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Is a transformational leadership style key for combatting climate change?

A case-study of Obama and the likeliness of an active climate policy

Political leaders in International Conflicts and Issues

Mirthe van der Vloet
S1381911

Supervisor
F.E Bakker

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Introduction

Climate change is an issue like no other. Policies concerning other critical issues can eventually be reversed or improved. Not so with climate change, since there are points of no return regarding soil degradation, deforestation and the decreasing supply of raw materials (Hertsgaard, 2016). Therefore, active climate policies are crucial for combatting climate change now. However, climate change is a topic that is fiercely debated by both politicians and scientists and even the existence of it is denied. As Obama said: *“Part of what’s unique about climate change, is the nature of some of the opposition to action. It’s pretty rare that you’ll encounter somebody who says the problem you’re trying to solve simply doesn’t exist. When president Kennedy set us on a course for the moon, (...) nobody ignored the science. I don’t remember anybody saying that the moon wasn’t there or that it was made of cheese”* (White House Archives, 2014a).

A political leader can have great impact on creating those much needed climate policies. However, the variety in opinions regarding the topic can be in the way of an active climate policy, because policy outcomes can reflect the leader’s beliefs (Jervis, 2015,p. 3). Since individuals differ in their traits and beliefs, the urge that could lead to the initiation of a climate policy could be different as well. Therefore the belief or disbelief of the political leader in climate change can be crucial for the policy outcome.

If society wants climate change to be tackled, the question arises what kind of leader is necessary for establishing an active climate policy and thus most likely believes in climate change. One way to answer this question is to look at leadership style. A leadership style is explanatory for the policy outcome of a political leader, since it reflects the beliefs and traits of the individual (George, 1980). These personal characteristics can shape the leader’s perception of the world and the way they deal with dilemmas, which can influence the policy outcomes (George, 1980; Kaarbo & Hermann, 1998). Since climate change is a cumbersome issue, where personal beliefs play a major part, the leadership style can be explanatory for the climate related policy outcome (Jervis, 2015). There are many leadership styles, but it seems that the transformational leadership style is more likely to initiate a climate policy according to similarities with the traits of being a climate change believer and the characteristic traits of a transformational leader. These similar traits can indicate the likeliness that a transformational leader will initiate an active climate policy. Theories about the Big Five

personality traits will support the link between the traits of a climate change believer and a transformational leadership style.

These theories will be discussed first, whereby also other perspectives to the subject will be offered for a complete picture. The combined hypotheses will be tested based on a case study on Barack Obama. This theory-testing case study will investigate whether Obama's transformational leadership style impacted the initiation of an active climate policy. This is executed by looking at the climate policy of the United States in Obama's office and in the office of previous and new presidents. After this there will be looked at whether the traits of a transformational leader can be found back in speeches, interviews and weekly addresses of climate related content, so the statement can be made that either Obama's transformational leadership style did or didn't have an impact on the initiation of an active climate policy.

Literature Review

The importance of the individual in environmental problems

The issue of climate change is nowadays widely recognised as one of the major challenges for mankind in the 21st century. There have already been taken some measures to combat climate change, for example the Paris Agreement, but there is still a long way to go to develop a climate policy that will deliver results in time. This difficulty is partly due to the complex nature of a global climate change regime, the very early stage of the development of effective policies and the wide variety of causes of climate change (Gupta & Grubb, 2000, p. ix). The difficulties are also due to the complexity of the negotiation process and the lack of leadership to take the lead in this multi-dimensional problem of this size and nature (Gupta & Grubb, 2000, p. ix). The prevailing approach to this environmental problem remains state centric, where states, through institutions or agreements, try to manage the global environment (Vogler & Imber, 1996, p. 79). International Relations (IR) theories most of the time ignore the research that has been done in foreign policy analyses on the effect that agencies, instead of structures, have on policies. The perceptions of agency are therefore under theorized in the IR theory (Kaarbo, 2015, p. 189). Scholars used to think that incorporating leaders into the study of international conflict would not add a lot to the understanding of conflict, cooperation and change in international relations (Hermann & Hagan, 1998, p. 124). Smith (1986) even wondered whether studying the individual has anything more to offer than just side notes to the theory of IR.

Although IR scholars do not use the individual as their level of analysis, it is not completely ignored. Waltz (1959) incorporated the individual in his three images to explain the international relations. He argues that men make states, and states make men and thus stating that looking into the motivations of individuals is important for understanding their acts. But even though he explains the effects that individuals could have, he semi-dismisses this by stating that only looking at the effects individuals can have is overoptimistic (Waltz, 1959). Yet, psychologically-oriented and agent-based theories have shown its significance in solving issues in international politics, and have thus much to offer (Kaarbo, 2015, p.195). Policy makers plan strategies and actions, which arise out of their personal experiences, goals, beliefs, and sensitivity to the political context (Mintz, 2004, p. 6). Understanding the relevance of leaders in today's multipolar world is important, because the policy that they bring out can be affected by the fact that leaders vary in their interpretations on how international politics should work (Hermann & Hagan, 1998, p. 134). So Waltz (1959) has stated that without the first image of the individual, no knowledge can be gained of the dynamics that determine policies (Waltz, 1959, p. 238).

The role of the individual can especially be important in relation to climate change. Since the opinions about the existence of climate change can be different for each individual, the individual level of analysis can give different insights on climate related policy outcomes. The interpretation of the information that is known about climate change, the ability of political leaders to work together for a global policy and the capability to take the lead can be dependent on these beliefs (Weber, 2010). The topic climate change and the reactions of political leaders to that topic is thus dependant on the different ways of dealing with political constraints and processing information of one single individual (Hermann, Preston, Korany & Shaw, 2001, p. 84; Weber 2010). The role that an individual could have on climate change could be seen back in the appointment of climate change denier Donald Trump: *"Ice storm rolls from Texas to Tennessee - I'm in Los Angeles and it's freezing. Global warming is a total, and very expensive, hoax!"* (Trump, 2013). His individual disbelief in climate change could indicate the changed climate regimes since he was appointed, such as the taking back of Obama's climate regulations, the aiding of the fossil fuel industry and the appointment of a climate change denier as the Environmental Protection Agency (Worland, 2017). This possible relationship between the individual political leader and the policy outcomes is

something that could give new insights in the politics of climate change. Therefore the level of analysis in this thesis will be on the micro-level of the political leader.

The leadership style and policy outcomes

Ignoring the micro-level level can cause incomplete and inadequate information about the way political leaders deal with information and opinions on climate change. The particular leadership style of a political leader can frame the way they deal with dilemmas in the international environment, such as the problems arising around climate change and the nature of policies resulting from that (Kaarbo & Hermann, 1998, p. 243). The certain leadership style is influenced by how the individual is likely to view his environment and how he operates in his own psychological environment. This cognitive approach, which differs from the rational approach that assumes that individuals are thoughtful thinkers, focuses on the operations of the mind and its beliefs and intuitions (Rosati, 2000, p. 52). In one's life, an individual acquires a set of beliefs and personal constructs which structures the external environment and the decisions based on that (George, 1980, p. 57). The beliefs of a political leader can affect the policy outcome through for example the content of his beliefs and through the perceptions and misperceptions that the leader holds (Jervis, 2015, p. 3). The leadership styles that are suggested by the leaders' personal characteristics are linked to their actions in the policy-making procedure and are thus highly recommended to look at when studying international relations (Kaarbo & Hermann, 1998, p. 256).

The individual and belief in climate change

The beliefs and leadership style of an individual are especially crucial with regard to climate change, because there are many different public understandings of climate change. In this thesis the distinction will be made between a climate change believer and denier. The concept climate change denier can be seen as the dismissal of the evidence that supports climate change, whereas a believer accepts the evidence (O'Connor, Bord & Fisher, 1999, p. 462). It is likely that when an individual differs in climate change beliefs, the personal characteristics supporting these beliefs might also differ (Milfont et al, 2015, p. 20). These different personal beliefs can then result into different leadership styles and policies around the topic (Bostrom et al, 1994, p. 959). In this way, individuals can have a big impact on combatting climate change by creating climate change related policy outcomes. If the assumption can be made that a political leader will be more likely to establish a climate policy when the leader beliefs in climate change, there needs to be investigated what kind of

leader would be more open for such a policy. Wurzel & Connelly (2010) argued that for tackling climate change, a leadership style is necessary that is based on long-term thinking and political innovation. It will take a high degree of creative leadership to tackle all the political challenges that arise around climate change (Wurzel & Connelly, 2010 p. 12). No such research has been done until now, that investigates which leadership style will most likely initiate a climate policy, using the links between the personal characteristics of climate change believers and the different leadership styles. This leads me to the question: *"Is the leaderships style of a political leader influential on an active climate policy?"* This is important because according to Obama: *"We're the first generation to feel the impact of climate change, we're the last generation that can do something about it"* (White House Archives, 2014b). If we want to combat climate change now, it is crucial to know what kind of leader will be likely to believe in climate change and subsequently will be more likely to initiate a related policy.

Theoretical framework

Below, a framework will be offered where the theoretical assumptions (A) and expectations (E) will be merged to a hypothesis (H) that will be tested in the analysis.

The beliefs and personal characteristics of a political leader lead to different leadership styles and policies (A1). Certain leadership styles will more likely lead to active climate policies than others (E1). This assumption is supported by the similarities in traits between the transformational leader (A2) and the traits that are characteristic for a climate change believer (A3). Since a climate change believer could be more likely to establish a climate policy (A4), the hypothesis can be made that, considering there are corresponding traits in being a climate believer and the transformational leadership, a transformational leader will be likely to establish an active climate policy (H1).

Assumption 1

The framework above will help explain the research question; whether having an active climate policy is leadership specific. To be able to answer this question, another question must be answered first. The statement must be acknowledged that different beliefs and personal characteristics lead to other leadership styles, which lead to different policies.

In this thesis the conceptualization of leadership style contains: *"The leaders' work habits, how they relate to those around them, how they like to receive information, and how they make up their minds"* (Kaarbo, 1997, p. 553). To explore the relationship between various personal characteristics and leadership styles, the trait theory will be used, that assumes that

leadership is dependent on the personal qualities of the leader (Judge, Bono, Ilies, Gerhardt, 2002, p. 765). There still remains pessimism about the relation between those two variables, but various researchers (Daft, 1999; Stogdill, 1948; House & Aditya, 1997; Mann, 1959, Bass, 1990; Yukl, 1998) have found that certain personal characteristics lead to different leadership styles. The concept personal characteristics is used because it contains not only personal traits, but also the beliefs, motives and ideologies that an individual can possess (Hermann, 1980, p. 8). Hermann (2005) used research linking personal characteristics of leaders to their political behaviour, and argued that seven characteristics are useful in assessing a particular leadership style. The cognitive theory sheds also light on the relationship between the individual and leadership styles. This theory provides models for determining the content of the personal characteristics, which is inevitable for understanding the policy outcomes (Rosati, 2000, p.54). George (1980, p.57) argues that these characteristics influence the policy because the set of beliefs and personal constructs provide the leader with a way of organizing information and constructing their environment. These cognitive principles explain human decisions in complex situations and are therefore a good model to explain policy making in international relations (Rosati, 2000, p. 53). Different theories thus focus on the interaction between personal characteristics and leadership styles and all conclude the same. Therefore there can be assumed that personal characteristics lead to different leadership styles.

To see whether a different leadership style leads to diversities in climate policies there must be looked at whether different leadership styles lead to different policies in general. Kaarbo & Hermann (1998) argue that a particular leadership style can frame the way in which a political leader deals with the decision making process (p. 243). There is much research done about how different leadership styles can influence the outcome of policies. Studies (Dyson, 2006; Hermann & Preston, 1994) suggest that the leadership style of an individual influences the policy making process in several ways. The work habits can shape the way a political leader prefers to receive information and how he makes decisions based on that (Hermann & Preston, 1994, p.75). Besides, a leadership style with a high need for power would be more likely to challenge constraints in the international system, what would result in different policy outcomes (Dyson, 2006, p. 294). Other research (Bono & Judge, 2004; Hoogh & Den Hartog, 2005) sheds light on the difference between transformational and transactional leadership and the different traits that lead to other decision making processes, alias policy outcomes. A transformational leader will for example be more likely to achieve change in the

policy outcomes, whereas a transactional leader appreciates the status quo (Bono & Judge, 2004). However, there are also theories stating that not the individual, but structures shape the policy outcomes. The institutional theory argues that governmental institutions determine policy outcomes, whereas rational theory argues that governments choose the policy resulting in the highest gains for society (Cox, 1981). Yet, the role of the individual in policy making could also be influential within these theories.

A1: Beliefs of political leaders lead to different leadership styles and different policies.

Expectation 1

In the first assumption, there is already stated that a leadership style can lead to different policy outcomes. Since the establishment of climate policies is very important for combatting climate change, it is crucial to know what kind of leadership style will be more likely to believe in climate change and thus initiate a climate policy. Climate change will be seen as the anthropogenic version, where changes in the global climate system are human-induced (IPCC, 2014). There are many different leadership styles that each have their own characteristics. In this way Hermann (2005) distinguishes eight different leadership styles, and Eagly, Johannesen-Schmidt & Van Engen (2003) distinguish transactional, laissez-faire and transformational leadership. In this research this distinction is made since the policy outcomes can be different for each leadership style.¹ The transformational leadership style is the leadership style that will be focussed on in this thesis. A transformational leader strives for change and wants to achieve this through inspiration and motivation (Judge & Bono, 2000). Transformational leadership is according to Wurzel & Connelly (2010) and Gallagher (2012) linked to environmental leadership and policy changes. Political leadership in climate change needs soft as well as hard power combined with innovative leadership, and a transformational leadership style seems to fit well in this description (Wurzel & Connelly, 2010, p. 14). The aspects of transformational leadership style also seem to match the expectations of an environmental leader. According to Bass & Stogdill (1990) the aspects of transformational leaders could be raising awareness and moral standards, encouragement to look beyond the self-interest of the common good, promoting cooperation and creating an ethical climate (Bass & Stogdill, 1990, p. 218). Wurzel & Connelly (2010) combine these aspects of transformational leadership style with the right traits of becoming an environmental

¹ The transactional leadership style refers to a leader who waits until problems become serious before acting upon it, while a laissez-faire style refers to the frequent absence of involvement during those problematic moments (Eagle, Johannesen-Schmidt & Van Engen, 2003, p. 571).

leader. It seems that the transformational leadership style is the best leadership style to analyse when looking at the possibility of the initiation of a climate policy.

E1: A transformational leadership style will most likely be a leadership style that combats climate change actively.

Assumption 2

To further examine the relationship between transformational leadership and the belief in climate change, the specific traits of the transformational leadership style and of a climate change believer must be studied. The Big Five personality model will be used, considering this model had a correlation of 0.48 with leadership, revealing a strong relationship between the five traits, agreeableness, extraversion, openness to experience, neuroticism and conscientiousness, and leadership styles (Judge, Bono, Ilies, Gerhardt, 2002, p. 765). This relationship is substantiated by the Big Five's use of the trait theory, which assumes that leadership is dependent on the personal qualities of the leader (Judge, Bono, Ilies, Gerhardt, 2002, p. 765). These personal qualities are well explained by the Big Five model, since it reflects the most prominent aspects of the personality and the traits are heritable and stable over time (Judge, Bono, Ilies, Gerhardt, 2002, p. 767). Research linking the Big Five traits to transformational leadership found that openness to experience, extraversion and agreeableness are positively related to transformational leadership overall (Judge & Bono, 2000; Judge & Bono 2004). Leaders who score high on the trait agreeableness are most likely to be cooperative and can be described as altruistic, which is one's concern for the welfare of others (Bono & Judge, 2004, p. 903; Sibley et al, 2011, p. 144). Low agreeableness leaders tend to be competitive and untrustworthy persons (Raad, 2000, p. 77). The trait openness to experience represents the embracement of change, achieved through intellectual stimulation and creativity (Bono & Judge, 2000; Sibley et al, 2011). Intellectual stimulation involves the questioning of old assumptions, using several information sources to stimulate new and different perspectives (Bono & Judge, 2000, p.753). Conversely, a leader that scores low on openness is most likely a closed-minded and pragmatic (Raad, 2000, p. 77). The last trait that is related to transformational leadership is extraversion, which is strongly related with social leadership and a positive view of the future. Leaders who score low on extraversion are most likely to be reserved, indifferent and distant (Raad, 2000, p.77).

A2: Transformational leaders are more likely to score high on the traits agreeableness, openness to experience and extraversion.

Assumption 3

To explore whether a transformational leadership is likely to be a climate change believer, investigating the corresponding traits of a transformational leader and a climate change believer could be useful. Previous research has linked the belief in climate change to the Big Five personality model (Milfont et al, 2015; Hirsh & Dolderman, 2007; Nisbet et al, 2009; Hirsh, 2010; Milfont & Sibley, 2012). The research linking these traits to believe in climate change all came to the same conclusion; climate change believers tend to have greater levels of agreeableness and openness to experience (Milfont et al, 2015; Hirsh & Dolderman, 2007; Nisbet et al, 2009; Hirsh, 2010; Milfont & Sibley, 2012). Milfont et al (2015) concluded that there was no significant relation between climate belief or disbelief and the traits extraversion and conscientiousness. Nisbet et al (2009) on the other hand argued that extraversion did have a significance with nature relatedness, and individuals who scored high on this trait are more likely to be highly connected to nature (Nisbet et al, 2009, p. 715). Due to this disagreement, the assumption can only be made for the traits agreeableness and openness to experience and their positive relation to believe in climate change.

A3: Climate believers are more likely to score high on the traits agreeableness and openness to experience.

By combining assumptions one, two and three with expectation one, the conclusion could be made that a transformational leader and a climate change believer have similar traits. These similar traits are agreeableness and openness to experience. This could mean that a transformational leader will be likely to be a climate change believer. Since expectation one also stated that the transformational leadership style will most likely lead to an active climate policy, the link between a transformational leader and a climate change believer seems to correspond. The next step is to investigate whether a leader who believes in climate change automatically is more likely to strive for an active climate policy.

Assumption 4

To investigate the relationship between the belief in climate change and an active climate policy, the research of Gallagher (2012) can give new insights. She argues that there are different mindsets in relation to sustainability, which can lead to different decision making processes and policy outcomes (Gallagher, 2012, p. 50). Humans have different views on climate change and will act according to these beliefs. To support this argument, the author used the Grid Group Typology.² There has been made a distinction between hierarchists, fatalists, individualists and egalitarians.³ The mindset of a hierarchist for example blames a lack of global governance for the failed climate policies, and argues that science will eventually solve the problem itself (Verweij et al, 2006, p. 822). However the egalitarian sees nature as fragile and men as caring and therefore working together is the only and best working solution for the environmental problems. This collaboration should be imposed in a top-down way (Verweij et al, 2006, p. 820). This shows how different beliefs and characteristics can shape the way individuals think about climate change and the way they act upon it. There won't be a climate policy when a hierarchist believes the problem will solve itself, whereas there will be a climate related policy if nature is seen as fragile and in need for help (Verweij et al, 2006). This assumes that when a political leader believes in climate change and is convinced that it can be solved, the policy outcomes of this leadership will most likely also be climate related.

A4: Political leaders who believe in climate change will be more likely to strive for an active climate policy.

H1: The hypothesis could be made that, since there are corresponding traits in being a climate believer and transformational leadership, a transformational leader will be likely to establish an active climate policy under his/her administration.

Research Design

² The Grid Group model is a model of two dimensions. The group dimension refers to the bonds with people, whereas the grid dimension exists of personal differences and similarities between people.

³ The Grid Group model makes a distinction between fatalism, collectivism, individualism and egalitarianism. The fatalist is characterized as having weak bonds with people and many interpersonal differences. The hierarchist has strong bonds with people and many interpersonal differences. The individualist has weak bonds with people and similarities with people. The egalitarian has strong bonds with people and similarities with people (Verweij et al, 2006, p. 820).

Methodology

A large theoretical framework will be offered in this thesis. After combining the trait theories about leadership and belief in climate change, a single case study will be used to verify or falsify hypotheses one. In this process qualitative analysis will be used. Although qualitative research has disadvantages in comparison to quantitative research, for answering this research puzzle it has more advantages. One disadvantage of qualitative research that must be noted is the difficulty of generalizing (Bryman, 2015, p. 379). However, in this thesis the aim is to see whether the independent variable leadership style played a role in a single case study about a leader's initiation of a climate policy. Since there is done none to little research about the connection between leadership style and the initiation of a climate policy, the aim is rather to provide an in-depth analysis for further research than the aim is to generalize. The precise method that will be used is the single critical case study. Single case studies do have limitations, such as the lack of methodological guidelines, researcher subjectivity, and external validity (Bennett & Elman, 2010, p. 500). However, handling the case study with discretion could solve these limitations and turn them into advantages. Using a critical case study has many advantages for solving this research puzzle, since a critical case is testing a theory, which later on can confirm, challenge or extend the theory.

Case selection

As the former president of America, Obama attracted a lot of attention with his charismatic leadership style and strong speeches, where the quote: "*Yes we can*" became famous (The Independent, 2008). In his eight years in office as the American president, he got labeled as a transformational leader (Gliem & Janack, 2008). Studying an American president regarding climate policies can give new insights on the topic, since climate related policy changes can have big impacts on the world's largest CO₂ emitter (White House Archives, 2016). Therefore this case study is based on the selection of the independent variable; the transformational leadership style. The selection on the independent variable is chosen to prevent selection bias, which occurs when selecting the case on the dependent variable (Bennett, 2004, p. 39). However, in the case of a political leader it is difficult to be ignorant about the dependent variable, the climate policy, since it is known that Obama's administration put in place a number of programs to battle climate change (CNN, 2017). To avoid the bias, there must be demonstrated that it were the specific traits of Obama that made him initiate a climate policy, instead of what IR theories say about the role of the state. A disadvantage of the single case study of Obama is that it is not representative, however in a

critical case study this is not the aim (Bennett & Elman, 2010). This theory testing case study is crucial for the further development of climate policies around the world, because the outcome of this research puzzle will investigate what kind of leadership will most likely initiate a climate policy. This information is important for either further research or an indicator for voters who are concerned about the climate.

Data selection

Obama as a transformational leader

Stating that Obama could be seen as a transformational leader is retrieved from secondary data⁴. This way of selecting data is chosen since it was time efficient and much of the research about Obama's leadership style was already done. The disadvantage of using secondary data is that it could be out of date or inaccurate (Bryman, 2015, p. 311). Therefore the data is attracted from the period 2008 till 2012, the years of election, so that if his leadership style were to change after his first administration, it can be noted.

Climate policy

To investigate whether the U.S had an active climate policy under Obama's office, a combination of primary and secondary data will be used. The Climate Record⁵ will be used to find out what Obama's promises were, and documentation and legislation, retrieved from the overview on the White House Archives, will be used to see whether his climate policy at the end of his office was active. This will give the most accurate picture of the climate policies.

Climate related content

According to Thurmond (2001) the validity of the data will be strengthened if there occurs triangulation. This means the combination of at least two data sources, which increases the ability to interpret the findings. There will be looked at three different sources, interviews, speeches and weekly addresses, to see whether the traits of a transformational leader can be found back in the climate related content of Obama. The data will be as diverse as possible,

⁴ In the research of Gliem & Janack (2008), Skowronek (2011), Green & Roberts (2012) and Engbers & Fucilla (2012), the authors argue that Obama could be seen as a transformational leader. The findings will be further explained in the results and analysis.

⁵ The Climate record is a historic commitment to protecting the environment and addressing the impacts of climate change initiated by Obama (White House Archives, 2016).

what will be reached by diversity in year of publication and the public that Obama is approaching⁶

Operationalization

Concept: Transformational Leadership

The transformational leadership style will be measured according to the traits of the Big Five model that had a positive relation with this leadership style; agreeableness, openness to experience and extraversion.

Concept: Climate policy

An active climate policy can be very broad. Therefore it needs to be operationalized, before investigating Obama's climate related policies. In this thesis a climate policy will be measured according to adaptation (Burton et al, 2002). Climate adaptation policy refers to: "*Actions taken by governments including legislation, regulations and incentives to mandate or facilitate changes in socio-economic systems aimed at reducing vulnerability to climate change, including climate variability and extremes. Changes can be made in practices, processes, or structures of systems to projected or actual changes in climate*" (Burton et al, 2002, p. 146).

Validity: measuring transformational leadership style according to the Big Five traits can be seen as a valid way, because research has linked these traits to this leadership style and found positive and negative relations. This means that there is a significant correlation between some of the traits and the transformational leadership style (Bono & Judge, 2000; Bono & Judge, 2004). Measuring climate policies according to adaptation seems like the most realistic way. Some researchers match a climate policy to environmental outcome (Aldy et al, 2003), but since the results of climate policies are often long term, results can be unreliable when looking at short-term outcomes.

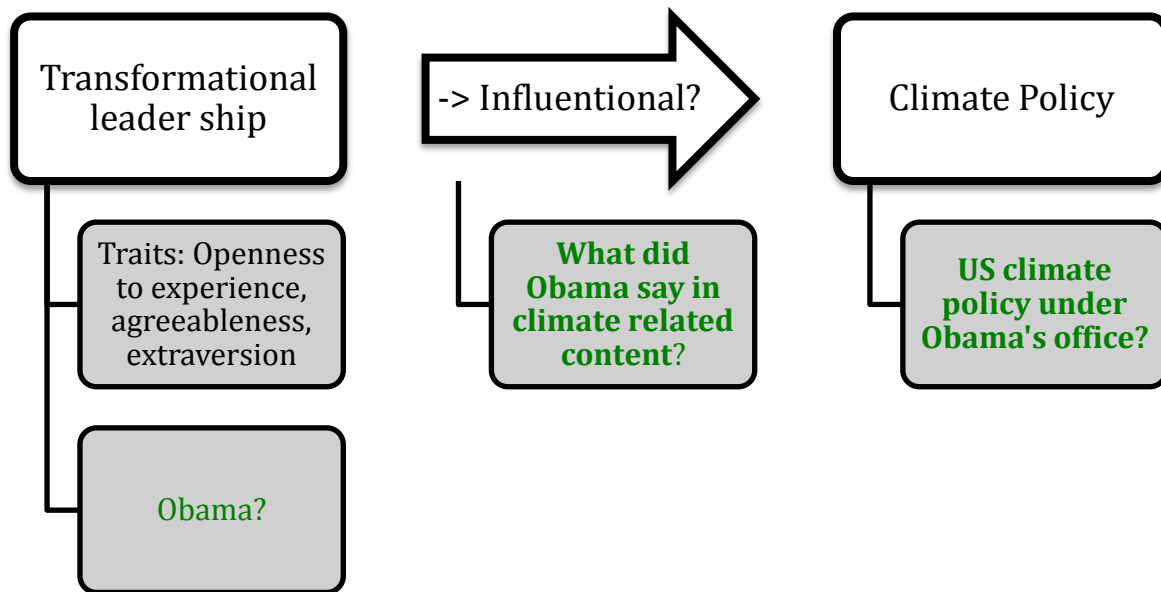
Reliability: In order for the results to be reliable, the results should be the same when measuring it a second time (Bryman, 2015, p. 322). In this research interpretation is used, while measuring the Big Five traits in Obama's climate related content. Interpretation can have a negative impact on the reliability of the research, but therefore the operationalization

⁶ The precise information about the content will be offered in the appendix.

of the traits should be as complete as possible in order for the results to be reliable. This also applies to the replicability of the research. A complete overview of the variables and the used data will help to improve the replicability.

Analysis & Results

Graphical representation of analysis



“Is a transformational leadership style influential on an active climate policy?” This graphical representation above shows how this will be answered. First there needs to be proved that Obama is a transformational leader, then there needs to be checked whether the U.S had an active climate policy under Obama’s administration. Lastly, there needs to be proven that the transformational leadership style of Obama was the factor that made him execute an active climate policy. This will show whether there is a relation between the transformational leadership style and Obama’s decision making to an active climate policy.

Obama as a transformational leader

The first secondary data source (Gliem & Janack, 2008) investigated the transformational leadership of Obama by analysing both textual and visual strategies that Obama used in his campaign period. Through analysing this, they found evidence that Obama meets the characteristics of a transformational leader. Skowronek (2011) analysed Obama in his campaign phase and stated he could be seen as a transformational leader, since the promise of change was key in this period. Green & Roberts (2012) stated that Obama was a transformational leader through analysing his voter’s motives. Both his strategy matched the

transformational leadership style, as well as his follower's need for change in policy (Green & Roberts, 2012, p. 20). Engbers & Fucilla (2012) investigated whether the political speeches matched a certain leadership style by using coding and textual analysis. The findings suggest that Obama uses a transformational leadership style, especially in his way of persuasion. Since multiple researches suggest the same, the statement that Obama can be seen as a transformational leader is plausible.

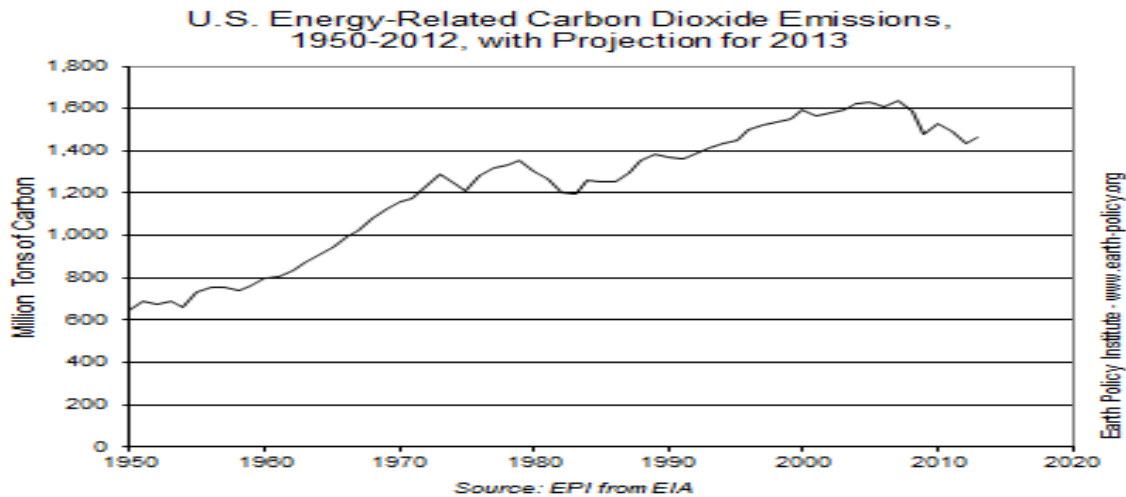
Climate policy of the United States

The active policy of the U.S will be investigated by looking at the climate related policies under the rule of previous and next presidents. For an as broad as possible view, the climate related policies of Bill Clinton, George Bush and Donald Trump will be investigated. On earth day Clinton stated: *"We also must take the lead in addressing the challenge of global warming that could make our planet and its climate less hospitable and more hostile to human life. Today, I reaffirm my personal, and announce our nation's commitment, to reducing our emissions of greenhouse gases to their 1990 levels by the year 2000"* (White House Archives, 1993). However, these words didn't lead to adaption under his administration. When Clinton left office there was only a minimum decrease of CO2 emission. The commitment to economic prosperity was prioritized above environmental protection (Wapner, 2001). George Bush also started his office with environmental concern, where he – as the first U.S president declared- that *" Human activities are changing the atmosphere in unexpected and unprecedented ways"* (White House Archives, 2013). However, the Bush administration announced that it would not implement the Kyoto Protocol, claiming that ratifying the treaty would only cause economic setbacks (Borger, 2001). It is even said that Bush had a do-nothing policy on climate change, because his administration blocked modest environmental reforms, while making it look as if they were doing something (Froomkin-Cheney, 2007). In 2017 the office of Trump discussed whether they should stay in the Paris Agreement (Dlouhy & Natter, 2017). He even signed an executive order, were he dismantles much of the work related to climate change under Obama's administration (White House Archives, 2017). Graph 1 shows the difference under Clinton's, Bush's and Obama's office.⁷ Despite the growing population of the U.S, the CO2 emissions went down when

⁷ Clinton was in office from 1993 till 2001, Bush was in office from 2001 till 2008 and Obama began office in 2008.

Obama took office (Davis & Caldeira, 2010), whereas these emissions increased under Bush's and Clinton's office.⁸

Graph 1: Environmental achievements under Obama's office



Retrieved from: http://www.earth-policy.org/data_highlights/2013/highlights41

Obama's climate related policy

To see whether there was an active climate policy under Obama's office, there must have been adaption of the climate related policies. As shown in the operationalization, adaption can be referred to as actions taken by the government such as legislation, regulation or incentives that combat climate change in any way (Burton et al, 2002, p. 146). According to the Climate Record, the U.S has done more to combat climate change than ever before under Obama's office (White House Archives, 2016). However, since deeds say more than words, it should be investigated whether there are active climate policies. In the beginning of his office, Obama made a commitment in the Climate Record, where he distinguished several aspects in combatting climate change. To investigate whether at the end of his office his promises became real, analyzing climate related legislation, regulation and incentives during his administration are important.

The first goal is to cut carbon pollution. Obama set the first national carbon, fuel and energy pollution standards by establishing the Clean Power Plan, which reduced the green house gases of the Federal Government by 17 percent. By releasing the U.S Mid-Century Strategy

⁸ There must be noted that the decrease in CO2 emissions could also be caused by the changes in economy and technological development (Davis & Caldeira, 2010).

for Deep Decarbonization, Obama worked together with Mexico and Canada to decrease the CO₂ emissions. Besides, he made American companies work together to cut carbon-pollution by launching the American Business Act on Climate Change (White House Archives, 2016).

The second goal is to expand the Clean Energy Economy. Obama made the largest investment in clean energy through the American Recovery and Reinvestment Act, where he provided 90 billion dollars in clean energy. This caused the wind power to triple and the solar power was increased by 30 times since Obama's office. He also performed technical improvements in clean energy together with investments in knowledge surrounding this topic. Besides, he invested money in the Clean Energy Investment Initiative, loan guarantees and the department of agriculture to support energy efficiency (White House Archives, 2016).

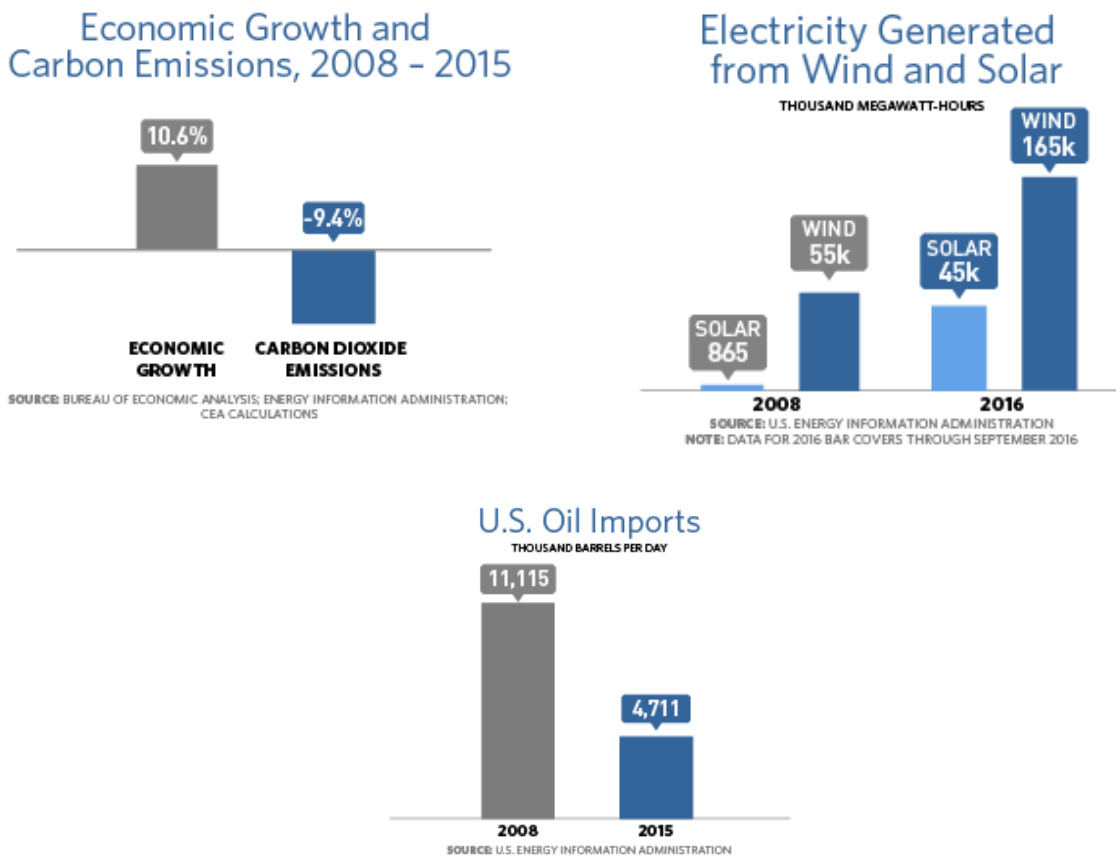
The third goal is to be the leader in global efforts. In Obama's office he led the global effort on climate change; the Paris Climate Agreement. This is one of his biggest and best-known achievements regarding climate change, however Obama also led an international coalition to secure an amendment to the Montreal Protocol, in order to phase down the green house gases (White House Archives, 2016).

The fourth goal is to protect natural resources. Obama protected the ozone layer and water sources by setting higher standards and protecting it by creating frameworks like the Clean Water Rule. Besides, he reformed the Toxic Substances Control Act in order to protect families from health effect of pollution and Introduced the first national limits and standards for air pollution (White House Archives, 2016).

The last goal is the preparation of impacts. Obama established a Leader Task Force to advise the Administration on how to prepare communities for the impacts of climate change and launched the National Disaster Resilience Competition in order to help people rebuild after those impacts. Besides, he released the National Climate Assessment, which is a scientific report that provides a stream of information on the impacts of climate change. This is not the only effort Obama put into knowledge and scientific information, since he also released

several reports⁹ to provide data to support innovative investments in environmental problems (White House Archives, 2016).

Graph 2: Environmental achievements under Obama's office



Retrieved from: White House Archives 2016

The achieved goals of the Climate Record show that the climate policy under Obama's office was active. This argument can be strengthened by graph 2, which shows that CO2 emissions decreased, while the economy kept growing. Secondly it shows that there was invested in wind and solar energy, and thirdly the U.S oil imports decreased rapidly. Of course more could be done, but compared to the do-nothing policy regarding climate change of his predecessors the adaptation under Obama's office is notable (White House Archives, 2016).

⁹ These reports are the Impact of Climate Change on Human Health, a Summit on Climate Change, Climate Data Initiative and a Climate Resilience Toolkit (White House Archives, 2016).

Relation transformational leadership and climate policies

The next step is to empirically investigate whether and how the transformational leadership style has an influence on the initiation of an active climate policy. To be able to answer this question there needs to be proven that it was Obama as an individual that was responsible for the initiation of climate policies. This can be demonstrated by connecting the characteristic traits¹⁰ of transformational leadership and the content of Obama's climate change related speeches, interviews and weekly addresses¹¹. If the traits can be recognized in the content, there could be stated that Obama's transformational leadership style had an influence on the climate policy. If not, it could be stated that not the leadership style, but institutions and state interests are influential on policy making.

Intellectual stimulation:

A transformational leader who scores high on intellectual stimulation, constantly challenges the status quo and strives for new information sources based on science (Lussier & Achua, 2015). Obama's leadership style seems to match this characteristic, since he strives to be provided with "*New insights and strengthening the models that tells us what to expect going forward (...) we used the most up-to date insights from climate science (...)*" (Popular Science, 2016). Leaders who feature high levels of intellectual stimulation encourage their followers and themselves, to question old assumptions and stimulate new and different perspectives (Lussier & Achua, 2015; Bono & Judge, 2000, p 753). Obama questioning the way the future of coal mining is going to be like can show this: "*We need to be honest with them, and say that the economy is shifting and how we use energy is shifting. That's going to be through here, but also through internationally. How can we take your skills and talents and work ethics that you showed in the coalmines, and use it to build some wind turbines or to install solar panels. We should all want to make sure the communities thrive with the energy industries of the 21st century and not the 17th, 18th or 19th century*" (New York Times, 2016). He stimulates novel thinking based on several information sources, not only related to the mining, but also to the assumptions of the Congress (Bono & Judge, 2000, p. 754): "*Now, that you'll hear from the special interests and their allies in Congress is that this will kill jobs (...) and every time they have been wrong*" (White House Archives, 2013). "*We've used science (...) to make old rules obsolete*" (White House Archives, 2013). There could thus be

¹⁰ The trait openness to experience will be tested using intellectual stimulation, creativity and change. The trait agreeableness will be tested using the tendency to cooperation and altruism. The trait extraversion will be measured using social leadership and having a positive view of the future (Judge & Bono, 2000).

¹¹ The full content of the speeches, interviews and weekly addresses will be offered in the appendix.

stated that there are some similarities between the content of Obama's speeches, interviews and weekly addresses and the trait intellectual simulation.

Creativity:

To come up with creative solutions and divergent ways of thinking is also part of the transformational leadership style (Lussier & Achua, 2015). Obama showed in his speeches and interviews that he can carry out this divergent and innovative way of thinking. For instance he does not carry out the black and white thinking about the economic side of climate policies: “ *We don't have to choose between a growing economy and a safer planet for future generations. We can have both*” (Popular Science, 2016). This out of the box way of thinking can also be found back in how Obama addresses his opponents: “*One of the enemies that we'll be fighting at this conference is cynicism, the notion we can't do anything about climate change*” (White House Archives, 2015).

Change:

A transformational leader, as the word suggests, is known for his ability to establish and embrace change (Bono & Judge, 2000, p. 754). The content shows that Obama is most likely to embrace changes, since that is one of his main goals concerning climate change: “ *The future is one that we have the power to change*” (White House Archives, 2015), “*So the question now is whether we will have the courage to act before it's too late (...) I'm here to say we need to act*” (White House Archives, 2013), “*I'm here personally (...) to say we have begun to do something about it*” (White House Archives, 2014b).

Cooperation:

Transformational leaders believe in the utility of cooperation (Hogan, 1990, p.795). Obama showed in his content that climate change is an issue that cannot be combatted alone: “*I call on all countries to join us -- not next year, or the year after, but right now, because no nation can meet this global threat alone*” (White House Archives, 2014), “*While you and I may not live to see all the fruits of our labor, we can act to see that the century ahead is marked not by conflict, but by cooperation*” (White House Archives, 2014). Obama not only aims for international cooperation, but also for national cooperation: “*In my State of Union Address, I urged Congress to come up with a (...) solution to climate change, like the one that Republican and Democratic senators worked on*” (White House Archives, 2013). Besides, transformational leaders who score high on agreeableness take responsibility for their deeds (Hogan, 1990, p. 796). This can be found back in the cooperation process of the two largest

emitters in CO₂, China and the U.S: *“This is a major milestone in the U.S-China relationship, and it shows what’s possible when we work together on an urgent global challenge”* (White House Archives, 2014c).

Altruistic:

A transformational leader with a high score on the trait agreeableness is concerned for the wellbeing of individuals (Bono & Judge, 2004, p. 903). In Obama’s speeches this can be specially found back in his concern for future generations: *“And for the sake of future generations (...)”* (White House Archives, 2014b); *“So today, for the sake of our children, and the health and safety of all Americans”* (White House Archives, 2013); *“I want to show her passionate, idealistic young generation that we care about their future”* (White House Archives, 2015). This altruism does not only apply for individuals, but also for the planet: *“We only get one home. We only get one planet. There’s no plan B”* (White House Archives, 2015).

Social leadership:

A part of the transformational leadership style is the idealized influence, which is a powerful tool to possess symbolic power that is used to influence and persuade others (Lussier & Achua, 2015). This is done by being articulative, expressive and dramatic (Bono & Judge, 2000, p. 753). In his climate related content, Obama uses persuasive and influential words to spread the message: *“So the climate is changing faster than our efforts to address it. The alarm bells keep ringing. Our citizens keep marching. We cannot pretend we do not hear them. We have to answer the call. We know what we have to do to avoid irreparable harm”* (White House Archives, 2014b); *“And if we act now, if we can look beyond the swarm of current events and some of the economic challenges and political challenges involved, if we place the air that our children will breathe and the food that they will eat and the hopes and dreams of all posterity above our own short-term interests, we may not be too late for them”* (White House Archives, 2014c); *“Convince those in power to reduce our carbon pollution. Push your own communities to adopt smarter practices. Invest. Divest. Remind folks there's no contradiction between a sound environment and strong economic growth”* (White House Archives, 2013); *“But this is one of those rare issues - because of its magnitude, because of its scope - that if we don't get it right we may not be able to reverse, and we may not be able to adapt sufficiently. There is such a thing as being too late when it comes to climate change”* (White House Archives, 2015). Mobilizing others by using powerful language can thus be found back in the content above. This is also demonstrated by

Gliem & Janack (2008), who analysed Obama's speeches and discovered his way of speaking matched with transformational leadership.

Positivity:

Transformational leaders have the ability to communicate an idealistic view of the future (Lussier & Achua, 2015). This positivity can be seen back in Obama's content, since he sees the planet as something that can be saved: "(...) *Reflecting our confidence in the ability of our technological entrepreneurs and scientific innovators to lead the way*" (White House Archives, 2014); "*We can do all of that as long as we don't fear the future; instead we seize it*" (White House Archives, 2013); "*But the knowledge that the next generation will be better off for what we do here -- can we imagine a more worthy reward than that? Passing that on to our children and our grandchildren, so that when they look back and they see what we did here in Paris, they can take pride in our achievement*" (White House Archives, 2015). "*We have now built an architecture that allows us (...) to curb the pollution that contributes to climate change. (...) But have we now given the (...) next generation a chance to solve it? Absolutely*" (NPR, 2016).

Analysing the content, it could indicate that the transformational leadership traits of Obama are present in the climate related content. The traits extraversion, agreeableness and openness to experience can be found back here, what could indicate the role of Obama in the establishment of the active climate policy of the U.S.

Conclusion & Discussion

The study of Obama has given some insights into the theories about leadership style and the initiation of active climate policies. A comparison is made in the extent of active climate policies under Obama's administration and the previous and next one of the United States. This shows that there was a more active climate policy under Obama's office, which could be caused by his transformational leadership style. This assumption can be supported by the fact that the traits of a transformational leader are found back in the climate related content of Obama's speeches, interviews and weekly addresses. This fact could make it plausible that it was Obama's transformational leadership style that had an influence on the active climate policy that occurred under his administration.

These findings are in line with the discussed theories surrounding the influence of leadership style on the policy outcomes and the similarities between the traits of a transformational leader and a climate change believer. These similarities predicted that a transformational leader would be more likely to be a climate change believer, and these beliefs can lead to the urge of initiating an active climate policy. The theories supporting the connection between transformational leadership style and environmental leadership could thus be adopted. Considering the findings, this thesis shows the added value of studying the individual instead of only looking at the IR theories around climate change.

The main aim of this thesis was to link the transformational leadership style to the initiation of an active climate policy. However, the results of this thesis cannot be generalized, since the theory was only tested on Obama. The results could be different when tested on other transformational leaders, since the available resources about the connection between transformational leadership and climate change were rare. Besides, little research has been done on the theories that are being merged in this thesis. The relationship between the transformational leadership style and the Big Five traits is only done by Bono & Judge, which can cause a biased view. Basically, the research that has been done so far on climate change and leaders is scarce, but has potential for further research since the results do indicate a relationship between the transformational leadership style and the initiation of a climate policy.

There could also be other factors that are influential on the initiation of an active climate policy. Research suggests demographic factors, like ideology, social status, age and gender could also correlate with the belief in climate change, and thus the initiation of a climate policy (Milfont et al, 2015; Poortinga et al, 2011). Especially gender seems to fit well in the theoretical framework, since females are more likely to carry out a transformational leadership style and the traits that are connected to the belief in climate change are more common under women (Milfont et al, 2015; Sibley et al, 2011; Dietz, Kalof & Stern, 2002). Since climate change is a problem that cannot be postponed, it is crucial to invest in the research around leadership and the combatting of this issue.

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Appendix

Table 1. Used speeches, interviews and weekly addresses :

Interview	NPR’s interview with president Obama about Obama’s years (2016)
Interview	Popular Science: President Obama on how to win the future (2016)
Interview	New York Times: Obama on Terrifying Treat of Climate Change (2016)
Speech	Remarks by the President at U.N. Climate Change Summit (United Nations Headquarters, September 23 2014)
Speech	Remarks by the President on Climate Change (Georgetown University, June 25 2013)
Speech	Remarks by President Obama at the first Session of COP21 (Paris, November 30 2015)
Speech	Remarks by the President in Announcing the Clean Power Plan (East Room, August 03 2015)
Speech	Remarks by President Obama and President Xi Jinping in Joint Press Conference (Great Hall of the People, November 12 2014)
Weekly Address	Climate Change Can No Longer Be Ignored (White House, April 18 2015)
Speech	Remarks by the President at the United States Military Academy Commencement Ceremony (U.S. Military Academy-West Point, May 28 2014)

Content of the speeches:

Trait intellectual stimulation:

"Before you can solve a problem, you have to understand it. That's why we've fought hard to protect the funding for the U.S. Global Change Research Program, a government wide effort to help us see what's happening in the present so we can better predict the future. Thanks to their efforts, our satellites, aircraft, ships, buoys, and terrestrial-monitoring systems are providing indispensable insights and strengthening the models that tell us what to expect going forward. My administration hasn't just helped to advance climate science—we've also made good use of the results. We used the most up-to-date insights from climate science as the basis of our national Climate Action Plan. And we've begun to develop accessible climate databases and tools that help governments, businesses, and citizens protect themselves from the effects of climate change that we can't avoid"(Popular Science, 2016).

"We owe the remaining people who are making a living in mining coal. We need to be honest with them, and say that the economy is shifting and how we use energy is shifting. That's going to be through here, but also through internationally. How can we take your skills and talents and work ethics that you showed in the coalmines, and use it to build some wind turbines or to install solar

panels. We should all want to make sure the communities thrive with the energy industries of the 21st century and not the 17th, 18th or 19th century" (New York Times, 2016).

"Now, what you'll hear from the special interests and their allies in Congress is that this will kill jobs and crush the economy, and basically end American free enterprise as we know it. And the reason I know you'll hear those things is because that's what they said every time America sets clear rules and better standards for our air and our water and our children's health. And every time, they've been wrong" (White House Archives, 2013).

Trait change:

"That future is not one of strong economies, nor is it one where fragile states can find their footing. That future is one that we have the power to change. Right here. Right now. But only if we rise to this moment" (White House Archives, 2015).

"So today, I'm here personally, as the leader of the world's largest economy and its second largest emitter, to say that we have begun to do something about it" (White House Archives).

"So the question now is whether we will have the courage to act before it's too late. And how we answer will have a profound impact on the world that we leave behind not just to you, but to your children and to your grandchildren. As a President, as a father, and as an American, I'm here to say we need to act. I refuse to condemn your generation and future generations to a planet that's beyond fixing. And that's why, today, I'm announcing a new national climate action plan, and I'm here to enlist your generation's help in keeping the United States of America a leader -- a global leader -- in the fight against climate change" (White House Archives, 2013).

Trait: cooperation:

"And today, I call on all countries to join us -- not next year, or the year after, but right now, because no nation can meet this global threat alone. The United States has also engaged more allies and partners to cut carbon pollution and prepare for the impacts we cannot avoid. All told, American climate assistance now reaches more than 120 nations around the world. We're helping more nations skip past the dirty phase of development, using current technologies, not duplicating the same mistakes and environmental degradation that took place previously" (White House Archives, 2014).

"In my State of the Union address, I urged Congress to come up with a bipartisan, market-based solution to climate change, like the one that Republican and Democratic senators worked on together a few years ago. And I still want to see that happen. I'm willing to work with anyone to make that happen" (White House Archives, 2013).

"This is a major milestone in the U.S.-China relationship, and it shows what's possible when we work together on an urgent global challenge. In addition, by making this announcement today, together, we hope to encourage all major economies to be ambitious -- all countries, developing and developed -- to work across some of the old divides so we can conclude a strong global climate agreement next year" (White House Archives, 2014).

"While you and I may not live to see all the fruits of our labor, we can act to see that the century ahead is marked not by conflict, but by cooperation; not by human suffering, but by human progress; and that the world we leave to our children, and our children's children, will be cleaner and healthier, and more prosperous and secure" (White House Archives, 2014).

Trait: altruistic:

"And for the sake of future generations, our generation must move toward a global compact to confront a changing climate while we still can" (White House Archives, 2014).

"So today, for the sake of our children, and the health and safety of all Americans, I'm directing the Environmental Protection Agency to put an end to the limitless dumping of carbon pollution from our power plants, and complete new pollution standards for both new and existing power plants" (White House Archives, 2013).

"I want our actions to show her that we're listening. I want our actions to be big enough to draw on the talents of all our people -- men and women, rich and poor -- I want to show her passionate, idealistic young generation that we care about their future" (White House Archives, 2015).

"This "blue marble" belongs to all of us. It belongs to these kids who are here. There are more than 7 billion people alive today; no matter what country they're from, no matter what language they speak, every one of them can look at this image and say, "That's my home." And "we're the first generation to feel the impact of climate change; we're the last generation that can do something about it." We only get one home. We only get one planet. There's no plan B" (White House Archives, 2015).

Trait: social leadership:

"So the climate is changing faster than our efforts to address it. The alarm bells keep ringing. Our citizens keep marching. We cannot pretend we do not hear them. We have to answer the call. We know what we have to do to avoid irreparable harm. We have to cut carbon pollution in our own countries to prevent the worst effects of climate change. We have to adapt to the impacts that, unfortunately, we can no longer avoid. And we have to work together as a global community to tackle this global threat before it is too late" (White House Archives, 2014).

"This challenge demands our ambition. Our children deserve such ambition. And if we act now, if we can look beyond the swarm of current events and some of the economic challenges and political challenges involved, if we place the air that our children will breathe and the food that they will eat and the hopes and dreams of all posterity above our own short-term interests, we may not be too late for them" (White House Archives, 2014).

"Broaden the circle of those who are willing to stand up for our future. Convince those in power to reduce our carbon pollution. Push your own communities to adopt smarter practices. Invest. Divest. Remind folks there's no contradiction between a sound environment and strong economic growth. And remind everyone who represents you at every level of government that sheltering future generations against the ravages of climate change is a prerequisite for your vote. Make yourself heard on this issue" (White House Archives, 2013).

"Most of the issues that I deal with -- and I deal with some tough issues that cross my desk -- by definition, I don't deal with issues if they're easy to solve because somebody else has already solved them. And some of them are grim. Some of them are heartbreaking. Some of them are hard. Some of them are frustrating. But most of the time, the issues we deal with are ones that are temporally bound and we can anticipate things getting better if we just kind of plug away at it, even incrementally. But this is one of those rare issues -- because of its magnitude, because of its scope -- that if we don't get it right we may not be able to reverse, and we may not be able to adapt sufficiently. There is such a thing as being too late when it comes to climate change" (White House Archives, 2015).

Trait positivity:

"And by early next year, we will put forward our next emission target, reflecting our confidence in the ability of our technological entrepreneurs and scientific innovators to lead the way" (White House Archives, 2014).

"We've got to look after our children; we have to look after our future; and we have to grow the economy and create jobs. We can do all of that as long as we don't fear the future; instead we seize it" (White House Archives, 2013).

"And, my fellow leaders, accepting this challenge will not reward us with moments of victory that are clear or quick. Our progress will be measured differently -- in the suffering that is averted, and a planet that's preserved. And that's what's always made this so hard. Our generation may not even live to see the full realization of what we do here. But the knowledge that the next generation will be better off for what we do here -- can we imagine a more worthy reward than that? Passing that on to our children and our grandchildren, so that when they look back and they see what we did here in Paris, they can take pride in our achievement" (White House Archives, 2015).