

Climate Change Politics from the Front Porch^{*}

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Abstract

Climate change is complex economically, politically, sociologically, and scientifically. How then do individual consumers/citizens navigate this increasingly alarming issue? I focus on two frameworks. The first considers the behaviors and beliefs of individuals. The second focuses on how individuals will be impacted by climate change and how various political institutions will impact this. These two frameworks are an effort to cohere previous and ongoing research.

Not for circulation or citation. For feedback from the awesome Berkeley community.

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Note to reader:

This paper is an attempt to integrate a range of disparate intellectual efforts around climate change, and is a very very rough and poorly written. Please, give me cites to literature I have missed, concepts I am not exploring, etc.. My hope is that this could be the foundation of a book, perhaps with a lot of coauthors.

1 Introduction

If an array of scientists and policy makers are correct, human civilization throughout many parts of the world will face dramatic challenges due to a quickly warming planet (on Climate Change, 2014; Wagner and Weitzman, 2016).

Solutions are abound. Coordinated efforts to solve underlying collective action problems internationally and/or domestically provide one approach. To date this has been challenging. Other solutions are more technological. Natural gas is a saving grace to some, except for those that know methane's caustic climate chemistry (Alvarez et al., 2012). Perhaps some day fusion. Or fission that can be built more speedily and without dramatic cost overruns (all this assuming it makes political, social, and economic sense). It does not seem like a 100% renewable strategy will be feasible for quite some time (Clack et al., 2017). And renewable sources like hyrdo-electric of course have other types of environmental impacts. Of course, all of these solutions come with distributional consequences including the displacement of workers in carbon intensive industries like coal.

Maybe adaptation is the way to go (Moser and Ekstrom, 2010; Lobell et al., 2008; Javeline, 2014)? Human and other species are constantly adapting to changes in the climate. Adaptation also faces an array of problems. For example, there will always exist tradeoffs between short term investments (that are cheaper) versus long term investments (that are more expensive). These longer term investments include, for example, investments in adaptation that are connected to mitigation. Collective action problems at the local and national level are also present, especially if efforts at adaptation produce technologies whose benefits can not be sufficiently internalized leading to under-adaptation (just like we have under-mitigation). Of course a weak form of adaptation, wherein we internalize the costs of recurrent post-disaster bailouts is another option. A different approach to adaptation is to directly confront raising temperatures through the reflection of sunlight via stratospheric injection of aerosols. This is known as solar radiation management and is one form of geo-engineering. This too, of course, brings with it a variety of problems including uncertainties

about the efficacy of the technology, governance questions, and moral hazard type dynamics that could also interfere with mitigation efforts.

Mindful of these challenges, I examine climate change as an issue that an individual could think they are contributing to, or not. That they think about or talk about, or not. That they could be impacted by, or not. Adopting a perspective of “Climate change politics from the front porch,” I take a step back from both elite level/state level accounts as well as resist starting the analysis from “here is the collective action problem” and the “game” we are playing. Instead, individuals do not necessarily see this in terms of a strategic game. And if they do, it is likely to draw on foundational intuitions around reciprocity. The information that people get and gravitate to is not necessarily just United Nations Intergovernmental Panel on Climate Change (IPCC) reports. Instead, like other areas of politics these days, faux/fake/conspiratorial information permeates the informational landscape.

I also try to think explicitly about individuals living in institutions that are responding (or not) to climate change. Not everyone in large countries will be impacted severely by climate change and there are no guarantees over which communities will be prioritized for ex ante (building sea walls) or ex post (disaster assistance) climate change *adaptation* resources. Individuals in industries that face pressure from mitigation policies might some day have access to resources for re-training (what I term Climate Adjustment Assistance-CAA) but for a variety of reasons individuals might not use the opportunity. Or even if they do it might not work. And day to day governance—in particular the implementation of regulations at the local level—might also be impacted by climate change. As discussed below, this includes things like food safety inspections that have day to day implications that would prevent one from sitting on the front porch.

The structure of the paper is as follows. Section 2 considers climate change from the perspective of individuals making decisions and acquiring information on a day to day basis. Section 3 embeds individuals within a set of institutions and considers some of the political economy considerations likely to impact individuals. Section 4 concludes.

2 Individuals in Global Problems

Individuals throughout the world contribute to the release of carbon dioxide. Some individuals contribute substantially more than others in their day to day lives. And while most individuals might be better off if everyone (or many others) would reduce their contributions to carbon dioxide

emissions, there are often few incentives to unilaterally deviate. This of course leads to well studied accounts of climate change being a collective action problem.¹ The benefits from reducing carbon dioxide output accrue to everyone. As these benefits are not internalized they are undersupplied. More abstractly, there exists a clear strategy for each person that is linked to a clear outcome. Conditional on expectations of the the strategies of other actors we get the collective action problem.

2.1 Individual behavior: Imperceptible harms

However, this highly strategic account of climate change incentives is at odds with how individuals actually contribute to climate change from a more day to day perspective; from the front porch. Instead, the daily grind of life, from turning on a light, to warming up the kitchen in the morning (or cooling down the bedroom at night), to driving to work, contributes to climate change in infinitesimal ways. And the same thing goes for our neighbors. Hence a more pedestrian view of individual behavior and climate change more looks like a “death by a trillion tiny paper cuts.” These are what can be called imperceptible harms.

In light of these infinitesimal impacts on climate change it is perhaps not surprising that many citizens make little connection between decisions about energy sources and climate change (Ansolabehere and Konisky, 2012) and most people do not discuss climate change with friends or family (Leiserowitz et al., N.d.).² Instead, what citizens do understand is the local impact of pollution (Ansolabehere and Konisky, 2014). That could be good in the short term but it sets up a future where “clean coal” is proffered as the energy solution for the future rather than a portfolio including renewables and nuclear. “Clean” carbon intensive energy sources, sans other technologies like sequestration (themselves poorly understood by the public (Ansolabehere and Konisky, 2014)), will not solve carbon dioxide induced warming.

Philosophers have debated what this means vis a vis various approaches to moral reasoning, including Parfit’s famous “Harmless Torturers” (Parfit, 1984). Indeed some of the debate about what imperceptible harms require of a moral code has extended to the climate change domain (Vance, 2016; Almeida, 2012; Smith, 2013; Hansson, 1999), yet there appears to be little applied

¹With this analysis a range of interventions have been explored that try to target individual behavior, including a range of “nudges” involving home electricity consumption (e.g., Harding and Hsiaw, 2014).

²Though Leiserowitz et al. (N.d.) report that the percentage of people talking about the issue with friends and family has been increasing over time.

empirical work taking this more pedestrian view, rather than the more sophisticated strategic problem around collective action. Instead, framing things around imperceptible harms might cast a new light on how climate change is a particularly difficult collective action problem: individuals are loosely aware that their actions (strategies) are leading to a particularly negative outcome. The incidental harms perspective brings “awareness” into the standard collective action context. Individuals do not connect their actions on a day to day basis to an outcome.³

Individuals are more aware of collections of imperceptible harms. Put differently, climate change as a problem is produced by groups but not individuals. Behaviorally this is interesting in its own right and bears additional documentation.⁴ This clearly sets up questions about how individuals evaluate the decisions of *other groups* which I turn to next.

2.2 Group behavior: Reciprocity

News reporting on climate change frequently discusses what other countries are doing.⁵ When individuals read this information it sets up the potential for individuals to support certain policies conditional on what they see other countries doing. These comparisons enable the potential for reciprocal relations.

Humans have functionally specific areas of the brain for supporting reciprocal relations (Rilling et al., 2002). Humans are attuned to whether or not others are engaging in cooperative behavior.⁶ Do individuals display patterns of reciprocity when it comes to climate politics? That is, if other countries are working more/less to reduce carbon emissions, will they support their own country

³Additionally, it would be interesting to know more about how individuals respond to competing views of obligations that normative theorists have articulated. Are some closer to a “folk cognition” (e.g., “the golden rule”) or more distant and less accessible to citizens?

⁴For example, what determines what size of group is necessary for individuals to understand their liability? Who is part of this group? How does a collection of individual consumers differ from collections of firms that consumers rely on? Do people understand a focus of regulatory policy on firms, rather than broader individual behaviors, due to it being clearer what a firm’s impact is? How does the collection of individuals into a “country” impact awareness? Or are smaller groups of individuals sufficient to trigger greater awareness?

⁵I am collecting data on this.

⁶Scholars of international relations have long emphasized the role of reciprocity in helping states avoid costly outcomes. While the design of institutions to support reciprocal relationships (e.g., monitoring and enforcement institutions) is central to this process, it is important to remember that individuals (whether they be elite leaders or non-elite voters) also engage in reciprocal behavior.

working more/less?

Recently scholars have been exploring how individual citizens respond to information about how other states act with respect to climate policies (Tingley and Tomz, 2014; Bechtel and Scheve, 2013; Bernauer, Gampfer and Kachi, 2014; Bernauer and Gampfer, 2015). Tingley and Tomz (2014) find an asymmetric form of reciprocity: individuals will reward cooperation but will not increase energy consumption if others increase theirs (i.e., positive but not negative reciprocity). A variety of explanations might account for this, ranging from the relatively low cost context of surveys to a deeper internalization of the fact that carbon emissions are often coupled with emissions of other things that create more localized externalities (e.g., particulate pollution). This suggests that issue linkage between climate change policies and pollution may be salient in facilitating greater effort, even if other countries are laggards. It also highlights the unintended dangers of technologies that deal with pollution but not carbon dioxide (like “clean coal”).

2.3 January 2nd: Goal setting

Many countries and states are setting carbon dioxide emissions reduction *goals*. When individuals set costly, non-binding, goals there are a variety of explanations for why these goals will be met (Locke and Latham, 2002; Hsiaw, 2013). One explanation is that a failure to meet a goal, if it is made public, will lead others to shame and punish them. The recent Paris Agreement has taken this logic to the international level. Individual states set out non-binding yet public goals.⁷

This turn towards “goal setting” sets up a number of questions. What determines these goals? Are they “strident” or likely to be met as a matter of existing economic trajectory? How and when will goals be revised as information about progress is observed? And how will individuals respond to countries meeting or not meeting their goals? Does this depend on the performance of other countries? Germany set very aggressive goals and while it has made substantial progress it is unlikely to meet them (EditorialBoard, 2017).

In a recently fielded survey experiment with Mike Tomz (we do not have the data yet!), we look at how people respond to an experimental vignette describing a country (large or small) that had set out (moderate or strident) goals for the Paris agreement and fails to meet their goal (where they were the only country to fail or many other countries their size failed). We then collected expectations

⁷For a list of goals under the Paris agreement, see <https://www.carbonbrief.org/paris-2015-tracking-country-climate-pledges>.

about the country’s willingness to honor future agreements, impact on prestige, whether individuals in the country would feel personally ashamed, and expectations about whether other countries would introduce sanctions. The turn to non-binding goal setting to reduce carbon dioxide leaves a lot of open questions. Hopefully it will not be too hot out to go for a run on January 2nd.

2.4 Before(?) Behavior: Beliefs and Conspiracies

Beyond taking actions or supporting pro-climate policies, perhaps conditional on the choices of others, individuals also form beliefs about what others think about climate change, and broader narratives—including conspiracies—to help understand complicated scientific and social phenomenon.

2.4.1 Second Order Beliefs

The standard way public opinion scholars study individual beliefs about climate change is to ask survey respondents if they ‘believe humans are causing climate change’ or ‘believe that climate change is happening’. These first order beliefs are very important to know and are well documented. But another way to examine what people believe about climate change is to probe what they believe about the beliefs of other people. In Mildemberger and Tingley (2018) we study exactly these ‘second order’ beliefs. We argue that they are important to understanding how individuals engage in collective action. For example, if someone believes that most other people do not think humans are causing climate change, then they would be less likely to think that these other people would take costly actions to combat climate change (including supporting policies to combat climate change).⁸

2.4.2 Reasoning and Reason Giving

In most public opinion work on climate individuals are not asked to explain their positions. One approach is to ask individuals to explain their positions in the form of an open ended response as part of a survey. For example, Mildemberger and Tingley (2018) investigate the reasons people give for their views by asking respondents to imagine they were either a climate change denier or recognized that humans are causing climate change. One interesting result was that by and large there was common knowledge of explanations. Those recognizing human sources of climate change

⁸Interestingly, we find that on average people underestimate the extent to which others think humans are causing climate change. This said, there is clear evidence of egocentric bias. On average, second order beliefs are a function of first order beliefs.

gave similar explanations for what a climate denier would say as someone who themselves was a climate denier. And vice versa.⁹

The most systematic work in this space involves “deliberative” democracy type efforts (e.g., Hobson and Niemeyer, 2011). Open ended survey responses do not allow for a more systematic probe into the nascent argumentative structure of views on climate. For this reason I have begun using a web based platform for eliciting “structured debates”, www.kialo.com¹⁰. Individuals can fill out pro and con arguments on both sides of a debate, or groups of individuals can be brought together to debate a topic. One unique feature of using structured debate is that individuals can provide evidence, or rebut, particular claims. This allows for multiple layers of reason giving in a structured manner. The structure and content of the debate can then be analyzed.

2.4.3 Conspiracies

The presence of conspiratorial thinking has long been a part of politics. What perhaps is surprising is the extent that people buy in to conspiracies (Oliver and Wood, 2014). And furthermore that people appear to genuinely believe in the conspiracies (rather than say they believe in them for expressive purposes (Berinsky, 2018)). Climate change has not been immune to conspiratorial thinking and insofar as overcoming these beliefs in light of new information requires cognitive *and* motivational resources, this will likely persist (Stahl and van Prooijen, 2018). Consider two examples: ‘climategate’ and ‘chemtrails.’

Climate Gate In November of 2009 the Climatic Research Unit at the University of East Anglia was hacked and email messages by researchers were released that some claimed indicated a grand conspiracy to suppress data suggesting climate changes was not real (e.g., Delingpole, 2009). The scientists involved claimed the emails were taken out of context and reflected standard critical academic exchange. An investigation revealed no evidence of scientific misconduct. Nevertheless, the conspiracy was picked up by mainstream media outlets in addition to more fringe outlets. The events took place while the Copenhagen Summit was meeting and served as a major distraction from an otherwise consensus position that humans are causing climate change. The effect on trust in scientists was palpable (Leiserowitz et al., 2013; Maibach et al., 2012; Nerlich, 2010) and placed

⁹For other work on reason giving about climate change see Tvinnereim et al. (2017).

¹⁰See Chaudoin, Shapiro and Tingley (Working Paper) for a general discussion of the tool and how it can be used for teaching and research.

the event squarely within the conspiratorial lexicon on climate change (Lewandowsky, 2014)

Chemtrails When airplanes fly they produce contrails. Water combines with engine exhaust to produce visible white trails. They have been observed ever since propeller driven airplanes started to be used, and are commonly seen following jet aircraft. To some, these are not contrails but instead are “chemtrails.” The actors and motives in chemtrail conspiracy stories are quite broad (corporations and the government; weather modification and mind control). But as discussed at length in Tingley and Wagner (2017), and previously shown by others (Oliver and Wood, 2014; Cairns, 2016) a non-insignificant percentage of US citizens report believing in the chemtrails conspiracy. The chemtrails conspiracy is also linked to geo-engineering. Geo-engineering, such as solar radiation management, would distribute aerosols in the atmosphere to reflect sunlight and cool down a warming planet (Keith, 2000).¹¹ There is a growing scientific and social scientific literature on this topic. Tingley and Wagner (2017) use the universe of Twitter data and all public Facebook data to show that social media conversation about geo-engineering is dominated by chemtrail conspiracies even though the deployment of solar radiation management tools has never happened. Tingley and Wagner (2017) further document that individuals engaging in chemtrail conspiracies are also more likely to engage in other conspiracies (Benghazi, etc.); a community of conspiracy.

This is important because *if* technologies like solar radiation management are needed¹² then it could be clouded by conspiracy. For example, it would not be spraying aerosols into the upper stratosphere to reflect sunlight and cool down a rapidly warming planet at relatively low cost, but instead further evidence of much deeper and darker plans. Such a conspiratorial foundation will make it difficult for clear thinking about emerging technologies like solar radiation management.

3 Individuals living in Domestic Institutions with Global Problems

Individuals do not live in isolation of domestic political institutions. There are regulations that govern acceptable forms of behavior and economic activities. This has implications for how humans

¹¹For public opinion work on geo-engineering/solar radiation management, see Burns et al. (2016); Mahajan, Tingley and Wagner (Working Paper).

¹²The scientists I speak to on the topic hope that these technologies are not needed. But the lack of mitigation effort requires pro-activity.

are causing climate change, but in doing so this also creates “winners and losers”, just like other forms of policy like trade. Even if policies did not create winners and losers, the impacts of climate change will. Below I (for now) largely bracket the important work on domestic institutions and *adaptation* (Javeline, 2014; Hall and Persson, 2017). Instead I focus on a different set of questions relating to the impacts of climate change and climate policies on individuals that are mediated through domestic institutions.

3.1 The Political Economy of Heterogeneous Climate Change Exposure

The impacts of climate change will not only be heterogeneous across the world, but it will also be heterogeneous within a country. This within country heterogeneity can arise in several ways. First, some areas may be more exposed to extreme storms. Other areas that will see more dramatic temperature spikes. This naturally raises a host of political economy issues.

On the front end are ongoing debates about how to deal with insurance. The politics of flood insurance schemes, for example, continue to be a mess in the United States and elsewhere (Michel-Kerjan and Kunreuther, 2011; Walsh, 2017).¹³ Crop insurance might face a similar fate (Miranda and Glauber, 1997; Rosenzweig et al., 2002). Of course insurance markets are not helpful for individuals killed by climate shocks, many of whom will be the uninsured poor and elderly (Klinenberg, 2015; Stott, Stone and Allen, 2004).

On the back end, what happens after a disaster or temperature shock. Who gets assistance, how fast does it arrive, how long does it stay around, and what conditions are put on assistance? Parts of the political science literature has been more focused on the effects of disaster assistance on voting (e.g., Chen, 2013) or on how people evaluate politicians based on their response. But this sets aside the disaster assistance process itself, which includes both political priorities and complicated bureaucratic processes (e.g., Sobel and Leeson, 2006). It is hard to look at the differential responses to Puerto Rico versus Texas and Florida during the 2017 hurricane season and think that political priorities are not at play. Even if they are not, and the difference was entirely logistically driven, this is the fodder of conspiracy and so are politically salient regardless (here from a more liberal direction) of the real explanation.¹⁴

¹³At some point one wonders if such schemes become so broke that they no longer generate moral hazard dynamics because no one will expect that they will pay out.

¹⁴An interesting ongoing debate considers voter responses to natural disasters. Some argue that voters irrationally

3.2 The Political Economy of Heterogeneous Regulatory Exposure

Humans are causing climate change, but does that mean governments should regulate industries that are carbon intensive (e.g., coal) when this could put people out of work? To me this is the core question that few want to explicitly take on. And interestingly, it has deep parallels to discussions about trade liberalization. Free trade (like a clean climate) might be welfare enhancing at the aggregate level, but that does not mean all individuals will be better off. This is why for trade there has been a long history of pursuing a project of “embedded liberalism” (Ruggie, 1982): allow for free trade but compensate the losers.

In the United States and elsewhere this led to various government led schemes like the US’s Trade Adjustment Assistance (TAA Feenstra and Lewis, 1994; Scheve and Slaughter, 2007). Consider instead what I am calling “Climate Adjustment Assistance” (CAA). Federal money designed to help workers who are hurt by regulations that seek to decrease carbon dioxide output. Individuals working in coal mines should not be “blamed” for climate change. Indeed, for many years they helped to power the livelihood of people working in other industries, and still do to a certain extent. So if a country wants them to lose their job, this should come with some form of compensation.

And there is bipartisan support for CAA. In 2016 I asked the following question on the Cooperative Congressional Election Study (fielded in October).

Congress could consider many important bills in the next two years. If you were in Congress would you vote FOR or AGAINST the following? Climate Adjustment Assistance: Provides education assistance and retraining to workers who have lost their jobs as a result of reductions in greenhouse gas emissions.

Strong majorities of Democrats and Republicans supported CAA.

punish incumbents for things they could not possibly control, such as a disaster (Achen and Bartels, 2004; Malhotra and Kuo, 2008). Ashworth, Bueno de Mesquita and Friedenberg (2018) argue disasters are opportunities for voters to learn about the competency of incumbents. Competency can be evaluated in terms of disaster preparedness. High quality incumbents are prepared, low quality incumbents are not. If a disaster strikes and the city was prepared then the incumbent is re-elected. But if not, then citizens learning their incumbent is not high quality. Hence an incumbent’s exposure to environmental disasters only comes with downside risk. This reconciles in a rationalist framework earlier observations that voters irrationally punish incumbents. My sense is that there are opportunities for empirical work in this regard.

In the spring of 2017 I fielded a survey experiment via the Americabarometer¹⁵. Half of the sample received the question above, the other half was told that people lost their jobs due to *policies* designed to reduce emissions.¹⁶ I did this because I wanted to make sure that people understood that reductions in greenhouse gas emissions were coming from policy decisions rather than other factors, like technological changes or economic effects (e.g., low natural gas prices).¹⁷

The differential wording had no impact and again there were strong majorities in both parties supporting CAA. While encouraging, does this mean domestic political opposition to greenhouse gas regulations can be compensated and no longer obstruct progress on the issue?

Unfortunately, public support will not be the main impediment. Instead there are a set of political and economic issues. First, even if these “embedded liberalism” schemes worked, it does not mean people will use them. For example, a recent story about worker retraining in coal country indicated people are not taking advantage of these opportunities because they think the Trump administration will bring their jobs back (Reuters, 2017). Most economists do not expect Trump will make this happen, but their view is not necessarily the one from the front porch.

Second, there are a whole host of challenges to these schemes even working. TAA was/is not exactly a success story. It was chronically underfunded. But even with proper funding the core component of worker “retraining” presupposes that a) industries exist in a local area that are *viable* to join and b) that someone (perhaps close to retirement) can be retrained. More vexing still is the realization that the impacts of individuals in a core industry losing their jobs creates ripple effects on the broader local economy, including service jobs not directly impacted by regulations (or trade exposure in the TAA case). For this reason some scholars of TAA focused attention on investing in communities rather than just on people (Rosen and Coalition, 2008; Schoepfle, 2000). Of course broader community investment programs in coal country will be costly. And rewards to investments in basic education or other community investments will not see an immediate return and hence are less politically attractive.

¹⁵<https://www.vanderbilt.edu/lapop/>.

¹⁶Congress could consider many important bills in the next two years. If you were in Congress would you vote FOR or AGAINST the following? Climate Adjustment Assistance: Provides education assistance and retraining to workers who have lost their jobs as a result of policies designed to reduce greenhouse gas emissions.

¹⁷My thanks to Noam Lupu for the suggestion and access to the Americabarometer.

3.3 Government Regulatory Functioning in a Warming World

Individuals live in societies where governments provide services. One of those services is regulations. Regulations can take a variety of forms and most debate around climate change and regulations is whether the government should be regulating the release of carbon dioxide. However, a different perspective on regulations is what determines the effectiveness of a regulatory agency and its agents? The typical way political scientists and others approach this question is to posit various political or economic incentives/constraints faced by bureaucratic agents (Scholz and Wood, 1998; Carpenter, 2014).

But what about environmental constraints? Simply put, if your regulatory job has you working and traveling outside and it is hot, this could impact performance just as the heat impacts job performance more generally (Pilcher, Nadler and Busch, 2002). To investigate this Obradovich, Tingley and Rahwan (2017) use micro-level data on food inspections over time for the United States. The data include not just inspections but also data on whether, conditional on an inspection, a violation occurred. They find that the probability of inspection decreases as it gets hotter. Coupled with data on violations this identifies a regulatory gap as the likelihood of a violation is increasing in temperature. We also identify other regulatory gaps, such as traffic stops and vehicle crashes. As such, climate change might be impacted by government regulations, but there is some evidence that climate change could impact day to day governance as well. In the case of food safety violations, people might spend less time sitting on the front porch and more time sitting in the bathroom.¹⁸

3.4 Where should I live?

“I will find a city find myself a city to live in find a city find myself a city to live in.” (Talking Heads, “Cities”, 1979, *Fear of Music*)

How will cities and communities respond to climate change? Are the threats too distant and uncertain to motivate change? The collective action problem too extreme in light of nation-states having a hard time pulling together a coordinated and aggressive response? Especially since Trump’s election, but even prior to this, some cities (and some US states) have been taking unilateral steps to combat the sources and effects of climate change. What does this portend for individual citizens?

¹⁸Of course there are more explicit ways that climate change can impact other areas of government that have less immediate impacts on individuals. For example, the US military’s ongoing concerns about climate change stem from a recognition that climate change will impact their abilities ranging from logistics to direct force projection.

First there are demand side considerations. In the United States there are well known climate stereotypes. San Diego is always pleasant, Seattle is often cloudy, etc.. Washington DC is humid because it is in a swamp, and despite certain political aspirations the summer heat index is unlikely to get better. Projecting forward, and already on the minds of individuals exposed to extreme weather or temperature, is where to live. The Sun Belt could become the Burn Belt. In Phoenix it was so hot in 2017 that flights had to be cancelled and some speculate whether the city will at some point become uninhabitable (deBuys, 2013; Alder, N.d.). At some point there may be climate induced migration even in the United States which is an advanced developing economy. And of course this will become an increasing issue internationally (McLeman and Smit, 2006; Reuveny, 2007; Black et al., 2011).

Supply side considerations center around technological and policy changes. Technologically cities are already exploring how to avoid heat sink's beyond rooftop gardens. Some cities, like Los Angeles, are experimenting with reflective pavement for which there is broader interest (Kaloush, 2007). While researchers exploring solar radiation management generally oppose the use of the technology for localized deployment (in part because it could lead to the weaponization of the method), cities may be faced with the urgent need to cool down the temperature more systematically and solar radiation management would be an option. A number of cities and states are adopting policies and engaging in various forms of advocacy.¹⁹ US states (with California leading for some time now, but others including Massachusetts and New York and potentially New Jersey joining the mix) are also becoming more and more active. This highlights how national policies create incentives for domestic political actors to participate in transnational action (e.g., Andonova, Hale and Roger, 2017; Hale, 2016).

4 Conclusion

Climate change, and climate change policies, have complicated economic, political, and social impacts. This overview paper tries to unpack how individuals interface with the issue.

Humans are causing climate change but on a day to day basis it is impossible for any individual to see the impact of their actions. Individuals can better understand the connection in the abstract at a group level. Our “country” produces X amount of carbon dioxide per year and maybe “we”

¹⁹Some of these efforts are coordinated internationally, like the C40 organization.

should do something about our emissions. Other countries should too, and if other countries cut emissions more we should do more. We can set some goals to help us, but New Years Day quickly turns into January 2nd. And what if others do not meet their goals?

Beyond making decisions about what policies to support, people can also have beliefs about climate change. Do other people think humans are causing climate change? Do they give the same reasons I think humans are causing climate change? And oh wait, did you see that Tweet about how all this climate change stuff is really to let powerful liberals control us? All of these epistemic considerations can vary in sophistication and evidentiary basis. But they can provide a window into how individuals think about a complicated set of issues.

Of course, individuals live within societies. Political institutions will in part govern who gains and who loses from efforts to reduce carbon dioxide emissions. But as the effects of climate change become felt more and more, the salience of ex ante (adaptation/disaster preparation) or ex post (disaster compensation/rebuilding) investments will increase. Furthermore, the effectiveness of day to day governance capacity may be compromised. In light of these things climate change is bringing to the fore choices over where to live and what types of technologies should be on offer to prevent climate induced shocks.

With this framework in mind, I have left out some core considerations about climate change from the front porch. While discussed briefly, I have not put the core role of pollution via particulate matter at the center. In part because others have done a great job at this (Ansolabehere and Konisky, 2014). A second theme I have not developed is the politics of adaptations to climate change that are themselves likely to be bad climate change inducing (Isaac and Van Vuuren, 2009). This would be the politics of air conditioning and other cognate technologies that lead to changes in energy consumption. And as they are energy intensive they will be less available to those with fewer resources.

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