

Children of Change: An Experiment in Producing Visual Climate Messaging for Parents and Caregivers

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Abstract: For my culminating master's project, I attempted to apply carefully selected theories and research to guide the production of a five-minute video trailer for a potential future documentary titled *Children of Change*. The video project endeavors to illustrate the myriad ways families and children in the United States are impacted by climate change, including proximity to the processes that contribute to climate change such as fossil fuel extraction, transport, and consumption; how the climate issue is inextricably tied to and will continue to exacerbate existing systems of oppression at home and around the world; and how our children's health and future well-being are most at risk. *Children of Change* also documents how parents, youth, and families are engaged in the fight for their lives.

Video can be viewed at: <https://vimeo.com/226170224>

Keywords: construal-level theory (CLT), extended parallel process model (EPPM), framing and co-framing, psychological distance, threat and efficacy, intersectionality, climate change, documentary

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Current arctic temperatures are measuring around 20°C (36°F) higher than usual for this time of year — which is record breaking, even in this era of record breaking temperatures — and have experts both puzzled and terrified (Mooney & Samenow, 2016). The United States Forest Service recently announced that 62 million trees died in California in 2016 alone, totaling 102 million dead trees, mostly in the southern and central Sierra Nevada but creeping northwardly as well. Officials are calling this mass die-off “unprecedented,” “startling,” “staggering,” and link the devastation to the west’s climate-exacerbated drought (Stevens, 2016). The journal *Science Advances* recently published research that suggests the Earth’s climate system may be more sensitive to warming than experts previously thought, which could lead to runaway climate change and an “apocalyptic” climate scenario by the end of this century (Friedrich, Timmermann, Tigchelaar, Timm, & Ganopolski, 2016; Johnston, 2016). And while data show that global emissions of carbon dioxide have leveled in the last few years, a recently published joint report warns that the global community has three scant years left to stabilize the climate (Figueres et al., 2017).¹

Mounting evidence and research indicate that we are balanced perilously on the edge of climate collapse as a result of human activity, and yet, in so many ways, the United States and its population have been mostly engaged in business as usual rather than rushing to mitigate the causes of climate change (Spash, 2015; Stocker et al., 2013). Certainly, there have been noteworthy efforts within the United States to limit global warming, but no actions drastic enough to significantly reduce or end the United States’ dependence on fossil fuels, subvert the pervasive culture of consumerism, or radically abate national and per capita greenhouse gas emissions. Point of fact, in June 2017 the new Trump administration announced that the United States will withdraw from the Paris climate agreement, one of only three nations (not including Vatican City) in the world not participating.²

It is increasingly hard not to despair, but as dark as these days seem, it also feels like a pivotal moment in history that must be seized. As part of my small contribution to what I see as a growing movement of people power in the face of rising global fascism and a rapidly changing climate, I have developed and produced a creative video project entitled *Children of Change* in an attempt to personalize the climate fight for my audience. This project has been a personal journey within which I have found both profound inspiration and paralyzing limitations in my quest to produce five minutes of the most compelling climate messaging ever made! ...Or at least a few minutes of watchable video.

By applying concepts from framing theory, risk communication, and psychology, I have attempted to create visual climate messaging that speaks to people, specifically parents and caregivers, who believe that climate change is happening (Leiserowitz, Maibach, Roser-Renouf, Rosenthal, & Cutler, 2017) but may not understand how the phenomenon—and the myriad

environmental and social issues that contribute to it—impact their children’s lives and shared future. The objective of this video project is to compel the audience — especially those with children in their lives — to take an active and vocal role in the fight to stabilize climate change, while keeping the discussion relevant across social, ethnic, cultural, and class boundaries within the United States.

Theories, Concepts, and Review of Literature

Framing Theory

In its simplest form, framing is the process of applying frames, or “schemas,” that impact people’s or groups of people’s context, perception, understanding, and conceptualization. Frames help people process the information with which they are presented, and which is often influenced by their past experience, stereotypes, and ideology. (Goffman, 1974; Heart & Feldman, 2014; Jones & Song, 2014; Lakoff, 2010; Nisbet, 2010). “All of our knowledge makes use of frames, and every word is defined through the frames it neurally activates. All thinking and talking involves ‘framing’” (Lakoff, 2010, pp. 71-72). Framing can be exercised by the message maker—scientists and experts, politicians and community leaders, or journalists, educators and media producers wishing to communicate about climate change and its effects—consciously or unconsciously; frames are then applied by the receiver, usually unconsciously.

In order to “overcome the communication barriers of human nature, partisan identity, and media fragmentation,” communication must elicit new ways of “thinking about the personal relevance of a gridlocked problem” (Nisbet, 2010, p. 44). Anyone who is interested in communicating about climate change, or more, finding the most effective ways of communicating about it to different audiences, might at least consider the role of framing in their climate message making. However, Dickinson, Crain, Yalowitz, & Cherry (2013) have warned against falling into “discursive habits” – that is, “use a set of frames for no other reason than habit and imitation. These taken-for granted frames activate particular cultural codes, evoke meanings, and trigger psychological mechanisms that often go unexamined...” (p. 147). Some of the more common frames applied to climate change issues by journalists, thought leaders and activists are: national security, economy, health and wellbeing, morality and stewardship, and religious appeals (Heart & Feldman, 2014).

Rhetoric and political discourse make good use of framing through word choice, assigning meaning and emotion to words, and/or building on meaning over time (Lakoff, 2010; Nisbet, 2010). For example, the term “climate change” has become a highly politicized set of words that evoke a powerful reaction and conjure strong imagery for many Americans. For groups that have positive associations with the term climate change, that is, those who believe it is real and human caused, frames can be used to motivate them to action, whether through personal behavior modification or by putting pressure on business and government. For groups that have negative associations with the term, the task may be much more challenging (Dickinson et al., 2013; Nisbet, 2010). Lakoff (2010) has cautioned, however, “that if research on framing is transformed into a communication strategy, it needs to be used responsibly. Journalists, experts, and advocates alike must... resist engaging in hyperbole or offering concrete answers when there

are none” (p. 45). Indeed, framing may best be used as one of many tools in understanding and creating climate communication (Nisbet, 2009; Heart, 2011).

Threat and efficacy & EPPM. A 2014 study conducted by Hart & Feldman examined the number of television network news broadcasts reporting on climate change between 2005 and 2011. They found that 59.3% of the broadcasts included the term “climate change” or “global warming” during those years; however, their study was not only concerned with how often climate change was reported, but also how threat was framed and if the stories inspired some type of action from viewers.

In order to analyze their information, Heart & Feldman (2014) employed the extended parallel process model (EPPM) developed by Kim Witte in 1992,

which emphasizes the role of threat and efficacy in effective risk communication [and] offers a useful framework for understanding how media messages about climate change may encourage or inhibit public engagement and action on climate change. The EPPM posits that messages about risk issues such as climate change may draw attention to the issue if strong threat information is provided but that it is critical for threat information to be accompanied by information about the efficacy of actions that individuals can take to help address the issue. (p. 326)

More simply, EPPM aims to prove that when a message conveys more fear than efficacy, it will be unsuccessful — that is, if the audience feels they can do little or nothing about an alarming and critical issue such as climate change, they will take greater steps to mitigate their own fears rather than attempt to address the issue, referred to as *fear control* and which is considered maladaptive. Examples of fear control responses include avoidance and defensiveness “that may control inner feelings of distress but do not actually address the risk itself” (Heart & Feldman, 2014, p. 327). If the viewer’s response to the message is to take actions to mitigate the risk, it is referred to as *danger control*. Furthermore, in the EPPM model, efficacy is broken down into two types: “*self-efficacy*, whether an individual can take an action, and *response efficacy*, whether the action will be effective in reducing the threat” (p. 327). When individuals feel able and empowered to take action and when they believe that their actions will be effective in directly addressing the issue, they are more likely to have a danger control response.

Heart & Feldman (2014) have further traced the efficacy of climate coverage down to how climate change *impacts* and *actions* are framed. A successful climate change message,

can convey information about threat and efficacy directly by providing explicit details about the susceptibility and severity of a climate change risk (threat) or the likelihood of a personal or political action being successful (efficacy). In addition, threat and efficacy information can also be communicated indirectly, by simply depicting the impacts and actions to which they respectively relate. (p.328)

Heart & Feldman (2014) found that dramatic images of climate change impacts (natural disaster areas, starving children, etc.) increase salience for viewers but also make them feel powerless to

do anything. Imagery that represents action (homes with solar panels) did not evoke strong emotion but did increase feelings of efficacy. “This suggests that effective climate change communication, including news coverage, should include discussion of both impacts and actions, to achieve the balance of perceived threat and efficacy needed to promote public engagement” (p. 328). Their research has found that, because of the “norms that drive journalistic selection and presentation of news” (p. 329), stories that focus on impacts have dominated news coverage of the issue.

Co-framing and fear appeals. An empirical research study conducted by Dickinson et al. (2013) also focused on the efficacy of fear appeals. The team designed climate messaging for gardeners and bird lovers and concluded that participants were more compelled to take action when the fear appeal was tailored to address an external issue for which the subjects deeply cared. For example, the subjects received two messages: one that framed climate change as detrimental to the survival of bird species and another that framed climate change as detrimental to the survival of the human species. The bird lovers favored fear messaging that appealed to their love of birds and nature. The study’s results indicate that a “generalization that positive framing is always superior to eliciting interest and intention to take reasonable personal action to reduce climate change” is not absolute... “When fear is co-framed with an object, the object matters” (p. 153).

Environmental Psychology, Construal-Level Theory, and Psychological Distance

Environmental psychology (EP) is a sub-field of psychology with a focus on understanding the “origin[s] and solutions of the current environmental crisis... [and] how human nature has played a prominent role in the emergence of ecological problems such as global warming, threats to biodiversity, resource scarcity and pollution” (Corral-Verdugo, Frias-Armenta, & Garcia-Cadena, 2010, p. xiii). EP is interested in the contextual factors that influence more environmentally harmonious and sustainable behaviors as well as the psychological variables that guide these behaviors, such as anti-consumerism and altruism (Corral-Verdugo, et al., 2010, p. 8). Construal-Level Theory (CLT) developed by Liberman & Trope (2000, 2003, 2007, 2010) is not expressly an arm of EP, but in at least one study (Spence, Poortinga, & Pidgeon, 2012) it has been effectively applied to the issue of climate change in an effort to better understand the psychology behind the human-nature disconnect and destructive environmental behaviors.

CLT proposes that people only experience the exact moment in which they are living, the “here and now,” making anything else outside of that experience — that is, “the past and the future, other places, other people, and alternatives to reality” (Trope & Liberman, 2010, p. 440) — difficult to process or prioritize. We are, however, always preoccupied with and guided by our memories and hopes for the future, so CLT asks, “How do we transcend the here and now to include distal entities? How do we plan for the distant future, understand other people’s point of view, and take into account hypothetical alternatives to reality?” (Trope & Liberman, 2010, p. 440). In other words, how do we close the psychological distance between a person and an object: in this case, climate change?

In its simplest form, CLT tells us that the larger the psychological distance between a perceiver and a subject or object, the more abstract the subject or object will be perceived. Conversely, the closer the psychological distance, the more concrete the subject or object will be perceived. “Psychological distance is a subjective experience that something is close or far away from the self, here, and now. Psychological distance is thus egocentric: Its reference point is the self, here and now, and the different ways in which an object might be removed from that point—in time, space, social distance [for example, the distance between the perceiver and another person or group], and hypotheticality [or uncertainty]—constitute different distance dimensions” (Trope & Liberman, 2010, p. 440).

CLT can be a useful tool in trying to understand a major paradox in our collective response to environmental crisis such as climate change: for example, although there has been a measurable increase in awareness of climate change and an understanding that it is human caused (as well as potentially devastating to future generations), many Americans do not live sustainable lives (Spense, Portinga & Pidgeon, 2012) or demand rigorous climate action from their governments and leaders. Indeed, climate change in particular is perceived to be distant on all four of the afore mentioned dimensions of psychological distance: temporal, spacial, distance between perceiver and object, and uncertainty (Milfont, 2010; Spense, Portinga & Pidgeon, 2012).

Discussion

There have been many challenges to communicating about climate change over the last several decades. Some of these challenges include, but are not limited to: the consolidation of news groups (Bagdikian, 2010) and shrinking newsroom budgets for environmental reporting (Nisbet, 2010); the “uncertainty” of climate science (Boykoff, 2007) and difficulties in communicating complex scientific information (Henderson-Sellers, 1998); the journalistic tenet of balanced reporting and a “profusion of think tanks and disinformation campaigns” dedicated to climate change denial (Nisbet, 2010, p. 45). Communicating about climate change is complicated, and the intrinsic “uncertainty” of climate science as well as the challenge of explaining the differences between *climate* and *weather* for non-expert audiences can cause confusion. “Science reporting by the media often involves complex and contested issues characterized by risk and uncertainty” (Dahl, 2015, p. 40). Boykoff (2007, 2013) has acknowledged the uncertainties inherent in climate science and how outliers, or “contrarians,” have exploited this uncertainty for their own gain. Uncertainty has been reframed to bolster the denialists’ agenda.

One explanation for the United States’ (its people, industries, and government) delay in responding to critical climate change signals may be that conditions like rising global average temperatures have been “difficult to perceive and detect because natural weather-related variability is large” (Trenberth, 2012, p. 284). Scientists are often asked if weather events are a result of climate change. Trenberth (2012) has found that,

the answer is that no events are ‘caused by climate change’ or global warming, but all events have a contribution...In reality the wrong question is being asked: the question is poorly posed and has no satisfactory answer. The answer is that all weather events are

affected by climate change because the environment in which they occur is warmer and moister than it used to be.” (p. 289)

When climate extremes occur, such as the current drought in California, he has suggested that questions regarding global warming be framed in this way. That is, extreme weather events will always happen as part of natural variability, but the intensity and frequency of such extremes are becoming more evident as the atmosphere warms, and it is important to stress this point to audiences (Trenberth, 2012).

A more abstract obstacle to effective climate change communication is what Lakoff (2010) has called the *environment frame*,

The Environment Frame sees the environment as separate from, and around, us. Yet, we are not separate from Nature. We are an inseparable part of Nature. Yet we separate self from other, and conceptualize Nature as other. This separation is so deep in our conceptual system that we cannot simply wipe it from our brains. It is a terribly false frame that will not go away. (p. 77)

Indeed, this particular frame is an intrinsic part of United States’ hegemonic ideology and unsurprising in a culture with an economic system based on exploiting and commodifying the environment, thus contributing to an artificial and unsustainable human-nature disunion. Nature has become the “other.”

Nisbet (2010) has found that in order “to generate widespread engagement with the ongoing policy debate, news coverage of climate change needs to shift away from traditional frames and devices and toward new perceptual contexts that resonate with a broader audience” (p. 56). One frame he has pointed to in particular is the *economic frame*, suggesting a “recasting” of climate change as a potential boon to the United States’ (perhaps even global) economy by means of creating jobs in sustainable energy fields and green building, for example. This frame serves as a counter-punch to rhetoric that frames CO2 reduction as a job killer. However, the economic frame does not address what might be considered the root cause of climate change: consumption and free market growth. It works within the existing capitalist paradigm rather than challenging it.

Methods, Limitations, and Process Analysis

Format

My graduate committee chair, Professor Marty Gonzalez, suggested that, rather than a full documentary, I should consider producing a five-minute trailer that could be used as a funding vehicle after graduation. This approach made a lot of sense to me, both at the time and in hindsight. Having a background in grant writing, I felt confident in my ability to research and apply for funding should I move forward with *Children of Change*, and I liked that a short trailer could be shared on social media as well as crowdfunding sites. Now that I am on the other side of the project and reflecting on the experience, making a trailer also allowed me the bandwidth to explore different directions within my project. I approached production as if I were creating a

full documentary, and that process coupled with post-production allowed me to identify what I was missing (engaging sequences with the interviewees, for example) that would be necessary in a full documentary. I also realized that, should I continue working on this project, I might rather create a series of short videos, as opposed to a long-format documentary, that chronicle people's stories of climate change and resistance.

Applying Theory to Production: Intention vs. Actuality

For *Children of Change*, I attempted to apply the previously discussed theories and research, as well as the theory intersectionality, in the production process with varying degrees of success.

Framing & co-framing. In the same way that the 2013 Dickinson et. al. study framed climate messaging for bird lovers by co-framing a fear appeal with the survival of bird species, I identified parents and caregivers as my primary audience (see discussion of audience below) and co-framed the climate change issue by placing children at the center of the conversation.

Of all the theories and research that I attempted to apply in this production, co-framing climate change with children seemed to be the most straight forward, and in some ways, successful. Parents are hardwired to care for and protect their children (Gettler, Mcdade, Feranil, & Kuzawa, 2011; Noriuchi, Kikuchi, & Senoo, 2008), and *Children of Change* hopes to make the case that parents and caregivers must protect our children from the dangers of climate change by facing the problem—and all the issues connected with it, such as resource consumption, capitalism, systemic racism, poverty, etc— head on.

Further, research indicates that both parents *and* non-parents have a positive neural response to images of babies and children (Rilling & Young, 2014), and I use imagery of infants, children, youth, and families throughout *Children of Change* to elicit empathy and the “aww” factor from my audience.

I had plans to interview a local activist, mother, and physician for this project, but that opportunity did not pan out. Around the same time that lead was falling through, I read an announcement by Dr. Ed Maibach who heads the George Mason Center for Climate Change Communication (4C). Dr. Maibach and his team were developing messaging which framed climate change as a public health issue. The idea the public health crisis frame was new to me and very exciting, and I felt that it had an important place within my project. (This would be a good place to review the literature on persuasive messaging for parents and what this group identifies as the most salient issues in regard to their children's wellbeing. My guess is that the health and wellbeing of their children would be at the top of most parents' list.)

I reached out to Dr. Maibach to tell him about my project and to see if he could connect me with a healthcare professional in the Bay Area whose work is focused on climate and health. Dr. Maibach sent me contact information for one of his longtime colleagues, Dr. Linda Rudolph, who directs the Climate Change and Public Health Program at the Public Health Institute in Oakland, CA. He also sent a series of short “essays” that 4C was testing on audiences. These essays were divided into eight categories: Extreme Heat, Poor Air Quality, Extreme Weather, Disease, Contaminated Water, Contaminated Food, Hunger & Malnutrition, and Mental Health Impacts. Each essay included information on *how* people are being harmed by climate change as

well as *who* is being harmed, which included vulnerable populations such as low-income communities, the elderly, pregnant and postpartum women, children, and infants. I contacted Dr. Rudolph immediately and she agreed to an interview, and I used Dr. Maibach's essays as a template for preparing my interview questions for her.

Psychological distance. I set out to close the psychological distance of climate change for viewers by addressing three of the four different dimensions in the following ways: 1. by showing how children are being impacted by climate change *now* (temporal); 2. focusing on climate change events happening in the United States (spacial); 3. by interviewing a parent who has experienced a catastrophic climate-related event (social distance). I had hoped to interview at least three families who could discuss how climate change events (and/or issues that contribute to climate change, such as fossil fuel extraction) have impacted their lives. If I had had more time and resources, I would have specifically liked to interview people from different socioeconomic and ethnic backgrounds than Gayle Lee, and I would have especially liked to interview a youth litigant in the landmark federal climate change lawsuit, *Juliana vs. U.S.* (Light, 2017). (One of my contacts for *Children of Change*, Isabella Zizi, an indigenous youth activist who is involved with Idle No More SF Bay, "a grassroots all-volunteer organization composed of Native and non-Native allies dedicated to climate change activism" (www.idlenomoresfbay.org) is aquatinted with some of the litigants, but I was unable to leverage that connection. I also contacted Our Children's Trust, an organization supporting the youth litigants, to arrange an interview with someone but was unsuccessful at making it happen in the remaining time we had.) For the fourth dimension (hypotheticality), I had planned for there be a discussion in *Children of Change* about the "uncertainty" of climate change as well as climate denialism, although it did not make it into the final edit due to time constraints and narrative flow. Psychological Distance in particular resonates with me and will likely serve as a checklist for future climate related content I might produce.

Threat and efficacy & EPPM. I attempted to apply the Heart & Fieldman (2014) EPPM model by placing more emphasis on efficacy than on risk by discussing both the impacts of climate change as well as the actions people are taking to mitigate its causes and impacts. This theory was my biggest challenge and weakest point in the project.

Because the time of production came almost immediately after Trump was elected president, there was a flurry of protests happening in the Bay Area where I live. I think that perhaps I focused too much on following these events in an effort to demonstrate efficacy, and thus *Children of Change* reads like a story of protest, which was not especially deliberate. I made the mistake of conflating protest with efficacy and should have spent more time being intentional about what kind of efficacy I wanted to present. Highlighting protest is fine, but (as Anthony Rogers-Wright states in the video), we need to do more than just march and show up for events in the fight to mitigate and adapt to climate change. If I move forward with *Children of Change*, I will be much more strategic about how I demonstrate efficacy and activism.

Intersectionality. The theory of intersectionality, coined by Kimberlé Crenshaw and developed within black feminist theory and critical race theory, examines how systems of

oppression and injustice (e.g., sexism, racism, classism) are interwoven, inextricably linked, and work in concert to perpetuate the abuse and exploitation of oppressed peoples. Although intersectionality may seem like an outlier to the other theories discussed in this paper, to me it was vitally important to use intersectionality as a lens in the planning and production of *Children of Change*.

Climate change will most certainly exacerbate inequalities and oppression around the world as the impacts continue to strain natural resources, food system, access to clean water, and government infrastructures. I wanted the conversation in *Children of Change* (and in general) to be inclusive for everyone impacted by climate change, but with special attention to populations that have been historically—and will likely continue to be—disproportionately marginalized, exploited, and abused,³ not least indigenous peoples, black communities, women, children, the poor, and of course the intersections of these groups.

At the suggestion of my committee, I removed several title cards from the first edit of the trailer, including one that read “Climate change is intersectional” and instead let Anthony Rogers-Wright’s soundbites frame climate change as “a form of violence— violence against women, violence against people of color” and as “systems of oppression working in concert together.” For any project that wishes to challenge the status quo (or orthodox environmental frames such as the economic frame), taking an intersectional approach may be useful not least because it can “illustrate how power structures and categorisations may be reinforced, but also challenged and renegotiated, in realities of climate change” (Kaijser & Kronsell, 2014, p. 417).

Choosing a Title

I came up with the title *Children of Change* well before I had proposed the project to my graduate committee. It has met with a mostly positive response from friends and those I contacted about *Children of Change*, although one friend thought it was too weak and unspecific. I disagree. And, in fact, I discovered that as the project evolved, the meaning of the title evolved for me, too. At first it was meant to evoke an image of children growing up in the era of climate change, but came to mean, to my mind, children, youth and families creating change for a better shared future.

Audience

For almost a decade, researchers at the Yale Project on Climate Change Communication (and often in collaboration with 4C) have conducted studies on public opinion of climate change. In their most recent report, Leiserowitz, Maibach, Roser-Renouf, Rosenthal, & Cutler (2017) found that 70% of Americans believe that climate change is happening (almost as high as their data showed in 2008); 58% of Americans believe climate change is a result of human activity; 35% believe Americans are being harmed by climate change; and 40% say they have been personally affected by climate change. However, only 33% of Americans discuss climate change with their friends and families “often” or “occasionally”; and most Americans believe that climate change is only a distant threat:

...they are most likely to think that it will harm future generations of people (71%), plant and animal species (71%), the Earth (70%), people in developing countries (62%), or the

world's poor (62%). They are less likely to think it will harm people in the U.S. (58%), their own grandchildren (56%) or children (50%), people in their community (48%), their family (47%), themselves (43%), or members of their extended family living outside the U.S. (41%). (pp. 3-4)

My primary audience is parents and caregivers who are part of the 70% of Americans who believe climate change is happening, and I therefore did not feel the need to include a discussion on the mechanics of climate change à la *An Inconvenience Truth*, but instead tried to illustrate how we are all being impacted by climate change (some more acutely than others) and that our children are in the direct line of threat.

Preproduction

Interviews. The trailer is structured around three primary interviews, which include an expert in the field of climate change and public health, a climate activist, and a parent who survived a harrowing climate related event with her children. This edit also includes an interview captured in the field with a youth activist. As mentioned above, I had hoped to interview more families and/or youth but found that three formal interviews were all we could accomplish within our timeframe and given several limiting factors. However, I think that the final edit of the *Children of Change* trailer would have greatly benefited from more voices of parents and youth.

Anthony Rogers-Wright. At some point in the last year or two I had become Facebook friends with Anthony Rogers-Wright who was working with the organization Environmental Action at the time. From his posts I knew that he was a new father, and I enjoyed the way he communicated about climate change issues for his organization. Anthony is also friends with Josh Fox, the director of Academy Award nominated *GasLand*, so Anthony was on my “dream list” of interviewees.

Anthony lives in Washington and travels frequently, and through Facebook I learned that he was attending a No DAPL (Dakota Access Pipeline) event in San Francisco in early February 2017. We were still in the pre-production phase, but I didn't want to miss the opportunity to interview him. I reached out via Facebook and he was very amenable to letting us interview him, so I jumped at the chance even though we were not fully prepared. Unfortunately, that unpreparedness contributed to poor quality video.

Gayle Lee. Gayle is an old friend of mine who moved back to her hometown of New York many years ago. I was in touch with her after Hurricane Sandy hit and was deeply impacted by the devastation it brought to her family. I considered her to be a victim of climate change, and it was Gayle's experience and resilience that inspired this project. I asked her to be a part of *Children of Change* and she was happy to oblige. I had hoped to travel to New York and interview her myself, but that was not feasible. Through the help of a friend, I found an early career videographer to shoot the interview for me while I interviewed Gayle via FaceTime. It took quite a bit of planning to work out an agreement with the videographer and schedule a time that worked for both of them. The three-hour difference also meant that they would have to get

started in the afternoon so that I could drop my kids off at school and find a quiet place to conduct the interview. Unfortunately, due to multiple factors, Gayle's interview and "b-roll" footage were almost unusable, which I only realized after receiving and reviewing the assets, and this was very late in the production timeline.

Dr. Linda Rudolph. As mentioned before, Dr. Maibach graciously connected me to Dr. Rudolph and her work as the director of the Climate Change and Public Health Program at the Public Health Institute in Oakland, CA. When I contacted Dr. Rudolph she was very supportive of my project and made the whole interview process incredibly smooth and pleasant for me and my team. I arranged to meet her with a small crew at her office in Oakland on a weekday afternoon. The office space was lovely, and Dr. Rudolph gave us full access to identify the best place to shoot. She was an incredible interview and the only real challenge we had that day was with audio and street noise.

Mykela. We met 16-year-old Mykela while shooting at the People's Climate Movement event in Oakland, CA in April of 2017. Mykela was a youth fellow at New Voices Are Rising, which is a program run by the Rose Foundation for Communities and Environment. We were able to interview her and another young New Voices youth fellow named Carlos, although unfortunately his interview did not fit into the final edit of the trailer. (However, we did record him and his friend performing an original spoken word/rap, which is the last song in the trailer that runs under the credits.) Although the video we captured of Mykela's was very over-exposed, I was happy to have the voice and perspective of a youth activist, and her words were more important to me than the video quality.

Production Team. I recruited an undergrad from my department, Jessi Fry, to help with production. I had collaborated with Jessi previously and observed how hard she worked as well as her willingness to jump in and try new things. Her primary duties evolved over time and included technical help with cameras, audio, and editing workflow. One of the most significant contributions Jessi made was setting up an email account for *Children of Change*. It hadn't occurred to me to do that and proved to be very helpful in keeping *Children of Change* correspondence organized. Jessi enrolled in an Independent Study course with Dr. Oscar Guerra and agreed to separate learning objectives with him. Dr. Guerra requested that I develop a grading rubric and give feedback at the end of the semester on her contribution to my project. I had never created a rubric before and didn't fully understand why Dr. Guerra had required this of me until the end of the semester when it was time to give feedback and I saw how important it is to give clear guidelines early on. That process was a valuable learning experience for me, especially as I move into the role of instructor. In return for her participation, Jessi earned credits toward graduation and gained additional field experience.

Jessi and I also recruited several undergrads to assist with audio and second cameras. In the semester prior, I identified one student in particular, Peter Mansour, to have very strong camera skills. I offered him the title of Director of Photography for *Children of Change*; he was not able to join us on every shoot, but his work was the strongest imagery and the most technically proficient footage we gathered. Peter has the technical camera skills that I lack, and

for my project he preferred to be directed as opposed to set loose to capture images. Two shots in particular, the two young boys holding protest signs and the drone footage of the kids and the refinery, were captured by Peter at my direction. He was able to create on video what I saw with my eyes. Working with him reinforced my desire to find a production partner with whom I can work on future creative projects as symbiotically as I did with him.

One of my main priorities in assembling a production team for this project was to provide a worthwhile and instructive production experience for undergraduates, though I too learned a lot about the production process and about myself as a producer/director/editor—the good and the bad—along the way. Four of the undergrads I worked with were from different parts of the globe and, to varying degrees, unstable countries. One student is undocumented (due to the increasingly vicious political atmosphere, we had to be especially careful about what events he could attend with us), one is in the United States on asylum, one had grown up in a refugee camp, and one student's parents had fled their country before she was born. As we worked on *Children of Change* I couldn't help but wonder how much climate change had played a role in these young people's diaspora and/or how much it will exacerbate already volatile situations in their homelands.

Music. I asked two of my friends to produce songs for me to use. One friend, Anna Sacks, is a folk singer, and I asked her to create a song with lyrics that sounded like a lullaby. I wanted something kind of sad, kind of ethereal, and also kind of hopeful. She wrote and recorded “Birdie’s Song” (named for my daughter, and Anna’s “goddaughter”), which is the song heard in the opening sequence of *Children of Change*. I asked my other friend who is a DJ to mix an original song with a hip hop beat and no lyrics that would play under interviews and sequences. She was unable to get us something before the deadline, so during post-production Jessi found a copyright and royalty free song that had high kinetic energy to transition us out of “Birdie’s Song.” However, I did not like how that particular song sounded after its first few seconds, so I mixed it with another song I found online titled “99” and for which I bought the rights for \$25. I quickly realized, though, that “99” had a scratchy record effect, which I loved aesthetically, but made the interviewee’s audio sound like bad recordings. I contacted the producer and he made me a version without the effect. I cut “99” and attempted to blend it with the beat that Jessi found so that I wouldn’t have to completely re-edit the fast-paced sequence that follows “Birdie’s Song.” Although I have never mixed music before and cannot report that I gained any special audio skills from the process, I am pretty happy with the outcome.

Production

Production began prematurely with Anthony’s interview as well as attending a vigil organized by Idle No More SF Bay in late January. Along with the three interviews, we shot three different climate-themed events, and I had a different crew for each shoot, which resulted in different production quality for each shoot.

Equipment. Two of the three interviews were shot as two camera set-ups. For Dr. Rudolph's interview, we used Peter's Canon 5D as the primary camera and Jessi's Canon 70D as the second camera. We recorded Dr. Rudolph's audio onto a Sennheiser H6 and used a lavalier microphone clipped to her blouse. We had one Ikan LED light to illuminate one side of her face (which we realized in post was unbalances as one side of her face was bluish from the natural light and one side reddish from the artificial light). Anthony's primary camera was the Canon 70D and second camera was a Canon T3i. We used the same audio set up as Dr. Rudolph and also used three Ikan lights as the room we interviewed him in was dark. For Gayle, the videographer I hired used a Canon 70D, a Sennheiser H4, and a borrowed lavalier microphone. She used natural light, which proved to be a problem in post because the light changed pretty drastically during the course of the shoot.

Peter was able to attend two of the three climate events and used his stabilizer to record most of the video. He also brought his drone to the Refinery Healing Walk. We got several arial shots of refineries in the East Bay, but for some reason, only the shots with the children and the smokestacks survived (thank goodness). At all three events we recorded separate audio onto a Sennheiser H4 and/or H6 using their built-in mics.

Permissions. I made sure to have permissions to record video for each of the events we shot. Two of the events were organized by Idle No More SF Bay, so I communicated with Isabella Zizi to make arrangements. Because the Idle No More SF Bay events included indigenous ceremonies, there were certain activities we were not allowed to record, specifically prayer and some ceremonial songs. The third event was the People's Climate March in Oakland and we were granted full permission to record there. We also collected talent releases from people interviewed or featured on camera and location releases where necessary.

Postproduction

Jessi and I got a late start with postproduction, which included reviewing and sorting through footage, setting up workflow on the Premier editing software, crafting a narrative structure with our interviews (Hewett & Vasquez, 2010), and a lot of handwringing on my part. Postproduction has also included color correcting video, sweetening audio, and sound design.

There were several obstacles to editing, not least of which was trying to figure out how to mask the difference in production quality between interviews (as is bound to happen when using different crews for different shoots and unpaid students with varying degrees of experience). Gayle and Mykela's footage were over-exposed, and Anthony's was not only lit poorly, but also slightly out of focus. Dr. Rudolph's video quality was far superior to the other two, but, as previously mentioned, her mic picked up traffic noises from the street below her office. There was not much to be done about the audio, but I made the decision to make the interviews black and white, which was an attempt to mask some of the video quality issues. I also liked that the desaturation sort of united the three interviews, which, because of the different backgrounds and video quality, were quite contrasting aesthetically. Most feedback I've received has not been favorable to the interviews being in black and white, though I still feel it was the best option.

“Kill your darlings.” Editing this project proved to be an especially difficult task for me and has highlighted my strengths and weaknesses as an editor. I was very inspired by “Birdie’s Song” and edited the opening sequence in one afternoon, using, for better or worse, all of the best footage we had. However, nothing else about the editing process was that simple or expeditious for me. I very much struggled with what clips to include, evident by the fact that my first cut was over 12 minutes long. I have come to accept that if I don’t have a particular song for inspiration, editing images together does not come easily for me. (As of February 2018, what I’ve yet to do and would still like to do is sit down with a professional editor who can help me refine the final rough cut of the trailer, but that of course takes a budget.

It has been challenging to honor all of my theories in such a short video and especially difficult reconciling how to produce a trailer—which traditionally is meant to leave the viewer hanging and (in the best examples) wanting more—with my objective to demonstrate efficacy. How can one demonstrate efficacy in a cliffhanger? In an attempt to address this challenge, I included several visuals of children and parents involved in protest (see discussion on efficacy above).

Future Work

I hope to someday pursue funding and perhaps a distribution outlet that will allow *Children of Change* to become a fleshed-out project, either as a feature-length documentary or series of short documentaries. Beyond that, I will continue applying co-framing and psychological distance to future creative work and environmental messaging.

Postscript

Children of Change was produced and edited in the spring and summer of 2017. Since then the devastation wrought by wildfires on the west coast of the United States, a string of powerful hurricanes in the Caribbean and southern costal United States, a record-breaking heat wave in my hometown of San Francisco, and flooding in south Asia is stupefying. The future is here.

A new poll conducted by Washington Post and ABC found that 55% of Americans believe that climate change makes hurricanes more intense, up from 39% in a similar poll taken after Hurricane Katrina in 2005 (Guskin & Dennis, 2017). Now is the time to organize people—not least parents, caregivers, and youth—in the climate fight, using whatever tools available, including art and media. Our children’s lives depend on it.

Notes

1. It is important to note here that this report credits carbon emissions reductions to, among other things, the *increase* in the use of natural gas around the world. However, the extraction, transport, and burning of natural gas can release methane, a heat-trapping greenhouse gas roughly 30 times more potent than CO₂. Therefore, the benefits of decreasing carbon dioxide emissions by using natural gas should be weighed against the impacts of increasing methane emissions (Howarth, Santoro, & Ingraffea, 2011) as well as the toll of fracking on communities and environment.

2. At the time this paper was written, the two nations not participating in the Paris agreement, Syria and Nicaragua, were non-signatories rather than withdrawals like the United States. Syria had not signed because of the country's protracted civil war; Nicaragua's leadership argued the agreement will be ineffective because it is non-binding and the emissions targets are not ambitious enough to avoid global devastation (Cabral, 2017).
3. A joint report between Global Witness and The Guardian estimated that around the world four environmental activists were murdered every week in 2017. "Most of the killings occurred in remote forest areas of developing countries, particularly in Latin America where the abundance of resources is often in inverse proportion to the authority of the law or environmental regulation" (Watts, 2018).

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