CLIMATE CHANGE IMAGERY: THE ROLE OF PERSONALITY ON EMOTIONAL

EXPERIENCE

by

DAVID LAMAR MORRIS II

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Student: David LaMar Morris II

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This dissertation has been accepted and approved in partial fulfillment of the requirements for the Doctor of Philosophy degree in the School of Journalism and Communication by:

Nicole Dahmen	Chairperson
Kim Sheehan	Core Member
Heather Shoenberger	Core Member
Troy Campbell	Institutional Representative

and

Janet Woodruff-Borden	Vice Provost and Dean of the Graduate School

Original approval signatures are on file with the University of Oregon Graduate School.

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DISSERTATION ABSTRACT

David LaMar Morris II

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Many people view climate change as one of the top issues facing the world today. As a result, a better understanding of how climate change messages are communicated has become increasingly important. Additionally, with the progression of today's society into that of highly-visual culture, opportunities for the investigation at the intersection of climate change and visual content would be of great benefit to academia and society, as a whole. More specifically, providing insight into how climate change visuals are framed and what their relationship is to emotions would support visual framing theory and present opportunities to strengthen climate change messaging in the future.

Taking a quantitative approach, this research deploys experimental design to test hypotheses and answer research questions on the relationships among three climate change visual frames (causes, impacts, solutions), emotional experience, and climate change salience. In addition, to attempt to provide further insight into these relationships, the personality traits neuroticism and extraversion are tested as moderators. A sample provided from Amazon Mechanical Turk ($n = 289$) was evenly disturbed between three experimental conditions, each representative of one of the climate change visual frames. Statistical analysis was then utilized to generate results in response to hypotheses one thru eleven and research questions one and two.

The findings from this study show that climate change visual frames each generate specific emotional experiences upon viewing. The causes and impacts climate change visual frames result in a negative emotional experience, while the solutions climate change visual frame generates a positive emotional experience. However, this research found no support for the personality traits neuroticism or extraversion playing a role in that response. Similarly, there was no connection found between emotional experience and climate change salience. The findings of this research, however, ultimately support the effectiveness of climate change visual frames without their traditional accompanying text, in the form of a caption or story, and contribute to visual framing theory. Considering the effectiveness of stand-alone climate change visual frames in generating positive and negative emotional experiences can prove useful for practitioners in the creation of future climate change content.

CURRICULUM VITAE

NAME OF AUTHOR: David LaMar Morris II

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene, Oregon
University of Memphis, Memphis, Tennessee
Wright State University, Dayton, Ohio
Sinclair Community College, Dayton, Ohio

DEGREES AWARDED:

Doctor of Philosophy, Media Studies, 2018, University of Oregon
Master of Arts, Journalism, 2015, University of Memphis
Bachelor of Arts, Mass Communication, 2012, Wright State University
Associate of Arts, Liberal Arts & Sciences, 2010, Sinclair Community College

AREAS OF SPECIAL INTEREST:

Visual Communication
Science Communication
Technology

PROFESSIONAL EXPERIENCE:

Chief Executive Officer, Active Digital Inc., 2013-2018

Pharmacy Technician, Kroger Pharmacy, 2009-2012

Chief Operating Officer, Active Digital Inc., 2005-2009

Technical Manager, Boundgrid Technologies, 2009-2012

Chief Executive Officer, Active Digital Inc., 2013-2018

GRANTS, AWARDS, AND HONORS:

Kappa Tau Alpha, School of Journalism, University of Missouri, 2018

Columbia Scholarship, School of Journalism and Communication, University of Oregon, 2015-2017

Graduate Teaching Fellowship, School of Journalism and Communication, University of Oregon, 2015-2017

Top Research Paper, Newspaper front page photographs: Effects of image consumption in a digital versus print news format., American Copy Editors Society, Newspaper and Online News Division of Association for Education in Journalism and Mass Communication annual conference, 2016

Top Faculty Paper, Images of resilience: The case for visual restorative narrative., Visual Communication Studies Division of International Communication Association annual conference, 2016

Top Research Paper, America's front pages: A 30-year update. American Copy Editors Society, Newspaper and Online News Division of Association for Education in Journalism and Mass Communication annual conference, 2014

Travel Grant, L. Dupre Long Journalism Fund, Used to attend Association for Education in Journalism and Mass Communication annual conference, 2014

Graduate Assistantship, Department of Journalism, University of Memphis, 2013-2014

PUBLICATIONS:

Dahmen, N. S., Miller, A., & Morris, D., II. (2017). The visual depth of Hurricane Katrina imagery: A longitudinal study through the lens of commemorative journalism and iconicity. *Communication Reports*.

Elias, T., Dahmen, N. S., Morrison, D. D., Morrison, D., & Morris, D., II**.** (2017). We talk of what we care about: Understanding climate change perceptions and attitudes across Hispanic, African American, and Anglo racial/ethnic groups. *The Howard Journal of Communications*.

Morris, D., II. & Haught, M. (2016). America's front pages: A 30-year update. *Newspaper Research Journal*.

Haught, M., & Morris, D., II. (2016). Hubs for innovation: Examining the effects of consolidated news design on quality. *Newspaper Research Journal*.

Haught, M., & Morris, D., II. (2016). The State of the Scholarship: Exploring the theories and methods used in visual communication journals. *Visual Communication Quarterly*.

Haught, M., Willis, E., Furrow, A., Morris, D., II. & Freberg, K. (2016). From tweets to seats: How does social media use affect commuter university students' football fandom? *Journal of Issues in Intercollegiate Athletics*.

Willis, E., Haught, M., & Morris, D., II. (2015). Up in vapor: Exploring the health messages of e-cigarette advertisements. *Health Communication*.

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CHAPTER I

INTRODUCTION

On December 28th of 2017, arguably the most powerful person in the United States, President Donald Trump, tweeted the following: "In the East, it could be the COLDEST New Year's Eve on record. Perhaps we could use a little bit of that good old Global Warming that our Country, but not other countries, was going to pay TRILLIONS OF DOLLARS to protect against. Bundle up!" (Trump, 2017). Five years prior to becoming the President of the United States, Donald Trump tweeted, "The concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive" (Trump, 2012). The concern this raises is not that of only a political issue, but that of an information issue. The most powerful person in the United States at the highest seat of the government does not believe in climate change. Worse yet, the President is using outdated terminology to comment on the topic, while confusing weather and climate change as the same concept (Pierre-louis, 2017; Trump, 2012; Trump, 2017). If the President of the United States is making such statements on the topic of climate change and is receiving more than 200,000 likes on his inaccurate comments, what does that mean for the public's understanding of climate change, especially when 20 percent of United States adults' believe there is no evidence of climate change, and 31 percent believe it is due to natural causes (Daniels et al., 2017; Feldman, Hart, Leiserowitz, Maibach, & Roser-Renouf, 2017; Greenwood, 2016; Spartz, Su, Griffin, Brossard, & Dunwoody, 2017)? Clearly, there is a current need to discover better means for communicating the implications of climate change on life and the planet

to the public (Daniels et al., 2017; Gunster, 2017; Feldman et al., 2017; Nerlich, Koteyko, & Brown, 2010).

Several weeks before President Trump's December 7 tweet, a video was published by National Geographic to their website, taken by Paul Nicklen on Somerset Island, of a starving polar bear struggling to look for food. This image was meant to demonstrate what the effects of climate change look like (Heart-Wrenching Video Shows Starving Polar Bear on Iceless Land, 2017). The video swept through social media, receiving more than a million views on the original posting and creating a mixture of emotional responses from viewers, ranging from sympathetic to cynical (Gibbens, 2017; Hopper, 2017). The starving polar bear video is just the most recent example of visuals being used in an attempt to raise climate change awareness and educate the public. However, what happens when these visuals generate adverse emotional responses to climate change, closing audiences off to messaging (O'Neill, & Nicholson-Cole, 2009)? Are there different types of visual frames of climate change that elicit different emotional outcomes? If so, is there an effective way to categorize people in relation to their emotional responses to visual climate change messages?

It is the focus of this research to explore the relationship of climate change images and accompanying emotional experiences to different visual frames used in climate change images. This research employs an experimental method to provide insight into the relationship between the emotional experience and three climate change visual frames: cause, impacts, and solution. Furthermore, this research offers two personality traits (neuroticism and extraversion) as a moderator and psychographic for the categorization

of individuals' based on an individual's emotional experience to climate change visual frames.

CHAPTER II

REVIEW OF LITERATURE

The review of the literature will conceptualize climate change, framing theory, emotion, and personality. The definition and discussion of climate change as an issue will lead to the discussion of visual frames employed. Next, emotion will be introduced as a result of viewing climate change visual frames. Following the discussion of climate change visual frames and emotion, personality will be explored as psychographic. Finally, based on the literature, specific hypotheses and research questions will be proposed.

Climate Change

Climate change is defined by the National Aeronautics and Space Administration (NASA) as a "broader range of changes that are happening to our planet" as a consequence of global warming, including rising sea levels, shrinking glaciers, and changes in planet life cycles (Shaftel & Callery, 2015). Global warming refers to the long term warming of the planet and is encompassed in the concept of climate change, making the terms not synonymous. While global warming was initially used to label all matters related to the activities of humans that cause atmospheric changes that will impact not only human life, but all life on the planet, this concept is now expressed as climate change (What's in a name? Weather, global warming and climate change, 2016). The negative impact on the climate is the result of human activities, such as the burning of fossil fuels and deforestation.

The existence of climate change is often considered a point of contention for many people outside of academic and scientific communities. The general public is

divided by strong views on both sides of the argument over the existence of climate change (Greenwood, 2016). To further complicate the argument, a portion of the public believe that if climate change *does* exist, is it not the result of human behavior (Greenwood, 2016; Scruggs & Benegal, 2012). Furthermore, climate change is highly politicized, with belief in climate change being attached to political ideologies (Greenwood, 2016; Giddens, 2009; McMright & Dunlap, 2011; Weingart, Engels, & Pansegrau, 2000). While climate change is still under debate in the public domain, scientist have much more consensus on the existence of climate change and the role of human perpetuation (Cook et al., 2016; Doran & Zimmerman, 2009; Scientific consensus: Earth's climate is warming, 2018). This research will operate under the belief that climate change is real and that humanity has a direct impact on the process of climate change. The complexities of climate change science, as well as the highly political nature of climate change, have complicated informing the general public on the topic. For this reason, it is important for research to explore the most effective ways to communicate climate change. Climate change has been, and will continue to be, a serious topic that requires exploration, not only for researchers, journalists, and activists, but also for the public and the planet.

Framing Theory

Early discussions of framing by McCombs and Shaw (1993) placed framing as a second level to agenda setting theory, along with the concept of priming. McCombs and Shaw (1993) conceptualized priming as a public response to the manner in which the media conveyed information: the more importance the media assigned to an issue, the greater that issue was perceived by the public to be important. Framing the author's

argument is the way in which the issue is presented to the public. Over the past several decades, the concept of framing has evolved into what some would argue is its own research paradigm (Entman, 1993). Entman (1993) defines a frame as how something is presented to an audience, similar to McCombs' and Shaw's definition of framing as a process. Entman (1993) describes the act of framing as "to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described" (p. 52). In his further research of framing, Entman (1993, 2004) found there to be four functions of a frame: define a problem, diagnose the cause of the problem, make a moral judgment, and suggest a solution to the problem. A single message might utilize several of these functions. Further conceptualizing framing, Entman discusses four locations where frames can exist in the communication process: with the communicator who makes conscious and unconscious framing judgments based on and guided by the frames that organize their own belief system, in the text which contains frames based on the presence or absence of information, with the receiver who has their own set of frame that guide their view and my differ from those of the communicator, and, lastly, in culture, which has a commonly-invoked set of frames by people from the same social groupings. The communicator, by making a decision about what information to put in a message, is either consciously or unconsciously framing (Entman, 1993). In the text, which is not always written word, frames are produced by the information that is present or absent. The receiver of the message has their own frames and might not match up with the frames intended by the communicator. Lastly, culture itself has "commonly invoked frames; in fact, culture

might be defined as the empirically demonstrable set of common frames exhibited in the discourse and thinking of most people in a social grouping" (Entman, 1993, p.53). Entman also addresses the many ways in which framing has been utilized in research over the years, since its conceptualization as part of agenda setting theory (Entman, 1993). This leads him to argue that concept of framing has moved beyond agenda setting theory.

Scheufele (1999) also believed it necessary to separate framing from agenda setting theory. When providing an overview of framing, Scheufele (1999) described framing research in media effects to fall along two different dimensions: first, exploration of media frames, versus the individual frames that people have in their own mind about the world around them; second, the use of frames as both dependent and independent variables for media research. Scheufele (1999) further conceptualized framing to be a process model with a continuous feedback loop for the creation of frames. The process model not only accounted for the direct parties involved in the creation of frames, but also the ideologies, attitudes, and behaviors that influence the parties involved. While Entman's (1993) explanation of the functions of frames was thorough, Scheufele's (1999) conceptualization of the locations and their detailed relationships in which frames exist was made more comprehensive by the process model.

Salience. Salience is a term used across multiple disciplines including communications, semiotics, sociology, and psychology. While the definition of salience is similar in all the contexts, it is important to define salience in a mass media research context. Salience is a term found in mass communication research and is used in both agenda setting theory and framing theory to express the degree to which something is

more noticeable or important (Entman, 1993; McCombs & Shaw, 1993; Scheufele, 1999). When writing about framing and salience, Entman (1993) stated, "frames highlight some bits of information about an item that is the subject of a communication, thereby elevating them in salience. The word salience itself needs to be defined: It means making a piece of information more noticeable, meaningful, or memorable to audiences." (p.53).

Visual framing. As previously stated, framing is not limited to the written word. Visuals are also a location for frames and are equally as important as the written word (Kim & Kelly, 2007; King & Lester, 2005). While visuals can encompass many mediums, such as infographics, illustrations, paintings, and video, the most predominate visual used by the media which contains frames is photography, though there has been a transition to video in more recent years (Davis, 2017). In the context of visuals, Messaris and Abraham (2001) point out there are aspects of photographs that make them effective at framing. Messaris and Abraham (2001) point to photographs' ability to capture a moment in time and a representation of that reality. This gives photographs the ability to act as an index for reality. Messaris and Abraham (2001) also address the idea that viewers are less likely to be aware of the framing in photographs than they would be of framing in written word. Messaris (1994) previously called for an increase in visual literacy due to this notion. Coleman (2010) further strengthens the argument for framing research in relation to visuals, asserting that framing is a strong entry point into visual research. Many visual framing studies over the past several decades have been concerned with frames utilized by the media to cover important topics. Indeed, researchers have addressed the use of frames in visual content regarding the Sept. 11, 2001, terrorist

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attacks (Dahmen & Christensen, 2013; Powell, 2011), Hurricane Katrina (Borah, 2009; Fahmy, Kelly, & Kim, 2007; Dahmen & Miller, 2012; Shin, Fahmy, & Lewis, 2012), and even the presidential election of Barack Obama (Hunter, Lewis, & Overton, 2013). These research projects examined the use of such visual frames in communicating messages about natural disaster, financial, political, terrorism, and nationalism.

      Climate change visual frames. The majority of scholars identify climate change images as belonging to one of three categories (Chapman, Corner, Webster, and Markowitz, 2016; Nisbet, 2010; O'Neill & Nicholson-Cole, 2009). Each of these categories are visual frames of climate change. The first visual frame of climate change images is impacts. Images representative of this visual frame depict the effects of climate change and the damage it can cause to the planet and to people (Chapman, Corner, Webster, and Markowitz, 2016; Nisbet, 2010; O'Neill & Nicholson-Cole, 2009). Some of the common images from the impacts climate change visual frame are of flooding or wildfires. The second visual frame of climate change images is causes. Images representative of this particular visual frame depict industrial pollution and environmental destruction linked to climate change (Chapman, Corner, Webster, and Markowitz, 2016; Nisbet, 2010; O'Neill & Nicholson-Cole, 2009). The third visual frame of climate change images is solutions, which in this case depict positive action toward combating or mitigating the effects of climate change (Chapman, Corner, Webster, and Markowitz, 2016; Nisbet, 2010; O'Neill & Nicholson-Cole, 2009). Common images from the solutions climate change visual frame are of alternative energy sources and planting of vegetation. Hart and Feldman (2016) make the argument for a fourth visual frame of climate images. This fourth, less agreed upon by scholars, visual frame of climate change

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images is personalization of a relative figure like a scientist or political figure. Chapman, Conner, Webster, and Markowitz (2016) note the importance of personalization as an aspect of the other three visual frames of climate change images, while stating that use of personalization, such as with politicians and celebrities, is often viewed negatively by the public.

Climate change visual research thus far, while focused on responses from viewers, has produced a mixture of findings. The climate change visual frame of impacts is a good means for getting attention; however, it falls short of creating salience and action related to climate change (Chapman, Corner, Webster, and Markowitz, 2016; Nisbet, 2010; O'Neill & Nicholson-Cole, 2009). An iconic climate change image, such as the polar bear on the iceberg, is easily-recognizable by the public, but the images now have negative associations that cause viewers to become closed to messaging on the topic of climate change (Chapman, Corner, Webster, and Markowitz, 2016). Research also shows that the presence of a single person making eye contact with the camera or the display of a location that is geographically relatable to the audience can increase salience, just not by using a politician or celebrity (Chapman, Corner, Webster, and Markowitz, 2016; Nisbet, 2010). There have been mixed results of climate change images matched with captions and stories regarding the result on salience and behavioral changes (Feldman & Hart; 2017). So much variation in research design has complicated the relationship between the messages of climate change images and their accompanying text.

An area in climate change visuals research even more complex is the emotions elicited by climate change images. Research in this area has shown that the three visual

frames of climate change images have connections to different emotions. The visual

frame of solutions is the only one of the three to elicit positive emotional responses, such

as hope (Chapman, Corner, Webster, and Markowitz, 2016). Visual frames of climate

change impacts cause elicit negative emotional responses by making people feel worried,

anxious, or fearful (Chapman, Corner, Webster, and Markowitz, 2016). While previous

research has demonstrated a connection between the visual frames of climate change

images and emotions, this area requires further development. Variations in emotional

response are often found and explained by differences in the images overlooking the

difference in individuals. Furthermore, prior research has overlooked the difference

between a person's perceived emotions and their experience, and a physiological

emotional response measured by biometrics.

Emotion

Emotion is defined as "a conscious mental reaction (such as anger or fear)

subjectively experienced as strong feeling usually directed toward a specific object and

typically accompanied by physiological and behavioral changes in the body" (Emotion,

2017). While a dictionary can produce a singular definition for emotion, the field of

psychology has not been as successful (Izard, 2010; Kleinginna & Kleinginna, 1981). In a

study that surveyed academics in fields related to emotion, asking for both a definition

and function of emotion, Izard (2010) received mix results. While there was no clear

definition for emotion, the author did find three key aspects related to the definition of

emotion; "neural circuits and neurobiological processes, phenomenal experience or

feeling, and perceptual-cognitive processes" (Izard, 2010, p.368). However, in relation to

the function of emotion, the author found three agreed upon functions by other academics

that participated in the study: "functions in motivating and focusing individual endeavors, social interactions, and the development of adaptive and maladaptive behavior" (Izard, 2010, p.368). Research into emotion has shown that the definition and function is most often left to the researcher to operationalize within each study (Izard, 2010; Kleinginna & Kleinginna, 1981). The current research defines emotion as the expression of a physiological response given a cognitive label, which is interpretable by others, on one's mental state (Lazarus, 1982; Oatley, 1992). This definition falls into the cognitive theory of emotion's school of thought. The definition is rooted in the two-factor theory of emotion, realized by Stanley Schachter and Jerome Singer in 1962. The two-factor theory of emotion, unlike previous theories of emotion, suggests that physiological arousal occurs first in the body as a response to a stimulus. Following the physiological arousal, a cognitive process occurs to find the reason for the arousal and then label it with a response or an emotion (Schachter & Singer, 1962). It is important to note that Schachter and Singers' (1962) two-factor theory of emotion is not without criticism. Reisenzein (1983) found "that this arousal-emotion relationship is mediated, in part, by causal attributions regarding the source of arousal" (p. 239).

Emotion and images. Research has shown that images have the ability to not only capture emotion by freezing it in time, but also to evoke it from viewers (Quigley, Lindquist, & Barrett, 2014). Scholars have made the argument that this ability is superior to that of the written word alone (Lynn, Shavitt, & Ostrom, 1985; Newhall, 1938; Paivio & Csapo, 1973; Paivio, Rogers, & Smythe, 1968). The power of images to elicit emotions is only strengthened by the aesthetic decisions made by the image's creator.

Given the power of images in eliciting emotions, there is no absence of academic research exploring the application of images to induce specific emotions (Quigley, Lindquist, & Barrett, 2014). Lang, Bradley, and Cuthbert (1997), in the area of psychology, created the International Affective Picture system (IAPS), which is comprised of images created to act as emotional stimuli. The IAPS has been tested across different demographics and methodologies and has been found to be a consistent method for displaying images with the intent to measure emotions (Delplanque, N'diaye, Scherer, & Grandjean, 2007; Grühn & Scheibe, 2008; Ito, Cacioppo, & Lang, 1998; Libuman, Otani, Kern, Vigar, & Novak, 2007; Mikels et al., 2005). The effectiveness of the IAPS at producing normative responses of measurable specific emotions from images strengthens the concept of images as consistent producers of emotions. Furthermore, this research provides merit to the proposed relationship of climate change images and elicited emotions.

Personality

Personality refers to a set of habitual behaviors, cognitions, and emotional patterns. Researchers believe these aspects of personality to be the result of both biological and environmental factors. There are two overarching themes in the psychological research of personality, an area labeled personality psychology (Allport, 1937). Allport (1937) believed personality psychology to reside in either an idiographic or nomothetic approach. Idiographic approaches are more focused on the distinctive aspects of an individual. Nomothetic approaches to personality research are characterized by exploration for patterns and generalizable classifications for individuals. Two theories that use the nomothetic approach are personality types and personality traits. Personality

types, such as Type A and Type B understanding of personalities, classify Type A as aggressive, impatient and competitive, while Type B individuals are classified as calm, patient, and easy-going (McLeod, 2017). As the type theory of personality developed, it became increasingly clear that placing individuals in finite categories was an ineffective view of the complexity that is personality. Some researchers have found personality trait theories to be a more adequate means for representing personality (Furnham, 1996). Furnham and Crump (2005) compared a more complex personality type measure: the Myers–Briggs Type Indicator (MBTI), which has 16 distinct types (Myer, McCaulley, Quenk, & Hammer, 1998) and the personality trait measure of the Big Five NEO Personality Inventory (Costa & MacCrae, 1992). They found the MBTI to have less correlation with personality disorders. One of the most prominent personality trait theories in research today is The Big Five.

Big Five personality traits. The Big Five personality trait theory is sometimes referred to as the Five Factor Model (FFM), and it is a model that consists of common words used to describe personality (Goldberg, 1990; 1993; Westerhoff, 2008). The concept of gathering the words that relate to personality is rooted in the Lexicon Hypothesis first explored by Sir Francis in 1884 and later by Gordon Allport and Henry Odbert in 1936 (Goldberg, 1993). The common words used to describe personality were then statically processed using factor analysis (Goldberg, 1990). The Big Five was developed in the 1970's by two research teams that included Paul Costa, Robert McCrae, Warren Norman, and Lewis Goldberg and is comprised of five different dimensions (Westerhoff, 2008). The five factors are openness, conscientiousness, extraversion, agreeableness, and neuroticism. These five factors are commonly referred to by one of

two mnemonics, OCEAN or CANOE (Pappas, 2017). A key point of the Big Five is that the traits are a combination and that combination is what makes up an individual's personality, not just a single trait.

Openness. Openness is a shortened title for the factor, "Openness to experience". Openness to experience is described as the level of an individual's willingness to be vulnerable to having new experiences (John & Srivastava, 1999). In the context of thinking, openness to experience is often related to an individual's imagination and ability to come at something from a different angle. Individuals with high openness to experience are often creative, with a passion for learning and welcoming attitude toward new relationships (Ackerman, 2017; Lebowitz, 2016). The opposite is an individual with low openness to experience who prefers predictability and finds comfort in the routine. Here are several of the traits that fall within openness (Ackerman, 2017; John & Srivastava, 1999; Lebowitz, 2016): adventurousness, curiousness, intellectuality, emotionality, complexity, insightfulness and imaginativeness.

Conscientiousness. Conscientiousness as a factor denotes an individual's ability to control their own impulses. Additionally, conscientiousness is self-disciplined and conforms to societal norms (John & Srivastava, 1999). Conscientious individuals find solace in obeying the rules and following a well-organized plan. To that end, if an individual is high in conscientiousness, they are often successful in positions of power and make hard strides to achieve goals and to be successful in their endeavors (Lebowitz, 2016). In opposition, an individual with low conscientiousness will fall prey to the challengers of success, such as procrastination and recklessness. Here are several of the traits that fall within conscientiousness (Ackerman, 2017; John & Srivastava, 1999;

Lebowitz, 2016): planning, reliability, controlling, predictability, consistency, and thoroughness.

   Extraversion. Extraversion is a scale between extroversion and introversion, similar to Carl Jung's original theory on personality types (Jung, 2014). Individuals that fall on the extraversion side of the scale draw energy from interacting with other individuals. Introversion, on the other end of the scale, indicates individuals who draw that same energy by spending time alone and would be drained of energy if interacting with others (Ackerman, 2017). Individuals who are high in extroversion are often considered to be a "social butterfly" and seek out stimulation from interactions with others (Lebowitz, 2016). Individuals with low extroversion, which is considered introversion, are quiet and lost in thought. Here are several of the traits that fall within extraversion (Ackerman, 2017; John & Srivastava, 1999; Lebowitz, 2016): assertiveness, energy, sociability, friendliness, and articulation.

   Agreeableness. Agreeableness as a factor of the Big Five addresses how well an individual interacts with others. The previous factor, extroversion, relates to the kind of interactions sought out by individuals, while agreeableness is a direct caliber and quality of those interactions. Cooperative and compassionate are attributes that can be associated with agreeableness and the interaction with other individuals. Individuals who are high in agreeableness are often sympathetic and affectionate, resulting in them being respected, well-liked, and trusted by others (Lebowitz, 2016). Individuals lacking in the agreeableness factor are argumentative and challenging to others. This results in being less liked by others and in being considered as rude or unsympathetic to others. Here are

several of the traits that fall within agreeableness (Ackerman, 2017; John & Srivastava, 1999; Lebowitz, 2016): compassion, sensitivity, patience, humility, and trust.

Neuroticism. Neuroticism is the Big Five factor which is associated with more negative traits by comparison to the other four factors in the Big Five. Neuroticism is an individual's confidence and acceptance of themselves. Neuroticism also embodies an individual's emotional stability and temperament (Ackerman, 2017; John & Srivastava, 1999; Lebowitz, 2016). Individuals high in neuroticism experience anxiety and sadness, and suffer from low self-esteem (Lebowitz, 2016). Different from the other factors of the Big five on the opposite side, individuals with low neuroticism exhibit confidence and high self-worth. Here are several of the traits that fall within neuroticism (Ackerman, 2017; John & Srivastava, 1999; Lebowitz, 2016): insecurity, lack of confidence, anxiety, nervousness, moodiness, and vulnerability.

Personality traits and emotions. Research has shown a connection between some personality traits and emotions (McCrae & Costa, 1994; Plutchik, 1997; Strom & Storm, 1987). Plutchik (1997) stated, "although the domains of personality and emotions traditionally have been considered and taught as two distinct conceptual areas, there are several reasons for considering them as part of the same domain of interpersonal relations" (p. 17). Plutchik (1997) later in his book presented two reasons for personality and emotion to be considered the same domain. The first is the overlap in language used to describe both personality and emotions in previous research that explored the overlap in verbage directly (McCrae & Costa, 1994; Strom & Storm, 1987). The second, Plutchik (1997) argues, is in the overlap in the functions of personality traits and emotions. The author states that both personality traits and emotions have a similar function "to regulate

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social relations" and "that traits are fundamentally persistent expressions of emotional tendencies" (Plutchik, 1997, p. 23).

Specifically, within the factors of the Big Five, extroversion is equated to positive emotions (Hermes, Hagemann, Naumann, & Walter, 2011; Lucas & Baird, 2004; Watson & Clark, 1992; Watson & Clark, 1997) and neuroticism is linked to negative feelings (Costa & McCrae, 1987; Rusting & Larsen, 1997; Watson & Clark, 1992).

Hypotheses and Research Questions

Based on the perceived relationship, from the literature, between climate change visual frames and elicited emotions the research proposes three hypotheses and one research question.

H$_1$:   Climate change images utilizing the visual frame of causes will generate a negative emotional experience in viewers.

H$_2$:   Climate change images utilizing the visual frame of impacts will generate a negative emotional experience in viewers.

H$_3$:   Climate change images utilizing the visual frame of solutions will generate positive emotional experiences in viewers.

RQ$_1$:   Is there a difference between the type of climate change visual frame and its effect on emotional experience?

Based on the overlap of personality traits and emotions explored in the literature, the research proposes eight hypotheses.

H$_4$:   Climate change images utilizing the visual frame of causes (-) will generate a negative emotional experience (-) in individuals with a trait of neuroticism (-) in their personality.

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H_5:   Climate change images utilizing the visual frame of impacts (-) will

          generate a negative emotional experience (-) in individuals with a trait of

          neuroticism (-) in their personality.

H_6:   Climate change images utilizing the visual frame of solutions (+) will

          generate a negative emotional experience (-) in individuals with a trait of

          neuroticism (-) in their personality.

H_7:   Climate change images utilizing the visual frame of causes (-) will

          generate a negative emotional experience (-) in individuals with a trait of

          extraversion (+) in their personality.

H_8:   Climate change images utilizing the visual frame of impacts (-) will

          generate a negative emotional experience (-) in individuals with a trait of

          extraversion (+) in their personality.

H_9:   Climate change images utilizing the visual frame of solutions (+) will

          generate a positive emotional experience (+) in individuals with a trait of

          extraversion (+) in their personality.

H_10:   Individuals with the trait of neuroticism (-) in their personality will

          express a higher level of salience after viewing both causes (-) and impacts

          (-) visual frames of climate change, as opposed to solutions (+) framed

          climate change visuals.

H_11:   Individuals with the trait of extraversion (+) in their personality will

          express a higher level of salience after viewing solutions (+) framed

          climate change visuals, as opposed to both causes (-) and impacts (-)

          visual frames of climate change.

RQ$_2$:   Is there a difference between climate change visual frame and the effects

on climate change salience?

Figure 2.1 presents a model of the hypothesize relationship between climate

change visual frame and emotional experience as detailed in H$_1$- H$_3$. Figure 2.2 presents a

model of the hypothesize relationship between climate change visual frame, personality

trait, and emotional experience as detailed in H$_4$- H$_9$. Figure 2.3 presents a model,

detailed in H$_{10}$- H$_{11}$, of the hypothesize relationship between emotional experience and

climate change salience with personality trait as moderator. All figures are included in

Appendix A.

Summary

Climate change remains an important and complicated topic that requires the

exploration into a more complete explanation of communication around the topic. Based

on previous research, an important intersection for climate change research is the visual

frames used in the framing of climate change and how individuals receive these frames.

One area for further investigation is the emotion of individual generated by climate

change visual frames. Research suggests, given the connection between emotions and

personality traits, that personality traits have the potential to moderate the relationship

between climate change frames and emotions. Furthermore, the positive and negative

emotions of individuals will likely have implications for the effectiveness of climate

change visual frames at increasing salience. To test the hypotheses and research questions

presented in this study, an experiment will be conducted. The experiment is to examine

the relationships between the concepts presented by the literature. The next chapter

presents the methodology implemented for the experiment.

CHAPTER III

METHODOLOGY

To adequately represent the relationship between personality traits and emotional responses to climate change frames, a study utilizing experimental method was conducted. The experiment will investigate perceived emotional responses to climate change visual frames and the effect of those responses on salience. Additionally, personality was tested as a moderator to the relationship for climate change visual frames and emotions. The experiment was accomplished through the use of self-report measures and Amazon Mechanical Turk in an attempt to test Hypotheses 1 – 11 and answer research questions 1 - 2. This approach provided a more detailed comprehension of the emotional responses elicited by individuals with different personality traits when exposed to different climate change frames, and how those varying responses influence salience.

This study employed a between-subject experimental design with climate change visual frames as an independent variable, personality trait as a moderator, and emotional experience as a dependent variable.

Participants

Amazon Mechanical Turk provided a sample of 344 participants from around the United States in the current experiment. Recruitment was conducted through Mechanical Turk by providing each participant with $0.80 for the completion of a Qualtrics-based experiment with self-report measures. Participants were limited to the United States with Hit approval greater than 98 percent and a total number of Hits completed surpassing 100; these choices were made to help insure the quality of participants.

Stimulus Selection

The stimulus selected for this study consists of photographs from the Climate Outreach organization's online library of climate change images, categorized into climate change visual frames. Sixty photographs, based on the method used in the International Affective Picture System or IAPS (Lang & Bradley, 2007; Lang, Bradley, & Cuthbert, 1997), were selected from each of the climate change visual frames (causes, impacts, solutions) to gain consistency across all visual frames in relation to nuances between images, such as location and the presence of humans. These factors have both been shown in prior research to influence the reception of climate change visual messages (Leiserowitz, 2006; Myers, Nisbet, Maibach, & Leiserowitz, 2012; O'Neill & Nicholson-Cole, 2009). The links to the climate change images used in the study can be found in Table 3.1. All tables for this dissertation are included in Appendix B.

Pretest

It was determined the stimulus images selected for this study from the Climate Outreach organization's online library of climate change images required pretesting to insure the correct climate change visual frame was being represented. The pretest was deemed necessary based on several factors. First, even though the images are catalogued into one of the three climate change visual frames (Causes, Impacts, and Solutions), they are images from all around the world and not just United States-centric. Second, each image displayed in the Climate Outreach visual library is accompanied with a caption and other detailed information about the image that helps to strengthen its depicted visual frame, including menu structures that place images in the climate change visual frame.

Finally, content matter, such as presence of people, animals, and creative techniques differed across images falling into the same climate change visual frame.

To directly address the aforementioned concerns about the use of images form the Climate Outreach's visual gallery, a pretest utilizing a content analysis was developed. The images were coded by three separate coders. Each coder, a current representative of the United States population, was provided with a description of each climate change visual frame, instructions on the coding process, and a link to a combined folder off all the images ($n = 556$) from all the climate change visual frames. This removed each image from its original context, guiding information, and file name. The code book instructed coders to choose the strongest represented climate change visual frame for each image and to move that image file into a folder labeled either causes, impacts, solutions, or not_clear. Upon the completion of the coding task by all three coders, file management software was used to create a folder that only consisted of files found to be overlap in all three coders' visual frame folders. The final 60 images selected to represent each climate change visual frame in the current study were then randomly selected from the resulting folders that only represented climate change images within each climate change visual frame agreed upon by all three coders. The images' links with title, credit, and climate change visual frame are presented in Table 3.1.

Procedure

Amazon Mechanical Turk was used to disseminate a survey constructed in Qualtrics. Each Qualtrics survey contained sixty photographs from one of the three climate change visual frames, as well as self-report measures from personality traits, emotional experience, and salience. First, subjects viewed information about the

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perceived risk of participation in the survey and were reminded that they may opt out at any point in the survey. Next, subjects completed a measure of salience on the topic of climate change, followed by a personality trait scale, each consisting of 10 Likert scale questions. Next, the Qualtrics survey randomly assigned subjects into one of three groups, consisting of a single climate change visual frame. Each group then view 60 climate change images from the group's respective visual frame of climate change (Delplanque, N'diaye, Scherer, & Grandjean, 2007; Grühn & Scheibe, 2008; Ito, Cacioppo, & Lang, 1998; Lang, Bradley, and Cuthbert 1997; Libuman, Otani, Kern, Vigar, & Novak, 2007; Mikels et al., 2005). Each image was displayed for 5 seconds before auto forwarding to the next random image with the assigned group (Delplanque, N'diaye, Scherer, & Grandjean, 2007; Grühn & Scheibe, 2008; Ito, Cacioppo, & Lang, 1998; Lang, Bradley, and Cuthbert 1997; Libuman, Otani, Kern, Vigar, & Novak, 2007; Mikels et al., 2005). After the subject viewed all 60 images, they completed the SAM scale to measure emotional experience, provided a second measure of salience, and they answered demographic questions. The dissection was made to measure emotional experience after the viewing of 60 images in a climate change visual frame group to combat nuance differences between images within the same visual frame and to allow for emotional responses to the overall frame. The Qualtrics survey ended and subjects being thanked for their time.

Measures

As outlined in the procedure, experimental participants first completed self-report measures of salience on the topic of climate change and personality traits before viewing the stimuli. Upon viewing the stimuli, participants will complete measures of emotional

experience and a second measure of salience. These measures will be identical for each group of stimuli. Demographic variables will be measured after participants have seen the stimuli and completed all other measures. A complete listing of measures and scale items is included in Appendix C.

Independent Variable. Climate change visual frames are operationalized as three different visual frames present in images depicting aspects of climate change in previous research (Chapman, Corner, Webster, and Markowitz, 2016; Nisbet, 2010; O'Neill & Nicholson-Cole, 2009). The first visual frame is impacts; these images show the direct impacts of climate change on the environment. The second visual frame of climate change is causes. The causes frame depicts a cause associated with climate change, such as pollution and environmental destruction. The third visual frame of climate change is solutions, and these images focus on positive actions to address climate change.

Dependent Variables. Emotional experience is operationalized for the purpose of this research as a subject's feelings experienced along the axes of arousal and valence that can be measured with self-report measures by the subject experiencing the emotion (Bolls, Lang, & Potter, 2001). The Self-Assessment Manikin (SAM) will be utilized as the self-report measure that subjects will complete after viewing stimuli to the subject's arousal and valence. SAM uses images of a person that represent the degree of arousal and valence across a sliding scale while providing subjects with the ability to only select one that represents their current state.

Salience is operationalized as perceived importance to climate change. Salience will be measured by a Likert scale question on a scale form not important to important, on how often the topic of climate change is thought about.

Moderator. Personality trait, for the purpose of this research, is to attach as a moderator for relationship between climate change visual frame (independent variable) and perceived emotional experience (dependent variable). Personality trait is operationalized for the purpose of this research as a subject's levels of the Big Five personality traits: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Of the five traits that make up OCEAN, the following are two of primary concern to this research on the basis of their relationship to emotional responses: Neuroticism, as a personality trait, has a correlation with experiencing negative emotions (Jeronimus, Riese, Sanderman, & Ormel, 2016), and extraversion, as a personality trait, has a correlation with experiencing positive emotions (Shiota, Keltner, & John, 2006). Personality trait will be measured with Ten-Item Personality Inventory (TIPI), which consist of ten Likert scale questions. TIPI was chosen for its ability to produce reliable results in relation to much larger personality trait measures that would create issues in survey fatigue and time restraints (Gosling, Renrfrow, & Swann, 2003).

Summary

This chapter summarized the methods employed to conduct an experiment in order to test the hypotheses and answer the research questions presented at the end of chapter two. The chapter presented the stimuli, described the experimental procedures, and operationalized key concepts related to the research. Lastly, an explanation of the measures was provided. The next chapter will introduce the results from the experiment.

CHAPTER IV

RESULTS

This chapter presents the findings of statistical tests used to analyze the results of the quantitative experiment to test hypotheses and answer research questions. First, an overview will be provided of the statistical analysis used in relation to each hypotheses and research question. Second, there will be descriptive statics and a test for randomization in the study's sample. Third, scale reliability statistics and descriptive statistics are presented. Lastly, the chapter presents the results of each statistical test in relation to the hypotheses and research questions, grouped in concepts.

Data Analysis

A one-sample t-test was executed on each of the climate change visual frame conditions in order to test the first three hypotheses (H_{1-3}), and a one-way ANOVA was used in order to answer Research Question one (RQ1). H_1 argued that climate change images representing the visual frame of causes would generate negative emotional experience. H_2 argued that climate change images representing the visual frame of impacts would generate negative emotional experience. H_3 argued that climate change images representing the visual frame of solutions would generate positive emotional experience. RQ1 asked if one of the climate change visual frames is more affective on emotional experience.

Bivariate correlation was implemented to test the next six hypotheses (H_{4-9}). H_4 explored the relationship between a negative emotional experience and individuals with the trait of neuroticism in their personality within the climate change visual frame of causes. H_5 explored the relationship between a negative emotional experience and

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individuals with the trait of neuroticism in their personality within the climate change visual frame of impacts. H_6 explored the relationship between a negative emotional experience and individuals with the trait of neuroticism in their personality within the climate change visual frame of solutions. H_7 explored the relationship between a negative emotional experience and individuals with the trait of extraversion in their personality within the climate change visual frame of causes. H_8 explored the relationship between a negative emotional experience and individuals with the trait of extraversion in their personality within the climate change visual frame of impacts. H_9 explored the relationship between a positive emotional experience and individuals with the trait of extraversion in their personality within the climate change visual frame of solutions.

Regressions were preformed to test the last two hypotheses (H_{10-11}), and a one-way ANOVA was used in order to answer Research Question two (RQ2). H_{10} argued that the personality trait of neuroticism would moderate the relationship between the climate change visual frame and salience. H_{11} suggested that the personality trait of extraversion would moderate the relationship between the climate change visual frame and salience. RQ2 asked if one of the climate change visual frames is more affective on climate change salience.

Sample

A total of 344 individuals attempted to participate in the study. Upon the completion of the data collection window and the closing of the Qualtrics survey, multiple respondents were removed from the sample as a result of not fully completing the experiment or of failing the manipulation check. A total of 31 participants failed to complete the experiment, opting not to participate prior to stimulus exposure. A

manipulation check question instructing participants to select the topic of the images viewed in the slide show resulted in an additional 24 participants being removed from the sample. The remaining sample of 289 participants ($N = 289$) was predominately comprised of white ($N = 233$; 80.6%) males ($N = 170$; 58.8%). A complete representation of demographics in the sample can be viewed in Table 4.1.

In order to check for successfulness of the random assignment of participants between conditions, statistical tests and demographical analysis were utilized to look for any statistically significant differences. An ANOVA was utilized to test the differences between the conditions and age of participant. There was no statistically significant difference in age between conditions ($F(2, 286) = .585$, $p > .05$). To examine the differences across conditions in relation to gender and race, Chi-squares were used. The results of the Chi-square demonstrated there was no statistically significant difference in the occurrence of men and women in any condition ($\chi^2 (2) = 1.233$, p $> .05$). Similarly, there was no statistically significant difference in the occurrence of white and non-white participants in any condition ($\chi^2 (2) = 1.705$, $p > .05$).

Measures

To gauge the reliability of Likert- type measures consisting of more than a single item, Cronbach's alphas were utilized (Gliem & Gliem, 2003). Acceptable alpha values for reliability range from 0.70 to 0.95 (Bland & Altman,1997; DeVellis, 2016; Nunnllay, 1994). Other research suggests that alpha values exceeding 0.90 suggest redundancy in items used in the scale (Streiner, 2003). The Ten Item Personality Measure (TIPI) was tested for Cronbach alphas in relation to these aforementioned criteria (Bland & Altman,1997; DeVellis, 2016; Gliem & Gliem, 2003; Nunnllay, 1994; Streiner, 2003).

Extraversion (α = .782), Emotional Stability (α = .844), and Conscientiousness (α = .726) were found to be reliable, based on the aforementioned values (Bland & Altman,1997; DeVellis, 2016; Nunnllay, 1994; Streiner, 2003). Agreeableness (α = .600) and Openness to Experiences (α = .530), however, failed to reach reliability based on suggested Cronbach alphas values (Bland & Altman,1997; DeVellis, 2016; Nunnllay, 1994; Streiner, 2003). However, the TIPI has been shown in prior research to have low Cronbach alpha values base on its design to measure broad domains with only two items for each dimension of the Big-Five personality scale (Gosling, Rentfrow, & Swann, 2003; Kline, 2000; Wood & Hampson, 2005). The descriptive statistics and corresponding Cronbach's alphas values for each measured variable and items are presented in Table 4.2.

Emotional Experience

The first three hypotheses suggested that each of the climate change visual frames based on their content would generate negative or positive emotional experiences for participants. To test each hypothesis, a one-sample test was employed with the test value set at five. Five on the Sam scale for valence represents a neutral emotional experience, placing values greater than five in a positive emotional experience and values less than five as a negative emotional experience. Based on the one sample t-test, participants who viewed the climate change visual frame of causes stimulus (*n* = 97) had a negative emotional experience (*M* = 3.61, *SD* = 2.064), a statistically significant difference from the neutral emotional experience test value of five (*t*(96) = -6.640, *p* < .000). Based on the one sample t-test, participants who viewed the climate change visual frame of impacts stimulus (*n* = 91) had a negative emotional experience (*M* = 4.23, *SD* = 2.119), a

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statistically significant difference from the neutral emotional experience test value of five ($t(90) = -3.463$, $p = .001$). Based on the one sample t-test, participants who viewed the climate change visual frame of solutions stimulus ($n = 101$) had a negative emotional experience ($M = 6.17$, $SD = 1.860$), a statistically significant difference from the neutral emotional experience test value of five ($t(100) = 6.311$, $p < .000$). Given the results of the one sample t-tests and the significant differences between the means of each experimental condition and the neutral emotional experience test value (5), the first three hypotheses (H_{1-3}) had strong support.

RQ1 asked if there is a difference between the climate change visual frames and emotional experience. A one-way ANOVA was computed comparing the emotional experience of participants who viewed one of the climate change visual frames; a significant difference was found among the three climate change visual frames ($F(2,286) = 43.588$, $p < .000$). Tukey's HSD was used to determine the nature of the differences between the climate change visual frames. This analysis revealed that participants who viewed the climate change visual frame of solutions had more positive emotional experiences ($M = 6.17$, $sd = 1.860$) than participants who saw the climate change visual frame of causes ($M = 3.61$, $sd = 2.064$) or impacts ($M = 4.23$, $sd = 2.119$). Participants who viewed the climate change visual frame of causes ($M = 3.61$, $sd = 2.064$) and impacts ($M = 4.23$, $sd = 2.119$) had negative emotional experiences that were not statistically different from each other.

Personality

The second set of Hypotheses (H_{4-9}) suggests a relationship between emotional experience and the personality traits of neuroticism and extraversion. Pearson's

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correlation coefficient was calculated for the relationship between emotional experience and the personality trait of neuroticism for each the climate change visual frames. For H$_4$, a weak correlation that was not significant was found (r(95) = .135, p = .187). Participants who view the climate change visual frame of causes, show no relationship to the personality trait of neuroticism and the corresponding emotional experience. For H$_5$, a weak correlation that was not significant was found (r(89) = .041, p = .696). Participants who view the climate change visual frame of impacts show no relationship to the personality trait of neuroticism and the corresponding emotional experience. For H$_6$, a moderate positive correlation was found (r(99) = .301, p = .002), indicating a significant linear relationship between participants with the personality trait of neuroticism and corresponding emotional experience who view the climate change visual frame of solutions. Pearson's correlation coefficient was calculated for the relationship between emotional experience and the personality trait of extroversion for each of the climate change visual frames. For H$_7$, a weak correlation that was not significant was found (r(95) = .017, p = .865). Participants who view the climate change visual frame of causes, show no relationship the personality trait extroversion and emotional experience. For H$_8$, a weak correlation that was not significant was found (r(89) = .002, p = .987). Participants who view the climate change visual frame of impacts show no relationship to the personality trait extroversion and corresponding emotional experience. For H$_9$, a weak positive correlation was found (r(99) = .263, p = .008), indicating a significant linear relationship between participants with the personality trait extroversion and corresponding emotional experience who view the climate change visual frame of solutions. The results of the Pearson's correlation coefficients do not support hypotheses

four and five, in that there is no relationship between emotional experience and the personality trait of neuroticism in the condition groups of climate change visual frames causes and impacts. Additionally, the results of the Pearson's correlation coefficients do not support hypotheses seven and eight, in that there is no relationship between emotional experience and the personality trait of extroversion in the condition groups of climate change visual frames causes and impacts. However, the results of the Pearson's correlation coefficients do support hypotheses six and nine, in that there is a relationship between emotional experience and the personality traits of neuroticism and extroversion in the condition group of climate change visual frame of solutions.

Salience

H_{10} suggested that the personality trait of neuroticism would positively moderate the relation between climate change visual frame and climate change saliences. Using Model 1 of the PROCESS macro by Hayes (2017), it was determined that the relation between climate change visual frame and salience was not moderated by the personality trait of neuroticism, as the interaction was not statistically significant (β = -.0085, SE = .1715, p = .9606). Table 4.3 presents the results of the regression.

H_{11} suggested that the personality trait of extroversion would positively moderate the relation between climate change visual frame and climate change saliences. Using Model 1 of the PROCESS macro by Hayes (2017), it was determined that the relation between climate change visual frame and salience was not moderated by the personality trait of extroversion, as the interaction was not statistically significant (β = .1622, SE = .1508, p = .2832). Table 4.4 presents the results of the regression.

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RQ2 asked if there is a difference between the climate change visual frames and salience. A one-way ANOVA was computed comparing the emotional experience of participants who viewed one of the climate change visual frames. The salience means of participants who viewed the three different climate change visual frames was compared using one-way ANOVA. No significant difference was found ($F(2,286) = .487, p = .615$). The participants' salience did not differ significantly based on the viewing of the three climate change visual themes. Participants who viewed the climate change visual frame of causes had a mean of 3.94 ($sd = 1.99$). Participants who viewed the climate change visual frame of impacts had a mean of 3.98 ($sd = 1.909$). Participants who viewed the climate change visual frame of solutions had a mean of 3.72 ($sd = 1.929$).

Summary

This chapter presented the results of the experiment, including detailed information about the demographics of the sample and also data on the reliability of the measures used in the study. In addition, the results of statistical analysis used to address the hypotheses and research questions were provided. Hypothesis testing suggests that there is support for climate change visual frames generating positive and negative emotional experiences, depending on the nature of the frame. However, no relationship was found between the personality traits neuroticism and extraversion in relation to these emotional experiences. Furthermore, the personality traits neuroticism and extraversion failed to moderate the relationship between emotional experience and climate change salience. Table 4.5 presents the conclusions of the hypotheses and research questions based on the results of this research. The next chapter will discuss the findings presented here and the theoretical implications of these findings.

CHAPTER V

DISCUSSION

The purpose of this dissertation was to better understand the role that personality traits (Extroversion, Neuroticism) play in the emotional experience of climate change visual frames, as well as to explore the implications for changes to climate change salience. Conducting an experiment using participants from across the United States, this study determined that each climate change visual frame (Causes, Impacts, and Solutions) generates its own emotional experience in viewers. However, personality traits extroversion and neuroticism offer no explanation for the relationship between climate change visual frame and emotional experience. Furthermore, personality traits extroversion and neuroticism do not moderate the relationship between climate change visual frame and salience, in part due to the lack of relationship between climate change visual frame and salience overall. This chapter will review the results of the study, specifically addressing the theoretical and practical implications of the study's findings, ending with the limitations of the study and paths for future research.

Theoretical Implications

The findings of this study were consistent with previous research that examined climate change imagery for the existence of three climate change visual frames (Chapman, Corner, Webster, and Markowitz, 2016; Nisbet, 2010; O'Neill & Nicholson-Cole, 2009). While this research does not dismiss the possibility of other climate change visual frames' existence, it does support the existence of the three climate change visual frames discussed in previous research: causes, impacts, and solutions (Chapman, Corner, Webster, and Markowitz, 2016; Hart & Feldman, 2016; Nisbet, 2010; O'Neill &

Nicholson-Cole, 2009). In the context of frames, as examined by Framing theorist Entman, McCombs and Shaw, and Scheufele, this study strengthens the understanding that content including visuals is a valid location for frames to exist. This research does strength the agreement that framing research is still a valid research area that should be explored when considering the role that media content plays in the public's view of the world, as well as media's ability to shape the public world view.

One comportment of framing theory discussed by framing theorists is the frame's effect on the salience of the topic (Entman, 1993; McCombs & Shaw, 1993; Scheufele, 1999). When writing about the relationship of framing and salience, Entman (1993) stated, "frames highlight some bits of information about an item that is the subject of a communication, thereby elevating them in salience." This positive relationship between the frame and salience is a core concept of framing theory. If there is no relationship between the frame and salience, then concerns could be raised as to the soundness of framing theory. The importance of salience to framing theory is only further strengthened by Entman's (1993) definition: "The word salience itself needs to be defined: It means making a piece of information more noticeable, meaningful, or memorable to audiences" (p.53).

The findings of the current research's investigation of the relationship between climate change visual frames and salience is counter to the traditional understanding this relationship held by most framing theorists. This research found no support for the theorized positive relationship between frames and salience; no relationship was found between climate change visual frames and climate change salience. There are several explanations for the results of the current study that might elucidate its divergence from

traditional understandings of framing theory. One possibility is the existence of a relationship between the topic of climate change and a belief system, such as politics or religion, that prevents media messages from affecting the audience's comprehension of the importance of the topic of climate change. Another possibility is that the topic of climate change, overall, has become tainted from over exposure, resulting in climate change messages being less effective. No matter the reasoning for this research departure from framing theory's traditional understanding of the relationship between fames and salience, this more complicated relationship between climate change visual frames and climate change salience is an important discovery that warrants further exploration.

When considering the previous research on visual frames, it also important draw attention to the findings of this study, as based solely on the use of just a visual frame. The visual frames in the research were unaccompanied by text-based captions or stories that are often considered to be part of a visuals frame (Fahmy, 2010; Griffin, 2004; Parry, 2010; Rodriguez & Dimitrova, 2011; Pfau et al., 2006). The finding of this research in the ability of visual frames, absent of text traditionally used to strengthen a frame, to successfully generate emotional experiences adds support to the foundational quality of visual communication research and the importance of the continued study of visuals as frames.

While participants were exposed to the three separate climate change visual frames (causes, impacts, or solutions), hypotheses one to three proposed that these frames, being either negative in nature (causes and impacts), or positive in nature (solutions), should have the power to cause the viewer to experience those same underlying emotions as part of the viewing experience. These research findings are in line

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with this hypothesized relationship, having found that the viewing of both causes and impacts climate change visual frames creates a negative emotional experience in participants. In opposition to that, participants who viewed images belonging to the climate change visual frame solutions reported a positive emotional experience. In research question one, the focus was shifted to difference that may exist when the climate change visual frames are compared to one another for emotional experience. The findings coincide with the relationships discovered from hypotheses one thru three: the climate change visual frame of solutions is stronger at generating a positive emotional experience than either the causes or impacts climate change visual frame.

Given that findings of the study and the relationship demonstrated between a visual frame and emotional experience, this study supports previous research findings that frames have the power to generate emotions in viewers (Chapman, Corner, Webster, & Markowitz, 2016; Ekman & Friesen, 1971; Gorini, Griez, & Riva, 2010; Pfau et al., 2006). Considered on a macro level, this study strengthens the idea that frames have the power to influence individuals' states of mind (Coleman, 2010; Fahmy, Bock, & Wanta, 2014; Messaris and Abrham, 2001; Newton, 1998; Wanta, 1988).

With regard to personality and its role in the relationship between climate change visual frames and emotional experience, the findings of the study were not as expected. Given the perceived relationship of the personality trait neuroticism with negative emotions, and the personality trait extraversion with positive emotions, hypotheses four thru nine purposed logical relationships. Climate change visual frames causes and impacts, given their underlying negative content matter, would generate negative emotional experiences in participants with the personality trait of neuroticism based on

the trait's connection to negative emotions. Additionally, participants with the personality trait of neuroticism, with its connection to negative emotions, would also have a negative emotional experience to the climate change visual frame of solution. The bases for this thought process was that individuals with the personality trait of neuroticism are already strongly related to negative emotions, so any content on the topic of climate change would cause them to have an negative emotional experience. This would provide explanation for the findings of previous research that some people are turned off by climate change messaging and would possibly provide a way to categorize those individuals. The same relationships were found for hypotheses with the personality trait of extraversion, given it strong ties to positive emotions. Climate change visual frames of causes and impacts, given their negative nature, would still generate negative emotional experiences in participants with the personality trait of extraversion. However, the climate change visual frame of solutions, given its underlying positive content, would generate a positive emotional experience in participates with the personality trait of extraversion. Again, this would provide insight into the differences seen by previous researchers in responses to climate change visual frames (Chapman, Corner, Webster, & Markowitz, 2016; Feldman and Hart, 2017).

The findings of this study found no pattern or relationship between the emotional experiences of participants in relation to the personality traits of neuroticism or extraversion. It would seem that even though there is an association between the personality trait neuroticism and negative emotion and the personality trait extraversion and positive emotions, those relationships do not translate into emotional experiences. There are several points at which this relationship could fail to carry over into emotional

experience. It is possible that while these personality traits are related to their respective positive or negative emotions, that by their very nature, personality traits are more synonymous with one another than was considered in this research. That is, while personality traits do provide a way to categorize individuals, they do so in a very finite manor. After all, it is possible for individuals to have all five personality traits form the Big Five at one time. Furthermore, in the context of this research, it is important to consider the sample utilized. The sample collected from Amazon Mechanical Turk in particular for personality-based research could, perhaps, further complicated the findings. Participants from Amazon Mechanical Turk are often presented with measures of personality, and, therefore, might be less diligent in providing accurate representations of themselves. Specifically, in the sample gathered for this research, a statistically significant difference was found in the average ($n = 289$, $M = 3.63$, $SD = 1.81$) for the personality trait extraversion. In comparison to a larger study used to set the norms for the Ten Point Personality Survey in the population, this average was below the norm ($M = 4.44$). This shows that this sample in particular had lower levels of participants with the personality trait of extraversion, which could have impacted in the findings of the study in relation to personality.

The remaining two hypotheses and research question built upon the previously hypothesized relationship between climate change visual frame, emotional experience, and personality. Climate change salience was to be explored as a final product of the climate change visual frame and emotional experience, with personality moderating the relationship. On a foundational level, it was assumed that given the relationship between framing and the public's view of what is important, that the use of climate change visual

frames would impact climate change salience. However, this research found that climate change visual frames, emotional experience, and personality have no relationship with climate change salience. The lack of support for personality as a moderator to the relationship between emotional experience and climate change salience is of no surprise, given the findings of the study on the lack of relation between the personality traits neuroticism and extraversion and emotional experience. It stands to reason that further hypothesized relationships on this basis would lack support. However, the lack of relationship between climate change visual frames, the emotional experiences they generate, and climate change salience is a point of interest for this research. It is possible that the lack of relationship is the result of the sample, stimulus, or the measures used in this study in reference to climate change salience. It is possible that individuals participating in Amazon Mechanical Turk are less concerned with the salience of the topic of a survey they are taking than they are with the salience of receiving compensation; this was further reinforced by the necessity to remove participants from the sample for failing a simple manipulation check post stimulus. With regard to the stimulus used in the research, it is possible that there was a disconnect between the importance of climate change based on previous findings on the way in which people relate to climate to images via location and the presence of people (Chapman, Corner, Webster, & Markowitz, 2016; Hart & Feldman, 2016); this was not something considered in the selection of stimulus materials. The measures chosen for climate change salience for this research have been used in previous research to measure climate change salience, following exposure to text-based stimuli, the presence of which could change the effectiveness of the measures when applied to visual stimulus, more specifically an image

slide show. However, several possibilities still remain for the explanation of the absence of the relationship between climate change visual frames, the emotional experiences they generate, and climate change salience, though these outcomes have been prevented by research design. Given that pervious research has shown that people are being turned off from climate change messaging based on exposure to content (Morton, Rabinovich, Marshall, & Bretschneider, 2011; Nisbet, 2010; O'Neill & Nicholson-Cole, 2009), it is entirely possible that the level of exposure in this research triggered that effect, generating a lack of concern on the topic of climate change, resulting in adverse responses to the measures of climate change salience deployed in this research. It is also necessary to consider that the salience of climate change is tied to a much stronger system of beliefs, such as political ideology or religious beliefs (Gerten and Bergmann, 2011; Gunster, 2017; Hulme, 2009; Kellstedt, Zahran, & Vedlitz, 2008; McCright and Dunlap, 2011;). If the salience of climate change is attached to one of these belief systems, it stands to reason that no minimal level of exposure, such as the one deployed in this research, would result in any real consideration for altering these beliefs.

Summary

Based on the results of this study, it would appear that each climate change visual frame elicits a positive or negative emotional experience upon viewing; however, the personality traits neuroticism and extraversion play no role in the process. Furthermore, climate change salience seems to not be tied to any of the other measures in this experiment. This research also demonstrates the influence of the climate change visual frame, which remained intact when the images are separated from their captions (captions which are traditionally provided for more context and additional detail about what is

being depicted in an image). The final chapter will discuss the study's limitations and

present paths for future research, followed by a discussion of the implications of the

study's findings for the content creators.

CHAPTER VI

CONCLUSION

With the progressive worsening of climate change on a global scale and its effects on so many people around the world (Walker, Leviston, Price, & Devine-Wright, 2015), understanding the manner in which visual content plays a role in the conveying of climate change information becomes increasingly important. The ability for research to provide insight into the process associated with climate change messaging and to build a foundation for researchers and practitioners alike to work from is of great import to addressing the issue of climate change; this study's findings add to that body of knowledge. This study found that the climate change visual frames causes and impacts generate a negative emotional experience in viewers that mirror the underlying theme of the image's content. In opposition, the solutions climate change visual frame generates a positive emotional experience in viewers, which also mirrors the underlying positive nature of the images. Climate change images, shown without their traditional accompanying text captions or stories, still successfully convey their respected climate change visual frame of cause, impacts, or solutions. This research found no connection between climate change salience and climate change visual frame or emotional experience. In addition, personality traits neuroticism and extraversion are not an effective means for grouping people in relation to their emotional experiences to climate change visual frames. Based on these findings, this chapter will discuss the study's limitations, paths for future research, and implications for practitioners.

Limitations and Future Research

The choice of stimulus utilized in this research presents limitations. It was the intention of this study to explore climate change visual frames. The decision was made to do so using only still images to limit the scope of the research and to create an entry point into the investigation of the climate change visual frames that could be built upon through other visual mediums, such as video. The still images gathered to construct the stimulus for each climate change visual frame in this research were gathered from Climate Outreach project. The Climate Outreach project library of images, while separated in each climate change visual frame, consist of images taken all over the world by different photographers with different content. In order to address the variation that existed across all the different images in each stimulus group, the images were combined into a slide show with five second pacing. While this delivery method for images, in relation to measuring emotion after exposure, has been use in previous research and was necessary to address survey fatigue, it does present a viewing experience that is without user control and can seem unnatural to viewers, based on traditional means of viewing images.

Future research utilizing images as stimulus should consider the changes in the manner in which content is currently viewed, such as a different delivery method than a time control slide show used in the current research. In the past, before recent technologies such as computers, internet, and cellphones, which focus around the idea of user-controlled content, presenting images in a slide show was the norm and was an adequate means of image viewing. While previous research found this to be an effective means for image delivery, this is far less the case today, given our current modes of media consumption (Lang & Bradley, 2007; Lang, Bradley, & Cuthbert, 1997). Future

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stimulus should strive to create a more accurate user experience, representative of how people encounter images today on social media and of the devices the observer views visual content on in their desired manner. A created stimulus would, then, more accurately replicate the current reality of media viewing.

Several of the measures selected for this research consist of a single item. The use of the Self-Assessment Manikin scale, while only providing a single item measure for valence and arousal, was chosen for its effectiveness and its adaptability to visual depictions in its scale. However, without other measures for valiance and arousal, it is not possible to test the effectiveness of these measures to acutely measure valence and arousal within the study. It is important to note that this research only utilized self-report measures and data. By their very definition these rely on the participants' accuracy and honesty when providing data.

The Amazon Mechanical Turk sample used for this research places limitation on the results relatability to the general population, as the sample is not truly random. While Amazon Mechanical Turk provides participants for the research, they are still motivated to participate for monitory gain. In addition, the participants in the Amazon Mechanical Turk sample were not monitored for their focus and attention to the stimulus or the provided self-report measures. In order to address this issue, a manipulation check was added into the experiment after the stimulus; however, ultimately, participants could choose not to be engaged in the experiment and to focus on other activities. One way to address the issue with the sample would be to conduct the experiment in a lab setting to provide more control over the experimental process. In addition, prior research has shown that the presence of personality traits Extraversion, Neuroticism, and Openness are low in

Amazon Mechanical Turk workers (Goodman, Joseph, & Cynthia, 2013). Specifically, Extraversion is low in Amazon Mechanical Turk workers by comparison to other samples and the general public (Clifford, Jewell, & Waggoner, 2015).

It is possible that any of these limitations in the stimulus selection, research design, and sampling attributed to the absence of findings related to the personality trait (neuroticism and extraversion) and emotional experience. It is also possible that the limitations impacted the findings associated with exploring the relationship between climate change visual frame, emotional experience, personality trait (neuroticism and extraversion), and climate change salience. Future research should work to address the limitations present in this study.

Future research should strive to go beyond some of the limitations of the current research. The current research used only climate change images as its stimulus; images alone only account for a portion of the visual content created on the topic of climate change. As such, future research should explore climate change visuals in the contexts of video, 360 video, virtual reality, augmented reality, and mixed reality. Future research should also test the findings of the current study using measures other than self-report measures. The implementation of a psychophysiological experiment design could provide support for the findings of the current study and offer further examination of the relationships explored in the current study.

Future research should continue to explore the possibility of a psychographic that moderates the relationship between the climate change visual frame and emotional experience. While this study found support for the relationship between climate change visual frame and emotional experience, this research's tested moderator of the personality

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traits neuroticism and extroversion was unsuccessful. The finding of a psychographic that moderates the relationship between climate change visual frame and emotional experience could provide a means for delivering more successful climate change visuals to individuals.

Future research should seek to understand the how climate change visuals can influence behavioral changes that, ultimately, could lead to changes in the global state of climate change. One possible intersection worth exploring could be climate change visuals usefulness in making the connection between climate change salience and behavior changes. While this seems to be the goal of most climate change visuals, little is known about the start to stop process.

Implications for Practitioners

For content creators, the findings of this research can aid in the crafting of visual messages with the goal of conveying climate change messages in relation to emotions. In the area of solution journalism, where it is often the goal to provide context, to increase viewers' engagement, and to have an impact on social problems (Curry & Hammonds, 2014; Kruger, 2017), the findings that each climate change visual frame generates either negative or positive emotional experience can help to craft visual messages about climate change that are more appropriate for a target audience. It could prove beneficial to use the climate change visual frame solutions if the goal of a message is to present hope for the future in relation to climate change, or to generate interest in making changes to policy or behaviors. The climate change visual frames of causes and impacts might be better suited to use by practitioners for a fear-based approach to changes in behavior. Cause is necessary when interpreting the results of this research for practical application. The

findings of this study are that each climate change visual frame results in an overall positive or negative emotional experience. These findings do not mean that every individual will respond the same way as the participants in this research. In fact, it is more likely that there are other factors that help account for the emotional experience following climate change visual frames not discussed in this research.

For photographers, the findings of the research assist in adding validity to the importance of being aware of the frame and narrative that is being constructed when images are being created. It is important for photographers to remain diligent in their efforts to capture an accurate representation of what they perceived to be the frame or narrative. Moreover, the findings of this research generate a need for speculation over the relationship of visual frames to saliences, at least in the context of climate change. This research has shown that the connection between climate change visuals and climate change salience is not clear. Captions often considered to be as important as the photographs for their ability to provide content in relation to this research were shown not be necessary to maintain the visual frame of climate change. That is not to say that captions are not of importance and great value, but it does stress the importance that the visual frame alone carries in communicating these messages.
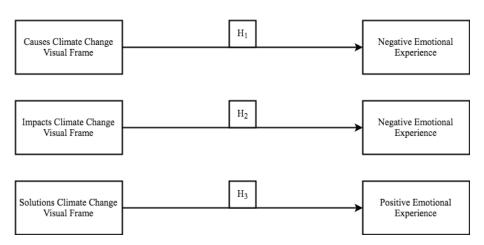
Summary

The purpose of this dissertation was to better understand how visual climate change frames influence emotion and climate change salience. Building on that one step further, this research attempted to find a psychographic (personality trait) that allows for the grouping of people for better-targeted visual climate change messaging. The necessity of this research stems from the continuous use of traditional visual climate change
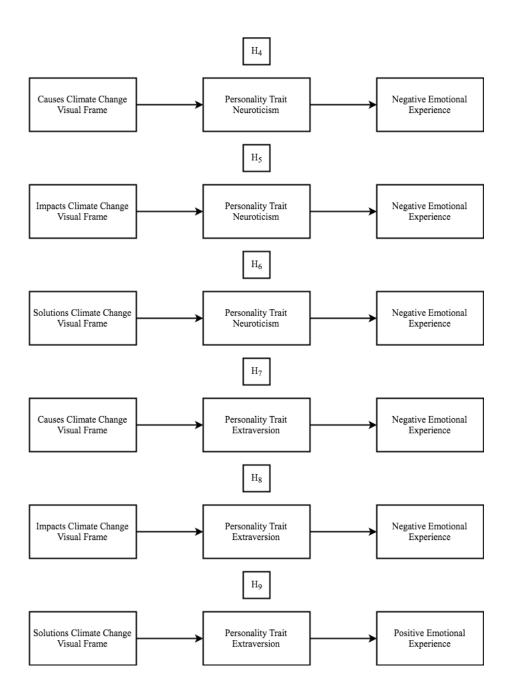
messaging, despite the results and the constant creation of inaccurate counter-messaging. With the increased use of visuals to convey all information, not just that of large scale social issues, such as climate change, it is important to consider the findings of this study moving forward for both academic research and content creation.
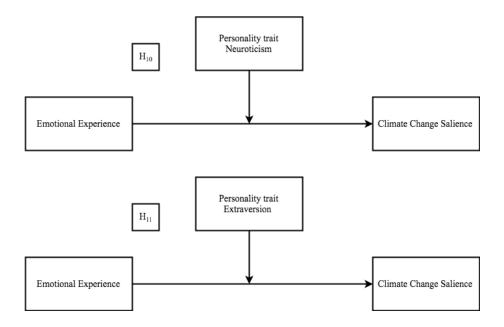
APPENDIX A

FIGURES

Figure 2.1. Conceptual model of hypothesized relationship of each climate change visual frame and emotional experience.

Figure 2.2. Conceptual model of hypothesized relationship for each climate change visual frame with consideration for personality trait leading to emotional experience.

Figure 2.3. Conceptual model of hypothesized relationship of personality traits as a moderator for emotional experience and climate change salience.

APPENDIX B

TABLES

Table 3.1. Stimulus Images from the Pretest

Title / Credit	Image URL	Frame	Caption
*Temptations "Keep Them Busy"	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=1008	Causes	Burning of computer wire and parts to recover copper and other metals in Accra, Ghana. The computers are shipped here from Europe and the USA and some are reused but majority are dumped in Ghana. Poor workers often from the northern poorer region of Ghana do the work and sell the copper to buyers who send the copper to China or India.: This is a compelling image: the pile of burning wires glows like a branding iron through the smoke from the chemical fire. This image hints at the environmental and health consequences of consumer electronics, connecting viewers with what life looks like at the end of our consumer choices.
*Oil Sands Smoke / Todd Korol	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=1007	Causes	The Syncrude oil sands plant in northern Alberta, releases carbon dioxide into the air while processing oil.: Smoke stacks are a classic climate image and our research found they were easily recognized and associated with the causes of climate change. The contrast in size between the oil plant and the giant plumes of smoke illustrates the enormity of their impact on the environment

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Deforestation Landscape / Bridget Besaw	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=1006	Causes	New deforestation, recently cut trees and slash and burning in preparation for farming.: Deforestation was easily recognized in our research as a climate-related image. Showing the scale of this acknowledged and emotionally impactful climate cause is likely to provide a powerful connection with the viewer.
*Tar Sands Alberta / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=1005	Causes	Aerial of Suncor Millenium Mine, north of Fort McMurray, Canada.: Our research suggests that people are likely to have an immediate understanding and negative emotional response to images like these which show climate causes at such a huge scale.
*Pulp Mill Pond / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=1004	Causes	Pulp mill and aeration ponds, Jesup, GA: This striking and unusual image is likely to provoke negative reactions to this climate impact. Here, the waste water is aerating on the water, like fried eggs the size of the mill itself.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Oil Wellhead Burning / Ed Kashi	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=978	Causes	In an Ogoniland village in the Niger Delta, an unattended oil wellhead that had been leaking for weeks has turned into a raging inferno. This environmental disaster effects the crops, water, and air for locals forcing farmers and fishermen out of work, amplifying tensions between locals and the oil companies. Oil fires like this one emit large amounts of carbons into the atmosphere, degrading air quality and contributing to global warming. This is one example of the adverse impacts of resource extraction on our climate.
Deforestation in Malaysia / xPACIFICA	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=1001	Causes	Aerial images of cityscape, landscape, and agriculture in Johor, Malaysia: Deforestation was easily recognized in our research as a climate-related image. Showing the scale of this acknowledged and emotionally impactful climate cause is likely to provide a powerful connection with the viewer.
Traffic Jam in Germany / Markus Tacker	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=976	Causes	Our research found that people often had difficulty linking individual behaviors to climate change- so showing personal behaviors 'at scale' is more effective.
Traffic Jam in England / Highways England	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=977	Causes	Our research found that people often had difficulty linking individual behaviors to climate change- so showing personal behaviors 'at scale' is more effective.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Traffic Jam USA / Florian	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=975	Causes	Our research found that people often had difficulty linking individual behaviors to climate change- so showing personal behaviors 'at scale' is more effective.
Fracking Landscape / Simon Fraser University	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=886	Causes	In areas where shale-drilling/hydraulic fracturing is heavy, a dense web of roads, pipelines and well pads turn continuous forests and grasslands into fragmented islands.
*Beach and Oil Refineries / Spencer Thomas	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=883	Causes	"Baby Beach" with oil refineries in the background.
*Clearcutting in Oregon / Francis Eatherington	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=887	Causes	Coquille Forest, unit 5, after clear-cut and before logs hauled away.
Coal Mining in Spain / Jennifer Woodard Maderazo	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=885	Causes	Effects of coal mining.
Oil Spill in British Columbia / Clive Camm	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=884	Causes	The sign says it all. To be fair, oil tankers - like the one in the background - had nothing to do with this spill.
Mountaintop Coal Mining / Dennis Dimick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=880	Causes	Mountaintop Removal Coal Mine. This is where electricity comes from. It's a repost of a panoramic image of the Kayford Mine near Charleston West Virginia originally posted here in late 2008.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Smokestacks and Texas / Roy Luck	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=877	Causes	Shorebirds on the beach at Lynchburg Landing. Sepia-tone image.
Cement Factory in Cameroon / Carsten ten Brink	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=878	Causes	Figuil: life in front of the cement factory
*After the Party / John Seb Barber	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=879	Causes	After the parade, the clean-up operation begins.
Coal Mining / Zhart	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=882	Causes	Coal miner in Xingtai, China.
Deepwater Horizon Spill / Public Domain	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=881	Causes	Fire boat response crews battle the blazing remnants of the off shore oil rig Deepwater Horizon April 21, 2010. A Coast Guard MH-65C dolphin rescue helicopter and crew document the fire aboard the mobile offshore drilling unit Deepwater Horizon, while searching for survivors April 21, 2010. Multiple Coast Guard helicopters, planes and cutters responded to rescue the Deepwater Horizon's 126 person crew.
Coal Trains in Wyoming / Kimon Berlin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=871	Causes	Giant coal trains near North Antelope Rochelle Mine
*Pollution from Airlines / dsleeter_2000	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=874	Causes	Air China B-2471 takeoff SFO runway 28R.
*Deforestation in Oregon / Francis Eatherington	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=872	Causes	Rainforest clearcut in 2008. Elliott State Forest.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Scooter Pollution in Malaysia / Roland Haas	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=876	Causes	Rising incomes double motor vehicle fleets every 5 - 7 years and leads to severe congestion and pollution in cities like Kuala Lumpur.
*Tar Sands Landscape / Dru Oja Jay	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=875	Causes	Tar sands, Alberta
Deforestation in Kalimantan / David Gilbert	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=866	Causes	This photo is from an investigative report from Rainforest Action Network that presents evidence that Cargill is operating two undisclosed palm oil plantations in West Kalimantan, Indonesia. The destruction of primary rainforest by Duta Palma. West Kalimantan, Borneo. Cargill was a key purchaser of palm oil from this notorious rainforest destroyer up until 2008.
*Oil Trains in Saint John / Chris Toe Pher	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=868	Causes	Oil Cars - Saint John NB 2015
*Smoke Stacks in Benxi / Andreas Habich	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=869	Causes	Benxi heavy steel industries in February 2013.
Garzweiler Tagebau / Raimond Spekking	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=870	Causes	Bucket-wheel excavators 288 and 258 in Garzweiler surface mine
Mayon Prime Cement / Adam Cohn	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=867	Causes	Mayon Prime Cement Cargo Hold
*Breaking Coal in India / Paul Hahn	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=843	Causes	India, Jharkhand, Agaria, Tola, West Bakaro, Tata, coal mine, Adivasi, indigenous people, coal mine, woman breaking coal into smaller pieces with hammer for coking, smoke, air pollution, fossil fuels, natural resources, Third World, developing country, poor, poverty, Asia, 2008.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Coal Mining in Greece #3 / Nikos Pilos	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=861	Causes	1/8/14. PTOLEMAIDA, GREECE. A worker during his night shift talking over the radio and coordinating the transfer of the huge excavator from one side of the mine to the other, where there's still a lot of lignite to be extracted.
Destroyed Cement Plant / Martin Sasse	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=854	Causes	After tsunami in South East Asia, Sumatra, Banda Aceh, cement factory in ruins, industry, catastrophe, natural disaster, flood, seaquake, destruction, Asia, Indonesia, Province Aceh, January 2005, only 20 of the 600 employees of the factory survived the devastation
Traffic Jam Seoul / Martin Sasse	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=860	Causes	Korea, Seoul, traffic jam
Tar Sands in Winter / Dominik Asbach	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=845	Causes	Canada, Fort Mc Murray, ThyssenKrupp Safway has the contract to make scaffolding for oil company Suncor Energy, digger removing the oil sand to be refined, industry, economy, North America, November 7, 2007
Factory Farming Chickens / Franz Bischof	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=829	Causes	Germany, Lower Saxony, Herrman Hartlage's turkey farm in Winkelstett, December 14, 2010. In the shed, there are around 4,500 turkeys aged 18 weeks. Poultry, birds, turkeys, factory farming.
Rice Growing / Markus Kirchgessner	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=842	Causes	Africa, Madagascar, southeast, near Mizilogare, women are planting rice.
Small Scale Deforestation / Michael Martin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=839	Causes	Mali, in der Sahelzone, Holzsammler, Holz, sammeln, Brennholz, Brennmaterial, Abholzung, Umwelt, Umweltzerstoerung, Wuestenbildung, Wueste, Bevoelkerung, Alltag, Sahel, Afrika Reise, Travel

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Traffic Jam in Beijing / Dorothea Scmid	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=841	Causes	Asia, China, Beijing, rush hour traffic, Xizhimen Dajie.- Asien, China, Peking, Stossverkehr, Stau, Xizhimen Dajie.07.05.2008.
Maintaining Pipes / Massimiliano Clausi	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=817	Causes	Ecuador, 2012 - A Petroecuador worker fixes a pipe on the road leading to the Colombian border. Petroecuador, along with its partner Chevron Texaco, has been responsible for thousands of leaks resulting in a serious damage to the ecosystem.
Deforestation for Palm Oil / Donang Wahu	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=826	Causes	Excavators cut trees on a vast pulpwood concession for palm oil plantations and to produce pulp paper owner by Sinar Mas Group located in N1 22 51.1 E101 39 46.1 peat swamp forest in the province of Riau in Sumatra, Indonesia. This destruction also threatens our wider world; peatlands are perhaps the world‚Äôs most critical carbon stores, and Indonesia's peatlands are vast, storing about 35 billion tonnes of carbon. When these peatlands are drained, burned and replaced by acacia, eucaylptus or palm oil plantations, carbon dioxide is released.
Land Clearing / Massimiliano Clausi	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=819	Causes	Ecuador, 2012 - A Colombian farmer working on his "finca". These patches of forest are given away at a low price by the government to farmers who then clear them up to grow crops.
*Deforestation on Churia Hills / Daniel Pilar	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=821	Causes	Nepal, Churia Hills, community Korak, the ethnic minorities Chepang and Tamang are imperiled because of social discrimination, archaic cultivation methods and the climate change, here: woman with basket full of branches in the village Chaughara.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Egg Laying Chickens / Matthias Jung	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=828	Causes	Timmermans egg farm; deep litter eggs; 30,000 chickens in coop ; 9 chickens per sq m; run by farmers Linda and Johan Timmermans; near Maaseik, Belgium, 11.02.2011, factory farming, hens, poultry.
Coal Mining Greece	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=811	Causes	PTOLEMAIDA, GREECE. Operators of the big excavator have to walk through the mud to work in the mine.
Fracking in North Dakota / Kristoffer Finn	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=816	Causes	USA, Die Praerie des US-Bundesstaates North Dakota ist der Schauplatz des juengsten US-Oel-Booms, das Fracking-Verfahren bildet dabei die technische Voraussetzung. So auch bei diesem Rig rund zwei Autostunden ausserhalb von Williston, ND, US, auf dessen Platform am 09.08.2012 Oel-Arbeiter sich unterhalten, Beruf, Arbeitsplatz, Oelplattform, Oelfoerderung, Oelindustrie, Industrie, Wirtschaft, Schutzhelm, Sicherheit, Maenner, Arbeitskleidung, Berufskleidung.
Children's Playground / Dermot Tatlow	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=814	Causes	USA, North Dakota, Bakken formation, fracking, hydraulic fracturing, oil boom, oil production, oil industry, crude oil, economy, Children playing on an oil pump see-saw at the Williston Community Builders Playground.
Factory Farming Sheep / Obie Oberholzer	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=815	Causes	South Africa, Northern Cape, Karoo, "Farm Security Feedlot between Hanover and Richmond. Apporoximately 19,000 sheep.", agriculture, animal breeding, sheep, herd, Africa, Landwirtschaft, Viehzucht, Schafe, Schafsherde, Afrika, laif_creative

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Hamburg Port / Thies Raetzke	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=802	Causes	Seaport terminal Hansaport Hamburg, aerial shot, transport, port, logistics, shipping, economy, harbour, ship, ore, coal, open-air storage, open depot, Europe, Germany, June 09, 2016.
Coal Mine Germany / Karsten Schoene	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=809	Causes	Deutschland, Nordrhein-Westfalen, Steinkohle, Bergwerk RAG Anthrazit Ibbenbueren
*Smokestacks and Bike / Martin Leissl	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=806	Causes	Braunkohletagebau, Braunkohle, Tagebau, RWE AG, Aussenaufnahme, Mann, Mensch, Fahrrad, Besucher,
Walking Past the Site / Christian Berg	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=807	Causes	An elderly woman walks past massive construction sites at Duyen Hai Complex in Tra Vinh Province. Vietnam, December 1st 2015.
*Coal Mining Greece #2 / Nikos Pilos	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=810	Causes	1/8/2014. PTOLEMAIDA, north Greece. A worker and operator of one of the excavators is taking a break for a smoke. The pollution is so big that the workers believe that a cigarette won't hurt. Most of the men don't wear masks or helmets.
*Cell Phone and Coal Plant / Adam Dean	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=734	Causes	A farmer, sitting astride his motorbike, talks on a mobile phone after working in fields beside the Shentou coal-fired power plant.
*Picnic and Fossil Fuels / Adam Dean	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=745	Causes	The family of migrant construction workers eat a meal at a wedding banquet in their housing compound. Looming over them are the smoke stacks and pylons of the Datong No. 2 coal-fired power plant, where some of them work.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Impacts of Fracking in ND / Joan Bardeletti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=753	Causes	Brad Olson sits on top of his tractors looking down at his two dogs as he unloads his latest crop of wheat he has brought in from the field. With his modern agricultural equipment, he is able to farm a very large terrain. In this part of North Dakota it has become very difficult to find farm laborers to employ since everyone wants to work in the oil and gas industry. North Dakota is second only to Texas in oil producing states in the US. Oil and shale gas reserves that were until recently uneconomical for large scale production have become highly profitable with new hydraulic fracturing (fracking) technologies. The populations of towns like Williston, which lies near some of the biggest reserves in the state, have doubled in size in the space of two years and local services are struggling to keep up. Trailer parks have emerged on the outskirts of towns where oil companies are renting out rooms for between USD 100 to 150 per night, which includes two meals. Accidents have doubled in a year and the crime rate has risen sharply. By 2012, North Dakota had 198 drilling platforms compared to 30 in 2009.
Impacts of Fracking in ND / Joan Bardeletti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=756	Causes	Ernest Salters works as a chef at the "Male Camp" for workers employed by Target Logistics in Williston, North Dakota. He came from South Carolina after having been laid off three times in the space of one year. He works seven days a week for six weeks in a row before getting two weeks off…

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Impacts of Fracking in ND / Joan Bardeletti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=754	Causes	Nick (leaning on his truck) watches his daughters Kassidy (8) and Hannah (6) while they play on their pogo sticks. They are living in a trailer park on the outskirts of Williston where Nick is employed in the local oil industry. He travels with his family around the US laying pipe lines. The family doesn't want to stay here for long since they don't like the atmosphere in Williston and don't want to spend the winter here…
Impacts of Fracking in ND / Joan Bardeletti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=755	Causes	Jason Bock speaks to residents of a trailer park in Williston. He is a police officer with the local sherriff's office and patrols mostly at night. The town's population has doubled over the past two years and crime rates have risen accordingly. A new prison built to house 50 is already full…
Impacts of Fracking in ND / Joan Bardeletti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=757	Causes	From left to right: Candice Panner (cleaning lady), Story Scotts (grocery shop employee), Terry Legions (a manager from California) and Karine Smith (cleaning lady from Utah) pose in a gym. They are four of the 38 women working at the "Male Camp" operated by Target Logistics, which houses around 600 people…
Impacts of Fracking in ND / Joan Bardeletti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=748	Causes	Two women help out in the kitchen of the Lutheran Church which has been welcoming those who have failed to make it in the oil and gas boom in North Dakota and those who have lost their homes due to rising rents pushed up by incomers…

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Impacts of Fracking in ND / Joan Bardeletti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=751	Causes	Mike, Chris, Jeremy, Dustin (front), Lance and J (back) sit in their room at a motel in Williston in North Dakota. They are construction workers from Minnesota who have come to North Dakota to work on one of the many construction sites connected to the oil industry. They have been working here for two months and while they don't like Williston much they are keen to stay since the pay is better than elsewhere…
Impacts of Fracking in ND / Joan Bardeletti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=749	Causes	Bill Gardner is one of the many losers left behind in North Dakota's current oil and gas boom. He came to the state four months earlier without any qualifications. He did some odd jobs before ... He is now homeless and sleeps where ever he can until he gets moved on by the police…
Impacts of Fracking in ND / Joan Bardeletti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=750	Causes	Leanne and Dan Belmann sit in their living room. They are a farming family, are passionate about horses and love the rural American lifestyle. They are now letting part of their property to a trailer park where newly arrived workers in the oil and gas industry are able to park their mobile homes…
Impacts of Fracking in ND / Joan Bardeletti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=752	Causes	Workers and earthmoving equipment work to lay a new oil pipeline near Williston in North Dakota…
Fishing Near Detroit Coal / Ami Vitale	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=737	Causes	12 year old Jordan Beverly fishes in a park next to a coal plant in River Rouge, Detroit. He suffers from asthma.
*Fishing at Detroit / Ami Vitale	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=735	Causes	A man fishes in the bay beside the DTE coal plant in Detroit. Many of the people who live in close proximity to the plant suffer from asthma.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Coal Plant with Farmers / Chris Stowers	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=738	Causes	Farmers collect wheat with their cow and cart near the Guru Hargobind Thermal Power Plant. Some of the output of ash from the coal burnt in the plant escapes into the air and has been speculatively linked to health problems in the area, as well as affecting crops.
*Xinwu Coal Mine / Qilai Shen	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=743	Causes	Workers, in between shifts, walk through the grounds of the Xinwu Coal Mine which is owned by Liansheng Group, a coal mining company that has been hit by the falling price of the fossil fuel leaving the firm struggling to repay its loans.
Coal Jaintia Hills / Suzanne Lee	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=747	Causes	The Kong Ong Depot, the largest coal storage depots in the Jaintia Hills. The coal comes from privately owned mines in the surrounding region. Pinky works to make 'pocket money', earning between INR 250 - INR 500 (GBP 6) a day. She says she wants to be an astronaut so that she can leave this world. There are approximately 5,000 privately owned coal mines in the region sitting on top of about 40 million tons of coal. Many use children, often trafficked, to work them under conditions that are hard and unregulated. The coal is dug out using primitive methods and basic tools.
Children and Coal / Suzanne Lee	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=732	Causes	Children from the Presbyterian church school place stones on the ground to mark the border of their land in an attempt to prevent the coal depot from encroachment. The children must weave their way through the piles of coal that stand between the school and the road. When the children reach 12 years of age they are often pulled out of school to work in the mines…

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Settlements near Steel Plant / Robert Wallis	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=736	Causes	A man stands in the village of Jujsai Saloud. Tata's Jamshedpur Steel mill (in the background) towers over the Santal Adivasi village which is now a slum but was formerly the centre of an agricultural community. The Santal's farmland was taken over by Tata for the location of the steel mill. Jamshedpur is now known as the 'Pittsburgh of India' and is a purpose built city designed by Tata to house its employees. Unfortunately almost none of the Santals who were displaced by the steel mill received employment or any compensation for their land. They now live in this slum on the edge of the mill and scrape a living from the mill's slag heap by separating lime and bits of coal from the slag which they resell to earn less than one USD per day.
Small Shale Oil / Adam Dean	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=724	Causes	A man transports a barrel of oil in an ox drawn cart, past makeshift derricks and prospector's homes at Nga Naung Mone, Myanmar's largest unregulated oil field.
Collecting Brown Coal / Bjoem Steinz	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=733	Causes	Visitors watching a brown coal excavator at work in an open cast mine in the North Bohemian Basin.
*Logging Generations / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=725	Causes	A child plays with a tyre beside a stack of logs stored in a compound in Turubu Bay. Turubu Bay is one of many places in PNG where logging companies are practising land grabs and illegal logging. The World Bank estimates 70% of logging in PNG is illegal.
*India Traffic Jam / Atul Loke	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=706	Causes	Heavy traffic chokes the Western Express highway during the morning rush hour.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Forest Fire Traffic 2 / Paul Lowe	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=703	Causes	The roads are clogged with a mixture of vehicle exhaust fumes and smoke. The smog covers much of south-east Asia as the fires in Kalimantan rage on unchecked - many of them in the peat bogs below the rainforest floor. Pontianak, a town of 450,000 people, is currently the most polluted place on earth. Some reports put the pollution index as having risen to 1800, some give the figure as half this number. Any figure over 300 is considered dangerous. On 26th September the register showed 967, about the equivalent to smoking 70-80 cigarettes a day. Many Indonesians are unaware of the risks they face from the smoke and haze, and it is unclear as to whether the face masks that are being distributed to the local population offer much protection.
Forest Fire Traffic 1 / Paul Lowe	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=704	Causes	Members of the Pontianak NGO coalition distribute free masks to the local population…
*China Car Jam / Robert Wallis	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=713	Causes	Rush hour traffic and pollution.
*Logging in Cameroon / Alfredo D'Amato	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=690	Causes	A man uses a chainsaw to section a felled tree while his colleague watches him work.
*Oranges at the Dump / Jacob Silberberg	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=685	Causes	A girl carrying fruit on her head descends on a village at the Olusosun landfill site. The Olusosun dump is Nigeria's largest trash heap comprising over 100 acres of garbage and is believed to be the largest in Africa. There are around a thousand houses built within its boundaries

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Electronic Waste / Jeroen Bouman	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=682	Causes	A girl passes a heap of circuit boards in an alley, holding her nose because of the strong smell of tin solder. Every year Guiyu takes in more than a million tons of computer waste, imported from all over the world. About 40,000 local farmers and 100,000 migrant workers make their living from the e-waste, which contains toxic ingredients such as lead, beryllium and mercury. The workers risk catching respiratory and skin diseases, eye infections and even cancer.
Pork Production / Qilai Shen	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=684	Causes	A worker moves a rack of pig carcasses at a meat wholesale and distribution centre.
Electronic Waste Dump / Andrew McConnell	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=673	Causes	Plastic from e-waste is piled high at Agbogbloshie dump, which has become a dumping ground for computers and electronic waste from all over the developed world. Hundreds of tons of e-waste end up here every month. It is broken apart, and those components that can be sold on, are salvaged.
Pollution and Girl / G.M.B Akash	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=675	Causes	A girl crosses a bridge over the heavily polluted Buriganga River. Everyday 1.5 million cubic metres of waste water from 7,000 industrial units in surrounding areas and another 0.5 million cubic metres from other sources are released into the river. Although the government have enacted laws that require industry to safely process effluents these are rarely enforced and pollution remains uncontrolled. The river is biologically dead and increasingly a serious health hazard to those using and living near it.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Cement Shipping / Stefan Boness	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=681	Causes	Workers loading bags of cement from a ship in the harbour of Massawa.
Coal in Italy / Alfredo D'Amato	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=671	Causes	A technician directs a machine used to unload coal from a barge docked at the Torrevaldaliga Nord power station's jetty. The coal is moved by conveyer belt directly into storage at the power station. Torrevaldaliga Nord is said to be the world's least polluting coal-fired power station. It is one of the most innovative and modern plants in the world, emitting less greenhouse gas than other coal-fired stations, as well as the oil-fired plant it was converted from.
Mass Meat Productation / Alfredo Caliz	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=669	Causes	Meat being prepared for the production of McDonald's hamburgers at a food production facility.
Child and Electronics / Natalie Behring	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=662	Causes	A small Chinese child sitting among cables and e-waste, Guiyu, China. Much of modern electronic equipment contains toxic ingredients. Vast amounts are routinely and often illegally shipped as waste from Europe, USA and Japan to countries in Asia as it is easier and cheaper to dump the problem on poorer countries with lower environmental standards. This practice exposes the workers and communities involved in dismantling e-waste to serious, environmental problems, danger and health hazards. Greenpeace is strongly urging major manufactures to exclude toxic materials from their products.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Meat Production / Ricardo Funari	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=653	Causes	Workers butcher livestock in Marfrig slaughterhouse facility. Marfrig is the world's fourth largest beef trader. After Greenpeace released a report exposing Marfrig's link to Amazon deforestation, the company announced a moratorium that prevents them from buying cattle raised in newly deforested areas within the Amazon.
*Oil Tanker Burning / Paolo Vaccari	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=666	Causes	Cypriot oil tanker HAVEN burning Gulf of Genoa; it was carrying crude oil from Iran. (Greenpeace Witness book page 88-89)
*Pipeline Spill in Russia / Christian Bussau	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=667	Causes	Leaking pipeline and oil polluted ground in the Komi-Region, Russia.
Factory Farming / Daniel Beltra	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=654	Causes	Extensive documentation of man made forest fires to clear land for farming and cattle. In very large areas the deforestation has caused devastating desertification of the land. The Amazon rain forest is being deforested at an alarming pace primarily for cattle ranching. Deforestation not only destroys biodiversity and displaces forest peoples but is also responsible for 75% of Brazil's greenhouse gas emissions, making Brazil the world's fourth largest climate polluter.
Mongolian Herders and Coal / Lu Guang	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=640	Causes	Herders look through a window as trucks pour tip sand produced by the coal mines onto the grassland and encroaching onto their land with cattle.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Coal Ash Ponds / Zhao Gang	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=647	Causes	A Greenpeace activist takes a sample at the coal ash disposal site owned by the Shentou Number 2 Power Plant. With even the lightest wind, the tiny particles take flight, blotting out the sky like a thick sandstorm of ash. This is highly hazardous to people, as the fine particles are easily inhaled. Lu Youlong, who works nearby, told Greenpeace that contaminated water has seeped from the ash dam into village fish ponds, killing all the fish. Many fields have also developed puddles of alkaline water, making it impossible to grow crops.
Albian Oil Sands / John Woods	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=650	Causes	Oil filled soil is removed from the ground at Shell's Albian Sands mining project in Northern Alberta.
Meat Factory and Production / Ricardo Funari	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=652	Causes	A worker butchers livestock in Marfrig slaughterhouse facility. Marfrig is the world's fourth largest beef trader. After Greenpeace released a report exposing Marfrig's link to Amazon deforestation, the company announced a moratorium that prevents them from buying cattle raised in newly deforested areas within the Amazon.
Methane in the Water / Les Stone	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=641	Causes	Sherrie Vargson ignites the water coming out of her kitchen faucet in Bradford County. Methane in her well has caused her health problems. The well is just 100 feet from her house.
*Polluted Yellow River / Lu Guang	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=630	Causes	The Yellow River is heavily polluted by coal and chemical factories. A single net like this will catch very few fish in this stretch of river.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Cleared Land in Kalimantan / Ulet Ifansasti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=636	Causes	A view of a cleared land near the area where orangutan bones were found at the PT. Andalan Sukses Makmur concession, a subsidiary of Bumitama Gunajaya Agro (BGA) Group in Central Kalimantan. The pristine forest, its flora and fauna are threatened by the palm oil expansion in the area.
*Palm Oil and Single Tree / Ulet Ifansasti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=633	Causes	A solitary rainforest tree remains standing in a recently planted palm oil plantation on former orangutan habitat inside the PT Karya Makmur Abadi Estate II palm oil concession. PT KMA II is a subsidiary of the Malaysian Kuala Lumpar Kepong Berhad (KLK) group.
Oil Spill Clean Up / Roengrit Kongmuang	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=637	Causes	Rescue workers, local volunteers and PTT personnel attempt to clean up the oil spill at Ao Phrao beach in Ko Samet, Rayong Province, one of the areas most affected by the oil spill. More than 50,000 liters of crude oil has spilled into the sea, 20 kilometers southeast of the Map Ta Phut industrial estate following a leak from a pipeline at an offshore platform. The pipeline is operated by PTT Global Chemical Public Company, a subsidiary of PTT Public Company Limited (the largest fossil fuel conglomerate in Thailand). Greenpeace is calling on the Thai government to review its energy policy and to put an end to oil drilling and exploration in the Gulf of Thailand.
*Deforestation for Palm Oil / Ulet Ifansasti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=632	Causes	A network of access roads on former orang-utan habitat inside the PT Karya Makmur Abadi Estate II palm oil concession. PT KMA II is a subsidiary of the Malaysian Kuala Lumpar Kepong Berhad (KLK) group.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Beach and Coal Plant / Kemal Jufri	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=638	Causes	Children play by the beach near a coal power plant in Jepara, Central Java, oblivious to the possible threats to their health. The coal mining furore poses serious hazards to human health, the environment and the social integrity of communities around mining areas.
Palm Oil Plantation	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=635	Causes	Aerial photographs taken on several flights to document deforestation and forest beauty throughout the northern area of Pará State, Brazil. Includes construction of the controversial Belo Monte Dam project, and areas where three large dams are also to be built on the Tapajos River. In addition, Greenpeace is in the area to witness the "Cachoeira Seca" (Dry Waterfall) Indigenous land, where illegal logging and land grabbing has been occurring.
Planting and Drought	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=629	Causes	Just a ditch separates the Ningxia Baofeng Energy plant from Li Jiayun (not her real name) who is hoeing her field. Li's family planted 50 to 60 mu of red dates, but after they used the water from the ditch to irrigate the plants, many of them died. Sweet corn also won't grow here. The government moved the villagers to the Hongshiwan Mine Relocation building. They have to travel 2 to 3 km to get to their land. Many of them are willing to build new homes in the old place to be closer to their land.
Mining in Kalimantan / Moses Ceaser	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=548	Causes	Landscape in East Kalimantan, Indonesia.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Mother and Child / @Greenpeace	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=626	Causes	A mother tries to console her child her home near the Datang Hexigten Qi coal-to-gas plant. She says that since it begins operation, smoke from the plant fills the air, water in the wells begin to have an odd taste and the ambient noise levels has increased. All these are directly affecting their daily lives. China's flagship coal-to-gas pilot project is already breaking national standards on air and water pollution, according to an on-the-ground investigation by Greenpeace China.
Yellow Smoke from We'an / Lu Guang	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=625	Causes	Thick yellow smoke produced by oxygen cutting at the Wen'an steel plant in Wu'an gives off a pungent stench. Air pollution has become one of the most severe environmental problems in mainland China.
Metal Smelting / Goodwin Steel Castings	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=549	Causes	Transferring molten metal from the furnace to the ladle.
*Cattle and Gas Flares / Les Stone	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=620	Causes	Cattle graze in a field as gas flares from a pumping installation on the Eagle Ford Shale in Karnes County. The shale oil boom is going strong here south of San Antonio on a formation that stretches for about 300 miles across south Texas, one of the most prolific oil patches in the United States, In some areas the oil companies have discovered "sweet" spots and they are still drilling, while other areas have been cut back. Excess gas is burned off at oil pumping stations which dot the countryside.
Timber Industry Cameroon / Mokhamad Edliadi	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=543	Causes	Aerial view of the timber market in Yaoundé, Cameroon.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Tar Sands of Alberta / Kris Krug	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=547	Causes	DeSmogBlog investigates the controversial decision by Alberta's government to ignore the threat of rapid industrial expansion in the Alberta Tar Sands region, and instead kill thousands of wolves to appear to be doing something to save dwindling woodland caribou populations. Through interviews with scientists, wildlife experts and a First Nations chief, the myth of Canada's "ethical oil" is further exposed as oil industry greenwashing.
*Logging Truck / Ollivier Girard	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=546	Causes	Wood Truck for the Company Fabrique Camerounaise de paquets (FIPCAM) near the village of Ngon. District of Ebolowa, Cameroon.
Turkey Factory Farm / MPCA Photos	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=542	Causes	Gorans Brothers turkeys, Blomkest, MN -- The Minnesota Pollution Control Agency administers rules regulating livestock feedlots and the ways manure is handled in Minnesota.
*Transportation in Banglasdesh / ADB	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=544	Causes	Lack of training for drivers and traffic police, lack of enforceable laws, and a huge number of vehicles contribute to the daily traffic jams in the capital.
Long Yard Indonesia / Agung Prasetyo	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=541	Causes	A worker at a log yard, Indonesia.
*Electronics Waste / Fairphone	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=539	Causes	Burning site, Agbogbloshie
Electronics Waste / Fairphone	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=540	Causes	Chargers collected (using a monitor as a bucket!)

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Garbage Dump in Arctic / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=533	Causes	Rubbish dumped on the tundra outside Illulissat in Greenland with icebergs behind from the Sermeq Kujullaq or Illulissat Ice fjord. The Illulissat ice fjord is a Unesco world heritage site: Images of melting ice have become one of the 'classic' climate images, but here, large-scale waste connects human actions directly with these abstract, yet iconic environmental consequences. Most people have an aversion to waste and litter, and so its proximity to a World Heritage protected landscape is likely to evoke strong reactions.
*Slum in Lagos / Samantha Appleton	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=536	Causes	LAGOS: DEVASTATION INHABITED The Megacity of Lagos, Nigeria is a teeming cluster of slums that continues to grow exponentially and will soon become the third largest city. Lagos is urban poverty at its most horrific, in a country with one of the world's largest oil supplies. People have built up their own towns and social systems in the wake of complete governmental abandonment. Nigeria does not provide the most basic of services. Indentured slavery is standard, health care is non-existent, and corruption is the only system. (STORY FIRST PUBLISHED 11/2006) The Makoko slum in Lagos, Nigeria as a storm rolls through early in the morning. The slum is home to hundreds of thousands of people, the majority of whom live in squalid shacks built on stilts in the putrid lagoon.: This is a powerful image of the consequences of oil extraction on human lives and communities.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Tyre Landfill / Jose Azel	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=537	Causes	CA: Westley: tires (estim. qty: 4-6 million) are burned for electricity by plant that supplies 3500 homes.: The incredible scale of this tyre dump is emphasised by the toy-sized humans and machinery. Connecting this image with the outcome (burning tyres for electricity) tells a shocking story of climate change causes.
*Oil Sands Alberta / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=531	Causes	Syncrude and Suncor oil sands mine sites near Fort McMurray, Alberta, Canada.: While there are no people to humanise this image, our research suggests it is likely to produce a strong negative emotions, and convey the scale and urgency of the climate challenge.
Mining Truck and Man / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=530	Causes	Tire repair specialist changing a tire on the Cat 793 150 ton truck at the Suncor Facility, north of Fort McMurray, Alberta, Canada.: Our research points to the importance of showing climate causes on a large scale. The size of these tyres effectively conveys the scale of mining, not only in excavation but also transportation: the human figure is tiny next to the monster-sized vehicle.
*Conventional Logging / Bridget Besaw	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=521	Causes	Conventional logging; P.T. Inhutani Timber company in the Inhutani conventional logging concession. Images of logs (whole trees) stored in log lot, logs being moved and put on trucks and trees being hauled out of the woods by skidder. : Our research pointed to the importance of linking individual people with large-scale climate causes such as deforestation

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Meat Products / Kevin Moloney	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=512	Causes	Graders separate beef trimmings for different levels of lean content before sending the fatty meat to be ground for hamburger at a Cargill meat packing plant in Fort Morgan, Colo. Cargill is participating in trials of a cattle vaccine for e-coli among undertaking other measures to control the harmful-to-humans pathogen that can come from meat contaminated by cattle feces.: This image links industrial-scale climate cause (factory farming) with individual people, and may help to connect individual meat-consumption with the wider context of how it has been produced.
Factory Farmed Eggs / Robert Benson	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=523	Causes	Chickens sit inside cages at a chicken egg farm near San Diego, California.: This image conveys the scale of factory farming, and their contributions to climate change. People don't easily make the link between eating meat and climate change, but showing this 'behaviour' at in industrial scale is a better way of making the link than just showing an individual action.
Oil Derricks / Paul Giamou	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=507	Causes	A nodding donkey pumps crude up from the ground on an oil field.: These oil pumps look almost comical at first glance but a closer look shows that they stretch out far into the horizon - an eerie, apocalyptic scene. Our research suggests that people are likely to have a negative emotional response to images like these which show climate causes at such a huge scale.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Deforestation of Malaysia / xPACIFICA	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=504	Causes	Aerial images of cityscape, landscape, and agriculture in Johor, Malaysia: Deforestation was easily recognised in our research as a climate-related image. Showing the scale of this acknowledged and emotionally impactful climate cause is likely to provide a powerful connection with the viewer.
*Oil Sands Mining / Todd Korol	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=494	Causes	The tar sands in northern Alberta, Canada: In our discussion groups, the scale of the destruction caused by Tar Sands provoked strong reactions.
Logging Aerial / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=498	Causes	Pine Falls Paper Company log yard, Pine Falls, Manitoba, Canada.: Our research found that showing causes of climate change on an industrial scale is powerful. The perspective of this photo illustrates the scale of deforestation that seems almost exaggerated. The logs look like matchsticks and the (actually huge) industrial vehicles seem tiny next to the amassed logs.
Village Women and Firewood / Ralph Davis	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=499	Causes	Village women carry stacks of firewood as if to fuel the fires of the distant smokestacks. Sawi Modhapur India: Connecting the lives and perspectives of identifiable individuals with large-scale climate impacts is likely to provoke strong reactions
*Surface Coal Mine / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=492	Causes	SHANXI, CHINA - FEBRUARY 1: Miners and machinery work at a surface coal mine in Shuo Zhou City, Shanxi, China in February, 2004. These miners are preparing to blast the coal.: Our research found that connecting identifiable individuals to polluting climate causes are likely to be effective at holding viewers' attention.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Fishing and Smokestack / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=491	Causes	Coal power plant in Taiyuan, Shanxi, China: This is a powerful image of the human impact of climate change: a single child plays in polluted waters as smoke stacks loom in the reflection
Children and Fossil Fuels / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=485	Causes	Children play in the Hillcrest section of Corpus Christi, Texas next to the fence line of CITCO refinery. Three of the four children have asthma.: Our research suggests that linking the life of innocent children to climate causes will provoke strong reactions. Children playing would ordinarily be a happy scene, but the contrast with the smoke stacks in the background brings another dynamic altogether.
*Deforestation and Fires / Harrison Shull	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=487	Causes	An aerial view of slash and burn clearcut logging outside of Lake Adger, NC. : Our research suggests that showing the scale of climate causes - such as deforestation - is the way to ensure it has the most impact.
*Smoke Stacks and Houses / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=490	Causes	Coal burning power plant in Conesville, Ohio. An overwhelming majority of scientists from around the world now believe that carbon dioxide emmisions from the burning of fossil fuels is warming the earth.: Smoke stacks are a classic climate image â " our research found they were easily recognised and associated with the causes of climate change. This particular 'smoke stack' shows how close residential homes (in the foreground) are to the filthy by-products of this power plant, adding an important human dimension.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Children and Natural Gas Flares / Ivan Kashinsky	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=482	Causes	Davis and Kelvin Caiza stand in front of towers that burn natural gas (part of the process of extracting the oil) in Sachas, Ecuador, on December 19, 2007. Pablo Fajardo is the lead attorney for the plaintiffs in the lawsuit against Texaco, which is now owned by Chevron. For twenty years Texaco was responsible for recklessly disposing of crude oil and toxic waste which leaked into the water supply of the people living in these areas…
Electronic Recyclying / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=480	Causes	Taicang Port Imported Recyclable Resources Processing Zone, near Shanghai, China. This is a development project of the government to encourage business in recycling of metals and plastics, some of which comes from electronics.: Most people feel a strong dislike for waste, and yet the waste from consumer-driven electronics may not be strongly linked to climate change in people's minds. This image tells a human story about the consequences of the consumer electronics industry, at the end of a long production chain that begins with environmentally-damaging rare mineral extraction.
Unloading Electronics / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=481	Causes	At CRT Recycling in Brockton, Massachusetts a worker unloads electronics that were picked out of a commercial trash compactor before going to an incinerator.: Images like this depict consequences of consumer-driven electronics that are typically invisible to Western populations, where masses of discarded electronics are left in landfill or incinerated (thereby producing harmful emissions).

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Electronic Metal Recovery / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=476	Causes	Burning of computer wire and parts to recover copper and other metals in Accra, Ghana. The computers are shipped here from Europe and the USA and some are reused but majority are dumped in Ghana. Poor workers often from the northern poorer region of Ghana do the work and sell the copper to buyers who send the copper to China or India.: Skeletons of televisions, irons and computers show the scale of waste produced from modern lifestyles, where persistent demand for new electronics, coupled with their short lifespans has led to an entire industry just to deal with the resulting waste. This image taps into the dislike that most have for waste, and may help to connect individual actions (e.g. buying new products) to wider consequences.
*Burning the Wires / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=477	Causes	...This image shows the harmful consequences of electronic waste. It tells a human story by illustrating potential health impacts, and shows the contribution of consumer electronics to climate change, even at the end of its lifecycle.
Electronics and Metal Recycling / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=474	Causes	...This image is a sad contrast to typical images of people carrying food or water on their heads. The literal burden of electronic waste may connect viewers with what life looks like at the end of our consumer choices.
*Burning for Metal / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=473	Causes	...This image shows the harmful consequences of electronic waste. It tells a new story, of people who may be inhaling harmful fumes when dealing with the by-products of consumer-driven electronics.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Used Electronic Piles / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=479	Causes	At the Anrong Disassembling Industrial Park, Taizhou City, Zhejiang Province, China workers are disassembling scrap computers imported from the USA. Some other scrap products are mixed in and a larger piece is being burned to remove some plastic: Most people feel a strong dislike for waste, and yet the waste from consumer-driven electronics may not be strongly linked to climate change in people's minds. This image tells a human story about the consequences of the consumer electronics industry, at the end of a long production chain that begins with environmentally-damaging rare mineral extraction.
Recycling of Electronics / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=472	Causes	Workers unload televisions at the Alaba Market, Lagos Nigeria. Many of the electronics here are second hand and shipped from Asia, the USA or Europe for reuse. The small shop dealers buy electronics from the containers and are very good at repairing the goods for sale. Only when material has no value is it sent to nearby dumps...
*Electronics Refuse Pile / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=471	Causes	laba Market, Lagos Nigeria. Many of the computers here are second hand and shipped from Asia, the USA or Europe for reuse. The small shop dealers buy electronics from the containers and are very good at repairing the goods for sale. When material has no value is it sent to nearby dumps, and young men look for parts or wire that they recycle the metals. However, much toxic material ends up in these dumps in Nigeria...

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Recycling Circuit Boards / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=470	Causes	A village named Muftaffabad Loni on the outskirts of New Delhi, India that specializes in recycling circuit boards from electronics. The boards are taken out of electronics in other areas of New Delhi. Some of the boards are burned, some are dipped in sulfuric acid to get the metals separated from the plastics.: Most people's grandmothers and mothers struggle with technology, but this photo tells an unusual story, where people in developing countries work to salvage what they can from the masses of waste from consumer-driven electronics. This image may help viewers connect the dots between their individual consumption of electronics, to the harmful and wasteful aspects of the industry that contributes to climate change.
Coal Mining / Harrison Shull	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=469	Causes	Aerial view of a Slurry Pond at a MountainTop Removal (MTR) coal mine near Fayetteville, WV: The contrast of the dirty slurry pond with the clean river at the top of this image is striking, and hints at potential dangers of contamination.
Logging Ship / Mint Images	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=461	Causes	Rainforest lumber loaded on freighter (aerial), Sandakan, Borneo: This striking photo conveys the scale of a major climate cause (deforestation).
*Paving in Greenland /	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=423	Causes	Laying tarmac on a road in Ilulissat on Greenland with icebergs from the Jacobshavn icefjord behind.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Drought in Mongolia / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=425	Causes	China is in the middle of the worst drought in 50 years. Precipitation totals have fallen significantly across most of China's northern provinces. 60% of China's 669 major cities face water shortages, of these 110 face serious water shortages. Climate change modelling shows that Northern China is going to get significantly drier leading to crop failure and desertification which is already happening in many places in northern China. Inner Mongolia has been particularly badly hit with ever drier conditions and creeping desertification. Here a shepherd follows his flock acorss a dry dusty landscape in Inner Mongolia.
*Fishing and Coal Plant / Ted Wood	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ACauses&id=467	Causes	Steam rises from Morgan Lake in front of the five-unit, 2,040-megawatt Four Corners Coal Power Plant, located on the Navajo Indian Reservation west of Farmington, New Mexico. Bass fishing is popular in the heated lake.: This dramatic image hints at flow-on effects from power plants, where contaminated waters may affect the wildlife, people, and food supply in the region
Scientist Measuring Plant Growth / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=1003	Impacts	The Global Observation Research Initiative in Alpine Environments (GLORIA) at Mount Schrankog, Austria. They are laying out one meter quadrants to see the change from 10 years ago which was documented by photographs. The researchers have shown that grasses move upslope and many native wildflowers which only grow on the summits are threatened with extinction.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Drinking Water and Fracking / Kevin Moloney	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=1002	Impacts	Beverly Landrey drives to the home of neighbor Gary Packard to fill gallon jugs with tap water. Landrey's well recently went dry after decades of regular flow -- a problem she and husband Roland attribute to the growing number of coal bed methane wells drilled in the area. Natural methane gas is extracted from coal seams by removing the water in the coal.: Connecting the lives and perspectives of identifiable individuals with climate impacts is likely to be effective. This photo tells a new story about how ordinary people are affected by the fossil fuel industry
Fisherman and Oil Spill / James Balog	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=1000	Impacts	94-year-old Cajun fisherman Eugene Barthelemy with crude oil that leaked into Barataria Bay (part of Mississippi River delta) from an explosion of the Deepwater Horizon drilling platform.: Telling a human story is crucial. The crude oil in this man's hands is likely to evoke disgust, but he connects with the viewer by extending his hands and his gaze towards the camera, holding their attention.
Dust Storm Sydney / Christophe Launay	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=999	Impacts	Apocalyptic vision of Sydney shrouded in red dust blown in by winds from the deserts of the outback.: This is a powerful, otherwordly image that might help people envision a climate-affected future, especially in places where the effects of climate change are not easily visualized.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Tyre Landfill	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=998	Impacts	CA: Westley: tires (estim. qty: 4-6 million) are burned for electricity by plant that supplies 3500 homes.: The incredible scale of this tyre dump is emphasised by the toy-sized humans and machinery. Connecting this image with the outcome (burning tyres for electricity) tells a shocking story of climate change causes.
Glacier Before and After / Gary Braasch	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=988	Impacts	Pasterze Glacier, Hohe National Park, Austria, receding glacier in the Alps.
*Flooded US Street / DVIDSHUB	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=987	Impacts	Ten feet of water flood nearly 20 percent of the neighborhood throughout the city of Minot, N.D., leaving more than 4,000 homes inundated by flooding, June 25. With the Souris River expected to crest, city official scramble to implement a recovery strategy hoping to endure the high water preventing the loss of thousands of homes already damaged by flooding. At eight feet above major flood stage, the water appears to be leveling off.
*Flooded Road Signs in UK / Climate Visuals	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=986	Impacts	Flooded road signs in the United Kingdom.
Draught in India / Jayanta Dey	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=989	Impacts	An Indian farmer walks with his hungry cow through a parched paddy field in Agartala, capital city of India's northeastern state of Tripura, March 10, 2005.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Wedding in the Philippines / Francis Malasic	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=985	Impacts	Newly weds Aljim Cabugnason (R) and Jenny (L) display their ring during wedding rites in front of a church at a village that was devastated by rampaging flood waters in Iligan City, northern Mindanao, Philippines, 27 December 2011. The death toll from floods in the southern Philippines has climbed to 1,453 as heavy rains triggered fresh floods in provinces on the east coast, the Office of Civil Defence said. EPA/ Francis Malasig.
Child Sea Level Rise, Tuvalu / Unknown	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=979	Impacts	A child from Tuvalu holds up a sign asking for a place to live as her own home suffers from sea level rise in the background.
Floods in South Yorkshire / Wendy North	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=980	Impacts	Torrential rainfall in South Yorkshire on the 25th June 2007 led to the beck flooding in the afternoon.
Flood Victim Pakistan / Paula Bronstein	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=981	Impacts	Pakistan flood victim Mohammad Nawaz hangs onto a moving raft as he is rescued by the Pakistan Navy August 10, 2010 in Sukkur, Pakistan. Pakistan is suffering from the worst flooding in 80 years as the Amy and aid organizations are struggling to cope with the scope of the widespread disaster, which has killed at least 1,500 people and displaced millions.
*Oil Sands Healing Walk / Ben Powless	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=974	Causes	July 6, 2013 - The Healing Walk.
*Forest Fires and Blaze / Jeff Walsh	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=973	Impacts	NSWRFS & FRNSW responded to a bushfire burning for the second day around the Cessnock town of Aberdare.The fire burnt along Duffie Rd and bounded Maitland & Cessnock Rds. Multiple Taskforces were responded as well as aerial support from waterbombing aircraft.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Solar Roof / Ruth Knight	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=949	Impacts	Shrinking the Footprint, the church goes green - solar panels going onto St George's Church in July as part of the Brighton Energy Co-Op.
Flooded US Highway / USEPA	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=970	Impacts	As a result of the flooding, the state lost approximately 500 miles of roadway and more than 30 bridges. Here, U.S. 34 in Greeley is breached by the South Platte River in flood stage.
*Devastation from Hurricane Ike / NOAA	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=972	Impacts	To help our coastal managers protect life and property and plan for hazard events, NOAA's Office of Ocean and Coastal Resource Management works with state partners through the Coastal Zone Management (CZM) program. The CZM program is a voluntary partnership between the federal government and coastal states and territories. One of its roles is to help states build resilient coastal communities and minimize the loss of life and property from hazards.
*Forest Fire Fighting / Michael Fernando	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=971	Impacts	Fighting a bushfire.
Permafrost Melt / Adam Jones	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=926	Impacts	Traditional wooden house leans at an angle. Tomsk, Siberia, Russia. June 2008. Person in photo is Dr. Griselda Ramirez of Mexico City, Mexico.
*Yarinacocha Lagoon Flood / Diego Sanguinetti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=922	Impacts	La laguna de Yarinacocha ya inundada visto a dos cuadras de la costa.
Water Shortage Tanzania / Public Domain	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=923	Impacts	Mwamanongu Village water source, Tanzania. "In Meatu district, Shinyanga region, Tanzania, water most often comes from open holes dug in the sand of dry riverbeds, and it is invariably contaminated."

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Flooded German Street / Michaela Rehle	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=925	Impacts	The sign above the door of restaurant and hotel 'Am Paulusbogen' is partially submerged in the flooded centre of the Bavarian town of Passau, about 200 km (124 miles) north-east of Munich June 3, 2013. Torrential rain in the south and south-east of Germany caused heavy flooding over the weekend, forcing people to evacuate their homes.
*Flooded New Orleans / David Mark	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=924	Impacts	A helicopter pilot looks down on a flooded New Orleans after Hurricane Katrina.
Refugees in Budapest / Michael Gubi	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=921	Impacts	Budapest Keleti. 3. September 2015: Einige Zeugen Jehovas nutzen die frühen Morgenstunden um ihre religiösen Schriften, darunter auch Informationsblätter auf Arabisch, vor dem Bahnhofsgebäude zu verteilen. Wenige Schritte entfernt schläft der 17 jährige Abdul auf seinem Nachtlager, das er erst spät nach Mitternacht bezogen hat, nachdem er wegen Platzmangels den unterirdischen Bereich des Bahnhofsvorplatzes verlassen hatte.
Glacier Retreat / H. Raab	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=917	Impacts	Pasterzen Glacier and Großglockner, Austria.
Refugee in Central Budapest / Michael Gubi	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=918	Impacts	NACHTRAG 2. Oktober 2015: Einige Stunden nach dieser Aufnahme ereignete sich mit dem Säugling und seiner Mutter folgende Szene am Bahnhof von Bicske.
Refugees in Austria / Josh Zakary	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=920	Impacts	Vienna Police Vs Refugees
Refugees in Train / Andreas Schalk	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=919	Impacts	refugees , somewhere in a train to munich

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Landslide in Peru 2 / Alberto Orbegoso	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=916	Impacts	Apenas ocurrida la emergencia por la caída de huaicos en Chosica, el Ejército del Perú se hizo presente para asistir a las familias damnificadas y apoyar en la limpieza y remoción de escombros.
Basketball and Fracking Tower / Sarah Craig	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=913	Impacts	A boy plays basketball in front of an oil well that is covered with large colorful flowers and is located next to Beverly Hills High School. Wells like this are hidden throughout Los Angeles.
*Coral Research / NPS	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=912	Impacts	A warmer climate impacts oceans in other ways beyond rising sea levels; coral reefs such as this one in Virgin Islands National Park are dying. Warmer ocean temperatures and more acidic waters (from increased carbon dioxide levels) are bleaching and dissolving coral reefs around the world. Reefs in Biscayne National Park, National Park of American Samoa, and War in the Pacific National Historical Park are also being impacted.
Landslide in Peru / Alberto Orbegoso	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=915	Impacts	Apenas ocurrida la emergencia por la caída de huaicos en Chosica, el Ejército del Perú se hizo presente para asistir a las familias damnificadas y apoyar en la limpieza y remoción de escombros.
Typhoon Haiyan Disaster / ADP	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=910	Impacts	Mrs. Myrna Ecija, 45, lost their house in Barangay 67. Her family decided to stay and rebuild their house from the debris where their house formerly stood.
*Saguro Cactis Impact / NPS	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=914	Impacts	Notice any changes in this scenic view of Saguaro National Park between 1935 and 2010? It can be easy to fall into the trap of ascribing any landscape change to "climate change," but the story of saguaros is much more complex.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Destruction from Typhoon Haiyan / ADB	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=911	Impacts	Houses destroyed by Typhoon Haiyan (Yolanda) in Palo, Leyte, Philippines.
*Forest Fire in Boise / Kari Greer	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=909	Impacts	Two members of the Idaho City Hotshots work on the Springs Fire on the Boise National Forest, August, 2012. Hotshot crews are the best of the best of wildland fire fighters. They have been extensively trained to fight fires in remote areas with little or no logistical support in the most demanding conditions.
*Approaching Storm / Zooey	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=908	Impacts	Storm Clouds Gathering
*Hurricane Sandy in Haiti / Loan Abassi	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=906	Impacts	Hurricane Sandy passed to the west of Haiti on 25 October, causing heavy rains and strong winds, flooding homes and overflowing rivers. A coastal town is flooded.
*Arctic Sea Ice Melt / Kathryn Hansen	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=905	Impacts	On July 10, 2011, Jens Ehn of Scripps Institution of Oceanography (left), and Christie Wood of Clark University (right), scooped water from melt ponds on sea ice in the Chukchi Sea. The water was later analyzed from the Healy's onboard science lab.
Pakistan Floods / ADB	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=907	Impacts	A family crosses the flooded streets of Pakistan.
Water Shortage in Ethiopia / Oxfam East Africa	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=902	Impacts	Oxfam has been trucking clean water in rural areas of southern Ethiopia, where poor rains left water sources dry
Flooding in the Philippines / Mathias Eick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=904	Impacts	Even apparently solid structures made from concrete and bricks were simply lifted up from their foundations and carried along by the raging torents, displacing some 400,000 people

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Spraying Tree for Beetles / Forest Service	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=901	Impacts	Spraying ponderosa pine tree with Carbaryl in Bitterroot National Forest campground to prevent mountain pine beetle mortality. Contractor sprays entire bole of tree to 50 feet high. Carbaryl is an insecticide and is 99% effective.
Oil Spill Clean-up in Spain / Stephane Grueso	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=900	Impacts	Tras el vertido del petróleo Prestige frente a las costas gallegas se produce la mayor catástrofe medioambiental de la historia de España. Toneladas y toneladas de petróleo van llegando a las costas. Ante la pasividad o desbordamiento de las autoridades, los ciudadanos se organizan y van a Galicia a ayudar a recoger el fuel. La figura del voluntario nace en España. En este documental seguimos la experiencia de un grupo de 50 voluntarios organizados por la Universidad de Sevilla, que van a Galicia a luchar contra la catástrofe. Durante seis días seguimos sus actividades y nos cuentan sus experiencias. Mediante este documental pretendemos descubrir y comprender las motivaciones que llevan a un grupo de personas a realizar una acción tan solidaria, novedosa y casi desconocida en nuestros días.
*Sea Ice Melt Ponds / Kathryn Hansen	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=903	Impacts	On July 12, 2011, crew from the U.S. Coast Guard Cutter Healy retrieved a canister dropped by parachute from a C-130, which brought supplies for some mid-mission fixes.
*Flooded Streets in Toowoomba / Timothy Swinson	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=899	Impacts	Flooding doesn't concern wheelie bins.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Flooded Sindh Province / UK Department	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=897	Impacts	People returning home as soon as the water recedes enough.
Man and Flood in Pakistan / DFID	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=898	Impacts	A man points to the level that the water came up to on the side of his home when floods swept through his village in Pakistan's Sindh province in August 2010.
Turtle and Oil Spill / NOAA	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=893	Impacts	Dr. Brian Stacy, NOAA veterinarian, prepares to clean an oiled Kemp's Ridley turtle. Veterinarians and scientists from NOAA, the Florida Fish and Wildlife Commission, and other partners working under the Unified Command are capturing heavily-oiled young turtles 20 to 40 miles offshore as part of ongoing animal rescue and rehabilitation efforts.
Flooded Suburb from Hurricane / NOAA	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=894	Impacts	Views of inundated areas in New Orleans following breaking of the levees surrounding the city as the result of Hurricane Katrina. September 11, 2005.
*UN Haiti Rescue Mission / Marco Dormino	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=892	Impacts	Members of the Jordanian battalion of the United Nations Stabilization Mission in Haiti (MINUSTAH) carry children through flood waters after a rescue from an orphanage destroyed by hurricane "Ike".
Water Collection Pakistan / Russel Watkins	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=896	Impacts	People displaced by the 2010 flooding in Pakistan collect clean drinking water from a tapstand in the town of Ghari Kharo, in western Sindh Province. UKaid from the British government's Department for International Development is helping the NGO Mercy Corps deliver clean water and sanitation facilities to over 160,000 people in Sindh as they return home to destroyed houses and partially flooded communities and agricultural land.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Flooding in Mexico / Huotzil	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=889	Impacts	Avenida Méndez, one of the most important ones in my city. the barrier we built downtown was supposed to contain this, but it breached last night and look how far the water went.
*Corn Impacts / Neil Palmer	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=895	Impacts	A maize farmer with his crop, which has been destroyed by parrots, whose migration patterns have changed and now coincide with the end of the maize season. From the Two Degrees Up series of case studies on the effect of climate change on agriculture
Haiyan Destruction 2 / Jens Grossmann	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=865	Impacts	Philippines, Leyte, Tacloban City, overview, refugee camp, destruction, devastation, typhoon Haiyan, natural catastrophe, tents, 21 November 2013.
Oil Spill Louisiana / Imke Lass	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=864	Impacts	Phil Simmons, cattle farmer, shrimper, oyster farmer, boat captain, in oil soaked marsh in Bay Batiste (Plaquemines Parish) in the Missippi delta,Empire, LA.
Underwater Signing / Mohamed Seeneen	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=891	Impacts	Minister of Fisheries and Agriculture Dr Ibrahim Didi signs the decree of underwater cabinet meeting.
Drought in Kenya / Brendan Cox	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=890	Impacts	Dead and dying animals at the Dambas, Arbajahan, Kenya, which has dried up due to successive years of very little rain. Africa's climates have always been erratic but there is evidence that global warming is increasing droughts, floods and climate uncertainty and unpredictability.
Feeding the Hippos / Nan Grosse-Woodley	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=838	Impacts	Africa, Kenya, Tsavo West National Park, drought, Kenya Wildlife Service, wildlife, wildlife conservation, Ngulia Valley hippo pool, subsidising feed for hippos, actions against effects from drought.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Drought in Germany / Hans-Christan Plambeck	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=847	Impacts	Dry spell in Brandenburg, Matthias Kurth, farmer, grain field, land dried up, arid, parched, harvest loss, dusty, agriculture, climate change, Calau, Germany, Europe, May 3, 2007
Flooded Road in the Himalayas / Jean-Basptiste	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=833	Impacts	The backside of the scenery. Routes and transportations. The Manali-Leh road flushed away by Zinzinbar stream during the floods on the 5th and 6th of August 2010.
*Drought and Cow / Anders Birch	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=863	Impacts	Joel is helping a friend make his cow stand up. The drought has made the animal so emaciated that it cannot do it by itself. The flies are already taking an interest in the soon to be dead cow.
Cleaning up Katrina / Christoph Bangert	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=848	Impacts	[Justin Norton a young volunteer belonging to the group led by Pastor Ren Bray of the Hands and Feet Ministries of the First Babtist Church from West Columbia, South Carolina, are cleaning a house in the Lower 9th Ward from mud and debris. Almost one year after hurricane Katrina swept through New Orleans much of a poor neighborhood called the Lower 9th Ward is still not cleaned up and looks as if the water that flooded the area just had left some days ago. Volunteer workers, mostly college students and church groups, from across the US are coming to New Orleans to help clean up people's houses and provide a variety of community services].
*Haiyan Destruction 3 / Jens Grossmann	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=812	Impacts	Asia, Philippines, Leyte, Tacloban City, destruction, devastation, population, catastrophe, typhoon Haiyan, 21 November 2013.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Haiyan Destruction 1 / Jens Grossmann	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=813	Impacts	Philippines, Samar, San Antonio village, destruction, devastation, typhoon Haiyan, Ronolfo P. Robin (45) and his woman Shara Jean B. Pedano (30), lost their three children Frenzy Jean P. Robin (6), Fritzy Jane P. Robin (3) and Fritz Joseph P. Robin, 20 November 2013
Playing Pipes / Massimiliano Clausi	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=818	Impacts	Ecuador, 2012 - Mother and child do their laundry at the river, a pipeline bridge crossing it in the background. Leaks and dumping of contaminated water from oil fields is believed to be the main cause of a rise in skin diseases and cancer among the locals.
Russian Forest Fires / Stanislav Krupar	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=832	Impacts	Europe, Russia, Ryazanskaya oblast, Village Kryusha, Fires in Russia. The volunteer fights the fire nearby the village Kryusha, some 200 km South of Moscow. More than 50 villages were burnt down during the summer fires in Russia in 2010. Kryusha was one of those villages, 11.08.2010
Drought in Somalia / Christoph Goedan	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=827	Impacts	Somalia the only wells in Haahi west of Oodweyne are in a dried up river bed. In this region it hasn t rained for about 2 years. Horn of Africa Somaliland Oodweyne Haahi drought dromedaries camels goats sheep animals poverty desert oasis 2011
Glaciers-Cloth / Frieder Blickle	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=798	Impacts	Austria, Tyrol, Rettenbach Glacier, Skiresort Oetztal, technical director of the ropeways in the ski resort, Management Glacier, textile to protect the ice of the glacier.
Fetching Water / Christoph Goedan	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=805	Impacts	Aethiopien, Der einizige Brunnen in der weiten Umgebung von Dalabi, der noch Wasser fuehrt, um Mensch und [Tier] zu versorgen.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Dakota Access Pipeline / Maria Feck	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=800	Impacts	A Native American is protesting against the construction of the Dakota Access Pipeline in front of the police, Standing Rock, Oceti-Sakowin Camp, [the camps were evicted by the police in February 2017], Standing Rock, Protest against the construction of the Dakota Access Pipeline, Standing Rock Reservation, North Dakota, USA.
Glaciers-Landscape / Frieder Blickle	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=797	Impacts	Switzerland, Engadine, Diavolezza Glacier, Protected Area against the summer sun on the glacier, practical protection against the climate change, looks a bit like a landart project.
Glaciers- Ski Resort and Cloth / Frieder Blickle	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=796	Impacts	Austria, Tyrol, Tiefenbach Glacier, Ski Resort, Protection with white fabric during summertime, less melting of the ice and snow, alps, global warming, alps.
Glacier's Meltwater / Frieder Blickle	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=795	Impacts	Tyrol, Rettenbach Glacier, Summertime on the glacier, river on the ice: melting water, behind: with textile protected ice area of the glacier, Soelden ski resort during the summer.
Glaciers-Measurments / Frieder Blickle	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=794	Impacts	Tyrol, Rettenbach Glacier, Glacier Scientist Dr.Andrea Fischer, University of Insbruck, checking the protected part of the glacier, (protection during summertime against the melting)
Glaciers-Covered by Cloth / Frieder Blickle	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=792	Impacts	Switzerland, Engadine, Diavolezza Glacier, Protected Area against the summer sun on the glacier, practical protection against the climate change, looks a bit like a landart project.
Glaciers- Ski Resort / Frieder Blickle	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=793	Impacts	...Same view in Summer, in July, little bit lower view, because of the lower position (no more 2M of snow, melted down in the upper not protected part to the rocks)

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Glaciers-Sewing Cloth / Frieder Blickle	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=790	Impacts	Engadine, Diavolezza Glacier, sewing parts of the protection together, protection against the summer sun, keeping the ice part of the glacier during the summer for this skiing area.
Glaciers-Carrying Cloth / Frieder Blickle	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=789	Impacts	Engadine, Diavolezza Glacier, Protection of the Glacier against the Summersun, Climate, Warming, Ice.
Haiyan-Destruction / Jens Grossmann	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=787	Impacts	Samar island, St. Antonio, 20 November 2013, destruction, storm damage, typhoon, haiyan, nature, natural disaster, catastrophe, environment, environmental destruction, climate change, consequences, aid
Haiyan – Truck / Jens Grossmann	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=788	Impacts	...car
Glaciers – Disappearing / Frieder Blickle	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=791	Impacts	Divolzza Glacier, Protected Part during the summer, View from the rope way, global warming,
Haiyan – Basketball / Jens Grossman	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=786	Impacts	Samar island, St. Antonio, 20 November 2013, destruction, storm damage, typhoon, haiyan, nature, natural disaster, catastrophe, environment, environmental destruction, climate change, consequences, aid, children playing basketball
Haiyan – Destroyed Coast / Jens Grossman	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=783	Impacts	Leyte island, Tacloban City, 21 November 2013, destruction, storm damage, typhoon, haiyan, nature, natural disaster, catastrophe, environment, environmental destruction, climate change, consequences, aid, ruins

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Haiyan – Chruch / Jens Grossman	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=784	Impacts	...church
Haiyan – Music / Jens Grossmann	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=785	Impacts	...woman
Bangladesh – Flooded Home / Anders Birch	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=778	Impacts	A woman tries to continue living in her flooded house even though the water reaches her ankles.
Haiyan – Laundry / Jens Grossmann	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=779	Impacts	Asia, Philippines, Cebu island, Medellin region, 17 November 2013, destruction, storm damage, typhoon, haiyan, nature, natural disaster, catastrophe, environment, environmental destruction, climate change, consequences, aid, woman, clothes line
Haiyan – Landscape / Jens Grossman	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=782	Impacts	South Guiuan, the place where the typhoon landed, 22 November 2013, destruction, storm damage, typhoon, haiyan, nature, natural disaster, catastrophe, environment, environmental destruction, climate change, consequences, aid
Haiyan – Body Bags / Jens Grossmann	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=781	Impacts	Leyte island, Tacloban City, 21 November 2013, destruction, storm damage, typhoon, haiyan, nature, natural disaster, catastrophe, environment, environmental destruction, climate change, consequences, aid, body bags, dead bodies
Haiyan – Search and Rescue / Jens Grossmann	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=780	Impacts	...rescue workers
Bangladesh-Flood and Footprints / Anders Birch	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=773	Impacts	At low tide and after heavy rain the earth in the village turns into spongy mud.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Bangladesh – Swimming / Anders Birch	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=774	Impacts	The village of Gabura is totally damaged by floods. Here is a road in the middle of the place.
Bangladesh – Bridge / Anders Birch	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=777	Impacts	A family has built a bridge of wood between their house and the dike. That is the only security they have against floods at high tide.
Bangladesh – Woman in Water / Anders Birch	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=776	Impacts	Residents in Gabura have to walk through water to get around.
Bangladesh – Man in Water / Anders Birch	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=775	Impacts	Salam Sarwans house was destroyed when the cyclone hit the village. Today he has lost everything.
Climate Displaces in Alaska / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=768	Impacts	Gloria, 6, at Newtok village cemetery which is located on the other side of Kealavik (Newtok) River, where the old village was situated many decades ago. Once suitable for building houses, the melting of the permafrost means the swampy ground is no longer good for housing.
Bangladesh – Village Flooded / Anders Birch	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=769	Impacts	In the center of Gabura. After the floods a few houses are still left standing, but they are flooded, especially at high tide.
Climate Displaces in Alaska / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=767	Impacts	Newtok is one of many places in Alaska that are under imminent threat from climate change. Permafrost thaw, regular floods and coastal erosion make it dangerous for people of Newtok to remain in their village. They have already started the relocation process to a new village site, called Mertarvik. It is estimated that in the next ten years nearly a 1/3 of the village's area will become uninhabitable due to erosion.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Bangladesh – Flooded Houses / Anders Birch	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=772	Impacts	Jharna stands on the remains of his old house. Everything is gone because of the cyclone, so now she uses the what's left of the house to dry palm leaves, she can use for a fire to cook by.
Bangladesh – Building Dike / Anders Birch	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=771	Impacts	Mud is used to make the dike more stable and prevent future flooding and subsidence tests. Work is progressing slowly.
Climate Displaces in Alaska / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=763	Impacts	A man stroking his dog in Newtok village.
Climate Displaces in Alaska / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=764	Impacts	Maria Carl, 67, dances with her friend in the school gym. Maria and her husband Moses are among the first people who moved to Mertarvik, the new site to where the whole village of Newtok will be relocated. Newtok village which is no longer a viable place to live due to climate change.
Climate Displaces in Alaska / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=761	Impacts	Glennesha Carl (front, 8) and her siblings Margaret, 10, and Ervin, 1, walking to their new home in Mertarvik. Their grandparents relocated there because their house in Newtok will soon be not suitable for living due coastal erosion that severely impacts the village.
Climate Displaces in Alaska / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=766	Impacts	Nathan Tom, 32, and his five year old son Tyson walk along the rapidly eroding coast line. Their village, Newtok, looses about 30 metres of coastal land every year. Nathan's house is located close to the erosion side and soon it will collapse...
Climate Displaces in Alaska / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=765	Impacts	An aerial view of Newtok village. Surrounded by water, the village is under imminent threat from climate change....

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Seawall in Kiribati / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=744	Impacts	Workers building a new sea wall near near Bonriki International Airport.
Climate Displaces in Alaska / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=758	Impacts	Children playing in a bedroom of a new house in Mertarvik where their grandparents moved from Newtok village which is no longer a viable place to live due to climate change.
Climate Displaces in Alaska / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=760	Impacts	Nathan Tom, 32, and his 5-year-old son Tyson in their house in Newtok. Nathan's house will be the first to disappear due coastal erosion. Nathan says that every year the villagers put pegs into the ground several dozen meters from the cliff. Almost every year the pegs collapse into the ground due to erosion. This year the peg was hammered in Nathan's backyard. He says: 'A couple years from now, I will have to leave this house. It's good that our village has already started relocating to a new place where we won't have these problems.'
Climate Displaces in Alaska / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=759	Impacts	Pauly Andy, 38, walks on the muddy shore of Mertarvik on Nelson Island, the new site that was chosen to relocate Newtok village. Newtok residents have decided to move as climate change means soon it will no longer be a viable place to live. Travelling to Mertarvik is possible only by boat, as it does not yet have a runaway. Those climate refugees who are already relocated there still have to travel back to Newtok village, as only there can they buy food, have medical check ups, attend the church services and send their children to school.
Malaria Threat / William Daniels	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=723	Impacts	In Calcutta, a man sprays fog to kill mosquitoes in order to protect people from malaria.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Building Seawall Tarawa / Jocelyn Carlin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=727	Impacts	Two men work on a breakwater made from coral rocks in preparation for the king tides. Such coastal defences are intended to break the swell and protect the homes right next to the lagoon and on the ocean side of the low-lying atoll Tarawa.
Policing Fracking / Joan Bardeletti	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=729	Impacts	Jason Bock speaks to residents of a trailer park in Williston. He is a police officer with the local sheriff's office and patrols mostly at night. The town's population has doubled over the past two years and crime rates have risen accordingly. A new prison built to house 50 is already full.
Collecting Water / Dieter Telemans	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=741	Impacts	A woman transports water in a jerrycan by rolling it along the ground. Most of the wells in the region have dried up or the water has become too salty for human consumption. The severe drought has extended across East Africa after the rainy season expected in October 2005 failed to arrive, continuing a decade of low rainfall.
Biking and Sea Level Rise / Jocelyn Carlin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=740	Impacts	Young men cycle along the narrowest part of the island. During high spring tides water washes over the coral into the lagoon.
Typhoon Haiyan Shelter / Adam Dean	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=730	Impacts	People made homeless by Typhoon Haiyan sleep on pews in a Church which is being used as a shelter in Tacloban, the city worst affected by the storm. Typhoon Haiyan, or Typhoon Yolanda as it is known in the Philippines, was the deadliest typhoon to hit the Philippines to date and is known to have killed over 5,700 people. It made landfall on 7 November 2013 and reached wind speeds of over 140 miles per hour.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Walking to School / Dieter Telemans	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=726	Impacts	Girls from Fetuvalu High School wander home from school past a point on the lagoon side of the atoll where the water spills over the road at full tide.
*F-U Sandy / Robert Wallis	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=721	Impacts	Union Beach, New Jersey a coastal township heavily impacted by Tropical Storm Sandy, which hit New York and other parts of the north eastern United States on the evening of 29 October 2012. 31 year old Missy removes trash from the house she was born and raised in. She said "Our house was built by my grandfather back in the 1920s. They knew how to build them back then. That's why we survived and our neighbors were wiped out. But we can't live in it now (with no electricity or running water) and we can't afford to rebuild so we're cleaning up and waiting for the government inspection to say whether it's deemed fit for repair (and eligible for government disaster relief) or demolition".
Typhoon Aftermath / Adam Dean	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=720	Impacts	A man washes with a water from a bucket outside his temporary home on the site of his former home that was destroyed by Typhoon Haiyan...
Flooding in Pakistan / Andrew McConnell	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=722	Impacts	A family move their possessions to higher ground as flood water inundates their village after Manchar Lake burst its banks. Severe flooding had left at least 1,600 people dead and affected up to 20 million.
Protecting the Home / G.M.B. Akash	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=718	Impacts	A man is sleeps in front of his flooded house which he hopes to guard from looters while his family have taken refuge in flood shelters.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Living with Fracking / Dermot Tatlow	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=709	Impacts	David Headley stands beside a fracking site built on his land, outside Smithfield, Pennsylvania. While David Headley owns his land he does not own the mineral rights and has no say over where the fracking company can drill on their land. He claims that the fracking has caused pollution, and gas leaks on the property and has polluted the water and damaged his family's health.
*Bangladesh Fresh Water / Espen Rasmussen	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=712	Impacts	Many of the islands in the Khulna Division lack fresh drinking water, and the villagers have to walk for several kms to get hold of clean water. Here on Angtihara island the tap is working, but the inhabitants need to get to the well before it becomes flooded. Many people are forced to drink salt water because they are not able to get hold of fresh water. This causes numerous health problems including skin diseases and fever. The sea in the Bay of Bengal is rising, affecting the hundreds of thousands of villagers living on the low islands in the south.
Washing Vegetables / Robert Wallis	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=710	Impacts	Local residents are without electricity or running water for almost a week after an electrical transformer supplying power to downtown areas blew up on the night of the storm. Many of them live in high-rise buildings, up to 30 floors high. A woman washes greens in an open fire hydrant. Tropical Storm Sandy hit New York and other parts of the north eastern United States on the evening of 29 October 2012
*Freezer Rescue / Tom Pilston	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=719	Impacts	An Environment Agency worker drags a chest freezer through the flood waters in the Somerset village of Moorland.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Sea Wall Construction / Robin Hammond	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=699	Impacts	Women labour all day constructing a clay wall that they hope will protect them against the rising seas. Islanders of the Sunderbans in the Bay of Bengal can only stand by and watch as rising sea levels consume their homes and livelihoods.
*Flooding in Kenya / Andrew McConnell	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=696	Impacts	60 year old Korlabe villabe chief Idle Kasow struggles in flood water. The village had to be abandoned after the Tana River burst its banks. Torrential rain throughout Kenya during the rainy season caused widespread flooding, leaving 94 people dead and displacing over 76,000.
Malaria and Climate / William Daniels	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=698	Impacts	35 year old Kajal Jana has four children and lives in Basanti Colony. Her family is part of the population at risk in Kolkata as she lives in a slum area and uses only one old and untreated mosquito net for her family of six.
Moving House / G.M.B. Akash	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=708	Impacts	Men and women carry a house wall away from the banks of the River Jamuna. Hundreds of buildings were moved as erosion caused by flooding threatened to destroy houses along the river.
*Kiribati Sea Level / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=692	Impacts	Peia Kararaua, 16, swims in the flooded area of Aberao village. Kiribati is one of the countries most affected by sea level rise. During high tides many villages become inundated making large parts of them uninhabitable.
Permafrost Melt / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=689	Impacts	Gloria, 6, at Newtok village cemetery which is located on the other side of Kealavik (Newtok) River, where the old village was situated many decades ago. Once suitable for building houses, the melting of the permafrost means the swampy ground is no longer good for housing.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Getting to School / Tom Pilston	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=683	Impacts	Joe Walker and Harry Whitehead arrive, on the first boat of the day, on the 'mainland' where they to go to school. The village of Muchelney, where they live, is cut-off by flood water. Unprecedented storms with torrential rain have struck Somerset during the winter of 2013/14. The Somerset Levels, a flood plain, have been particularly inundated with rain and Muchelney, a small village at the heart of the Levels, has been cut-off for the past four weeks and is effectively an island and will remain so until the weather abates.
*Russian Flooding / Vlad Sokhin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=688	Impacts	Sergey and his friend trying to tow his car out of a flooded area on the sea front. Flooding occurs regularly, sometimes cutting off road access to the settlement.
*Erosion in Bangladesh / G.M.B. Akash	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=693	Impacts	A woman stands beside the River Jamuna where erosion is eating into its banks.
Delivering Water / Dieter Telemans	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=674	Impacts	A water truck delivers water to villages in the area where most of the wells have dried up or the water has become too salty for human consumption. The severe drought has extended across East Africa after the rainy season expected in October 2005 failed to arrive, continuing a decade of low rainfall.
Shell Refinery Neighborhood / Les Stone	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=665	Impacts	Clara Smith, 96, stands at the window of her home looking out at Shell refinery just a couple of yards (meters) away.
Fisherwoman and her Catch / Sataporn Thongma	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=661	Impacts	Amidst scorching heat, an elderly fisherwoman gathers a few remaining shell catch in Lam Takong Dam, where waters have dried up due to prolonged drought.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Displaced by Sea Level / Robin Hammond	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=672	Impacts	Children at Fun Caring Play Centre in Auckland, a kindergarten for Tuvaluan children started with the aim of teaching New Zealand born Tuvaluan children their native language and culture. There are as many as 4,000 Tuvaluans living in New Zealand - a massive proportion of Tuvalu's 12,000 population. The tiny Pacific Island nation of Tuvalu is one of the few places in the world already experiencing the devastating effects of climate change and global warming. Due to the rising sea level, erosion, and extreme weather events, the island nation is shrinking and may eventually disappear.
*Bleached Coral / Fredrik Naumann	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=670	Impacts	Dead corals. This coral reef bleached and died in 1998 due to a rise in water temperature, believed to be caused by global warming. When inspected a year later by marine biologists, no recovery was detected.
Fishing to Farming / Jacob Silberberg	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=677	Impacts	Famers around Lake Chad. Many farmers in the area used to earn a living as fishermen, but as the waters of the lake have receded, and fish stocks dwindled, people have had to earn a living from the land rather than the water. Lake Chad is drying up, due largely to desertification as the Sahara advances southward. This advance is caused in part by global warming which has reduced rainfall in the region, weakening plants whose roots once held topsoil in place. The lake is also drying up because water is pumped out from the lake by government sponsored irrigation schemes.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Hurricane Stan Mexico / Teresa Osorio	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=660	Impacts	Hurricane Stan has caused an emergency in Mexico. According to the Mexican government figures there are more than 1 million, 100 thousand people who have been directly affected by the floods with an unknown number who have disappeared. In Chiapas alone, 650 mm rain fell in a short period of time causing extensive damage to roads and houses. The flooding has cut off communities resulting in food quickly becoming in short supply.
Before and After Glacier / Daniel Beltra	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=663	Impacts	Original photograph taken in 1928 of the Upsala Glacier. Comparison image taken in 2004.
Oil Spill Dead Animal / Daniel Beltra	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=649	Impacts	The carcass of an animal. In the background workers attempt to clean up oil on a beach in Port Fourchon. The oil from the leaking Deepwater Horizon wellhead disaster has reached the shore. The BP leased oil platform exploded April 20 and sank after burning, leaking thousands of barrels of crude oil per day from the broken pipeline into the sea.
*Swimming in Trash / Gavin Newman	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=658	Causes	Greenpeace volunteers collect plastic rubbish from Manila Bay. Once a beauty spot it has now become one of the most polluted bodies of water in Asia where sludge, human waste and industrial waste have formed a floating dump.
*Flooding in Bangkok / Sataporn Thongma	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=642	Impacts	People flee from their houses as the floods rise in Bangbuathong area, Nonthaburi province, on the northern outskirts of Bangkok. Thailand's worst flooding in five decades has killed hundreds of people and affected millions more who have had to flee their homes.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Coastal Erosion Alaska / Robert Knoth	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=657	Impacts	One of the 18 houses in Shishmaref which has sank into the sea. October storms have become more frequent and violent due the rise of the temperature in the Artic. In the past the ice would protect the island against the waves which nowadays eat away Shishmaref 6-15 meters per year. These days there is no ice until the end of December.The village of Shishmaref, along with hundreds of other Alaskan Native villages, is suffering from the serious consequences of climate change. Rising temperatures have resulted in a reduction in sea ice. The permafrost that the village is built on has also begun to melt, making the shore vulnerable to erosion.
*Grapes and Drought / Pierre Gleizes	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=651	Impacts	French wine maker Julien Guillot shows detail of grapes in his vineyard suffering from the lack of rain. If temperatures increase beyond 2°C, France will be faced with a runaway geographical displacement of both its natural and cultivated ecosystems, and the effects on the sustainability of wine production will be catastrophic for the local industry.
*Forest Fire Aftermath / Andri Tambunan	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=631	Impacts	Pak Sunarto, a village elder, examines an area at Tanjung Leban Village that was burned by fire. He makes frequent visits since the fire could be reignited at any time due to dry vegetation and heat. Fire ravaged over 3000 hectares of land at Tanjung Leban Village. Over 200 villagers were evacuated and several homes were destroyed.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Oil Spill Collection / Syed Zakir Hossain	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=622	Impacts	Local people collect furnace oil from the waters of the Sela river, in the mangrove forest of Sundarbans, Bangladesh, a UNESCO World Heritage site where an oil-tanker named Southern Star VII, carrying 350,000 litres of furnace oil was sunk in the river after it had been hit by a cargo vessel. The event is very threatening to the region's flora and fauna.
Sea Wall in Kiribati / Christian Aslund	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=627	Impacts	House with a sea wall in front of it in the community Temwaiku-Tenei, on Tarawa Island, where the rising ocean is encroaching on their community. Kiribati, is a group of islands in the Pacific Ocean in risk of disappearing because of sea level rise caused by melting sea ice and and ice sheets in Greenland and Antarctica. The rising sea levels also contaminates their drinking wells with salt water.
Typhoon Hagupit / Alanah Torralba	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=624	Impacts	An elderly woman climbs her house that was swept by strong winds during Typhoon Hagupit in Can-Avid, Eastern Samar. More than 2 billion pesos worth of damages to infrastructure and agriculture were reported after Typhoon Hagupit lashed on parts of the central Philippines. Some 1.3 million people remain in evacuation centers, according to the Department of Social Welfare and Development.
*Damaged Boats after Hurricane / Tim Aubry	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=639	Impacts	Damaged boats dropped in a heap by the storm surge of Hurricane Sandy on the New Jersey shore.
Father Carries Daughter to Safety / Logan Abassi	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=616	Impacts	A father carries his daughter on the shoulders as residents flee rising waters in search of shelter, after heavy rains caused by tropical storm 'Noel" flooded their homes in Cité Soleil, Haiti.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Floods in Haiti / Logan Abassi	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=614	Impacts	A woman carries supplies through a flooded street in Cap Haïtien.
Tar Sands Trap Lines / Robert Van Waarden	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=615	Impacts	A woman watches as a semi travels a dirt road in Alberta, Canada.
Hurricane Katrina Aftermath / Justin Maxon	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=601	Impacts	AKER, LOUISIANA-AUGUST 19, 2006. Angela Tillman, 40, has been living alone since her husband died of a heart attack two months prior on the couch right in her trailer because of an infection he got swimming from their home in the lower Ninth Ward to a nearby overpass after Hurricane Katrina destroyed their home. Tillman, has been fighting depression since her husband's death and has no money or job to get herself out the trailer park. A year after the majority of people in New Orleans lost everything to Hurricane Katrina, most of them are still struggling to pick themselves up and rebuild their lives.
Health and Fracking / Les Stone	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=619	Impacts	Lynn Buehring wears a breathing mask outside her home in Karnes County. She lives with her husband in the middle of three different hydrofracking wells that have been flaring since 2011. She is suffering from severe reactions to the chemicals and Hydrogen Sulfide (H2S) gas released from the wells. Her entire life has been turned upside down. A retirement place on a quiet country road has now become a nightmare. She has to wear a respirator whenever the winds blow in her direction. She is suing Marathon Oil for relief.
Testing the Sea Ice / Kenneth Mankoff	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=594	Impacts	Testing the ice next to the icebreaker before disembarking.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Flooded Farmers Field / USDA	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=597	Impacts	Flooding and water damage in the Park and Tongue River Watersheds located in Cavalier, Pembina and Cavalaier Counties in ND on Thursday, May 23, 2013.
*Flooding in Louisiana / USDA	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=598	Impacts	Soldiers help rescued residents out the back of a high-water vehicle after severe flooding in Baton Rouge, LA Aug. 14, 2016. Guardsmen have rescued more than 3,400 people and 400 pets since operations began Aug. 12, 2016.
Walk for Water / Jean-Philippe Soule	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=600	Impacts	Bhil women often walk long distances through the desert to bring back jugs of water that they carry on their heads. Above and beyond anything else, water dominates the lives of all who dwell in Rajasthan. In most of the desert, there has been no rain since the monsoon of 1999. In some areas, the ground is so salty that wells dug in those areas yield no potable water.
Smoke Masks and Fires / Aulia Erlangga	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=590	Impacts	An army officer helps to distribute masks to car passengers driving through the city of Palangkaraya, Central Kalimantan.
Smoke and Agriculture / Aulia Erlangga	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=591	Impacts	A man waters his crops behind his house. Thick smoke from peat fires disrupt the daily activities of local people.
*Sipping from Melt Pond / Kathryn Hansen	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=592	Impacts	On July 19, 2011, Zachary Brown of Stanford University sipped freshwater from a melt pond on sea ice in the Arctic ocean.
*Greenland Ice Sheet / NASA GSFC	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=589	Impacts	Persistent melt in 2008 lifted the snow cover from a low-lying area of Greenland's ice sheet, revealing a rough terrain crossed by melt water streams.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Withdrawing Water During Drought / Velia Coviello	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=593	Impacts	Men and children withdrawing water for irrigation in the Dogon plateau (Mali) during a sandstorm day.
Flood Management in India 3 / ADB	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=586	Impacts	Workers carrying sand filled geo bags to load them on to the boat to be pitched on the banks of the river Brahmaputra in Gumi village, Guwahati, Assam as a part of the embankment project.
Fetching Water in Lao / ADB	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=587	Impacts	Children walking to a nearby river to get water in Lao PDR.
Flood Management in India / ADB	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=588	Impacts	Workers building on the banks of the river as a part of the Integrated Flood and River Bank Erosion Risk Management Investment program funded by ADB. The project has given the villagers confidence to live and work in the area.
Flood Management in India 4 / ADB	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=585	Impacts	A villager of Gumi washing clothes on the banks of the river Brahmaputra, Gumi, Guwahati, Assam. The pitched geo bags are serving well as ghats for the villagers.
Flood Management in India 2 / ADB	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=584	Impacts	Workers filling and carrying sand filled geo bags for loading on boats. The bags will be pitched on the banks of the river as a part of the Integrated Flood and River Bank Erosion Risk Management Investment program funded by ADB.
*Fire Fighters Kalimantan / Aulia Erlangga	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=583	Impacts	Army officers try to extinguish fires in peat land areas, outside Palangka Raya, Central Kalimantan.
Fort McMurray Town Wildfire / asonwoodhead 23	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=581	Impacts	That was day 2 of the Fort MacMurray fire on Sunday May 1 2016.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Boy, Bike and Smoke / Aulia Erlangga	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=582	Impacts	A student goes to school wearing a mask to protect him from the smoke that blankets the city of Palangka Raya, Central Kalimantan.
Fort McMurry Wildfire / Chris Schwarz	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=580	Impacts	A raging wildfire consumes the forest next to Highway 63 twenty four kilometres south of Fort McMurray Saturday, May 7, 2016. The "Beast", as it was called by Wood Buffalo fire chief Darby Allen, is a 1500 square kilometre inferno that has prompted the mass evacuation of nearly 90,000 people from the northern Alberta city.
*Destroyed Neighborhood / Chris Schwarz	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=579	Impacts	Damage caused by a wildfire that swept through several neighbourhoods in Fort McMurray on Tuesday, May 3, 2016, and prompted the mass evacuation of over 88,000 people.
Forest Fires in Kalimantan / Aulia Erlangga	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=578	Impacts	Children are forced to wear masks due to the toxic smoke from peat land fires. Palangka Raya, Central Kalimantan.
Air Quality Monitoring / Aulia Erlangga	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=577	Impacts	Martin Wooster, Professor of Earth Observation Science at King's College London and National Centre for Earth Observation (NCEO), measures air quality in an area of burned land in Palangka Raya, Central Kalimantan.
*Flood American Streets / Alex Perkins	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=575	Impacts	Stranded Ambulance
*Forest Fires with Army / Aulia Erlangga	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=576	Impacts	Army officers join firefighters to extinguish fires in peatland areas, outside Palangka Raya, Central Kalimantan.
*Dog Rescue After Storm / Alex Perkins	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=574	Impacts	Walking dogs is hard in a flood

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Typhoon Aftermath / ADB	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=573	Impacts	In the aftermath of Typhoon Ketsana (Ondoy), a boy drags some possessions through the flooded streets of Metro Manila. Typhoon Ketsana (Ondoy) dropped 455 mm (17.9 in) of rain on Metro Manila in a span of 24 hours on 26 September 2009. A month's worth of rainfall in a single day washed away homes and flooded large areas, killing hundreds and stranding thousands in the city and nearby provinces.
Deepwater Oil Clean-Up / Bridget Besaw	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=516	Impacts	Press tour with Louisiana Governor Bobby Jindal. Clean-up crews sucking oil with vacuum tubes and placing absorbent pompom booms. East Grand Terre was involved in a Barrier Island restoration project before the oil spill.: This image of an oil-spill cleanup combines identifiable people with industrial-scale pollution, which our research found was an important factor in determining people's sense of the seriousness of the problem.
Oil Impacts on Fishing / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=529	Impacts	Ronnie Campbell of Fort Chipewyan, Canada fishing for food for his sled dogs on Lake Athabasca. Several of the white fish he caught had red spots on the fish.: This image hints at the flow-on effects of mining, where contaminated waters have clear impacts on the wildlife, people, and food supply in the region
Dust Storm Sydney / Christophe Launay	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=526	Impacts	Apocalyptic vision of Sydney shrouded in red dust blown in by winds from the deserts of the outback.: This is a powerful, otherwordly image that might help people envision a climate-affected future, especially in places where the effects of climate change are not easily visualized.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Fisherman and Oil Spill /	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=514	Impacts	94-year-old Cajun fisherman Eugene Barthelemy with crude oil that leaked into Barataria Bay (part of Mississippi River delta) from an explosion of the Deepwater Horizon drilling platform.: Telling a human story is crucial. The crude oil in this man's hands is likely to evoke disgust, but he connects with the viewer by extending his hands and his gaze towards the camera, holding their attention.
Mermaid Show / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=500	Impacts	Mermaid Show at Weeki Wachee Springs, Florida. The show has been going on since 1947. In the early years, there was eel grass and sand on the bottom. Today with elevated nitrate levels algae grows on the bottom.: The altered landscape behind this mermaid show tells a new story of climate change.
*Farming and Drought in China / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=513	Impacts	China is in the middle of the worst drought in 50 years. Precipitation totals have fallen significantly across most of China's northern provinces. 60% of China's 669 major cities face water shortages, of these 110 face serious water shortages. One of the main consequences of this is that many areas that previously produced much of China's food are seeing crop yields falling, leading to a loss of long term food security. Computer simulation shows that as Climate change accelerates, it will lead to food shortages across large parts of china. This shot shows workers toiling in the fields in Shanxi province. Unlesss it rains any crops they are preparing the ground for are unlikely to grow.: A single person working in barren, drought-affected farmland conveys a powerful human story.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Figure and Glacier / James Balog	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=506	Impacts	Columbia Glacier, Alaska, USA, 19 June 2009, Layers of eroded sediment stripe an iceberg: Images of melting ice and snow have become iconic of climate change. Arctic sea ice is not a local or familiar terrain for most people, so it is unlikely to connect with their everyday lives, but showing experts interacting and working in the situation is an effective way to bridge the gap between a distant impact and the viewer.
Drinking Water and Fracking / Kevin Moloney	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=497	Impacts	Beverly and Roland Landrey haul empty bottles to fill with water at a neighbor's farm. The Landrey's well recently went dry after decades of regular flow -- a problem she and husband Roland attribute to the growing number of coal bed methane wells drilled in the area. A several day supply of water sits in jugs on the floor at right. Natural methane gas is extracted from coal seams by removing the water in the coal.
Drinking Water and Fracking / Kevin Moloney	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=496	Impacts	Beverly Landrey drives to the home of neighbor Gary Packard to fill gallon jugs with tap water. Landrey's well recently went dry after decades of regular flow -- a problem she and husband Roland attribute to the growing number of coal bed methane wells drilled in the area. Natural methane gas is extracted from coal seams by removing the water in the coal.
Health Impacts and Refinery / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=484	Impacts	Horace Smith outside his home in the Hillcrest neighborhood of Corpus Christi, Texas with the CITCO Refinery in the background. Horace has severe respiratory problems and must has oxygen 24-7.: This image shows how communities living near petrochemical factories can be affected.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Drinking Water Drought / Kevin Moloney	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=493	Impacts	Burkinabe women throw all their weight into a pump donated by an international aid organization to collect water in their northern Burkina Faso village. Desert sands encroach on what was once savannah in the Sahel region of northwest Africa.: Telling a human story is crucial. The effort required to access water is visible on her face, and underscores the impact of drought on human lives.
*Drought Corn / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=488	Impacts	Corn farmer Kela Gelo in the village of Buya near Yabello, Southern Ethiopia. He only got a few ears this year because of the drought.: Connecting the lives and perspectives of identifiable individuals with large-scale climate impacts is likely to provoke strong reactions.
Health and Oil Refinery / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=483	Impacts	Erma Lee Smith, 74 who lives in Carver Terrace public housing in Port Arthur, Texas that is located next to two large oil refineries. She has to have a breathing treatment four times a day and has had respiratory problems for over 30 years. She has lived all her life in Port Arthur.. Studies have shown that the residents have a higher level of respiratory problems and a higher level of cancer than a similar community not located near a refinery.
Drought in California / Peter Essick	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=465	Impacts	Folsom Lake Marina, Folsom, California: The mesmerizing aesthetics of the image may capture viewers' attention. This image shows the effects of drought on a local boating community.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Man Walking in Desert / Gabriel Lindoso	http://usclimateandhealthalliance.org/author/savannah/	Impacts	Good health depends on a healthy environment—clean air, clean water, abundant nature, and a healthy food system. While this seems straightforward, we – as health, development, or environment professionals– still largely fail to connect human and environmental health in our work on sustainable solutions. A positive feedback loop between public health disciplines and environmental science disciplines can build more sustainable health in our communities if we do more together.
*Hurricane Katrina Aftermath / NOAA	http://www.noaanews.noaa.gov/stories2005/s2494.htm	Impacts	Data from the Gulfstream IV, quality assured while aboard the aircraft, was fed by satellite communication directly into the primary NOAA forecasting computer models. These data helped the NOAA National Hurricane Center to first catch Katrina's turn toward the southwest as she reached hurricane strength just before the South Florida landfall.
*Surviving the Arctic / US Geological Survey	http://www.climatesciencewatch.org/2010/12/26/polar-bears-threatened-or-endangered/	Impacts	On December 22 the Obama administration reaffirmed a Bush-era decision that listed the polar bear as "threatened," rather than the more protective "endangered," under the Endangered Species Act. The Department of the Interior says the polar bear does not qualify as "endangered" because it is not "on the brink" of extinction — a standard that is not contained in the Endangered Species Act. Our friends at the Center for Biological Diversity charge that the administration is sacrificing sound science for political expediency.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Drought and River California / Peter McBride	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=459	Impacts	Aerial Images of the CO River Delta in Mexico with a high tide flowing up sections. Some hoped the 2014 historic pulse flow moving its way across the dry Colorado River Delta, part of a binational agreement for restoration, would reach the sea. Jury is still out.
Unmask my City – Sao Paulo / Jon Spaull	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=455	Impacts	Glaucia Miranda wears a face mask lit up with current air quality readings. Part of the Unmask My City air pollution campaign, the mask changes color dynamically according to local air pollution levels, with the colors matching Air Quality Index standards for PM2.5 particulates.
Unmask My City – Poland / Greg McNevin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=454	Impacts	Liliana Cichy amuses her daughters with and LED light mask for the Unmask My City air pollution campaign in her family's apartment in Warsaw, Poland....
Unmask My City – Serbia / Greg McNevin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=453	Impacts	Personal trainer Ivan Tovilovic wars a face mask lit up with current air quality readings on his morning commute to Belgrade's Ada Ciganlija park...
Unmask My City – Chennai / Greg McNevin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=450	Impacts	P Senthil Kumar, an auto driver in Chennai, India, wears and LED face mask lit up with current air quality readings at Marina Beach...
Unmask My City – Serbia / Greg McNevin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=452	Impacts	Personal trainer Ivan Tovilovic runs while wearing a face mask lit up with current air quality readings in Ada Ciganlija park...
Unmask My City – Ahmedabad / Greg McNevin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=451	Impacts	Mrs. Hansaben Raskibhai Dentali working with SEWA group wears a LED face mask lit up with current air quality readings at the Vasna vegetable market in the old part of Ahmedabad city, India, where she has a stall selling jewelry...

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Unmask My City - Chennai / Greg McNevin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=449	Impacts	Dilli Babu, a fisherman from Ennore, Chennai, wears a LED face mask lit up with current air quality readings near the NTECL Vallur Thermal power plant...
Unmask My City - Chennai / Greg McNevin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=448	Impacts	A villager from NTO Kuppam, Chennai, India, wears an LED face mask lit up with current air quality readings...
Unmask My City – Turkey / Greg McNevin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=445	Impacts	23 year old radio-television student Enes Ishak Ordueri wears a LED face mask for the Unmask My City campaign in a back alley in Galata, Istanbul...
Unmask My City - Chennai / Greg McNevin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=447	Impacts	The sun rises behind the smoke stacks of the North Chennai Thermal Power Station, India.
Unmask My City - Turkey Greg McNevin	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=446	Impacts	Dr. Sadun Bolukbasi, a cyclist and physician, wears a LED light mask as part of the Unmask My City campaign as he commutes through traffic central Adana, Turkey...
*Personal Flood Impacts / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=434	Impacts	Jenny Kay removes flood damaged property from her house on Warwick Road in Carlisle, Cumbria on Tuesday 8th December 2015, after torrential rain from storm Desmond. The storm set a new British record for rainfall totals in a day with 341.4mm falling in 24 hours.
Flood Defenses / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=428	Impacts	The new flood defences in Cockermouth, Cumbria, UK, being built after the disastrous 2009 floods that inundated large parts of the town.
*Lending a Helping Hand / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=431	Impacts	Children Wade through flood waters on the road at Storth on the Jent Esuary in Cumbria, UK, during the January 2014 storm surge and high tides.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Flood Waters and Cars / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=430	Impacts	A motorist stuck in flood waters on the road at Storth on the Kent Estuary in Cumbria, UK, during the January 2014 storm surge and high tides, is pushed out by two helpers.
Damaged Shopfront / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=435	Impacts	On Saturday 5th December 2015, Storm desmond crashed into the UK, producing the UK's highest ever 24 hour rainfall total at 341.4mm. It flooded the Lakeland village Glenridding, which was just starting to repair when another period of heavy rain on Wednesday 9th December caused the Glenridding Beck to burst its banks, causing yet further destruction. This picture taken the next morning on Thursday 10th December of shops that were flooded out for a second time.
*Shipwreck in the UK / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=422	Impacts	The Riverdance washed ashore off Blackpool. The river dance was one of 3 ships lost that day off the UK. The ship was hit by a huge wave that shifted the vehicle cargo on the decks causing the ship to list violently. The crew were airlifted off by RAF helicopter before the ship ran aground. As climate change takes hold more and more damage will occur as the weather becomes more violent.
*Everyday Flooding / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=420	Impacts	A woman escapes the rising floodwaters in Bently near Doncaster, South Yorkshire, UK hit by unprecedented floods during June 2007.
*Kayaking and Flood Waters / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=417	Impacts	Kayakers in the flood waters on the road at Storth on the Kent Estuary and a stranded motorist.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Flooded Playground and Abbey / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=421	Impacts	On Friday 20th July 2007 up to 5 inches of rain fell across central and southern England on already saturated ground. Rivers rose rapidly and by Saturday flooding started to occur along the Severn corridor. Tewkesbury in Gloucestershire was particularly badly hit where the rivers Severn and Avon meet. River's rose to unprecedented levels causing the worst ever floods. Thousands of homes were inundated with people having to be evacuated, many by boat or by Sea King helicopter. The Myth water treatment plant in the town was also flooded, cutting off water supplies to around 350,000 people, with the water predicted to be off for up to 2 weeks. Many also had their electricity supplies cut off as sub stations were affected by the floods. Estimates for the cost of the devastating and unprecedented summer floods are around 5 billion. Tewkesbury Abbey and a children's playground surrounded by flood water. Never in the abbey's long history has it witnessed floods like it.
*Car Caught in Floods / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=426	Impacts	On Thursday 19th November 2009 over 31cm of rain fell in 24 hours on the Cumbrian mountains. The single largest rainfall total in the British Isles since records began. It caused unprecedented flooding, with Cockermouth being particularly badly hit after both the Cocker and Derwent burst their banks. The main street was 5 feet underwater and millions worth of damage was caused. This shot shows a flooded car in Ambleside, UK.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Wading Through Flood Waters / Ashley Cooper	https://www.climatevisuals.org/images?f%5B0%5D=theme%3AImpacts&id=419	Impacts	A man wades along the main street of toll Bar near Doncaster South Yorkshire UK hit by unprecedented floods during June 2007.
People Powered Transport / Jes	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=991	Solutions	seven thirty bourke street
Healing Walk Tar Sands / Ben Powless	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=990	Solutions	2013 Healing Walk - The Walk
Forest Protest / Greenpeace	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=984	Solutions	Maules Creek, Monday 31st March 2014: Over 150 people are taking direct action, occupying the proposed mine site of Whitehaven's controversial open cut Maules Creek coal mine – the largest currently under construction in Australia. Occupying both of the company's compounds erected deep in the Leard State Forest, the concerned citizens have been able to disrupt work on the mine. They intend to remain on site for as long as possible. The action comes as the global community comes to terms with the dire warning delivered today by the latest report into the impacts of climate change by the Intergovernmental Panel on Climate Change.
Markel and Wind Energy / BPA Agency	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=983	Solutions	German Chancellor Angela Merkel flies in a helicopter over the Offshore Windpark Baltic 1 near the Baltic sea Peninsula of Zingst, May 2, 2011.
*Urban Gardening California / VitusKonter	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=969	Solutions	Members of the Bay View Garden and Yard Society and the Bay View Neighborhood Association planting the new garden at the KK Triangle.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Co-opertaion for Forestry / Luis Enrique Saldana	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=965	Solutions	MINISTRO DE DEFENSA SE REUNE CON PRIMER CONTINGENTE DEL SERVICIO MILITAR EN ZONAS DE EMERGENCIA E INSPECCIONA LA NUEVA BASE DE CONTROL FLUVIAL DE PUERTO OCOPA.
*Citi Bike NY / NYC DOT	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=967	Solutions	NYC DOT Citi Bike Ride from UES to UWS Stations.
Energy Turbine / Todd Paris	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=966	Solutions	Wave-power technology at river test site in Alaska.
Transition Heathrow / Transition Heathrow	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=968	Solutions	Community garden in Heathrow.
*Gardening Education / 10:10	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=964	Solutions	Lawley Primary plant sunflowers
*Wind Turbine Installation / Thomas Gennara	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=960	Solutions	Consumers Energy's $255 million Cross Winds® Energy Park in Michigan's Upper Thumb began serving electric customers Dec. 12, 2014,with a formal declaration that it has begun commercial operation.
*Solar Installation / Kristian Buus	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=961	Solutions	Andy Tyrrell and Jake Beautyman install solar panels on a barn roof on Grange farm, near Balcombe.
Earthship Building / Jenny Parkins	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=963	Solutions	Two men build a home from recycled materials in Malawi.
Learning by Solar Light / Patrick Bentley	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=962	Solutions	A young boy completes his homework by solar-powered lamp-light, Zambia.
Cobbler Repair Shop / Rocco Lucia	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=954	Impacts	Cobblers in Mercado 25 de Mayo, Cochabamba, Bolivia. The new market gives shelter to young craftmans repairing shoes.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Cleaning Solar Panels / 10:10	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=959	Solutions	Grange Farm is hosting the first batch of solar panels installed by REPOWERBalcombe, the energy co-op set up by residents in the wake of the anti-fracking protests in 2013. They aim to install enough solar panels to match the electricity needs of the entire village.
Forest Education / Lester Ledesma	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=955	Solutions	Patrollers working in the jungles around Macooih. Each patrol group is composed of community members who are tasked with maintaining the general well-being of the forest. This is made possible through the Poverty and Environment Fund (PEF) with the approach known as payment for forest ecosystem services.
Agriculture Education / US Department of Agriculture	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=957	Solutions	Organic certification cost share programs puts organic certification within reach for farms of all sizes. It is of great value to organic farmers and supports the integrity of the organic label.
Climate Summit / UN Photo	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=958	Solutions	Secretary-General Ban Ki-moon hosted the Climate Summit 2014 at UN headquarters in New York on 23 September. In inviting world leaders, from government, finance, business, and civil society, the Secretary-General asked them to bring bold announcements and actions to the Summit that will reduce emissions, strengthen climate resilience, and mobilize political will for a meaningful legal agreement in 2015.
*Reforestation Kalimantan / James Anderson	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=956	Solutions	The Pesalat Reforestation Project in Central Kalimantan, Indonesia, works to restore forest within a national park degraded by fire and logging. As of 2013, 450 hectares are under restoration, with over 4,000 seedlings planted.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
High Speed Train / US Army Band	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=950	Solutions	The PLA Band traveled with "Pershing's Own" to Shanghai. Here, the command team of the PLA Band passes the time with a deck of cards.
*Small Scale Wind Energy / Alaska Center for Energy	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=952	Solutions	Two young Alaskans working on a wind turbine component.
*Electrical Vehicle Charging / Oregon DOT	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=953	Solutions	A participant in the EV event charges his vehicle with the new fast charge EV station at Mt. Hood Skibowl.
*Solar School / Jessica Reeder	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=951	Solutions	Black Rock Solar arranged a field trip for Clayton Middle School students to visit The Children's Cabinet, a nonprofit providing services to young people in the Reno area. The Children's Cabinet is partially powered by solar energy, thanks to an array provided by Black Rock Solar.
Sustainable Living / Brian Liloia	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=947	Solutions	People working on installing a living roof.
Solar Engineering / Gaganjit Singh	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=946	Solutions	From September 2011 to the following March, women travelled from across Africa, from countries like Uganda Liberia and South Sudan, to take part in training to become solar engineers.
*Green Wall / Rene Spitz	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=943	Solutions	Visitors admire the green wall and sustainable architecture at the Musee du Quai Branly, Paris.
*Demolition of Fossil Fuels / shirkazan	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=945	Solutions	Away she goes
Biogass Construction / SuSanA Secretariat	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=944	Solutions	Excavations of a biogas dome visited by project partners.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Thermal Imaging / Carlos Amat Photography	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=942	Solutions	We use infrared scanning technology to identify areas where energy can be lost to the environment. With this information, we can take action to improve the insulation performance of building penetrations, door seas, dock plates and air curtains.
*Tree Planting Maldives / niOS	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=941	Solutions	Children of Hulhumale Pre-School in Hulhumale, Maldives, participate in the environmental organization Bluepeace's project NURTURE.
Electric Vehicles / Wendell	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=940	Solutions	Ventura had a street fair today, I arrived before the crowds (hoards:-) and noticed these two Tesla Roadsters, pretty cool rides!!
Winter Cycling Copenhagen / Colvill-Andersen	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=936	Solutions	Bicycle Rush Hour Copenhagen - Winter
*Children Harvest Aubergine / Michael Bish	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=938	Solutions	Two Taiwanese childen harvest an aubergine in the city of Tainan.
Biogas in Indonesia / Perkumpulan Lesman	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=939	Solutions	Peserta Pelatihan Berpraktek
*Insulation Installation 2 / Simon Williams	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=937	Solutions	Kiwis deserve healthy and warm homes. With the Government supplying over $300,000,000 over the next four years there has never been a better time to retrofit insulation into your home.
Cycling in Amsterdam / Marc van Woundenberg	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=935	Solutions	Two brothers cycling in Amsterdam
*Solar Engineers / UK DFID	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=934	Solutions	Bundei Hidreka, 31, (left) is sharing her electrical engineering skills with Rohim Miniaka, 20, teaching him how to make a solar lamp.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Solar Power India / Abbie Trayler-Smith	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=933	Solutions	Meenakshi Dewan tends to maintenance work on the solar street lighting in her village of Tinginaput, India. Huge pylons run across these hills, supplying power to the big cities – but rural areas like this are not connected to the main grid.
LEED Building / Uwe Schneider	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=928	Solutions	Overlooking the Mezzanine and Main Lobby of The Armory from the third floor office balcony.
*Wind Farming India / Braden Gunem	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=931	Solutions	A shepherd herding his goats past the wind turbines. Kanyakumari, India
European High Speed Train / Arne List	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=932	Solutions	Diesel-Triebwagen des ICE von Kopenhagen nach Hamburg über Puttgarden. Dieser Zug trägt die Beschriftung der DSB (Dänische Staatsbahn). Leider fiel er auf halber Strecke aus, aber es stand ein identischer Ersatzzug der DB bereit.
Flood Protect Sri Lanka / Dominic Sansoni	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=927	Solutions	Two men work on repairing and refilling breached sections of embankments as part of the North-East Irrigated Agriculture Project. Sri Lanka.
*Insulation Installation / Nick Nguyen	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=930	Solutions	Bridget installing insulation
CO2 Science / Stephan Elleringmann	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=862	Solutions	PhD student Elke Naumburg measuring tree growth from the levels of photosynthesis in the leaves.
*Rush Hour Copenhagen / Colville-Andersen	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=929	Solutions	Bicycle Rush Hour Copenhagen – Summer. 56% of Copenhageners ride a bicycle for transport daily. 75% cycle all winter. This is the world's busiest bicycle street. Nørrebrogade. Over 40,000 cyclists per day.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Bio Energy in Denmark / Paul Langrock	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=858	Solutions	Energy island Samsoe, awarded with Danish and European Solar Award, all energy is produced on the island. Denmark, May 15, 2003. Local power plant for organical substances, providing all 180 households of Marup and Nordby with heating energy. Employee working with a small crane, processing wood shavings.
*Solar Panel Aerial / Jan-Peter Boening	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=855	Solutions	Solarpark Zeche Goettelborn, site of former Goettelborn coal mine near Saarbruecken, Germany, July 22, 2004.
Greenhouse Agriculture Solution / Martin Jehnichen	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=857	Solutions	Iceland, Mosfellsdalur, geothermally heated and illuminated greenhouse for cultivating roses, gardener, December 2002.
Afforestation in Ethiopia / Guenay Ulutuncok	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=859	Solutions	Afrika, Dritte Welt, Entwicklungshilfe, Wiederaufforstung, Setzlinge
Renewables and Yurts / Andrea Kuenzig	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=852	Solutions	Mongolia, nomadic woman in front of yurt, solar energy, power, electricity, solar panel, power supply, woman, nomads, population, ethnic group, tradition, traditional way of life, Asia
*Roll Out Solar Panels / Paul Langrock	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=850	Solutions	Obertshausen, roof sealing, solar cells used to generate electricity, employees laying 3 metre wide solar cells on roof of a factory, Dachland GmbH in cooperation with SIT Solar Integrated Technologies, solar power, technology, solar panels, photovoltaic facility, regenerative, alternative energy, beneficent to environment, renewable, environmental, ecological, near Offenbach, Hesse, Germany, Europe, July 20, 2006.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Bioethanol Research / Paul Langrock	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=851	Solutions	Zoerbig, chemistry lab technician Christin Guenther, MBE Mitteldeutsche Bioenergie GmbH Co KG, portrait, measuring volume of bioethanol, bioenergy, grain, woman, workplace, job, occupation, profession, regenerative energy, renewable, alternative, raw materials, Saxony Anhalt, Germany, Europe, July 29, 2005
*Cleaning Solar Panels / Paul Langrock	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=856	Solutions	cleaning the photovoltaic facility on roof of federal ministry of the environment and labour, installed with 100 kilowatts peak output kwp by Solon AG, sun, solar power, renewable energy, beneficent to environment, electricity, clean, government buildings, Berlin, Germany, August 5, 2004
Solar Cooker / Melanie Dreysse	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=853	Solutions	Burkina Faso, Bobo Dioulasso, solar-powered cooker, in front of school, presentation, solar energy, population, men, West Africa, March 2003
Bamboo Nursery / Bernd Jonkmanns	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=849	Solutions	Wolfgang Eberts, tree nursery of son Friedrich Eberts in Italy, growing bamboo, plant, plants, cultivating, cultivation, Europe, Italy
Solar Cooling Tcchnology / Paul Langrock	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=846	Solutions	Germany, Thuringia, Westenfeld, EAW Energieanlagenbau GmbH Westenfeld produces absorption cold facilities for solar cooling, surplus warmth from, for example, solar thermal plants is used as energy. Picture shows processing of copper pipes for transmitting heat in the low temperature absorber, workplace, occupation, solar energy, regenerative, alternative, renewable, ecofriendly, Westenfeld, Europe, June 18, 2007

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Sustainable Forestry Practice / Gregor Hohenberg	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=837	Solutions	horse logging near Muencheberg, Brandenburg, ecological forestry, timber, logs, wood, logger, forest, horse, horses, working animals, winter, snow, Europe, Germany
*Wind Turbine Test Site / Paul Langrock	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=844	Solutions	Germany, Rysum, Rysumer Nacken near Emden, construction of the 5 megawatt wind turbine Bard VM of Bard Engineering GmbH for offshore tests, offshore wind turbine, facility, wind power, generation of electricity, megawatts, kilowatt hours, renewable energy, regenerative, alternative, sustainable, Ems, water, East Frisia, Krummhoern, Europe, December 16, 2007
Biogas / Paul Langrock	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=840	Solutions	Germany, Lauchhammer, Biogaspark Lauchhammer uses liquid manure and plant biomass to generate 15 million kilowatts of green electricity for the region every year, biogas plant, fermenter, regenerative, alternative, renewable, sustainable, bioreactor, biotechnology, bioenergy, raw materials, Europe, Brandenburg, November 17, 2008
Offshore Wind Turbine Maintenance / Paul Langrock	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=835	Solutions	offshore wind farm Burbo Bank, 7 km from coast. 25 wind turbines of type Siemens SWT 3.6 107 at 3.6 megawatts will generate 90 megawatts of electricity. Operator is Dong Energy. wind power, renewable energy, Liverpool Bay, Irish Sea, England, Great Britain, United Kingdom, UK. Europe, June 30, 2010.
*Solar Powered Boat / Michael Trippel	https://www.climatevisuals.org/images?f%5B0%5D=theme%3ASolutions&id=824	Solutions	renewable energies, solar ferry "Sole Mio" on the Lake Constance connects Reichenau Island with Mannenbach (Switzerland), ferryman and owner Tom Geiger, 02 August 2011.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Solar Energy Research / Thomas Ernsting	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=836	Solutions	Almeria, Spain. German Aerospace Center's doctoral student Stefan Wilbert works at the meteorological station at Plataforma Solar de Almeria in southern Spain. These Pyranometers (Ufos) measure the amount of sunlight falling on the earth. They also analyse the aerosol content, steam and thin ice clouds in the atmosphere. This data is important for solar power stations, as the solar mirrors can only concentrate direct sunlight and convert it into usable heat. Due to aerosols a small part of the light is scattered and cannot be concentrated by the mirrors. The silver coloured rotating shadow band pyranometers first measure direct sunlight, and when the black shadow band crossed the centre they measure the indirect rays, science, research, Europe
*Green Garden in New York / Stefan Falke	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=834	Solutions	Colin Beavan at the 'La Guardia Corner Garden' community garden in Lower Manhattan, New York, where he and his family grow vegetables. "No Impact Man" Colin Beavan and his family lived a year-long zero-waste lifestyle in New York City. He produced a movie and book about the experience.
*Man and Offshore Wind Turbine / Paul Langrock	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=825	Solutions	Deutschland, Nordsee, Alpha Ventus, Deutschlands erster Offshore Windpark in der Nordsee. DOTI, Deutsche Offshore Testfeld und Infrastruktur GmbH, Konsortium aus Vattenfall, E.ON Climate and Renewables und Netzbetreiber EWE. Offshorewindpark, Strom fuer 50.000 Haushalte.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Filling up With Hydrogen / Philipp Wente	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=820	Solutions	world record, hydrogen fuel cell car drove 2200km from Oslo to Monte Carlo without tankers, the longest distance driven in a hydrogen fuel cell car, 2160km, Europe tour, hydrogen, H2, FCEV, fuel cell electric vehicle, Hyundai ix35, pre-series vehicle, alternative fuel vehicle, hydrogen fuel cell car, test, new technologies, zero CO2, climate-neutral, market launch 2015, SUV, car, automotive industry, record, Europe
Run-of-the-River-Hydro / Michael Trippel	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=823	Solutions	renewable energies, Danube Run-of-River Plant Jochenstein, workers testing one of the four turbines, Jochenstein, 15 September 2011
Formula for the E Berlin ePRIX	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=803	Solutions	Race for electric cars, Formula One, FIA Formula E Berlin ePrix, Karl-Marx-Allee, Berlin, Germany, Europe, 21 May 2016. Motorsports, motoring, motor sport.
Examining the Hydroelectricity / Michael Trippel	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=822	Solutions	enewable energies, Marienstatt Abbey, the abbey has got an own hydroelectric power station, abbot Thomas is in charge of the energy generation, Marienstatt, 13 October 2011
*Repair Jobs / Paul Langrock	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=804	Solutions	WERBLICHE NUTZUNG NUR NACH RÜCKSPRACHE!!! Industriekletterer pruefen Rotorblaetter von Windkraftanlagen in luftiger Hoehe, Messung und Dokumentation an der Blattspitze. Men working with ropes checking rotor blade of wind turbine.
Building a Turbine / Thomas Ernsting	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=799	Solutions	Europe, Denmark, Brande. Siemens Wind Power. Siemens assembly operators during pre-assembly of engine strands of 3,6 megawatt wind power supply.

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Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Protesters at the Tagebau Garweiler / Matthias Jung	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=808	Solutions	Lignite mining, brown coal, strip mining, surface mining, Europe, Germany, North Rhine-Westphalia, Garzweiler near Erkelenz, fossil fuels, energy, environment. Relocation of the towns Keyenberg, Kuckum, Unter/- and Oberwestrich, Berverath and Borschemich. Here: Protest of anti-mining activist organization "Ende Gelaende" occupation, demonstration, resistance, protesters, activism, environmentalism, environment, climate protection. August 2015
*Solar on the Church / Paul Langrock	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=801	Solutions	Electricity, sun, solar energy, collector installed as roof system on top of protestant church, girl riding little horse. compensation for electricity fed into the grid pays necessary restauration, installation, plant, power, renewable, solar module, panel, photovoltaics, Europa, Deutschland, Zernin, Mecklenburg Vorpommern. 12.09.2016
*Solar Panels on Lake / Adam Dean	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=742	Solutions	Workers, from the power company Sungrow, assemble an array of solar panels which will float on a lake created over a flooded coal mine.
Electric Car Factory / Qilai Shen	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=728	Solutions	Workers on the assembly line producing Battery Electric Vehicles (BEV) at the REVA (G-Wiz) Electric Car Company (RECC) factory.
Wind Turbine Manufacture / Mikkel Ostergaard	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=715	Solutions	Wind turbines being made at a Vestas windmill factory.
*Solar in Nepal / Peter Barker	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=714	Solutions	A local man inspects his newly-installed solar panel, which provides electricity to light his home.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Solar Powered Cooker / Chris de Bode	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=739	Solutions	A youth cleaning a solar cooker at a Bhutanese refugee settlement. The cooker has to be cleaned after every meal in order to keep the surface working as effectively as possible. With the financial help of the Dutch Council for Refugees, a total of 6,300 solar cookers will be distributed amongst the Bhutanese refugees living in the region. The solar cookers consist of a reflective, aluminium, parabolic-shaped device that concentrates the sun's rays onto cooking pots placed on a frame in the centre of the dish. The dish has to be adjusted to the new position of the sun around every 10 minutes. It takes about 55 minutes to prepare a cooked meal on a sunny day and it is hoped that using the solar cookers will alleviate pressure on resources and reduce kerosene consumption by 75%.
Group Solar Cooking / Chris de Bode	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=746	Solutions	Local residents with their new solar cookers during a cooking competition at a Bhutanese refugee settlement. All the entrants were given a solar cooker to take home with them after the event and the winner received a pressure cooker...
Ice Core Science / Nick Cobbing	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=717	Solutions	Scientist Jason Box from the Byrd Polar Research Centre drills a long hole in the ice to extract ice core samples. These enable him to map precipitation and melt levels, building a map of weather and climate changes over a period of years in a local area south of Timmiarmiut, north of Kap Cort Adelaer, on the South Eastern tip of Greenland.

Table 3.1. Continued.

Title / Credit	*Image URL*	*Frame*	*Caption*
Solar Education / Abbie Trayler-Smith	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=716	Solutions	Pupils studying in a school classroom that is illuminated by an electric light during the evening. The students are able to work at night thanks to a set of new solar panels that power the lighting and allow them extra time to learn. The solar panels were installed as part of a renewable energy programme sponsored by Christian Aid during an appeal to help poor communities deal with climate change.
Solar School Boat / G.M.B. Akash	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=711	Solutions	Children attend a school on a boat run by Shidhulai Swanirvar Sangstha, an NGO founded in 1998 with a mission to assist the communities living along the vast wetlands of Chalan Beel in Rajshahi district. By building up a fleet of solar powered flat-bottomed boats, all made with locally available materials, Shidhulai provides a range of education, health and training facilities to water-side families
*Solar in Somalia / Nichole Sobecki	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=705	Solutions	Said Jama talks on a cell phone beside the family's solar panel, which supplies the only electricity to this remote part of northeastern Somalia. Said and his family continue to live a pastoral lifestyle, although they're having to find ways to adapt to a rapidly changing environment. As land becomes increasingly dry and eroded, many pastoralists use cell phones to communicate where grazing land exists and the best routes to get there.
Rice Methane Emissions / Heldur Netocny	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=702	Solutions	The International Rice Research Institute (IRRI). Research on methane emission from rice paddies.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
European Sea Level Protection / Dieter Telemans	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=707	Solutions	Workers construct a pipline as part of the Belgian Coast Safety Plan. The Governement launched this plan in order to protect the coastline against the threat of a super storm which could cause a major flood. This beach in Oostende will be covered with 500,000 mÂ³ of sand in order to elevate it by one to three meters. The sand comes from a sand bank in the sea.
Glacier Science / Nick Cobbing	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=701	Solutions	Scientist attending to cameras, which collect data about glaciers on the ice cap, in Eastern Greenland. They are powered by a small solar panel that feeds a rechargeable cell in the camera case. The scientist can later piece together time-lapse images of the glacier, which will show any recession in its position.
Reforestation with Coal / Robert Wallis	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=697	Solutions	Planting trees near Datong to try and stop soil erosion and spreading desertification which is linked to global warming and changing weather patterns in China. A factory spews smoke in the background.
Underwater Research / Fredrik Naumann	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=691	Solutions	Marine biologist Carden Wallace (left) from the Museum of Tropical Queensland examines corals on the Great Barrier Reef. In 1998 scientists began warning about the destructive impact on coral reefs of rising sea temperature, coral bleaching and global warming. In March 2016 reports emerged that showed 95 percent of reefs from Cairns to Papua New Guinea were now severely bleached with up to 50 percent mortality in the bleached corals.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Cleaning the Solar Panels / Robert Wallis	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=700	Solutions	Kamla, age 33, is Rajasthan's first female solar engineer. Starting her education at age 11 in night school, while carrying on with her domestic and farm work, she went on to study solar technology and now runs a rural field station fabricating solar home lighting systems and solar lanterns. Despite her humble background she has travelled to Delhi to speak at National Conferences on solar technology. Here Kamla checks the voltage on rooftop solar panels and cleans the panels at a Barefoot College field station.
Solar Engineer / Suzanne Lee	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=694	Solutions	Kamla Devi, 38, is Rajasthan's first female solar engineer. She graduated as a solar engineer 17 years ago and has been practicing since. She also teaches at the Tilonia village Barefoot College (run by an NGO that provides education in rural communities).
Learning Solar Skills / Dieter Telemans	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=695	Solutions	Maasai women from Kenya and an Indian woman following a course on solar energy at the Barefoot College. The solar powered college was founded by Bunker Roy and aims to teach illiterate women from impoverished villages without access to the electricity grid in India, Africa and elsewhere around the world. At the end of their training, the women return to their villages as Barefoot Solar Engineers, who will install, repair and maintain solar lighting units. The college aims to provide sustainable sources of alternative energy at the grassroot level for cooking (parabolic solar cookers), lighting (solar lighting) and heating (solar water heaters).

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Reforestation in China / Ian Teh	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=686	Solutions	Workers plant trees as part of the 'Green Great Wall' project, launched by the Chinese government in 1978, which envisages a 4,500 km long barrier to stop the expansion of the Gobi desert through cultivation of shrubs and trees by 2050.
*Testing Energy Efficiency / Qilai Shen	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=678	Solutions	Workers on the assembly line at TCP Co., a energy saving light bulb company, on the outskirts of Shanghai.
*Planting the Desert / Ian Teh	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=687	Solutions	A farmer work in his field on the edge of the Kubuqi desert. The government plants trees and shrubs here in an effort to block the wind and stabilize the soil.
Agriculture Solutions / Eduardo Martino	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=679	Solutions	A farmer stands in his field of crossed corn, which is grown in an experimental and highly productive way. The agriculture in this area used to be highly mechanized, but now farmers are making use of plants that produce bio matter - humus and also oxygen. This diversification of technology helps to curb global warming whilst also protecting the soil. It also has a positive social effect, as neighbors exchange experiences and support each other by sharing improved grains and seeds. This way, the whole of the community is benefited.
Greenhouse Research / Rob Huibers	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=680	Solutions	A Vietnamese worker in a tomato greenhouse lit with LED lights in a colour designed especially for this type of crop. This is an experiment in an environmentally friendly way to grow crops all year around. The lights are red, pink and blue.
Tesla Generation / Adam Dean	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=668	Solutions	A child rides a toy Tesla as people look at a Tesla Model X , behind, on a Tesla stand at a promotional event in the Indigo shopping mall.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Bioenergy Village Germany / Paul Langrock	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=659	Solutions	Bioenergy village Juehnde, the first community in Germany which produces all its energy needed for heating and electricity, with CO2 neutral biomass. Manure and wood chips are used to create energy. Technical components are a biogas plant consisting of a bioreactor as well as a wood chip heating plant.
Energy from Waste / Andrew Testa	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=676	Solutions	The loading bay at Covanta Waste-to-Energy plant, Westbury, New York. The plant feeds rubbish into giant furnaces that produce steam to turn a turbine and produce electricity.
Geothermal Solutions / Paul Langrock	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=664	Solutions	The first geothermal power station in Germany. Worker at Organic Rankine Cycle Turbine OCR. The turbine produces enough energy (250 KW) to provide for 500 households.
Bioenergy Brewery / Kate Davison	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=655	Solutions	The Royal Brewery in the center of Manchester is converting to using bio-fuel to power the brewery. The bio-fuel will be the spent grain husks that is left over from the brewing process.
*Solar Thermal Plant / Sudhanshu Malhotra	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=645	Solutions	The solar thermal plant set up by Trans Solar Technologies, in collaboration with Holy Family Hospital, New Delhi. A perfect example of small scale, decentralized-renewable energy project, the plant supplies 22,000 litters of hot water everyday to the hospital for its various needs. Seen here is Sunny George, the hospital's maintenance officer at the plant site on the hospital's roof.
Tidal Power / Steve Morgan	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=643	Solutions	Testing the Scotrenewables tidal turbine off Kirwall - Scotrenewables Tidal Power Ltd is a renewable energy research and development business based in the Orkney Islands.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Seawall in Thailand / Vinai Dethajohn	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=656	Solutions	Workers build a seawall as water breaches a highway in Laem Talumpuk cape. The region is threatened by sea level rise due to climate change. Laem Talumpuk is in Pak Panang District in the southern province of Nakhon Si Thammarat, on the eastern shore of the Gulf of Thailand. Climate change-induced wind pattern has intensified the speed of coastal erosion in both the Gulf of Thailand and the Andaman Sea. On average, 5 meters of coastal lands in the region are lost each year.
Wave Energy / Steve Morgan	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=644	Solutions	Tidal power, also called tidal energy, is a form of hydropower that converts the energy of tides into useful forms of power - mainly electricity. As tides are more predictable than wind energy and solar power, tidal power has potential for future electricity generation...
Pico Hydro Power / Vivek M	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=646	Solutions	Sridhar Bhatt using his Pico Hydro Unit. Seen here is the inlet of water, turbines and the generator. Residents of Chembu with land and access to flowing water have begun to install their own private pico-hydro systems to bring electricity. Thirty five I kW systems have been installed in the panchayat by Nisarga Environment Technologies, a company that delivers renewable energy systems and efficient cooking stoves to rural areas.
*Solar Cooker / Shayne Robinson	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=648	Solutions	A student from the Madiba a Toloane high school cooks food on the solar equipment. Greenpeace has trained 15 teenagers to install and use solar powered equipment and the trainees organize an open day to demonstrate and share their experience.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Indigenous Protest / Christian Rinke-Lazo	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=623	Solutions	Environmental and human rights groups organize a mass demonstration with thousands of participants on the streets of Lima, Peru, to demand urgent action on climate change and appeal to the world´s political leaders attending the United Nation COP20 summit currently taking place in Lima
Lignite Mine with Turbine / Frank Muellers	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=628	Solutions	Last remaining houses of the village Pier at open pit mining area Inden in the Rhenish lignite mining area. Wind turbines in the background.
*Philippine Gardening / John Novis	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=634	Solutions	Sarilaya (gender freedom) is a Filipino non-government organization committed to empower women and promote gender equality through health development programs and sustainable agriculture. Women meet regularly for training and skill sharing at the Sarilaya training center, where organic vegetables and medicinal herbs are grown.
*Learning About Solar / Bente Stachowske	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=621	Solutions	Saerbeck in North Rhine Westfalia is a community which owns their own wind and solar park. 70% of the private households in Saerbeck are supplied by renewable energies. Teenagers from Saerbeck are discovering the wind and solar park.
*Children and Gardening / Cheryl-Samantha Owen	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=617	Solutions	Kitale township school children put into practice what they have learned at Manor House Agricultural Centre. Farmers in Kenya are effectively applying ecological farming practices that are increasing their ability to build resilience to and cope with climate change.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Environmental Education / Ryan Brown	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=613	Solutions	Christel Jacques, 55, leads her Wildlife Club of 8-year-old children on an outing to learn about mangroves. The Wildlife Clubs of Seychelles are school-based clubs where 90 per cent of the club leaders are women. Jacques, who has received a national award for her work with the clubs, aims to "sensitize pupils to be friendly to the environment and how to become a responsible citizen, so that we could have a sustainable Seychelles."
Coral Reef Mapping / Ryan Brown	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=612	Solutions	Sylvanna Antat, Marine Research Officer with the Seychelles National Parks Authority, plays a leading role in mapping coral reefs in the waters around Mahe Island in Seychelles. The health of the coral reefs is important both ecologically and economically, as reefs are important for biodiversity, and they provide protection from coastal erosion and help mitigate storm damage.
Vegetarian Option / Peter Caton	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=618	Solutions	Ecological vegetarian food is being served at Greens restaurant in San Francisco, USA
Co-opertaive Agriculture / Joe Saade	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=611	Solutions	In the Katfoura village on the Tristao Islands in Guinea, the civil society organization Partenariat Recherches Environnement Medias (PREM) is providing rural women with new opportunities to generate income and improve community life.
Solar Lantern Homework / Joanna B. Pinneo	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=608	Solutions	Mforo, Tanzania a village near Moshi, Tanzania. Using a Solar Sister solar lantern several of the Solar Sister entrepreneur Fatma Mziray's children study at night.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Sustainable Agriculture / Joe Saade	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=610	Solutions	Guinea - Rural Women's Cooperative Generates Income and Improves Community Life
Solar Sisters Meeting / Joanna B. Pinneo	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=607	Solutions	Mforo, Tanzania a village near Moshi, Tanzania. Solar Sister entrepreneurs meet together at Fatma Mzirayâ's home to go over business and share ideas. They enjoy being together and they all feel like it helps them to learn from each other and try new methods of selling and marketing. They have all become close friends because of the group. They agree that if women work together it is easier to get opportunities and grow their business.
*Solar Power in Orissa / Abbie Trayler-Smith	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=609	Solutions	Meenakshi Dewan, 20, brings something very special to her home in Orissa, India: electricity.
Solar Cattle Protection / Joanna B. Pinneo	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=606	Solutions	Solar Sister entrepreneur Fatma Mziray checking on her cows in the evening. Before she had the portable solar lantern she and her husband were getting up throughout the night to check on the cows because, despite the thorny brush that serves as a fence around the cows, hyenas were getting in and killing cows. They discovered that when they hung a lamp up on the tree near the cows the hyenas stayed away. This has been a great solution and they no longer have to get up several times through the night.
Climate Science / Ethan Welty	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=602	Solutions	Research Assistant Rachel Edie takes measurements of greenhouse gases from global air samples at the Stable Isotope Laboratory, Institute for Arctic and Alpine Research in Boulder, Colorado.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Clean Cookstove / Joanna B. Pinneo	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=603	Solutions	At her home near Arusha, Tanzania Solar Sister entrepreneur Julieth Mollel prepares a dinner of ugali, vegetables and beans cooking on her clean cookstove. Ugali is a staple eaten in many countries in Africa and is cornmeal porridge. Working in her compact outdoor kitchen at night is easier now both with the clean cookstove that puts out very little smoke and uses only a fraction of the firewood of a traditional three-stone cookstove but also with her Solar Sister solar lantern to light up the area brightly while she works.
Seeding and Agroforestry / Tri Saputro	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=605	Solutions	A Lubuk Beringin farmer, Rosminah, spreads organic fertilizer to her rubber seedling on her farm at Lubuk Beringin village, Bungo district, Jambi province, Indonesia. Agroforestry can improve crop productivity in several ways: increasing soil organic matter, infiltration and water storage.
Irrigation Project / Marcos Villalta	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=604	Solutions	Bringing water to the crops thanks to an irrigation project
Glaciologist Work / Marc Steinmetz	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=599	Solutions	Glaciologist Fidan Goktas of the Alfred Wegener Institute for Polar and Marine Research in Germany, takes samples of meltwater from Antarctic ice cores in order to date them by means of ion chromatography. Ice which was formed in summer contains higher levels of sulfate and methane sulfonate, while strata which formed in winter are rich in sodium chloride. Goktas investigates atmospheric traces trapped in arctic or antarctic ice to gain understanding of past climate.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Solar Power Water Pump / USDA	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=570	Solutions	California rancher Ned Wood unlocks the controls for the photovoltaic solar cells and well pump on Friday, Jul. 24, 2015 in Contra Costa County, CA. USDA photo by Lance Cheung. The system is made possible with the assistance of the U.S. Department of Agriculture (USDA), Natural Resources and Conservation Service (NRCS) Service Center in Concord, CA.
Urban Beekeeping / Lance Cheung	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=572	Solutions	U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) Biological Science Technician Nathan Rice harvesting honey from the two colonies at the People's Garden Apiary on the USDA Headquarters Whitten Building roof, in Washington, D.C on Friday, Sept. 5, 2014.
*New York Highline Park / Lance Cheung	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=569	Solutions	High line is an elevated railway line owned by the City of New York, today it is a 1.45 mile long linear public park maintained, operated, and programmed by Friends of the High Line, in partnership with the New York City Department of Parks and Recreation.
Underground Irrigation / USDA	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=571	Solutions	Joe Muller and Sons, Co-Owner Tom Muller digs down to check the soil condition of his crop of tomatoes, that receive underground micro irrigation, in Woodland, CA on Wednesday, Apr. 15, 2015.
Measuring Carbon / James Maiden	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=568	Solutions	Conducting fieldwork in Jambi, Sumatra, Indonesia.
Public Transport Tokyo / Carina Sze	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=566	Solutions	Public transit in Tokyo.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Watering the Mango Tree / Olliver Girard	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=567	Solutions	Kouanda Issiaka, 65 years old, is watering his mango plantation for extra income for his family, Boromo, Burkina Faso.
*Testing Soil Health / Goergina Smith	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=565	Solutions	For over a decade, CIAT has tested agronomic and soil management practices in Western Kenya. From minimum tillage to integrated soil fertility management, these trials are the most comprehensive picture of tropical soil health that we have in Kenya. They show-case changes in soil fertility and health, which take time to develop, hence the importance of these long-term trails.
Off Grid Solar / ADB	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=564	Solutions	Divya, a representative of Simpa Networks, giving a demo and explaining the benefits of Simpa energy solar set to the residents of Sonsa, Mathura, Uttar Pradesh.
Solar and Business in Afghanistan / ADB	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=561	Solutions	Cold storage facilities for potatoes in Bamyan has provided extra income for farmers allowing them to purchase solar power panels to bring light and connectivity into their homes.
Carbon Peat Monitoring / Aulia Erlangga	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=563	Solutions	CIFOR researchers install a device to examine peat dynamics in the Tumbang Nusa research forest outside Palangka Raya, Central Kalimantan.
*Solar Energy Bhutan / ADB	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=560	Solutions	A woman installing solar panels on the roof in Bhutan.
Railway Construction Azerbaijan / ADB	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=562	Solutions	Railway construction from Poyle to Salakhle in Azerbaijan.
Afforestation in Cameroon / Olliver Girard	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=558	Solutions	Women preparing the Gnetum (okok) nursery in the village of Minwoho. Lekié, Center Region, Cameroon.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Wind Enery Pakistan / ADB	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=559	Solutions	Fishermen return from their day of fishing at KhuttiKun New Island, Taluka Mirpur Sakro, Thatta District, Sindh province. Construction of the roads as part of the wind energy project has made the sea more accessible for them to fish and make a better living.
Carbon Measurement Indonesia / Aulia Erlangga	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=556	Solutions	CIFOR scientists and partners from the Indonesian Ministry of Marine and Fisheries install a sedimentation and carbon stock measurement tool called the Rod Surface Elevation Table Marker Horizon in various test sites along the Pulau Dua coastline.
Carbon Stock Measurement / Kate Evans	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=557	Solutions	Pulling up mangrove roots for carbon stock assessment during low tide. For Center for International Forestry Research (CIFOR) study on above-ground and below-ground biomass destructive sampling in mangrove ecosystems, as part of the Sustainable Wetlands Adaptation and Mitigation Program (SWAMP). Kubu Raya, West Kalimantan, Indonesia.
Carbon Peat Monitoring / Deanna Ramsay	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=555	Solutions	A CIFPR researcher explains the use of Ground Penetrating Radar to measure peat depth with professors and students from the University pf Riau. Peat is an important source of carbon storage.
Nursery in Brazil / Kate Evans	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=554	Solutions	Acai nursery in Acre, Brazil - a state government initiative to assist reforestation with the forest product.
*Solar Panel Development / Dominic Sansoni	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=553	Solutions	Solar panel on used for lighting village homes. Sri Lanka.
*Installing Insulation / Harrison Shull	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=525	Solutions	Harrison Shull adds rolls of R30 insulation in his attic in Fayetteville, WV.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Measuring Wind Turbine Blades / Carl D. Walsh	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=535	Solutions	Northern Power Manufacturing Director Craig Giles inspects the thickness of a wind turbine blade with calapers at the company's Barre, Vermont Factory on January 20, 2009. Sales of these units, meant for commercial and residential onsite power generation, are rising according to a company spokesperson. With alternative energy sources a big issue on newly inaugurated President Barack Obama's agenda, sales for companies such as Northern Power may continue to rise.: Showing people interacting with renewable technologies is a good way to engage the viewer.
Organic Carrot Farming / Michael Hanson	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=534	Solutions	SEQUIM, WASHINGTON, USA. A farmer at Nash's Organic Produce picks carrots on a foggy day. Kia Armstrong, a 28 year old manager at the farm, believes the new Obama administration must do a better job of bring consumers back to local farmers. She says, 'Obama's election is a sigh of relief, but we must stay realistic about the fact that things aren't going to change quickly.' Inauguration Day, January 20, 2009.: This farmer's carrot-top hat adds a touch of humour and relatability to a climate solution.
Intergeneratio-nal Gardening / NCVO London	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=552	Solutions	The photo is of two unrelated Grace & Flavour members cropping leaks, one aged seven, another retired. From a mothers' perspective watching a child learn about vegetables in the context of a community garden is just lovely.
Organic Vegetable Harvest / Michael Hanson	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=511	Solutions	SEQUIM, WASHINGTON, USA. Sharah Truett and Eric Schreiner harvest leaks on a sunny day in Sequim at Nash's Organic Produce.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Measuring Glacier Melt / Dan Shugar	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=527	Solutions	A glaciologist drills a hole to install equipment on Black Rapids Glacier, Alaska. Alaska's Black Rapids Glacier, known affectionately as the 'Galloping Glacier', advanced forward (surged) forward in 1936/37, advancing up to 30 meters (100 feet) a day. Today, Black Rapids Glacier is thinning up to 3 metres (10 feet) per day during the summer.
Carbon Exchange Measurements / Ashley Cooper	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=522	Solutions	A scientific experiment by scientists from Sydney University, Australia, in the Snowy mountains. The study is monitoring C02 exchange between the atmosphere and the soil on a grassland plot. Robert Simpson takes soil samples to measure the level of methanotropic bacteria.
Sapling Planting / Bridget Besaw	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=519	Solutions	The Kaduwaa Village Conservation Council is a community group in charge of reconstruction forest monitoring. In the outskirts of the forest they demonstrate monitoring techniques and plant trees as part of an effort to research how climate change may be effecting their forest and to plant more trees.
Photographing Glaciers / James Balog	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=505	Solutions	James Balog on stranded channel in Survey Canyon, downstream of moulin. Greenland Ice Sheet, July 1, 2009.
*Solar Community / Topher Donahue	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=510	Solutions	Solar panel installation, Boulder, Colorado.: Showing people interacting with renewable technologies is a good way to engage the viewer. This image may be particularly effective because it shows climate solutions at scale, connecting individual actions with collective outcomes, and conveys a positive social norm.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Carbon Sequestration Project / Bridget Besaw	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=518	Solutions	Sumalindo Four Timber Concession Forest planner Suryadi Mentemas searching for and placing red and yellow tags on trees that should not be cut because they are part of the carbon sequestration research project.This is one of various projects through-out Indonesia where the international conservation organization The Nature Conservancy is. The Nature Conservancy is working with local communities to support alternative livelihood programs and more sustainable practices in agriculture, lumber harvest and fishing--all with a focus on adaptation to, and prevention of climate change.
Measuring Carbon Sequestration / Bridget Besaw	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=517	Solutions	Forest guards Lebin Yen and Chris Djoka in Wehea Forest examining various plants and recording them in a notebook as part of the carbon sequestration research project...
*Urban Farming / Michael Hanson	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=509	Solutions	WASHINGTON DC, USA. At the Common Good City Farm in Washington DC, farmers grow food for the community. Urban farming is a growing movement throughout the country. Communities are starting to recognize the importance of growing their food on empty city blocks or near populated areas.: Images like this are better than the 'solution' (urban farming, community gardens) without the people.
Time-Lapse Photography / Ethan Welt	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=508	Solutions	U. S. Geological Survey glaciologist Shad O'Neel climbs up an instrument tower to service a time-lapse camera installed at Columbia Glacier, Alaska.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Plant Migration / Peter Essick	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=489	Solutions	The Global Observation Research Initiative in Alpine Environments (GLORIA) at Mount Schrankogl, Austria. They are laying out one meter quadrats to see the change from 10 years ago which was documented by photographs. The researchers have shown that grasses move upslope and many native wildflowers which only grow on the summits are threatened with extinction.
Recycling of Electronics / Peter Essick	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=478	Solutions	Electronics recycling facility Metran in Kematen, Austria is where metals and plastics are sorted after the waste is first shredded at Mueller-Guttenbrunn in Amstetten. At a shake table the waste is separated by friction as hard items drop through first because they have less friction. The drum turns and small objects drop through the holes.
Woman and Small Solar / Alessandro Gandolf	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=502	Solutions	Ethiopia, Hirin. A woman placing the portable solar panel she uses to recharge her mobile phone and lamp on the roof of her cabin.
Urban Gardening / Michael Harrison	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=501	Solutions	A woman waters her urban farming plot in a immigrant community of Denver, CO
Small Scale Solar / Alessandro Gandolf	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=503	Solutions	Ethiopia, Dirid. A village nearby Udet. Mohamed Yasan charging his mobile phone via a small solar panel outside his shop. Paying a small fee, Mohamed charges the cell phones of his customers.
*Solar Worker / Caia Image	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=466	Solutions	Worker examining solar panel in rural landscape.
*Solar Installer / Topher Donahue	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=468	Solutions	Namaste Solar installer Ryan Dulaney working on the Denver Museum of Natural History.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Pine Beetle Science / Peter Essick	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=463	Solutions	Research Scientist, Bark Beetle Ecology Kathy Bleiker of the Canadian Forest Service and Field Technician Gurp Thandi collect mountain pine beetles at a research site near Grande Prairie, Alberta. They are able to determine how many beetles are infesting a section of the tree, and how many survive the winter and emerge the following year. In past warm years as many as ten times as many beetle emerge as have entered the tree.
Pine Beetle Research / Peter Essick	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=464	Solutions	Colorado State University professor and beetle researcher Dan West collects mountain pine beetles from a ponderosa pine that was being attacked in a forest in the Front Range west of Ft. Collins.
*Working on Wind Turbine / Robert van Waarden	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=456	Solutions	Two maintenance men work on a wind turbine in northern Poland near Kobylnica during the winter.
Urban Farming / Michael Hanson	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=462	Solutions	Locally sourcing food is a growing trend and chicken coops are rising in popularity throughout the US. Here, a chicken coop in the backyard of a family in Texas.
Man and Wind Turbine / Robert van Waarden	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=458	Solutions	A man from Collon, Ireland, examines the view from the stairs on his wind turbine.
*Wind Turbine and Tulips / Robert van Waarden	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=457	Solutions	A tulip farmer examines his crop with a wind turbine in the background in the fields of Middenmeer, the Netherlands: A person in the foreground gives an often-absent human dimension to an image of renewable energy 'in action' on a tulip farm.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
*Solar Powered Boat / Christophe Launay	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=460	Solutions	Trip on the Seine river with the Planet Solar yacht between Rouen and the D'Amfreville lock. The MS TÃ»ranor PlanetSolar is currently the largest solar boat ever built, Planet Solar was launched on March 31, 2010 after 3 years of feasibility studies, construction, tests, and optimizations. On May 4, 2012, after 585 days of navigation, the MS TÃ»ranor PlanetSolar reached Monaco, the starting point of the trip around the world, powered 100% by photovoltaic energy.
Installing Wind Turbine / Ashley Cooper	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=427	Solutions	The jack up barge, Kraken, loaded with wind turbines for the Walney Offshore windfarm project, off Barrow in Furness, Cumbria, UK, lifts a tower piece into place. When finished it will have 102, 3.6 MW turbines, giving a total capacity of the Walney project of 367.2 MW, enough to power 320,000 homes. The rotor diameter of the turbines is 107m for Walney 1 and 120 m for Walney 2. The wind farm is owned and constructed by Dong Energy.
*Installing Insulation / Ashley Cooper	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=424	Solutions	A man measuring the depth of insulation in a house loft or roof space. Insulating your loft can save a significant amount of household heat loss and therefore help save energy and help combat climate change
Protesting Shale Gas / Ashley Cooper	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=432	Solutions	Protestors with a protest banner against fracking at a farm site at Little Plumpton near Blackpool, Lancashire, UK, where the council for the first time in the UK, has granted planning permission for commercial fracking fro shale gas, by Cuadrilla.

Table 3.1. Continued.

Title / Credit	Image URL	Frame	Caption
Welding Solar Cookers / Ashley Cooper	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=429	Solutions	Women welding joints during the construction of solar cookers at the Barefoot College in Tilonia, Rajasthan, India. The Barefoot College is a worldwide charity, founded by Bunker Roy, its aims are, education, drinking water, electrification through solar power, skill development, health, women empowerment and the upliftment of rural people.
Small Wind Turbine	https://www.climatevisuals.org/images?&f%5B0%5D=theme%3ASolutions&id=418	Solutions	Three wind turbines being constructed behind the Kirkstone Pass Inn in the Lake District, UK. Because of its remote location, the pub is not connected to the grid and currently spends £25,000 a year on a diesel generator. The wind turbines will vastly reduce the need for the generator and are the first wind turbines to get planning permission in the National Park.
*Morocco Solar / Philippe Roos	https://climateoutreach.org/climate-visuals/galleries/images-evoke-positive-emotions/nggallery/page/1	Solutions	A man stands beside a solar mirror at the Ain Beni Mathar Integarted Thermo Solar Combined Cycle Power Plant in Morocco.
*Man Planting Tree Burkina Faso / CIFOR	http://tzyouthpower.blogspot.com/	Solutions	Firewood is an increasingly scarce and valuable commodity in the Sahel. Farmers who allow trees to regenerate on their land have a ready source of fuel for their own use and for sale, and are able to leave crop residues in the field, building up organic matter in the fragile soil.
*Learning Solar Cooking / UN Development Program	https://climatecultures.net/category/art-activism/	Solutions	"Women learning how to use a solar cooker. Solar cookers can help to reduce deforestation and carbon production bringing cleaner air locally as well as lower carbon globally."

Note. * = Images selected to be included in the final experiment.

Table 4.1. Demographic Breakdown of Study Participants ($N = 289$)

Average Age = 35.25 ($SD = 11.233$)

Gender	N	Percent
Male	170	58.8
Female	119	41.2
Race		
Hispanic or Latino	19	6.6
Black of African American	31	10.7
Asian	29	10.0
Native Hawaiian or Other Pacific Islander	1	0.3
Other	5	1.7
American Indian or Alaska Native	4	1.4
White	233	80.6

Note. Participants were permitted to choose more than one race they identified with, resulting in percentage of race surpassing a total of 100 percent.

Table 4.2. Descriptive Statistics for Measured Variables and Items (*N* = 289)

Variable	*Item*	*M*	*SD*	α
Personality				
Extraversion		7.24	3.62	.78
	Extraverted, enthusiastic	3.39	2.03	
	Reserved, quiet	3.39	1.97	
Neuroticism		9.94	3.39	.84
	Calm, emotionally stable	5.18	1.67	
	Anxious, easily upset	4.76	1.97	
Openness		10.12	2.70	.53
	Open to new experiences, complex	5.20	1.50	
	Conventional, uncreative	4.92	1.76	
Conscientiousness		10.96	2.71	.73
	Dependable, self-disciplined	5.63	1.29	
	Disorganized., careless	5.32	1.74	
Agreeableness		10.32	2.90	.60
	Sympathetic, warm	5.20	1.60	
	Critical, quarrelsome	5.12	1.86	
Salience				
	I worry about climate change on a day-to-day basis.	3.88	1.94	
Valence	Self-Assessment Manikin Images (V)	4.70	2.29	
Arousal	Self-Assessment Manikin Images (A)	4.47	2.164	

Note. α = Cronbach's alpha.

Table 4.3. Summary of Regression of Climate Change Visual Frame Predicting Climate Change Salience Moderated by Personality Trait Neuroticism ($N = 289$)

Variables	β	SE	95% CI	
Interaction				
X1	.0441	.2869	-.5207,	.6089
X2	.2795	-.7575	-.7618,	.3384
Neuroticism	-.0073	.1261	-.2555	.2409
Interaction 1	.0241	.1702	-.3108	.3591
Interaction 2	-.0085	.1715	-.3462	.3292

Note. $^*p < .05$, $^{**}p < .01$, $^+p < .001$.
$R^2 = .0035$, $F (5, 283) = .2016$, $p = .9616$.

Table 4.4. Summary of Regression of Climate Change Visual Frame Predicting Climate Change Salience Moderated by Personality Trait Extroversion ($N = 289$)

Variables	β	SE	95% CI	
Interaction				
X1	.0498	.2838	-.5088,	.6083
X2	-.2188	.2763	-.7627,	.3252
Extroversion	-.0626	.1073	-.2738	.1485
Interaction 1	.2748	.1579	-.0359	.5856
Interaction 2	-.1622	.1508	-.1347	.4591

Note. $^*p < .05$, $^{**}p < .01$, $^+p < .001$.
$R^2 = .0193$, $F (5, 283) = 1.1114$, $p = .3544$.

Table 4.5. Hypotheses and Research Question Conclusions

Hypotheses & Research Questions		Conclusion
H_1:	Causes visual frame of climate change will generate a negative emotional experience.	Supported
H2:	Impacts visual frame of climate change will generate a negative emotional experience.	Supported
H3:	Solutions visual frame of climate change will generate a positive emotional experience.	Supported
H4:	Causes visual frame of climate change will generate a negative emotional experience in individuals with the personality trait of neuroticism.	Not Supported
H5:	Impacts visual frame of climate change will generate a negative emotional experience in individuals with the personality trait of neuroticism.	Not Supported
H6:	Solutions visual frame of climate change will generate a negative emotional experience in individuals with the personality trait of neuroticism.	Not Supported
H7:	Causes visual frame of climate change will generate a negative emotional experience in individuals with the personality trait of extroversion.	Not Supported
H8:	Impacts visual frame of climate change will generate a negative emotional experience in individuals with the personality trait of extroversion.	Not Supported
H9:	Solutions visual frame of climate change will generate a positive emotional experience in individuals with the personality trait of extroversion.	Not Supported
H10:	The personality trait of neuroticism will positively moderate the relation between climate change visual frame and climate change salience.	Neuroticism does not appear to moderate this relation.
H11:	The personality trait of extraversion will positively moderate the relation between climate change visual frame and climate change salience.	Extraversion does not appear to moderate this relation.
RQ1:	Is there a difference between climate change visual frame on emotional experience?	Solutions produced significant more positive emotional experiences.
RQ2:	Is there a difference between climate change visual frame on climate change salience?	There does not appear to be an interaction.

APPENDIX C

STUDY MEASURES

Ten-Item Personality Inventory - (TIPI)

Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

Measured on seven-point, Likert scales ranging from "disagree strongly" to "agree strongly."

<u>I see myself as:</u>

1. Extraverted, enthusiastic.

2. Critical, quarrelsome.

3. Dependable, self-disciplined.

4. Anxious, easily upset.

5. Open to new experiences, complex.

6. Reserved, quiet.

7. Sympathetic, warm.

8. Disorganized, careless.

9. Calm, emotionally stable.

10. Conventional, uncreative.

TIPI scale scoring ("R" denotes reverse-scored items):

Extraversion: 1, 6R; Agreeableness: 2R, 7; Conscientiousness; 3, 8R; Emotional Stability: 4R, 9; Openness to Experiences: 5, 10R.

Salience

What are the three most important issues facing United States today?

- Immigration

- Climate change

- The economy

- Healthcare

- Crime

- Education

- Environmental issues

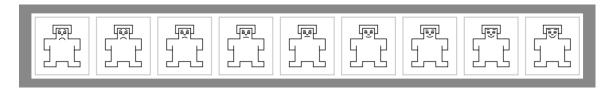What are the three most important issues facing United States in the next 20 years?

- Immigration

- Climate change

- The economy

- Healthcare

- Crime

- Education

- Environmental issues

Measured on seven-point, Likert scales ranging from "strongly disagree" to "strongly agree."
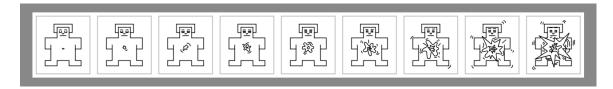
1. I worry about climate change on a day-to-day basis

Self-Assessment-Manikin scale

Please select image that best represents your current state.

Please select image that best represents your current state.

Demographics

1. What is your age?

2. What is your gender?

   Male / Female / Other

3. Are you Spanish, Hispanic, or Latino or none of these?

   - Yes

   - None of these

4. Are you Spanish, Hispanic, or Latino or none of these?

   - Spanish

   - Hispanic

   - Latino

5. Choose one or more races that you consider yourself to be:

   - White

   - Black or African American

   - Asian

- Native Hawaiian or Pacific Islander

- American Indian or Alaska Native

- Other

6. What is your political affiliation? Generally speaking, do you usually think of yourself as a Republican, Democrat, Independent, or other?

- Strong democrat

- Not strong democrat

- Independent, lean democrat

- Independent

- Independent, lean republican

- Not strong republican

- Strong republican

- Other party

7. We hear a lot of talk these days about liberals and conservatives. I'm going to show you a seven-point scale on which the political views that people might hold are arranged from "Extremely liberal" to "Extremely conservative." Where would you place yourself on this scale?

- Extremely liberal

- Liberal

- Slightly liberal

- Moderate

- Slightly conservative

- Conservative

- Extremely conservative

- Don't know

8. What is the highest level of school you have completed or the highest degree you have received?

- Less than high school degree

- High school graduate (high school diploma or equivalent including GED)

- Some college but no degree

- Associate degree in college (2-year)

- Bachelor's degree in college (4-year)

- Master's degree

- Doctoral degree

- Professional degree (JD, MD)

9. How do you describe your religion, spiritual practice, or existential worldview?

- Agnostic

- Animist

- Atheist

- Baha'i

- Buddhist

- Christian (Including other descriptions which might include related faith or practice communities) -Further analysis may sub-divide this response category into Protestant, Catholic, Lutheran, Methodist, Presbyterian or other frequently cited denominations

- Deist

- Hindu

- Humanist

- Jewish (Including other descriptions which might include related faith or practice communities)

- Muslim

- Pagan

- Pantheist

- Polytheist

- Secular

- Sikh

- Spiritual but not religious

- Taoist

- Unitarian Universalist

- Wiccan

- No response

- Prefer not to answer

10. Information about income is very important to understand. Would you please give your best guess? Please indicate the answer that includes your entire household income in (previous year) before taxes.

- Less than $10,000

- $10,000 to $19,999

- $20,000 to $29,999

- $30,000 to $39,999

- $40,000 to $49,999

- $50,000 to $59,999

- $60,000 to $69,999

- $70,000 to $79,999

- $80,000 to $89,999

- $90,000 to $99,999

- $100,000 to $149,999

- $150,000 or more

11. What is your zip code?

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