507}$$

$$n(\text{Female}) - 3 = 70 - 3 = \mathbf{67} \quad 1/67 = \mathbf{0.015}$$

$$n(\text{Male}) - 3 = 68 - 3 = \mathbf{65} \quad 1/65 = \mathbf{0.015}$$

$$0.015 + 0.015 = \mathbf{0.030} \quad \sqrt{0.030} = \mathbf{0.173}$$

$$0.507 / 0.173 = \mathbf{2.931} \quad 2.931 > 1.96 \therefore \text{statistically significant}$$

Test for Difference Between Race Correlations Among Study Variables**PEB and SR.**Correlation of 0.15 (White) = z of **0.151**Correlation of 0.63 (Non-White) = z of **0.741**

$$0.741 - 0.151 = \mathbf{0.590}$$

$$n(\text{White}) - 3 = 93 - 3 = \mathbf{90} \quad 1/90 = \mathbf{0.011}$$

$$n(\text{Non-White}) - 3 = 45 - 3 = \mathbf{42} \quad 1/42 = \mathbf{0.024}$$

$$0.011 + 0.024 = \mathbf{0.035} \quad \sqrt{0.035} = \mathbf{0.187}$$

$$0.590 / 0.187 = \mathbf{3.155} \quad 3.155 > 1.96 \therefore \textit{statistically significant}$$

PEB and CI.Correlation of 0.48 (White) = z of **0.523**Correlation of 0.62 (Non-White) = z of **0.725**

$$0.725 - 0.523 = \mathbf{0.202}$$

$$n(\text{White}) - 3 = 93 - 3 = \mathbf{90} \quad 1/90 = \mathbf{0.011}$$

$$n(\text{Non-White}) - 3 = 45 - 3 = \mathbf{42} \quad 1/42 = \mathbf{0.024}$$

$$0.011 + 0.024 = \mathbf{0.035} \quad \sqrt{0.035} = \mathbf{0.187}$$

$$0.202 / 0.187 = \mathbf{1.080} \quad 1.080 < 1.96 \therefore \textit{not statistically significant}$$

SR and CI.Correlation of 0.33 (White) = z of **0.343**Correlation of 0.68 (Non-White) = z of **0.829**

$$0.829 - 0.343 = \mathbf{0.486}$$

$$n(\text{White}) - 3 = 93 - 3 = \mathbf{90} \quad 1/90 = \mathbf{0.011}$$

$$n(\text{Non-White}) - 3 = 45 - 3 = \mathbf{42} \quad 1/42 = \mathbf{0.024}$$

$$0.011 + 0.024 = \mathbf{0.035} \quad \sqrt{0.035} = \mathbf{0.187}$$

$$0.486 / 0.187 = \mathbf{2.599} \quad 2.599 > 1.96 \therefore \textit{statistically significant}$$