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CREATING NORMS TO GOVERN EARTH'S ATMOSPHERE

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CLIMATE CHANGE AND HUMAN RIGHTS:
CREATING NORMS TO GOVERN EARTH'S ATMOSPHERE

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DEPARTMENT OF PHILOSOPHY

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ABSTRACT

Global climate change is one of the most pressing threats to humanity in the 21st century. Not only is evidence of this warming unequivocal, scientific consensus holds that it is the result of human activity. If left unchecked, climate change will result in, at best, serious harms to many and, at worst, catastrophic harms to all. In the face of this threat, the international community has failed to agree on a set of norms for addressing the problem. This stalemate centers on three general questions: (1) What is the harm brought by climate change?; (2) Who is responsible?; and (3) What are the obligations borne by responsible parties?

My dissertation answers these questions, offering an alternative to current attempts from legal and philosophical frameworks. Finding current legal structures limiting, my discussion operates primarily in the moral domain. I focus on "rights-based approaches" rather than approaches premised on principles of distributive justice, what I call "equity-based approaches." The human rights framework I provide grounds human rights in the Capabilities Approach, which has been used extensively in development literature. This allows my argument to employ a vocabulary more sensitive to individual vulnerabilities and geographical diversity, while moving beyond mere material or economic provision.

In addressing the primary issues of harm and responsibility vis-à-vis climate change, my argument goes as follows. Following an introductory discussion of the problems posed by climate change, the politics of the divide between the Global North and Global South on climate policy, and existing philosophical approaches, I offer an argument for an interest-based account of human rights grounded in the

Capabilities Approach. Using recent work by Breena Holland, I argue that this approach yields a right to a functioning and sustainable environment. Applying this framework, I argue that the impacts of unabated climate change clearly violate this right. Additionally, I defend the claim that this discussion applies to both current and future generations.

Having addressed the harm of climate change, I offer an examination of the resulting responsibility and obligations. Highlighting the nature of climate change as an "aggregative harm," I note the difficulties involved in applying typical individual and collectivist paradigms for moral responsibility to the case of climate change. Drawing from Tracy Isaacs's work on responsibility in collective contexts and focusing on forward looking obligations, I argue for a four-fold taxonomy of differentiated responsibility: (1) the obligations of states; (2) the obligations of non-state collectives (e.g. corporations, NGOs); (3) the obligations of individuals as citizens; and (4) the obligations of individuals as members of the private sphere. These distinctions allow us to hold individuals morally accountable while still recognizing as primary the need for collective action.

INTRODUCTION

> *"Today 56 newspapers in 45 countries take the unprecedented step of speaking with one voice through a common editorial. We do so because humanity faces a profound emergency. Unless we combine to take decisive action, climate change will ravage our planet, and with it our prosperity and security. The dangers have been becoming apparent for a generation. Now the facts have started to speak: 11 of the past 14 years have been the warmest on record, the Arctic ice-cap is melting and last year's inflamed oil and food prices provide a foretaste of future havoc. In scientific journals the question is no longer whether humans are to blame, but how little time we have got left to limit the damage. Yet so far the world's response has been feeble and half-hearted."*[1]

These are the opening sentences of a common editorial published in newspapers throughout the world on the opening day of the 15th Conference of Parties (COP15) of the United Nations Framework Convention on Climate Change (UNFCCC) held in Copenhagen in December 2009. The editorial made clear the urgent need for collective action in the face of the "profound emergency" presented by climate change, and it seemed the world was ready to take such a step. COP15, or the "Copenhagen Summit," brought together not only the usual diplomats and negotiators, but also, in an unprecedented move, included the participation of 120 heads of state. Hope ran high. Ultimately, however, the Copenhagen Summit failed to produce any substantial agreement. While non-binding pledges for reductions and a commitment to future dialogue were made, the result was viewed by most as a disappointment.

[1] "Copenhagen Climate Change Conference: 'Fourteen Days to Seal History's Judgment on this Generation'," *The Guardian*, December 7, 2009, p. 1; available on-line at < http://www.guardian.co.uk/commentisfree/2009/dec/06/copenhagen-editorial> (Accessed 1 December 2010).

Two years on from Copenhagen, the facts of the editorial still ring true. The summits since, COP16 in Cancun and COP17 in Durban, have shown few signs of progress toward meaningful collective action, emphasizing the world's feeble response. The main changes of context are for the worse: the window for action has shortened and impacts are now being felt more acutely. Global climate change remains one of the most pressing threats to humanity in the 21st century. Evidence of global warming is unequivocal, and scientific consensus holds this warming to be almost certainly anthropogenic, resulting from increased greenhouse gas (GHG) emissions caused by industrial activity. If climate change is left unchecked, climate modeling shows at best an increased risk for serious and life-threatening harms for individuals in many countries—particularly those who are already in the most vulnerable locations—and at worst catastrophic harms across the entire planet. Given that human activity affects the global climate for better or worse, it is important to establish a recognized system of international norms for addressing the current threat from climate change.

However, as demonstrated by the failures of the Kyoto Protocol and the recent series of climate negotiations from Copenhagen to Durban, there is no existing consensus within the international community about what norms ought to be used. While most states agree that action is necessary, they disagree about who bears responsibility for addressing climate change and what that responsibility means in terms of policies related to mitigation (e.g. the reduction of GHG emissions) and/or adaptation (e.g. the development of new technologies to make populations less vulnerable to the effects of climate change). Generally, the developing countries of

the global South argue that the developed nations of the global North emit GHGs disproportionately and bear historical responsibility for present GHG levels. The countries of the North focus, on the other hand, less on historical responsibility and more on the need for all countries to move forward in a responsible manner, which they take to require limits on developing countries' GHG emissions. However, the North's position is often taken to be purely self-interested, since a primary reason given by developed nations for limiting the South's emissions is that without emission limits the countries of the North would be at an economic disadvantage.[2] This stalemate comes down to the inability to agree on two primarily ethical questions: Who is morally responsible, and, given this responsibility, what obligations do responsible parties bear? The differing responses of the North and South reflect differing ethical viewpoints.

This dissertation provides a moral framework for addressing these two central questions, which could then be used to evaluate climate policies as to their justness. In crafting my argument, there are three important facts to keep in mind. First, I am engaging the issue solely from an anthropocentric perspective. This is a conscious methodological choice made from the start, though it will quickly become clear this is due to my interest in using human rights as a tool for analyzing climate change. It is worth noting, however, that my framework is not necessarily

[2] This is most explicit in the Byrd-Hagel Resolution passed unanimously by the United States Senate in 1997, which set forth the conditions for the United States to become a signatory to any international climate treaty. In this resolution, the Senate made it clear that their rejection of the (at the time) proposed Kyoto Protocol was based on the fact that "the disparity of treatment between Annex I Parties [the global North] and Developing Countries and the level of required emission reductions, could result in serious harm to the United States economy, including significant job loss, trade disadvantages, increased energy and consumer costs, or any combination thereof" (United States Senate, *Byrd-Hagel Resolution*, S. Res. 98, 105th Congress, 1st Session).

incompatible with claims for more demanding obligations or limits on human activity that might arise from non-anthropocentric approaches. With its human rights focus, my account only sets minimal thresholds related to harm stemming from climate change and thus offers obligations related to those thresholds. Such an approach does not preclude the possibility we have other reasons (moral or prudential) for setting more stringent demands on human activities. Second, my analysis is conducted from a moral perspective. While appeals to legal and political matters might appear as examples to aid in understanding the moral issue at hand (or to help show how some moral idea might be manifested in reality), I am primarily interested in the underlying moral norms. I am therefore generally not concerned about the feasibility of my framework within current legal and political structures, since it might simply be the case that those structures perpetuate morally problematic inequalities and ought to be changed. Third, the framework offered in the proceeding chapters is just that: a framework. I do not intend to provide a complete application of the methods of analysis offered within this project. Consequently, I will not provide a specific listing of all existing obligations; instead offering a general typology of obligations. As will become clear, to engage in a complete application of my framework and identify all the obligations possessed in light of it would require a collaborative effort on the part of various experts across numerous domains. I simply offer an approach that could be used in future dialogue regarding climate change and global environmental regulatory policy.

In seeking to identify moral responsibility and any resultant obligations arising from that responsibility, it is important to first clearly identify the harm for

which responsibility is being determined. Consequently, the bulk of the dissertation seeks to detail the moral issues connected to climate change, offering a way to clearly identify and articulate the harm it poses (at least from a moral perspective). Chapter 1 will offer a general overview of the core issues related to climate change and historical attempts by the international community to address it. I use this discussion to identify the underlying political and ethical issues related to climate change. Here, the divide between the global North and South will be made clear through an examination of recent data related to GHG emissions, which point to a *prima facie* case for placing responsibility squarely on the countries of the developed North. Having provided the general background and isolated the relevant issues, I move to recent literature addressing responsibility related to climate change. In discussing the literature, I isolate two strands: what I term "equity approaches" and "rights-based approaches." The former type analyze the issue as a matter of distributive justice, treating it predominately as an economic issue. I reject this approach due to its inability to address the daily needs of individuals in diverse geographical areas, favoring recent efforts to offer rights-based approaches as the best way forward.

Following this general orientation, Chapter 2 explores the applicability of rights-based approaches to environmental matters and whether the current versions can adequately respond to the problems posed by climate change. The opening section of the chapter offers a general account of human rights, identifying them as universal moral rights and arguing for an interest theory of rights, based on the work of Joseph Raz. With this in hand, I then examine two different rights-based

approaches in the literature: (1) that climate change violates a generic environmental right; and (2) that climate change violates other fundamental basic rights (e.g., life, health). I argue that the first approach has trouble identifying the scope of resulting duties and leaves us with the need to identify what interests are harmed by climate change. This points us toward the second account, which highlights specific rights and consequently specific interests that are harmed by climate change. However, as I show, the second approach, in its current incarnation in the literature, only provides a partial account of the relevant rights and interests. In response, I offer an alternative account linking human rights and the environment that provides a more complete picture of the fundamental interests involved. In doing so, I turn to the Capabilities Approach, as championed by Martha Nussbaum. This move allows one to tap into a wealth of existing literature on human development, which could prove useful in future applications of my account. Invoking recent work by Breena Holland integrating the environment into the Capabilities Approach, I show how this approach yields an environmental meta-capability and a corresponding right to a sustainable ecological capacity that can give a more complete account of the link between climate change and human rights.

With my account of human rights in place, Chapter 3 turns to the task of offering a scheme for identifying human rights violations stemming from climate change. Since rights violations are understood through capabilities, my presentation here begins by offering a method for determining violations of the capabilities generally, and then moves into a presentation of how to determine violations of individuals' environmental meta-capability specifically. With respect to violations

of the environmental meta-capability, I offer two approaches: one focusing on particular impacts of climate change and one focusing on countries' overall ability to respond to climate change. With clear methods for determining rights violations (i.e. identifying actual instances of harm), the chapter moves to a brief presentation of various scientific data and issues in climate modeling necessary for applying those methods to the case of climate change.

Chapter 4 takes up the actual evaluation of climate change to argue that it can be legitimately seen as violating individuals' environmental meta-capability, and thus their human rights, under certain climate scenarios. In identifying future climate scenarios that result in rights violations, I initially limit my focus in this chapter to the time horizon of the current generation (i.e. the present to approximately 2100 CE) to avoid some philosophically contentious issues surrounding the rights of currently non-existent, future persons. After establishing that the impacts of climate change violate human rights in the current generation, I turn to the question of future generations (i.e. 2100 CE and beyond). Assuming the negative impacts of climate change will likely increase in future generations, I focus solely on philosophical reasons for accepting the rights claims of non-existent future persons as legitimate. In doing so, I draw heavily on existing work by Joel Feinberg and Ernest Partridge, as both have offered significant defenses of the rights of future persons, making particular use of Partridge's identification of four types of objections to the rights of future persons: indeterminacy, non-actuality, incapacity, and temporal remoteness. I address each of these, rejecting them as morally irrelevant. I then note that one might accept the legitimacy of future persons' rights

while still arguing that temporal distance requires future persons' rights claims to count less than the current generation's claims, a practice known as discounting. I close the chapter using recent work by Simon Caney to argue that the conditions related to climate change, and action sufficient for preventing harmful climate change, are such that it would be wrong to engage in discounting in this particular context. Thus, in addition to identifying morally unacceptable climate scenarios, my account also adequately responds to objections typically faced when considering future generations.

Having completed my analysis of the harm related to climate change (both what it is and how to identify it), I turn, in Chapter 5, to the question of responsibility for this harm and any resultant obligations for current or future action. Here, I offer a discussion of the troublesome nature of climate change as an "aggregative harm," that is, as a kind of harm that no single individual or act, in and of itself, can cause. Given climate change's aggregative nature, determining moral responsibility for climate change becomes a contentious matter. Some argue that any individual's GHG emissions considered in isolation cannot result in identifiable harm, thus no attribution of responsibility to individuals is allowed. Instead, responsibility is best attributed to states. However, this purely collectivist approach has come under attack as most views on collective responsibility require a discernable collective acting with an intent to harm—something difficult to identify in this case. To address this, I present recent work by Tracy Isaacs on collective and individual responsibility, offering her "two-level" theory of moral responsibility for situations requiring collective action.

Applying the theoretical considerations of Chapter 5, along with my previous discussion related to the harm of climate change, I argue, in Chapter 6, for the identification of two distinct levels of moral responsibility: (1) collective responsibility borne by states and corporations, and (2) individual responsibility borne by individuals based on their roles as citizens and members of the private sphere. While many discussions of responsibility focus on the past, my analysis looks squarely to the future, focusing on what Isaacs calls responsibility as obligation. I argue that states and corporations have moral obligations to not bring into being any future climate scenarios that would violate individuals' human rights, and individuals have obligations to do what they can as citizens, consumers, and employees to help states and corporations act in a morally appropriate manner. In closing the chapter, I address an epistemic objection to my account related to whether one can bear moral obligations without the belief (or knowledge) that anthropogenic climate change is occurring. I respond to this objection by an appeal to testimonial knowledge from experts and a corresponding need for "green education."

The political stalemate highlighted at the beginning of this introduction pointed to a need to resolve normative questions related to responsibility. Moreover, in order to address moral responsibility, we need to have a clear understanding of the harm posed by climate change. With the conclusion of Chapter 6, this project will have provided a framework that can address both issues. Consequently, moving forward, we could apply this framework to evaluate the policies offered by the North and South in an effort to identify those that are just. By addressing this normative

aspect of climate policy, we can provide strong reasons for preferring one policy to another. Ultimately, my framework would side with the policies of the South, but in doing so, it would also provide a helpful new vocabulary for trying to break the deadlock between the North and South.

CHAPTER 1
The Political and Ethical Challenges of Climate Change

1. The Problem of a Warming World

Global climate change is one of the most pressing issues facing humanity in the 21st century. As the most recent assessment report of the Intergovernmental Panel on Climate Change (IPCC) makes clear, "[w]arming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level."[1] From 1901-2000, this warming resulted in a 0.6 ^{o}C increase in average global surface temperature, and current climate projections show an additional increase between 1.1 and 6.4 ^{o}C over the course of this century.[2] The IPCC and other reports have shown that this warming has already lead to changes in sea levels and weather patterns yielding negative impacts on individuals, in addition to placing numerous plant and animal species under threat.[3] More troubling is the fact that these changes in the climate are occurring at historic rates. Taken together, these realities make potential impacts of any future warming extremely worrisome.

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[1] IPCC, *Climate Change 2007: Synthesis Report – Contribution of Working Groups I, II, and III to the Forth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Core Writing Team, Rajendra K. Pachauri, and Andy Reisinger (Geneva: IPCC, 2007), 30; available on-line at <http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm> (Accessed 17 November 2010).

[2] *Ibid.*, 30 and 44-45. For an explanation of the different scenarios used in climate projections, see the box on the bottom of p. 44. The scenarios are based on different development pathways and levels of greenhouse gas (GHG) emissions. See also my more detailed discussion of climate scenarios and projections in Chapter 3.

[3] For an excellent short summary of some presently observable impacts of climate change, see James Garvey, *The Ethics of Climate Change: Right and Wrong in a Warming World* (New York: Continuum, 2008), 8-12; *cf.* IPCC, *Climate Change 2007: Synthesis Report*, 30-33. See also my more detailed discussion of the impacts and harms of climate change in Chapter 4.

This concern is increased by the IPCC's more important claim that this warming is very likely anthropogenic, due to significant increases in greenhouse gas (GHG) emissions.[4] Given that GHGs can remain in the atmosphere for centuries, the actions of the past and our current actions will have profound effects on future generations.[5] Increased emissions (coupled with emissions from the past still in the atmosphere) will more than likely lead to temperature increases on the higher end of projections. This could prove devastating for many parts of the world. Michael Mann, a leading climatologist whose work has featured significantly in IPCC reports, captures the scope of possible negative consequences succinctly:

> These changes in climate are likely to have profound impacts on ecosystems, human health, water resources, agriculture, and the basic infrastructure that supports modern civilization. On balance, impacts are likely to be harmful, rather than beneficial, and include a greater tendency for drought and loss of water resources in some regions, and increased spread of infectious disease. These additional stresses on society could, in turn, lead to greater conflict.[6]

However, actions taken now and in the future through mitigation (i.e., reduction of resource inputs and emissions per output), adaptation (i.e., the reduction of vulnerability to the impacts of climatic changes), or some combination of both could

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[4] IPCC, *Climate Change 2007: Synthesis Report*, 38-41. The IPCC's use of "very likely" expresses a greater than 90% probability that the current warming has resulted due to human activity through GHG emissions. For an explanation of the IPCC's treatment of uncertainty, see p. 27.

[5] For example, carbon dioxide (CO_2) which accounts for 70% of GHG emissions, has a typical lifetime of hundreds of years, while other GHGs range from as little as 12 years (methane) to 50,000 years (some perfluorocarbons); for a listing of the lifetimes of the primary GHGs, see Table 2.14 in IPCC, *Climate Change 2007: The Physical Science Basis - Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Susan Solomon, Dahe Qin, and others (Cambridge: Cambridge University Press, 2007), 212-213; available on-line at <http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm> (Accessed 24 November 2010).

[6] Michael Mann, "Do Global Warming and Climate Change Present a Serious Threat to Our Welfare?" *Social Philosophy and Policy* 26, no. 1 (2009), 207.

reduce the potential for serious harm.[7] What is clear is that regardless of the course of action we take, human activity will affect the global climate, and without any action, the possibility for negative impacts increases.

Unfortunately, climate change is a global problem that cannot be addressed by a single country (or even a handful of countries). Mitigation by a single country would not be enough to fully protect its citizens, since GHG emissions disperse throughout Earth's atmosphere and collectively affect all the planet's inhabitants. What is worse is that countries with the greatest ability to act, or whose reductions would be the most significant, are among the least vulnerable. According to a recent study by J. Timmons Roberts and Bradley Parks, the five states most vulnerable to climate disasters in terms of death when adjusted for population (Mozambique, Sudan, Ethiopia, Honduras, and Bangladesh) have rates of death ranging from 5.55 to 1.23 people killed by climate related disasters per thousand, compared to the United States' rate of 0.03 killed per thousand.[8] When we take these same countries and compare their GHG emissions in 2005 (the last year of complete GHG data), the five countries identified by Roberts and Parks produced a combined 378 metric tons of CO_2 equivalent ($MtCO_2e$) and 0.99% of the total world emissions, while the

[7] Mitigation generally consists of the general reduction of GHGs emitted and/or the enhancement of carbon sinks (natural or artificial) that remove CO_2 from the atmosphere. Examples of adaptive actions include the replacement of temperature sensitive plants with more shock resistant ones or implementation of shore protection measures (e.g. improved seawalls) to reduce vulnerability to rising sea levels.

[8] J. Timmons Roberts and Bradley Parks, *A Climate of Injustice: Global Inequality, North-South Politics, and Climate Policy* (Cambridge, MA: The MIT Press, 2006), 76-81. In this study, Roberts and Parks consider data related to major hydrometerological disasters, such as windstorms, droughts, floods, and heat waves.

United States produced 6,900.9 $MtCO_2e$ and 18.26% of the total world emissions.[9] Thus, mitigation only on the part of Roberts and Parks's five most vulnerable countries would do little reduce their vulnerability to climate change, without significant GHG reductions from larger emitters like the United States. Additionally, countries listed throughout Roberts and Parks's study as most vulnerable to climate disasters generally lack the infrastructure and economy to develop the adaptive capacities necessary to reduce their vulnerability without significant emission reductions by other countries. Consequently, climate change presents a clear harm and raises questions about the responsibility for that harm, with the evidence pointing to a *prima facie* case for a moral obligation for large emitters to reduce their emissions protecting vulnerable countries.

Not only is action required by the larger emitters, they must act in concert. Without binding international agreements, it could be in a country's self-interest to not reduce GHG emissions, particularly if its risk from future climate change is low. In such cases, if others imposed GHG reductions, a country that does not make reductions might gain an economic advantage in the short and mid-term, while focusing on developing adaptive technologies to protect its citizens in the long-term. However, any nation acting in that manner would face a difficult challenge, as its attempts at adaptation might not keep pace with the impacts of climate change. If adaptive capacity were outstripped, that state would face significant harms that could

[9] *Climate Analysis Indicators Tool (CAIT) Version 9.0* (Washington, D.C.: World Resources Institute, 2011); available on-line at <http://cait.wri.org/cait.php> (Accessed 16 February 2012). This newest version of CAIT released in December 2011 includes emissions data and other relevant indicators related to climate change through 2008. However, the data for 2006-2008 is limited to only CO_2 emissions, whereas the data for 2005 includes all GHGs (CO_2, CH_4, N_2O, HFC, PFC. And SF_6). Consequently, I use the 2005 data, as it offers a more complete picture of GHG emissions.

have been avoided through earlier joint action with other countries. Consequently, collective global action is needed. As forcefully expressed in the Forward to the 2010 World Development Report, the need for international consensus and agreement is essential: "No country is immune. No country alone can take on the interconnected challenges posed by climate change, including controversial political decisions, daunting technological change, and far-reaching global consequences."[10] Given the interconnected nature of climate change, and the fact that no matter how humans behave we will have some effect on the Earth's climate, positive or negative, it is important to develop a set of international norms to determine how and by whom the Earth's thermostat ought to be controlled.[11]

2. "Climate Change", "Global Warming", and GHGs: Clarifying Terminology

Before advancing my discussion any further, it is important to make a few clarifications regarding terminology. To start, I draw from Stephen Gardiner, who notes that, "[p]otential confusion about the climate-change problem begins even with the terms used to describe it: from *greenhouse effect* to *global warming* to the more recently favored *climate change*."[12] The term greenhouse effect is less problematic than the other two, as it is merely a scientific term for the process that results in

[10] World Bank, *World Development Report 2010: Development and Climate Change* (Washington, D.C.: The World Bank, 2010), xiii; available on-line at <http://siteresources.worldbank.org/INTWDR2010/ Resources/5287678-1226014527953/WDR10-Full-Text.pdf> (Accessed 17 November 2010).

[11] The notion of "controlling Earth's thermostat" comes from journalist Jeff Goodell, whose recent book has brought public awareness to humans' ability to control Earth's climate through geoengineering. See Jeff Goodell, *How to Cool the Planet Geoengineering and the Audacious Quest to Fix Earth's Climate* (New York: Houghton Mifflin Harcourt, 2010).

[12] Stephen M. Gardiner, "Ethics and Global Climate Change," *Ethics* 114, no. 3 (2004): 555-600; reprinted in *Climate Ethics: Essential Readings*, eds. Stephen M. Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010), 3-35 (page citations are to the reprint edition). The quote given appears on p. 4.

increased surface temperature due to GHGs that results in both global warming and climate change, and without which the surface temperature on Earth would not be able to support life.[13] The terms global warming and climate change, however, are the source of confusion and problems since they are often used interchangeably and assumed to refer to the same problem. However, as a recent study from Britain has shown, public conceptions of these terms diverge, with members of the general public treating "global warming" to refer to heat-related impacts, human causes, and the greenhouse effect, while taking "climate change" to refer to more varied impacts, past events, and natural causes.[14] Consequently, it is necessary to identify the primary problem facing humanity and how these terms relate to it.

Global warming is a term that, at least in a technical sense, refers solely to the increase in global surface temperatures that is the result of increased concentrations of GHGs in the Earth's atmosphere. However, taking this as the primary problem facing humanity misrepresents the issue. Gardiner highlights three reasons why defining the issue solely in terms of increased temperatures is problematic: (1) "…considered in isolation, there might be no particular reason to prefer the world as it is now to one several degrees warmer"; (2) the primary concern of scientists is that global warming puts extra energy into the earth's climate system, disrupting the

[13] Referencing John Houghton's work, Gardiner summarizes this mechanism in the following manner: "Some atmospheric gases (called greenhouse gases, or GHG) have asymmetric interactions with radiation of different frequencies: just like glass in a conventional greenhouse, they allow short-wave incoming solar radiation through but reflect some of the earth's outgoing long-wave radiation back to the surface. This creates 'a partial blanketing effect,' which causes the temperature at the surface to be higher than would otherwise be the case" (Gardiner, "Ethics and Global Climate Change," 4). For Houghton's explanation of the greenhouse effect, see John Houghton, *Global Warming: The Complete Briefing*, 4th edition (Cambridge: Cambridge University Press, 2009), 10-21.

[14] Lorraine Whitmarsh, "What's in a Name? Commonalities and Differences in Public Understanding of 'Climate Change' and 'Global Warming'," *Public Understanding of Science* 18, no. 4 (2009): 401-420.

current climatological and ecological equilibrium, and creating an imbalance that is "occurring at an unprecedented rate" for which "any equilibrium position is likely to be thousands, perhaps tens or hundreds of thousands, of years off, and that existing species are unlikely to be able to adapt quickly and easily under such conditions"; and (3) it is possible that increases in GHGs and global temperatures could lead to drastic cooling (particularly due to changes in ocean levels that could shut down the system that circulates ocean currents, which distribute heat around Earth) and this cooling could create the same problematic imbalance noted in (2).[15] Thus, by only addressing a single component of the complex phenomena involved, the term global warming fails to fully capture the entire scope of the problem facing humanity today.

This bring us to the more inclusive term climate change, which the IPCC defines in the following manner:

> Climate change refers to a change in the state of the *climate* that can be identified (e.g., by using statistical tests) by changes in the mean and/or variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or *external forcings*, or to persistent *anthropogenic* changes in the composition of the atmosphere or in *land use*.[16]

"Climate" in this definition refers to average weather, where temperature is only one component of this analysis. Here, it is important to note that the IPCC understands climate change as something with both natural and anthropogenic causes, while the United Nations Framework Convention on Climate Change (UNFCCC) separates these causes, referring to changes that are attributable to human activity as climate

[15] Gardiner, "Ethics and Global Climate Change," 4-6.
[16] IPCC, *Climate Change 2007: Synthesis Report*, 78. Emphasis original.

change and changes that are attributable to natural causes as climate variability.[17] My use of climate change to this point has focused on the anthropogenic side, and consequently, I use the UNFCCC's definition of climate change throughout my discussion while also recognizing there are natural causes of changes to the climate. Gardiner notes that this is the best terminology insofar as it "captures the fact that it is interference in the climate system itself that is the crucial issue, not what the particular effects of that interference turn out to be."[18] Gardiner's point here is that climate change as a term places the emphasis not on whether there is warming or cooling as the effects of interference, but rather that there is some change to the current climatological and ecological equilibrium based on interference with the natural equilibrium. The problem is this human-made imbalance. Thus, I use climate change to refer to this general issue of the change in the climate system (particularly the problematic rate of that change), while treating global warming as a manifestation of the general issue of climate change and the greenhouse effect as the mechanism through which global warming happens.

I will close this section with a brief statement about the primary human activity that has increased the rate of climate change to an unsustainable degree. As noted above, the greenhouse effect results from numerous gases known as GHGs, some of which occur naturally. While carbon dioxide (CO_2) is the most commonly mentioned GHG, as it accounts for over 70% of total anthropogenic GHG emissions, the UNFCCC identifies five other primary GHGs: methane (CH_4), nitrous oxide

[17] *United Nations Framework Convention on Climate Change*, Article 1 [1771 UNTS 107; S. Treaty Doc No. 102-38; U.N. Doc. A/AC.237/18 (Part II)/Add.1; 31 ILM 849 (1992)].
[18] Gardiner, "Ethics and Global Climate Change," 5.

(N_20), sulphurhexafluoride (SF_6), hydroflurocarbons (HFCs), and perfluorocarbons (PFCs). These gases differ in both their radiative properties (i.e., how much energy they reflect back onto Earth) and their lifetimes in the atmosphere. Thus, they have different influences over climate change. To address this, a common metric is used to evenly compare the impacts of differing GHG emissions: CO_2-equivalent (CO_2e) emissions.[19] As noted, this metric is often expressed in metric tons ($MtCO_2e$) and is used throughout my discussion whenever I address any GHG emissions other than CO_2. Additionally, my usage of GHGs is meant to refer to all GHGs, unless noted otherwise.

3. Historical Attempts to Assess and Address Climate Change

What then has been done to address climate change so far? Have any effective, let alone just, results been produced? These questions are particularly important for the discussion in the following sections of this chapter, which isolate the political and ethical issues that arise in trying to address the harmful impacts of climate change. Engaging in this historical survey will also help us develop an understanding of the extent to which humans are aware of the causes and impacts of climate change. This is of particular significance for later discussions related to identifying both the harm posed by climate change in Chapters 3 and 4 and the obligations of individuals and collective entities (e.g. states) that stem from that harm in Chapter 6. If it turns out that humanity lacks a relevant level of awareness about the possible harms of climate change, then it is more difficult to place responsibility

[19] CO_2e emission = "the amount of CO_2 emission that would cause the same time-integrated radiative forcing, over a given time horizon, as an emitted amount of a long-lived GHG or a mixture of GHGs" (IPCC, *Climate Change 2007: Synthesis Report*, 36).

on any part of humanity. Yet, if, as will be shown below, most countries are not only aware of the issue, but also engaged in treaty negotiations due to the recognized threat, then there is good reason to think those countries bear a responsibility for the continuation of the harm.

Though climate change did not become a chief concern of international politics until the late 1980s, the roots of the global response to it can be traced to the 1972 United Nations Conference on the Human Environment (UNCHE) held in Stockholm, Sweden. This was the first international summit on environmental issues and set the groundwork for the current system of global environmental politics. One of the most important outcomes of UNCHE was *The Declaration on the Human Environment* (also called the Stockholm Declaration), which outlined principles for addressing environmental matters in the future. Most relevant for transboundary issues like climate change is Principle 21, which established that states possess "the sovereign right to exploit their own resources pursuant to their own environmental policies" coupled with "the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."[20] However, the declaration contained no binding or enforceable requirements, and was described by many as "merely a cosmetic event."[21] Nonetheless, its principles framed future discussions

[20] *Declaration of the United Nations Conference on the Human Environment*, Principle 21 [U.N. Doc. A/Conf.48/14/Rev. 1(1973); 11 ILM 1416 (1972)].

[21] Denise DeGarmo, *International Environmental Treaties and State Behavior: Factors Influencing Cooperation* (New York: Routledge, 2005), 41. For a detailed history of the major events and agreements in international environmentalism, including those I discuss in this section, see pp. 31-71 of DeGarmo.

on climate change and are still very much at the fore of environmental politics, most notably in the UNFCCC.

Following the 1972 UNCHE, environmental issues gained more international awareness and traction. At the same time, some of the first efforts to examine climate change as a threat to humankind were occurring. Following a series of studies and reports mostly conducted within the United States, the International Council of Science (ICSU), United Nations Environmental Program (UNEP), and World Meteorological Organization (WMO), initiated the first international environmental assessment in 1980.[22] This report led to continued assessments, which culminated in the World Commission on Environment and Development, which had been convened by the UN, producing the 1987 report *Our Common Future* (also known as the Bruntland Report, after the commission's chairman). *Our Common Future* tied GHGs (in the form of fossil fuels) to global warming and issued one of the first major warnings regarding the potential negative implications of increased GHG use:

> The burning of fossil fuels puts into the atmosphere carbon dioxide, which is causing global warming. This 'greenhouse effect' may by early next century have increased average global temperature enough to shift agricultural production areas, raise the sea level to flood coastal cities, and disrupt national economies.[23]

This heightened awareness and urgency led to the two most important developments in climate change assessment and policy: (1) the establishment of the IPCC in 1988,

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[22] Bert Bolin, *A History of the Science and Politics of Climate Change: The Role of the Intergovernmental Panel of Climate Change* (Cambridge: Cambridge University Press, 2007), 33-35. For details on many of the early reports, as well as a more detailed discussion of the events leading up to the formation of the IPCC, see pp. 33-52 of the same work.

[23] World Commission on Environment and Development*, Our Common Future*, ed. Gro Harlem Bruntland (Oxford: Oxford University Press, 1987), 2-3.

and (2) the signing of the UNFCCC, an international treaty resulting from the 1992 United Nations Conference on the Environment and Development (UNCED) in Rio de Janiero, Brazil (the "Earth Summit").

UNEP and WMO formed the IPCC in 1988, with 28 countries initially responding to an invitation to participate.[24] Presently, 195 countries participate as member governments who sign off on IPCC reports and in doing so take the information contained within them as authoritative.[25] The IPCC operates not as a scientific body, but instead provides periodic assessments on the state of our knowledge about climate change and its implications for the future:

> The role of the IPCC is to assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation. IPCC reports should be neutral with respect to policy, although they may need to deal objectively with scientific, technical and socio-economic factors relevant to the application of particular policies.[26]

Since its creation, the IPCC has released four assessment reports, the most recent coming in 2007.[27] These reports are important as they present the consensus of the international scientific community.[28] They simply present the facts related to climate

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[24] Bolin, *A History of the Science and Politics of Climate Change*, 49.

[25] The current number of member organizations comes from the IPCC's website, accessible at <http://www.ipcc.ch/organization/organization_secretariat.shtml> (Accessed 27 March 2012).

[26] IPCC, "Principles Governing IPCC Work," *14th Plenary Session of the IPCC* (1 October 1998); available on-line at < http://www.ipcc.ch/organization/organization_procedures.shtml> (Accessed 29 November 2010).

[27] The other reports were released in 1990, 1996, and 2001. The fifth assessment report is currently underway and set to be released in 2014.

[28] In light of the recent "Climategate" scandal involving hacked e-mails from scientists involved in the assessment process and whose work features prominently in IPCC reports that purported to show intentional attempts to cover-up or alter data, it is important to recognize those skeptical of the IPCC and climate science generally. However, most of the skepticism comes not from scientific circles, but instead from political circles, something that has been highlighted by James Garvey (see his *Ethics and Climate Change*, 12-14). For other more complete discussions of climate skepticism,

change as they have been established by a broad consensus of international researchers, and offer models of future states of the world based on numerous possible climate scenarios without making any claims about which scenario we ought to choose, how we ought to choose, or how we ought to bring about whatever scenario is chosen. These reports serve to offer the best available portrayal of current scientific knowledge on the matter, which can then be used by others in determining how to best utilize this knowledge. Of greatest importance is that each successive report has shown an increased confidence in the attribution of climate change to human activity. Consequently, the IPCC provides the best available facts related to human activity and that activity's impact on the world, information essential to answering the questions of harm, responsibility, and obligation raised in the following two sections.

Following the initial appraisal of climate change in *Our Common Future* and the first assessment report of the IPCC, the Earth Summit was held with the goal of addressing the growing consensus that poverty and excessive consumption by the affluent were both damaging the environment in important ways, one being through climate change. This summit resulted in the signing of the UNFCCC, which enjoys near-universal membership and has the following goal:[29]

> …[to achieve] stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved

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scientific uncertainty, and reasons for disregarding it in philosophical discussion see Gardiner, "Ethics and Global Climate Change," 7-9, and Steve Vanderheiden, *Atmospheric Justice: A Political Theory of Climate Change* (Oxford: Oxford University Press, 2008), 21-44.

[29] Presently, the UNFCCC has 195 parties (194 countries and the European Union) who have ratified the treaty. The current list of countries party to the UNFCCC can be found on-line at <http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php> (Accessed 27 March 2012).

> within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.[30]

However, while the UNFCCC itself affirms the anthropogenic nature of climate change and identifies GHG emissions as the primary culprit, it does not contain any binding measures or policies for addressing the problem. Instead, it simply sets out goals and procedures for future meetings of its signatories. These meetings, known as the Conference of Parties (COP), have been held annually since 1995.

The best-known result of these yearly conferences is the Kyoto Protocol that emerged from COP3 in 1997. This treaty stepped beyond the UNFCCC's encouragement to reduce GHG emissions and committed its signatories to actual reduction targets, with 37 industrialized countries and the European Community committing to reductions of at least 5 percent of their 1990 emission levels between 2008 and 2012.[31] However, the United States notably rejected this addition to the UNFCCC, primarily for not including reductions (or emissions caps) for developing countries. While the Kyoto Protocol has been seen as an important first step, it has generally been heralded as ineffective in addressing climate change.

The next decade of COPs produced little progress towards any effective or binding agreements. However, hope ran extremely high in the lead up to COP15 (the "Copenhagen Summit") in late 2009. On the opening day of talks, 56 papers in 45 countries ran a common editorial calling for COP15 to produce a binding, global

[30] *United Nations Framework Convention on Climate Change*, Article 2.

[31] *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, Article 3 [UN Doc FCCC/CP/1997/7/Add.1, Dec. 10, 1997; 37 ILM 22 (1998)].

treaty.[32] More importantly, COP15 included 120 heads of state, which was an unprecedented level of participation. Unfortunately, talks at this meeting stalled, with differences between the developed and developing countries yet again providing the cause. The underlying problems faced by the UNFCCC and its subsequent COPs will be addressed in the next two sections, as we look to draw out the philosophical issues brought forward by climate change.

4. Diagnosing the Political Problems: Sovereignty and the North-South Divide

As noted in the previous section, the UNFCCC has failed to produce an effective, binding solution to the problem of climate change. This is predominately due to the nature of the UNFCCC, and the international treaty system generally, which is the only current mechanism for addressing concerns related to climate change. This system, which comprises various international actors, most of which are states, is characterized by the following actions taken by one or more states in concert with one another:

> These actors gather information, exchange ideas, formulate proposals, and meet in informal and formal sessions to negotiate, prepare legal documents, and vote whether or not to accept new responsibilities, including taxing themselves to cover the costs of monitoring their global environmental management efforts.[33]

This system is voluntary and can only produce binding agreements for signatories of the treaties resulting from this process. Thus, when states refuse to accept certain

[32] "Copenhagen Climate Change Conference: 'Fourteen Days to Seal History's Judgment on this Generation'," *The Guardian*, December 7, 2009, p. 1; available on-line at <http://www.guardian.co.uk /commentisfree/2009/dec/06/copenhagen-editorial> (Accessed 1 December 2010).

[33] Lawrence Susskind, *Environmental Diplomacy: Negotiating More Effective Global Agreements* (Oxford: Oxford University Press, 1994), 11.

conditions they can simply choose not to become a signatory to the treaty. When that happens they are free to act however they want.

With this in mind, we can examine the two primary reasons for the current political stalemate in climate negotiations and see if they suggest a better way to develop a set of international norms for effectively combating climate change, which could then be implemented in an actual agreement between states. The first reason for the political stalemate is the problem of national sovereignty, which often leads to a lack of enforceability and adjudication. This stems from the fact that most argue a state's emission of GHGs is a domestic matter and since the state is the final authority on domestic matters, no other state can legitimately force it to alter its GHG emissions beyond what it decides for itself.[34] Moreover, if one state claims another is failing to meet GHG reduction targets, there is no international court to decide the disagreement between the two states in a binding fashion. The second problem, which stems from the voluntary nature of the UNFCCC and the need for joint action, is the inequality that exists between the developed world and the developing world (known as the North-South divide). As this section will show, these problems are not merely theoretical obstacles complicating the establishment of international norms, but instead point to deeper substantive ethical problems posed by climate change.

Sovereignty poses a *prima facie* problem for establishing a system of international norms for climate change, as it appears to reject the possibility of one

[34] However, the real problem might lie in the state's failure to make any decisions and simply allow private actors to emit GHGs at whatever level the economy happens to generate.

state legitimately imposing actions (or restrictions on actions) on another state.[35] It is for this reason that the current system of international politics and the UNFCCC operates in the manner it does. If the United States could require GHG reductions in China, without China's consent, this appears to violate China's sovereignty. More importantly, as noted above, the right of each state to be the sole determiner of how natural resources can be exploited within its borders was set forth in Principle 21 of the Stockholm Declaration. This is related to climate change, since it is the exploitation of various natural resources (e.g. the burning of coal) that produces GHGs. Still, one might argue that in the case of climate change and GHGs, a country's lack of action would violate the responsibility to not exploit (or at least not allow private actors to exploit) natural resources in ways that harm other states. However, this claim requires establishing that an individual state's GHG emissions are responsible for climate change as a whole, which is made problematic by the fact that climate change is an aggregative harm (i.e., a kind of harm that no single individual or act, in and of itself, can cause). Addressing the issues related to climate change as an aggregative harm and assigning responsibility for it will be the primary focus of Chapters 5 and 6. Ultimately, I will argue that while states cannot be held responsible for causing the harm, they can be responsible for a failure to respond to the harm appropriately. Regardless of this claim, or how one interprets the responsibility clause of Principle 21 vis-à-vis climate change, there is a second problem posed by strong conceptions of state sovereignty.

[35] This is assuming the modern understanding of sovereignty in the vein of Bodin, Hobbes, and the Treaty of Westphalia. See Christopher W. Morris, *An Essay on the Modern State* (Cambridge: Cambridge University Press, 2002), 172-227. It is this strong view of sovereignty that generally dominates international law.

This second difficulty is the lack of enforceability related to international agreements and adjudication when disputes arise. I will return to this issue during the dissertation's concluding chapter when looking at the problem posed by non-compliant states (i.e. states that fail to take action necessary to address harmful climate change), but we can see the general problem here. If sovereignty is absolute (or at least understood in a strong sense), then there cannot be any institution beyond the state to monitor its behavior and enforce any deviation from agreed actions. While it is certainly the case that most states abide by the international treaties they sign, without effective enforcement mechanisms or fora to adjudicate disputes among states there is nothing to keep states from blatantly disregarding their promises or simply failing to live up to them. It is true that other states could try to force the offending state to act through sanctions or military force, yet such action might be illegitimate and constitute a violation of the offending state's sovereignty. The legitimacy of such intervention would depend partially on how one understands climate change as an aggregative harm (i.e. whether or not the state being attacked is actually responsible for the harm coming from climate change), since if the offending state is not responsible for the harm, other states could not legitimize their intervention with a claim of self-defense. While the establishment of an international body for environmental regulation might address some of these questions, it is not entirely clear whether such a body would itself constitute a violation of state sovereignty. If states have sole authority over domestic issues and GHG emissions fall under that heading, even an international regulatory body would violate a state's

sovereign right to determine its own GHG emission levels and environmental policies.[36]

Due to the emergence of numerous multilateral organizations and international bodies, however, much theoretical work has been done to demonstrate why sovereignty ought not be the obstacle it often is taken to be by observers. Within this literature, some authors demonstrate how international organizations can be structured to allow states to generally maintain their sovereignty, while others simply reconceptualize sovereignty and move away from the modern understanding of absolute sovereignty.[37] While this theoretical work is insightful, it does little to reduce the problem of sovereignty, as it exists in current climate policy negotiations. In this sphere of international politics, sovereignty simply is the base notion of absolute domestic authority and self-determination related to the use of natural resources within a county's own borders, and this is something that, at least for the near future, appears non-negotiable. Politicians who are seen as allowing other countries to dictate climate policy are ousted from office. While the theoretical work might remove the apparent problems posed by sovereignty, the political will clearly

[36] One might look to the Montreal Protocol on Substances that Deplete the Ozone Layer for guidance with these types of issues, as it is one of the most successful UN treaties and dealt with transboundary environmental issues. For detailed information on the Protocol, see the webpage for the UNEP Ozone Secretariat at <http://ozone.unep.org/new_site/en/montreal_protocol.php> (Accessed 28 March 2012). It is worth noting that while some trade sanctions were included in the treaty, it relied heavily on economic incentives and assistance to get developing countries like China and India on board. Such conditional assistance, according to Royal Gardner, "provides a mechanism that deals with global environmental issues, yet avoids the problem of sovereignty," since states still are free to choose whether to accede to the treaty [Royal C. Gardner, "Respecting Sovereignty," *Fordham Environmental Law Review* 8, no. 1 (1996): 137].

[37] For an example of the first approach, see Alexander Cooley and Hendrik Spruyt, *Contracting States: Sovereign Transfers in International Relations* (Princeton, NJ: Princeton University Press, 2009). The second approach is exemplified by the collection of articles in Edgar Grande and Louis W. Pauly, eds., *Complex Sovereignty: Reconstituting Political Authority in the Twenty-first Century* (Toronto: University of Toronto Press, 2005).

seems not ready to accept this work.[38] I will not take up this practical concern in the dissertation, but it is worth noting that if the underlying philosophical arguments I offer in the following chapters are successful, then there is good reason, rooted in the demands of justice, to work to change the political will and create a global environmental regulatory regime.

The issues just discussed related to sovereignty point us to the other primary problems plaguing recent attempts to address climate change: the need for unanimity and the North-South divide. Sovereignty is only a problem insofar as there is disagreement and lack of unanimity (or at least a general consensus). If all the states agree not only that something must be done, but also agree about what each of them must do, then sovereignty does not pose a problem for collective action. However, when there is disagreement among states about what action they need to take, the problems of sovereignty highlighted above begin to manifest—the need for enforceability and adjudication only surfaces when differences exist. While there is unanimity that *some* action needs to be taken, there is no consensus on what that action ought to be and who should take the lead. As noted in the previous section regarding the highly touted climate negotiations at the Copenhagen Summit (COP15), the disagreement on action generally pits the developed (the global North) against the developing (the global South) world. Understanding this North-South divide illuminates some of the core ethical issues currently preventing the establishment of a system of international norms to govern climate matters and how

[38] I should note that the emergence of the European Union and the passage of the Treaty of Lisbon might be a sign that political will is shifting regarding the issue of sovereignty. However, even those discussions were (and continue to be) plagued by concessions to limit the authority of the EU.

disagreement over these ethical issues creates the problems related to sovereignty discussed above.

The conflict between the North and the South is best seen through a series of inequalities related to patterns of development and consumption.[39] Of primary concern are issues surrounding past development (which produced significant GHG emissions) and models for future development. These inequalities can be effectively captured by comparing both historical and recent GHG emissions for the top ten emitters in 2005 (by total emissions produced in $MtCO_2e$), along with a general comparison between emissions data for developed countries as a whole (those labeled Annex I countries under UNFCCC) and major developing countries (labeled non-Annex I countries under UNFCCC).[40] In the following discussion, data for Annex I countries will be treated as representative of the global North, while data for non-Annex I countries will be treated as representative of the global South.

The main trend that emerges from a comparison of data for GHG emission levels is that wealthy, developed countries have disproportionately high levels relative to their populations (See Table 1.1). While this disproportionality is maintained by all Annex I countries, it is driven primarily by the United States, which in 2005 emitted 18.26% of the total GHGs that year, while being home to only

[39] For a different presentation of the inequalities leading to the North-South conflict, based more on susceptibility and vulnerability, rather than development and consumption issues, see Roberts and Parks, *A Climate of Injustice*, and Bradley C. Parks and J. Timmons Roberts, "Inequality and the Global Climate Regime: Breaking the North-South Impasse," *Cambridge Review of International Affairs* 21, no. 4 (2008): 621-648.

[40] In 2005, the top ten emitters by amount in $MtCO_2e$ were in order from largest to smallest: China, *United States*, *Russia*, India, *Japan*, Brazil, *Germany*, *Canada*, *United Kingdom*, and Mexico (with those countries listed in italics being Annex I countries). Data from 2005 is used, as it is the most recent complete GHG data available; see note 9 above.

4.59% of the world's population.[41] The disparity between the North and the South is most apparent when one considers that Annex I countries, which accounted for only 19.48% of the global population while emitting 46.87% of the total world GHG emissions, yet non-Annex I countries emitted only 5 percentage points more with a population that is nearly 60 percentage points higher. The numbers are even starker when adjusting for population and considering per person usage. Here, we find a "typical" individual in Annex I countries emitted 14.1 $MtCO_2e$, with Americans setting the bar with 23.3 $MtCO_2e$, compared to the 3.6 $MtCO_2e$ emitted per person in non-Annex I countries.

Table 1.1. GHG Emissions in 2005 – Top Ten Emitters by Amount

COUNTRY	Emissions in $MtCO_2e$ per person	Total Emissions in $MtCO_2e$	% of Total World Emissions	% of World Population (in 2005)
China	5.6	7,242.1	19.16	20.19
United States	23.3	6,900.9	18.26	4.59
Russia	13.5	1,939.6	5.13	2.22
India	1.7	1,865.0	4.93	16.94
Japan	10.6	1,349.2	3.57	1.98
Brazil	5.4	1,010.5	2.67	2.89
Germany	11.9	977.5	2.59	1.28
Canada	23.0	741.8	1.96	0.50
United Kingdom	10.7	642.2	1.70	0.93
Mexico	5.9	631.0	1.67	1.60
Total	6.8	23,299.8	61.65	53.11
UNFCCC Party Totals				
Annex I Countries	14.1	17,714.2	46.87	19.48
Non-Annex I Countries	3.8	19,482.0	51.54	79.44

NOTES: Countries listed in italics are Annex I Countries in the UNFCCC

SOURCES: Climate Analysis Indicators Tool (CAIT) Version 9.0 (Washington, DC: World Resources Institute, 2012); World DataBank (Washington, DC: World Bank, 2012)

[41] CAIT Version 9.0; all subsequent statistical data in this section comes from this source and is for the year 2005 (the last year with full data for all primary GHGs) unless otherwise noted.

Given that the IPCC has identified GHGs as a primary cause of climate change, the disproportionality highlighted above has led to the view that those with higher emissions are more responsible for reducing emissions to prevent harmful future climate scenarios. This *prima facie* case for blaming developed countries and calling for reductions on their part is strengthened when we consider cumulative emissions over time; this is important since, as noted above, GHGs persist in the atmosphere long after their initial emission. On any historical measure, the disproportionality shifts even more towards the North (See Table 1.2).[42] For example, the United States accounts for 25.88% of total GHG emissions from 1950-2008, a nearly 8-point increase from its 2005 annual share. More importantly, on this analysis, Annex I countries are responsible for nearly 70% of all emissions from 1950-2008. As with before, the disproportionality is emphasized when considering per person emissions, with Annex I countries emitting 534.2 $MtCO_2e$ per person over this period compared to 56.4 $MtCO_2e$ for non-Annex I countries. This shows that viewed over time, Annex I countries emitted nearly nine and a half times as many GHGs per person compared to non-Annex I countries, while the yearly time slice for 2005 shows Annex I countries emitting only about four times as much per

[42] It is important to note that in considering cumulative data, these numbers only speak to how much any given country has emitted over a specific period. While this can be used along with the world total for that same period to say what percent of global emissions belong to each country, the data cannot be used to provide the percentage of GHGs presently in the atmosphere for any given country. While the general lifespans of each GHG are known, these are only typical lifespans. Some individual molecules might have shorter or longer lifespans. Coupling this with the fact that once in the atmosphere the origin of a specific GHG molecule cannot be determined, it is impossible to look at GHG levels in the atmosphere in a singular moment and assign what percent of those GHGs came from any given country. Cumulative emissions over a historical period are the best estimate available for who has contributed most to the current predicament.

person. While the emissions gap between the North and South might be closing (though there is still a significant gap), the historical disparity is drastic.

Table 1.2. Cumulative Emissions of CO_2 (for energy use) – 1950 to 2008

COUNTRY	$MtCO_2e$	% of Total World Emissions	$MtCO_2e$ per person
China	111,351.5	11.23	84.1
United States	256,485.0	25.88	842.7
Russia	89,777.0	9.06	632.5
India	28,192.5	2.84	24.7
Japan	46,865.8	4.73	367.0
Brazil	9,913.3	1.00	51.8
Germany	53,454.3	5.39	651.0
Canada	21,935.2	2.21	658.5
United Kingdom	33,368.5	3.37	543.5
Mexico	11,937.5	1.20	107.9
Total	663,280.7	66.92	188.6
UNFCCC Party Totals			
Annex I Countries	681,045.0	68.71	534.2
Non-Annex I Countries	300,635.4	30.33	56.4

NOTE: Countries listed in italics are Annex I Countries in the UNFCCC
SOURCE: CAIT Version 9.0 (Washington, DC: World Resources Institute, 2012)

These drastic inequalities have in turn led the North and South to argue for two diverging approaches to action. The South, highlighting the extremely disproportionate consumption historically, seeks to place primary responsibility for climate change on the North and calls for the countries of the North to drastically reduce their GHG emissions. Additionally, the countries of the South defend their right to continue to develop, which will increase their GHG emissions. Some proposals also call for the countries of the North to compensate the countries of the South. As many developing countries have argued, any agreement to reduce emissions at an even rate for all countries would not only be unfair given the

disproportionality of emissions, but would also continue to hinder the South by stunting its ability to develop. The North, on the other hand, seeks to emphasize the need for all countries to move forward evenly, pointing to projections of increased GHG emissions by the South and an increased risk of harm.

While development and GHG emissions do not have to bear a positive correlation, data on development indicators for the top ten emitters in 2005 shows support for such a relation in current development practices. However, it is important to note that the correlation is not simply between high emissions and development, but *disproportionate* emissions and development (to normalize for population differences). As such, it is important to compare the ratio of each country's percent of total world GHG emissions to its percent of the global population (See Table 1.3). In making such a comparison, a ratio of 1 would mean that a country emits the same percent of GHGs as it has people, what one might call their "equal share." A ratio above 1 means that country emits more GHGs than is share, while a ratio below 1 means it does not emit as much as its share allots.

Considering the data for the top ten total emitters in 2005, we see three of the four non-Annex I countries have a ratio below 1, while the other (Mexico) sits just above the threshold for proportional emissions at 1.044. Considering GDP per capita as a mark of development, we can see that these four countries have relatively low GDP (ranging from $3,452 to $10,751) in addition to their less than proportional emission levels. Annex I countries, on the other hand, have ratios that show increased emissions, ranging from 1.81 (Japan) to 3.99 (United States), and relatively high GDP per capita, as all countries in this group save for Russia have a GDP per

capita above $29,000. This same relation exists when comparing proportionality ratios and human development indices (HDI). The non-Annex I countries have low development (HDIs from 0.619 to 0.829) and all rank outside the top 50 most developed countries in the world, while the Annex I countries, excluding Russia (HDI = 0.802), have extremely high development (HDIs from 0.935 to 0.961) and rank inside the twenty-five most developed countries in the world.[43] These numbers show that, at present, as countries' emissions have increased beyond their baseline share, so too have their development levels. The more one develops, the more one emits. Worse, this increased development has come by not only producing more emissions, but by producing disproportionate emissions.

Table 1.3. Development Indicators for Top Ten GHG Emitters in 2005

COUNTRY	Emissions Rank by Total GHG Emissions	Ratio of % of Global Emissions to % of Global Population*	GDP per capita (in PPP US$)	Human Development Index Value (RANK)
China	1	0.949	6,757	0.777 (81)
United States	2	3.978	41,890	0.951 (12)
Russia	3	2.311	10,845	0.802 (67)
India	4	0.291	3,452	0.619 (128)
Japan	5	1.803	31,267	0.953 (8)
Brazil	6	0.924	8,402	0.800 (70)
Germany	7	2.023	29,461	0.935 (22)
Canada	8	3.920	33,375	0.961 (4)
United Kingdom	9	1.828	33,238	0.946 (16)
Mexico	10	1.044	10,751	0.829 (52)

*This row contains my calculations using the data in columns 4 and 5 of Table 1.1
NOTE: Countries listed in italics are Annex I Countries in the UNFCCC
SOURCES: CAIT Version 9.0 (Washington, DC: World Resources Institute, 2012); 2007/2008 Human Development Report (UNDP, 2008).

[43] United Nations Development Programme (UNDP), *Human Development Report 2007/2008 – Fighting Climate Change: Solidarity in a Divided World* (New York: UNDP, 2007). While the report is for 2007/2008, the HDI values it provides are for 2005.

This split creates problems for addressing climate change by adding questions about responsibility and fair development when trying to determine appropriate action. It cannot just be about blanket GHG reductions. It is also about understanding the relation between development and GHG emissions. The 2010 World Development Report captures this succinctly: "Climate change policy is not a simple choice between a high-growth, high-carbon world and a low-growth, low-carbon world—a simple question of whether to grow or to preserve the planet."[44] While new technologies can be developed and used to allow high-growth with low emissions, this development requires money and infrastructure not possessed by the South. Thus, a demand would have to be placed on the North to not only develop this technology but also freely transfer it to the South. However, this turns us in the direction of underlying questions of harm, responsibility, and obligation to which the North and South have different answers. It is here philosophers and theorists have made their mark, and these contributions are taken up in the next section.

5. Addressing the Ethical Problems: Harm, Responsibility, and Obligation

As the previous section highlighted, much of the disagreement on climate policy stems from disagreement about deeper questions of justice: What is the harm of climate change? Who is responsible for this harm, and, once responsibility is determined, what obligations do responsible parties bear? Understood in this sense, climate change becomes fundamentally an ethical problem:

> Climatologists can tell us what is happening to the planet and why it is happening, they can even say with some confidence what will happen in the years to come. What we do about all of this, though

[44] World Bank, *WDR 2010*, 1.

> depends on what we think is right, what we value, what matters to us.[45]

While politicians and negotiators answer the "what matters to us" in more self-interested ways keeping their focus within their own borders (as we saw in the discussion of the North-South divide in the previous section), scholars have entered the fray with attempts to answer these questions in terms of what we ought to do, rather than what is in any particular country's self-interest.

However, engagement with climate change by scholars is a recent phenomenon and until the past five or so years has been confined primarily within legal scholarship.[46] Most of this literature has focused primarily on efforts to find avenues within environmental law for the rights of future generations, sovereignty over natural resources, and the jurisdiction of international courts over transboundary environmental matters (e.g., pollution of rivers that flow into other countries and now more recently climate change).[47] However, by working within existing legal structures, these discussions are unable to provide a complete examination of the underlying ethical questions regarding harm and responsibility. One can offer compelling arguments for bringing the existing system of international law to bear

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[45] Garvey, *The Ethics of Climate Change*, 2.

[46] The most notable exceptions being Dale Jamieson and Henry Shue, who both started writing explicitly on the ethical implications of climate change in the early 1990s. See especially, Dale Jamieson, "Ethics, Public Policy and Global Warming," *Science, Technology and Human Values* 17, no. 2 (1992): 139-153, and Henry Shue, "Subsistence Emissions and Luxury Emissions," *Law and Policy* 15, no. 1 (1993): 39-59.

[47] Among the recent scholarship on these matters see William C.G. Burns and Hari M. Osofsky, eds., *Adjudicating Climate Change: State, National and International Approaches* (Cambridge: Cambridge University Press, 2009); Svitlana Kravchenko, "Right to Carbon or Right to Life: Human Rights Approaches to Climate Change," *Vermont Journal of Environmental Law* 9, no. 3 (2008): 513-548; Edith Brown Weiss, "Climate Change, Intergenerational Equity, and International Law," *Vermont Journal of International Law* 9, no. 3 (2008): 615-628 [an updated reprint of an article published in 1989]; and Burns H. Weston and Tracy Bach, eds., *Recalibrating the Law of Humans with the Laws of Nature: Climate Change, Human Rights, and Intergenerational Justice* (South Royalton, VT: Vermont Law School, 2009).

on climate change, without offering any claims about what morality itself demands. While legal scholarship can prove insightful for examinations of the moral questions related to climate change, it cannot itself answer them. Thus, it is important to move from the legal to the moral domain. This is particularly useful since, as Steve Vanderheiden notes, "if a moral right can be justified, then there is a strong case for recognizing a legal right, as well."[48] Consequently, if the issue can be conceptualized in terms of the moral realm, there would not only be reason to alter international law and policy, but it would also legitimate actions against states that are not in compliance with the demands of morality.

Philosophers and political theorists have made such a move to the moral domain, and it is here that my argument makes its primary contribution. While the ethical and political theory literature has generally been much slower to develop than the legal scholarship, recent years have seen an increased engagement with climate change as a central focus of discussion.[49] My goal in the following chapters is to offer my own account of how best to address the general ethical and political problems of climate change. With this goal in mind, it would be impossible to offer a complete analysis of the existing philosophical literature. However, a helpful distinction between two general types of approaches in the literature both situates

[48] Vanderheiden, *Atmospheric Justice,* 126.

[49] It is worth noting, however, that even with this recent increase in attention, direct engagement with climate change still finds itself limited when compared to other foci of philosophy and applied ethics. Stephen Gardiner highlights this in the Preface to a recent edited collection on climate change: "…as of January 2009, the *Philosopher's Index* listed only about 100 articles under 'climate change' and 'global warming,' most of them recent. By contrast, there were more than 700 listings for 'informed consent' and more than 1,000 for 'euthanasia'" [Stephen M. Gardiner, Simon Caney, Dale Jamieson, and Henry Shue, eds., *Climate Ethics: Essential Readings* (Oxford: Oxford University Press, 2010), xi].

and motivates my account. The two general types that can be identified are what I term "equity" approaches and "rights-based" approaches.[50]

Equity approaches typically focus on climate change first and foremost as a matter of distributive justice, concentrating on the allocation of the benefits and burdens of climate change. They view the absorptive capacity of the atmosphere as a good to be distributed among the Earth's population and then use different principles of equity and fairness to portion out GHG emissions and address responsibility for any inequalities. Two of the most prominent equity approaches are the Polluter Pays Principle (most notably associated with Henry Shue) and the notion of equal per capita emission entitlements (most notably associated with Peter Singer and Dale Jamieson).[51] The former operates on a general principle of distributive justice that those who create a problem must pay for addressing the problem and serves as an example of a more backward looking or historical equity approach. The latter focuses on the present, arguing that the absorptive capacity of the atmosphere should be divided equally among the Earth's population. Accordingly, on this account, each country is allowed GHG emissions equal to its population's emission allowance and compensation can then be awarded based on shortages and overages.

[50] It is important to note that former are not necessarily incompatible with rights, they simply do not use them as the central feature the way the latter do. Thus, one should not treat them as being mutually exclusive.

[51] For examples of these discussions see Henry Shue, "Global Environment and International Inequality," *International Affairs* 75, no. 3 (1999): 531-545; Peter Singer, *One World: The Ethics of Globalization*, 2nd Edition (New Haven, CT: Yale University Press, 2004), 14-50; and Dale Jamieson, "Adaptation, Mitigation, and Justice," in *Perspectives on Climate Change*, eds. Walter Sinnott-Armstrong and Richard Howarth (Amsterdam: Elsevier, 2005), 221-253. All three of these have been reprinted in *Climate Ethics: Essential Readings*, eds. Stephen M. Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010).

However, there are a few general problems facing equity approaches. First, most operate at the level of state interactions and thus are not sensitive to individual vulnerabilities to the adverse effects of climate change, even within fairly well-off states. Second, and more important, these approaches tend to operate within the cost-benefit analysis associated with environmental economics, which has been criticized as generally not sensitive to the diverse local contexts in which individuals live. For example, the per-capita approach highlighted above assigns all individuals equal emission entitlements without acknowledging that those living in significantly colder climates might require more emissions for their basic survival than those in moderate climates. Consequently, those in colder climates would have smaller emission allotments for non-survival activities than those in moderate climates, which would seem to go against the egalitarian spirit of the approach. While equity approaches are not dead-ends, it seems moving from a singular focus on equity to a more nuanced attention to need can address some of the pitfalls of equity approaches while still adequately dealing with the issue on the whole.

Shifting to a focus on need places one squarely in the domain of rights-based approaches to engaging climate change that have recently been developed by scholars. Most versions of a rights-based approach focus on human rights at an individual level, though some also engage collective rights of states. However, the literature holds far less agreement when it comes to the content of the rights violated by climate change. One version, championed by Paul Baer and his collaborators at think-tanks EcoEquity and the Stockholm Environment Institute, stresses the rights of individuals to a minimal level of development and uses this development right to

place strong responsibilities on the wealthy to address the cost of climate change.[52] Simon Caney offers a different version, arguing that climate change will harm some individuals' rights to basic fundamental interests such as health and security, and therefore there is an obligation to prevent future climate change.[53] Moreover, Caney holds this obligation applicable only to those whose basic rights are already protected and for whom acting to prevent climate change would not result in a loss of those protections. As such, wealthy states that already protect their citizens' basic rights and can reduce emissions while still protecting those rights bear the bulk of the responsibility to act. A third variation utilizes arguments for the existence of some notion of a general environmental right (e.g., a right to a safe environment).[54] In this version, rather than a right to health being violated, it is an individual's "environmental right" that is violated. Essentially, this disagreement about what right is violated by climate change results from different understandings of the interaction between the environment and some package of human rights.

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[52] Paul Baer, "Greenhouse Development Rights: A Proposal for a Fair Global Climate Treaty," *Ethics, Place, and Environment* 12, no. 3 (2009): 268-281; Paul Baer, Tom Athanasiou, Sivan Kartha, and Eric Kemp-Benedict, "Greenhouse Development Rights: A Framework for Climate Protection That is 'More Fair' Than Equal Per Capita Emissions Rights," in *Climate Ethics: Essential Readings*, eds. Stephen M. Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010), 215-230.

[53] For Simon Caney's primary work on climate change and human rights, see his "Cosmopolitan Justice, Rights and Global Climate Change," *Canadian Journal of Law and Jurisprudence* 19, no. 2 (2006), 255-278; "Human Rights, Responsibilities, and Climate Change," in *Global Basic Rights*, eds. Charles Beitz and Robert Goodin (Oxford: Oxford University Press, 2009), 227-247; "Climate Change, Human Rights, and Moral Thresholds," in *Human Rights and Climate Change*, ed. Stephen Humphreys (Cambridge: Cambridge University Press, 2010), 69-90; and "Human Rights and Global Climate Change," in *Cosmopolitanism in Context: Perspectives from International Law and Political Theory*, eds. Roland Pierik and Wouter Werner (Cambridge: Cambridge University Press, 2010), 19-44.

[54] See James Nickel, "The Human Right to a Safe Environment: Philosophical Perspectives on Its Scope and Justification," *Yale Journal of International Law* 18, no. 1 (1993), 281-295, and Tim Hayward, *Constitutional Environmental Rights* (Oxford: Oxford University Press, 2005).

While this shift in focus to human rights is a helpful one, the current theories adopting this type of approach still suffer from general questions about their scope. This will be discussed in detail in the next chapter, but we can see the issue one might have about such approaches through the following questions: on an account like Baer's focusing on a right to development, what is the level of development someone has a right to and how is it operationalized (e.g., percent above the poverty line, level of basic health)? Focusing instead on an "environmental right", how should such a right be conceptualized and how far does it extend? Any type of rights-based approach is going to have to provide a clear defense of not only what types of material protections must be provided, but also what levels of protections are required. Without such an account, a rights-based approach will not be able to provide any practical guidance about what measures need to be taken by countries in response to climate change. It is not enough to say that climate change constitutes (or will constitute) a violation of human rights and therefore we must prevent it. Rather, an account must be able to clearly explicate exactly what rights climate change violates, what impacts of climate change violate those rights, and under which climate scenarios a violation or rights would not occur. Any truly successful account will have to provide a detailed justification of the rights involved that clarifies their scope, and this is something often lacking in the literature to date.[55]

While equity and rights-based approaches to addressing the ethical aspects of climate change can yield similar proposals for action, I favor a rights-based approach for both theoretical and pragmatic reasons. Theoretically, a rights-based account is

[55] Here, I am particularly thinking of the lack of such an account in both Nickel and Hayward's presentation of a generic "environmental right." I will argue this point in detail in the next chapter.

able to address the intergenerational and transboundary nature of climate change with more ease than an equity approach. Regarding the intergenerational aspect, a rights-based account is better able to fully address objections to the claim that future generations are the bearers of rights (e.g. Derek Parfit's Non-Identity Problem) by employing an interest-based account of human rights, which is addressed in Chapter 4. Concerning the transboundary nature of climate change, since all human beings possess the rights present in any rights-based approach, the responsibilities and obligations that arise relative to these rights transcend political boundaries. Additionally, issues related to sovereignty might be more easily addressed in a rights-based approach, as this type of approach can allow one to maintain a general commitment to state sovereignty and the role of nation-states while legitimizing international regulation or intervention in cases of human rights violations. Thus, human rights can serve as a limiting factor on state behavior.

Beyond the theoretical considerations, there are significant real-world implications for establishing climate change as a violation of fundamental interests and basic human rights. First, such an account gives credence to the project of including environmental matters relevant to climatic issues in existing human rights law and conventions. This allows these matters to then fall under the jurisdiction of international courts and existing regulatory mechanisms. Second, and more important, by placing climate change under the aegis of human rights, the issue is given the backing of the strongest form of moral rhetoric available in contemporary global politics. The use of such rhetoric gives some hope that the arguments offered here might gain some traction in current political negotiations and help break the

North-South impasse. If people come to see their own daily actions as part of large-scale human rights violations, perhaps they might begin to make needed changes.

6. Concluding Remarks

The preceding discussion highlighted the current stalemate that exists in global climate policy negotiations. The countries of the developing world appear to have a strong case for placing responsibility squarely on the shoulders of the developed world based on the developed world's disproportionate GHG emission levels. Moreover, the developed world clearly possesses a capacity for addressing and responding to climate change that the developing world does not. To demand the same responses by both the developed and developing worlds would be to maintain the current development gap, depriving millions of people of living lives of decent minimal standards. However, the countries of the developed world also seem to have a legitimate worry about not placing some type of responsibility on developing countries. While the data in Section 4 make the case against the developed world clear, it also shows countries of the developing world emitting significant amounts of GHGs. Consequently, it seems reasonable to keep those amounts in check, at least to some degree.

This is where climate negotiations have run aground. Philosophers and political theorists alike have made clear that underlying all this are important value judgments related to ideas of fairness and moral responsibility. However, as Section 5 noted, there are significant worries related to various approaches that address these underlying ethical issues. Equity approaches appear to be unable to properly respond

to individual needs, often missing the poor and vulnerable in the developed world, while at the same time ignoring the rich in the developing world. While being able to respond to this worry, rights-based approaches seem vulnerable to objections related to their scope and ability to provide an account of the harm that is complete enough to produce information relevant for assigning responsibility for addressing climate change. Without a response to this type of objection, rights-based approaches are unable to serve as a moral framework that can be used to craft actual policy prescriptions.

The remaining chapters seek to provide an alternative rights-based account that is able to provide a moral framework that is capable of producing specific policy prescriptions. Such specifics will not be provided in this project, as the goal is to offer the general framework and moral principles that would be used to guide relevant experts in various areas of knowledge to develop not only an effective global climate policy, but a just one as well. In doing so, I will work through the issues related to identifying the harm of climate change from a moral perspective. Once the harm is identified, I will take up the issue of responsibility and what types of actions would be demanded in light of climate change's adverse impacts. Drawing from the lessons of current climate negotiations and the problem posed by non-compliant states, I will end the project by defending against claims that my account runs counter to commonly held views about state sovereignty. With this general trajectory in mind, we can focus our attention on the specifics of my human rights framework and responding to the worry about the scope of rights-based accounts in the next chapter.

CHAPTER 2
Human Rights and the Environment

The previous chapter highlighted the stalemate that exists in current climate negotiations between the developed and developing world and the ethical and political problems underlying this impasse. In addressing the normative aspects of the issue, I offered reasons for favoring a rights-based approach in analyzing climate change. This chapter explores the applicability of rights-based approaches to environmental matters and examines the adequacy of current rights-based approaches responses to the theoretical challenges posed by climate change. My primary interest throughout this chapter is whether an account is available that can provide an affirmative answer to the following query: "Do the negative impacts of global climate change, in and of themselves, violate human rights?"

Before providing an answer, I will offer a brief account of what constitutes human rights, particularly due to the various uses of that term that exist in both contemporary politics and philosophical scholarship. The first section of this chapter provides such an account, identifying human rights as universal moral rights. The subsequent sections of the chapter address two of the primary rights frameworks identified in the last chapter: environmental rights and basic human rights. I do not focus on development rights, since such approaches only address climate change indirectly. I will highlight the environmental and basic human rights frameworks as helpful, though ultimately inadequate, as they both suffer from a problem in determining their scopes. This inadequacy leads me to turn, in the final two sections

of the chapter, to a human rights framework that draws from Breena Holland's environmental extension of Martha Nussbaum's Capabilities Approach. I argue that this framework avoids the scope problem facing the others examined in the chapter. The result is a human rights account, yielding a right to a sustainable ecological capacity that can be used to directly engage the phenomenon of climate change.

At the outset, let me reiterate that this project is intentionally being conducted from an anthropocentric perspective; hence the focus on *human* rights. As such, I make no remarks addressing the rights of non-human species. However, it is important to keep in mind that the framework I argue for in this chapter is not necessarily inconsistent with a non-anthropocentric view that places more demanding obligations and limitations on human activity. A human rights approach simply sets minimal thresholds and establishes obligations humans owe to one another not to violate those thresholds. Such an approach does not speak to how these thresholds ought to be met, nor does it rule out the possibility that we have other reasons (moral or prudential) to set higher standards or obligations toward other humans, as well as non-human species. With that in mind, we can move forward in developing a human rights framework that can adequately address environmental matters generally and climate change specifically.

1. Clarifying Human Rights

The phrase "human rights" can refer to many different things ranging from rights codified in actual international documents, such as the *International Covenant on Civil and Political Rights*, to more abstract sets of ideal norms that are part of

certain moral traditions. Each represents a differing conception of rights—legal and moral, respectively—that can be used when developing a theory of human rights. Both types of rights share structural similarities (i.e. they have subjects, objects, respondents, and justificatory grounds).[1] Yet, their domains differ in important ways. Moral rights derive from ethics and apply across morality as a whole, while legal rights exist only within particular political domains, derived from the positive law enforced within them. Thus, while a moral right's existence is independent of the political structure that happens to be in place, a legal right's existence and enforceability are contingent on that particular structure. While legal rights are commonly accepted, moral rights draw more skepticism. For the purposes of this project, however, I assume there are such things as moral rights.[2]

Initially, those who tried to link human rights and climate change worked within the context of legal rights.[3] Unfortunately, this approach is limited in an important way: there is no legal body with global jurisdiction. Thus, there are not global legal rights. This is a severe constraint in light of the global nature of climate

[1] Here, I am using Alan Gewirth's schema for the structure of a right: "The general formula of a right is as follows: 'A has a right to X against B by virtue of Y.' In addition to the right itself, there are four elements here: the *subject* of the right, the right-holder (A); the *object* of the right (X); the *respondent* of the right, the person who has the correlative duty (B); and the *justificatory basis* or *ground* of the right (Y)" [Alan Gewirth, "Are There Any Absolute Rights?" in *Theories of Rights*, ed. Jeremy Waldron (Oxford: Oxford University Press, 1984), 93].

[2] For some of the early debates about universal moral rights, see Jeremy Waldron's edited collection, *Theories of Rights* (Oxford: Oxford University Press, 1984).

[3] See, *e.g.*, William Burns and Hari Osofsky, eds., *Adjudicating Climate Change: State, National, and International Approaches* (Cambridge: Cambridge University Press, 2009); John Knox, "Climate Change and Human Rights Law," *Virginia Journal of International Law* 50, no. 1 (2009): 163-218; Amy Sinden, "Climate Change and Human Rights," *Journal of Land, Resources, and Environmental Law* 27, no. 2 (2007): 255-271; Edith Brown Weiss, "Climate Change, Intergenerational Equity, and International Law," *Vermont Journal of Environmental Law* 9, no. 3 (2008): 615-628; and Burns Weston and Tracy Bach, eds., *Recalibrating the Law of Humans with the Laws of Nature: Climate Change, Human Rights, and Intergenerational Justice* (South Royalton, VT: Vermont Law School, 2009).

change. Coupling this limitation with the lack of explicit attention by theorists on the moral domain is particularly unfortunate, given that, as Steve Vanderheiden notes, "if a moral right can be justified, then there is a strong case for recognizing a legal right, as well."[4] Consequently, if climate change can be conceptualized in terms of justified moral rights, there would not only be reason to expand international law and codify new legal rights, but such an account would also legitimate action (at least morally) against states who are not signatories to current human rights instruments. For this reason, my focus is on the link between climate change and human rights understood as moral rights possessed and shared simultaneously by all human beings.

While the focus on human rights as moral rights has the benefit of legitimating action against states not part of current human rights instruments, it creates difficulties because arguments for moral rights yield extremely strong claims (e.g. they are universal and independent of state recognition). Many skeptics argue that such claims cannot be justified adequately and leave open questions about the content of these moral rights. As a result, there is a vast literature of philosophical defenses from human rights proponents and critical analyses from skeptics.[5] Addressing all of the issues involved, and offering a complete theory of human

[4] Steve Vanderheiden, *Atmospheric Justice: A Political Theory of Climate Change* (Oxford: Oxford University Press, 2008), 126.

[5] For excellent discussions of the current literature and recent attempts to offer detailed accounts of human rights, see James Nickel, *Making Sense of Human Rights*, 2nd edition (Oxford: Blackwell Publishing, 2006); James Griffin, *On Human Rights* (Oxford: Oxford University Press, 2008); Charles Beitz, *The Idea of Human Rights* (Oxford: Oxford University Press, 2009); and Johannes Morsink, *Inherent Human Rights: Philosophical Roots of the Universal Declaration* (Philadelphia, PA: University of Pennsylvania Press, 2009). Nickel also maintains an entry on human rights in the *Stanford Encyclopedia of Philosophy* that is regularly updated and available online at <http://plato.stanford.edu/entries/rights-human>.

rights, is clearly beyond the scope of this chapter, and even of the dissertation as a whole. Thus, I will only speak to those aspects of this literature that relate directly to existing discussions linking environmental matters (and therefore climate change) to human rights, understood morally.

The remainder of this section addresses the human rights literature with respect to both the justificatory arguments for moral rights and the interpretation of their content. Typically, people refer to two theories of moral rights: will theory (sometimes called choice theory) and interest theory.[6] These theories are meant to apply to any moral right, not just those shared universally by all human beings, since it is possible for an individual to have a justified moral right unique to them. Consequently, both theories require two steps when identifying human rights (i.e. universal moral rights): (1) identify the necessary conditions for any given individual to have a moral right to some object, and (2) identify those objects for which the conditions found in the first step are met for every human being at all times.

H.L.A Hart and Alan Gewirth have most prominently espoused the will theory of rights though in slightly different variations.[7] Taken most generally, a will theory of rights "connotes a conception of the right-bearer as agent and chooser rather than merely potential victim or potential recipient of assistance."[8] An individual then possess a right if and only if that individual is in a position to require a particular action of another, i.e. an individual P is in a position relative to

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[6] See Jeremy Waldron, "Introduction," in *Theories of Rights*, edited by Jeremy Waldron (Oxford: Oxford University Press, 1984), 9-12.

[7] H.L.A. Hart, "Are There Any Natural Rights?" in *Theories of Rights*, edited by Jeremy Waldron (Oxford: Oxford University Press, 1984), 77-90; Alan Gewirth, *Human Rights: Essays on Justification and Application* (Chicago, IL: University of Chicago Press, 1982).

[8] Waldron, "Introduction," 11.

individual Q such that P's "say-so would be sufficient to discharge Q from the requirement" of the duty in question.[9] For Hart, this is best exemplified in the special case of promising. When I promise my best friend I will babysit his daughter, I incur a duty to babysit his daughter and the only person who can free me of this duty is my best friend.[10] On this conception, according to Hart, the only moral right that applies to all human beings at all times is a right to individual freedom, and all other rights are either derived from it or are special rights created by the explicit consent of particular individuals (as in the case of promises).[11] Gewirth takes an approach similar to that of Hart, but focuses on our capacity for rationally purposive agency. Gewirth argues that since freedom and basic well-being are pre-requisites for engaging in any rationally purposive action, any claims to those pre-requisites are based on a general attribute of all human beings. This places all human beings in a similar relation with one another, creating universal moral claims to freedom and basic well-being.[12]

A will theory of human rights is attractive insofar as, if true, it establishes powerful rights claims. However, several worries arise when a will theory of human rights is employed. First, according to this view there is no such thing as an unwaivable right, since to have a right means to be in a position to discharge

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[9] *Ibid.*, 9.

[10] Hart explains this through an example involving an individual X who promises another individual Y that X will look after Y's mother. Hart summarizes the right involved in the following way: "Certainly Y's mother is a person concerning whom X has an obligation and a person who will benefit by its performance, but the person *to whom* he has an obligation to look after her is Y. This is something *due* or *owed to* Y, so it is Y, not his mother whose right will disregard and to whom X will have done *wrong* if he fails to keep his promise, though the mother may be physically injured. And it is Y who has a moral *claim* upon X; is *entitled* to have his mother looked after, and who can *waive* the claim and *release* Y from the obligation" ["Are There Any Natural Rights?", 81, emphasis original].

[11] Hart, "Are There Any Natural Rights?", esp. 89-90.

[12] Gewirth, *Human Rights*, 41-67.

someone from her duty. As Jeremy Waldron notes, "[m]ost of us believe, for example, that we have duties to not kill, maim and torture other humans, but few of us believe that there are good reasons for allowing the potential victims of these actions (or anyone else) to set aside our duty not to perform them."[13] Perhaps it is simply the case this belief held by many is false, but there is a second and more pressing concern—a will theory cannot ascribe rights to those agents who are not in the proper relation to other human beings vis-à-vis rationality or individual freedom. Consequently, a will theorist has difficulty ascribing rights to any individual with marginal rational capacities (e.g. babies, mentally disabled persons). A third issue specific to climate change joins these two general problems. Clearly, climate change will impact future generations, but a will theory of human rights has severe difficulties ascribing rights to individuals who do not yet exist (i.e. future generations), as those non-existing individuals do not seem to be in the proper relation to current generations to allow them to discharge individuals of the current generation from their duties. Taking these three difficulties together, it should be no surprise that none of the scholars currently advancing a human rights approach for addressing climate change operate with a will theory.

Rather, scholars utilize an interest theory of human rights, and I do the same. This approach is most commonly associated with the work of Joseph Raz, whose definition of what it means to have a right I will adopt:

> *Definition*: 'X has a right' if and only if X can have rights, and, other things being equal, an aspect of X's well-being (his interest) is a

[13] Waldron, "Introduction," 9.

> sufficient reason for holding some other person(s) to be under a duty.[14]

Raz's definition is based on an additional claim that someone or something can possess rights "if and only if either his well-being is of ultimate value or he is an 'artificial person' (e.g. a corporation)."[15] On such an account, it is clear that human beings are possessors of rights, and thus *human rights* will be those rights possessed by all humans through universally shared interests.[16] For example, the interest in not being killed is important enough to any individual's well-being—since being killed is a complete destruction of one's well-being—that it would ground a right to not be murdered.

The advantages an interest theory holds over a will theory of rights should be obvious. The two primary problems for will theory—the issue of unwaivable rights and the problem of individuals with marginal rational capacities—are non-existent for an interest theory. Since all that matters is the interest protected by the right, it is irrelevant whether the individual can cognize this right or be in some relation to another individual in terms of discharging them from the duty required by that right. More relevant to our examination of climate change, an interest theory of rights is consistent with the claim that future persons have rights. I will defend the specifics

[14] Joseph Raz, *The Morality of Freedom* (Oxford: Clarendon Press, 1986), 166.

[15] *Ibid.* For an expanded discussion of what it means to be of ultimate value, see 176-180.

[16] It is worth noting that an interest theory of rights can be argued to ground both positive rights and negative rights. Whether a particular right is positive, requiring some specific provision to be provided to an individual, or negative, requiring merely non-interference, will depend on the interest that grounds that right. Moreover, it is possible that the same interest could be interpreted to ground both positive and negative duties. For example, my interest in basic subsistence might be argued to only ground a duty for others not to prevent me from obtaining food and shelter, but it could also be argued to ground a duty for others to provide me with food if I cannot obtain it myself.

of this claim in Chapter 4. For current purposes, it is sufficient to say an interest theory can uphold the rights of future generations while a will theory cannot.

Utilizing an interest theory also holds another advantage, because it offers an account that lines up with our general notion of rights in everyday life. Simon Caney, who takes a human rights approach to climate change, aptly summarizes this in his affirmation of Raz's theory:

> In Raz's view, rights serve to protect fundamental interests. This claim does make sense to our use of the notion of rights. We ascribe rights to protect highly valued interests (such as liberty of conscience, association, and expression) and our standard ascription of rights is guided by our account of what persons' most important interests are.[17]

Not only does the use of fundamental interests connect our everyday usage with the philosophical definition, it also allows for a conception of rights that matches up with the notion that human rights present minimal standards owed to all. Clearly, an interest in the conditions necessary for survival count as sufficient to generate a right in others, but an interest in having delicious food does not. This is not to say there might not be reasons to promote aesthetically pleasing food if everyone's survival conditions were met; there would just not be a human right to such food. Thus, we have a conceptual definition that matches up with the general practice of human rights in contemporary life, which is important if one hopes to utilize a human rights argument to seek actual change in the world.

It is important to speak briefly to the worries of human rights skeptics and why, in the face of those worries, we still ought to utilize a human rights framework.

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[17] Simon Caney, "Human Rights and Global Climate Change," in *Cosmopolitanism in Context: Perspectives From International Law and Political Theory*, eds. Roland Pierik and Wouter Werner (Cambridge: Cambridge University Press, 2010), 26.

Skeptics about human rights generally question, particularly in an age of globalization, the legitimacy of claims to universal values, something required by human rights. Martha Nussbaum has highlighted three primary challenges offered against universalist claims: the argument from culture, the argument from the good of diversity, and the argument from paternalism.[18] The argument from culture claims we cannot simply assume that cultural views and norms different from ours are bad and incapable of allowing individuals to live good lives; this is an argument based in a notion of moral relativism. The argument from the good of diversity holds that "our world is rich in part because we don't all agree on a single set of categories, but speak many different languages of value."[19] The world is better for its diversity and lack of universality according to this argument. Lastly, the argument from paternalism "says that when we use a set of universal norms as benchmarks for the world's various societies, telling people what is good for them, we show too little respect for people's freedom as agents."[20] Nussbaum rejects all three arguments on the grounds they themselves appeal to universal values, and goes on to argue for the Capabilities Approach—a framework of values that can be applied universally, yet leaves room for cultural variation and local flexibility. It is this very framework I will turn to in the later sections of this chapter to tackle the problem facing current human rights approaches for addressing environmental matters. Thus, I will wait until I have fully developed my human rights framework to provide specific responses to these skeptical arguments. At this point, it is

[18] Martha Nussbaum, *Women and Human Development: The Capabilities Approach* (Cambridge: Cambridge University Press, 2000), 41-59.
[19] *Ibid.*, 50.
[20] *Ibid*., 51.

sufficient to say that by basing my framework on Nussbaum's own approach, I can avail myself of her rejection of the skeptic for the time being.

2. Linking Human Rights and the Environment

With the theory of human rights I employ clear, we can turn our attention to the possible relations these rights have with environmental considerations. Here and in the following sections, I address this topic with respect to two of the three rights-based approaches identified in the previous chapter: environmental rights and basic human rights. Before addressing these two approaches, let me first explain why the third, the developmental rights framework, will not be considered. The development rights framework was developed to specifically address the appropriate distribution of the costs of mitigation and adaptation.[21] Given this, any violation of development rights would not be the direct result of the negative impacts of climate change. Rather, development rights are only violated when individuals are prevented from reaching a particular threshold of development. Most pertinent to climate change, this framework holds that when the costs of mitigation and adaptation are dispersed in such a way that developing countries are restricted from continued development (e.g. by caps on GHG emissions), then those countries' citizens' development rights are violated. Consequently, the rights violation is only indirectly linked to climate change, while being the direct result of specific patterns of adaptation or mitigation.

[21] See Paul Baer, "Greenhouse Development Rights: A Proposal for a Fair Global Climate Treaty," *Ethics, Place, and Environment* 12, no. 3 (2009): 268-281; Paul Baer, Tom Anthanasiou, Sivan Kartha, and Eric Kemp-Benedict, "Greenhouse Development Rights: A Framework for Climate Protection That is 'More Fair' Than Equal Per Capita Emissions Rights," in *Climate Ethics: Essential Readings*, eds. Stephen M. Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010), 215-230.

By placing the focus primarily on the distribution of costs related to adaptation or mitigation, the development rights framework actually has more in common with the equity approaches rejected in the previous chapter, rather than the direct link that exists between climate change and both environmental rights and basic human rights. Another reason for focusing on approaches offering a direct link between climate change and rights violations is that they provide a more complete account of what the harm of climate change is and where responsibility for it originates. As it will turn out, the account I offer over the next few chapters yields similar consequences for the developed and developing world as the development rights framework, while offering the extra strength provided by a direct link between climate change and human rights.

In establishing a direct link between climate change and human rights, it is essential to provide a clear account of the relation between the natural world and human rights. When examining generally accepted human rights (e.g. right to basic health), the environment undoubtedly plays an important instrumental role in providing the underlying conditions necessary for the fulfillment of these rights. Consequently, one might say that since I need certain environmental conditions to have my moral claims met, I have a moral right to those particular environmental conditions, as my interest in having my moral claims met constitutes a sufficient interest for generating a right. However, this leaves the following question unanswered: is this moral right to those environmental conditions distinct from other identified human rights or is it merely a built-in component of other rights? The two options represent the approaches existent in the literature that directly link human

rights to climate change. The first defends a generic "environmental right" that while related to other human rights is distinct from them, and then shows that the effects of global climate change infringe on this right.[22] The second defends the claim that the effects of global climate change violate other established human rights, such as rights to health, food, and so on.[23] However, these approaches are not mutually exclusive. It is possible to defend a generic environmental human right and show that climate change infringes not only this right, but other rights as well.[24]

To some, it might seem an environmental right can only be understood through other rights, and thus the distinction just made is irrelevant. However, this distinction is useful, as it is vitally important to clarify the exact right(s) involved, since the scope of resultant duties is dependent on the particular rights in play. For example, if climate change is merely a violation of rights to basic health and subsistence, then there might not be any obligations for keeping the environment in

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[22] *cf.* James Nickel, "The Human Right to a Safe Environment: Philosophical Perspectives on Its Scope and Justification," *Yale Journal of International Law* 18, no. 1 (1993): 281-295; Tim Hayward, *Constitutional Environmental Rights* (Oxford: Oxford University Press, 2005); Richard Hiskes, *The Right to a Green Future: Environmental Rights and Intergenerational Justice* (Cambridge: Cambridge University Press, 2009). It should be noted, however, that while all three offer defenses of a generic environmental human right (e.g. a right to an adequate environment) none offer a focused discussion on how the effects of climate change infringe upon that right.

[23] This approach is typified by the recent work of Simon Caney; see his, "Cosmopolitan Justice, Rights and Global Climate Change," *Canadian Journal of Law and Jurisprudence* 19, no. 2 (2006): 255-278; "Human Rights, Responsibilities, and Climate Change," in *Global Basic* Rights, eds. Charles Beitz and Robert Goodin (Oxford: Oxford University Press), 227-247; "Climate Change, Human Rights, and Moral Thresholds," in *Human Rights and Climate Change*, ed. Stephen Humphreys (Cambridge: Cambridge University Press, 2010), 69-90; and "Human Rights and Global Climate Change," 19-44. This type of account is generally tied to the package of basic subsistence rights made famous by Henry Shue, see his *Basic Rights: Subsistence, Affluence, and U.S. Foreign Policy*, 2nd Edition (Princeton, NJ: Princeton University Press, 1996).

[24] Steve Vanderheiden seems to take something akin to this route in his recent book by talking of both "environmental rights" and how climate change violates a right to basic health, see *Atmospheric Justice*, 240-252. Additionally, in a footnote in one of his articles, Simon Caney gives the impression he is doing the same thing as Nickel and Hayward, which would place him under this combined approach (see Caney, "Human Rights and Global Climate Change," p. 21). However, I take other rights to be doing all the work in Caney's account and thus confine him to the second approach.

any particular condition or making GHG reductions, if basic health and subsistence can be met through technological advancements. However, if one holds there is a human right to self-determination or a right to one's homeland, then there might be strong obligations to protect certain geographies through massive attempts at mitigation and aid directed at adaptation in those areas, in order to avoid having environmental refugees whose right to self-determination is infringed.[25] Moreover, understanding climate change as violating a more general environmental human right might entail obligations of sustainable development and strong environmental protections that might not exist as components of other established rights. However, the demand of the obligations will depend on the scope of the environmental right, which in turn depends on its justificatory argument. Consequently, it is necessary to examine the justificatory arguments used in each approach to draw out the content of the rights involved and the scope of resultant obligations.[26]

3. Climate Change as a Violation of an Environmental Right

The first way to link climate change to human rights hinges on the establishment of a generic environmental right (e.g. a right to an adequate environment), which would then be the right infringed by climate change. While there are a few sustained defenses of such a right, there is no sustained argument

[25] Kit Wellman and Andrew Altman, drawing from the Universal Declaration of Human Rights, talk of such a right as a genuine human right; see their *A Liberal Theory of International Justice* (Oxford: Oxford University Press, 2009), esp. 2-3 and 10-42.

[26] There is also a parallel here with respect to the question of whose right is being violated, since certain rights might already be (or will soon be) infringed, while others will only be infringed for future generations.

applying this right to climate change.[27] However, if one can justify a right to some general level of environmental quality, then the application to climate change is straightforward, given the extensive data from the IPCC and other sources regarding the myriad ways climate change can harm environmental quality. Even more conservative estimates in the IPCC's most recent assessment show environmental impacts in populated geographic areas, particularly severe flooding in low-lying coastal plains, such that it would be hard to conceive how the inhabitants' right to an adequate environment would not be violated.[28] Given that obligations, which arise from scenarios like the flooding case, will hinge on the nature of the environmental right itself, my remarks in this section focus solely on clarifying the content and scope of such a right.

Heretofore, I have been playing fast and loose with what is meant by an "environmental human right." Generally, I have stuck with the ambiguous "right to an *adequate* environment" without providing any discussion of what makes an environment adequate. The Rio Declaration from the 1992 United Nations Conference on Environment and Development (known as "the Earth Summit") formulates such a right, perhaps slightly less ambiguously, as a right to a "healthy

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[27] At least I have not been able to find any sustained focus on such a right and climate change in the literature. The two most recent works defending an environmental right, Richard Hiskes' *The Right to a Green Future* and Tim Hayward's *Constitutional Environmental Rights*, only mention the issue of climate change on ten or so pages. Steve Vanderheiden might come the closest to this, however he focuses less on an environmental right of the type being discussed here and more on a right to climatic stability; see Vanderheiden, *Atmospheric Justice*, 240-257.

[28] IPCC, *Climate Change 2007: Impacts, Adaptation and Vulnerability - Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Martin Parry, Osvaldo Canziani, Jean Palutikof, Paul van der Linden, and Clair Hanson (Cambridge: CUP, 2007), especially the "Summary for Policymakers," 7-22; available on-line at <http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg2_report_impacts_adaptation_and_vulnerability.htm>; *cf.* World Bank, *World Development Report 2010: Development and Climate Change* (Washington, D.C.: The World Bank, 2010).

and productive life in harmony with nature."[29] Other international declarations, conventions, and constitutions, as well as the scholarly literature, identify the content of such a right in terms of "ecological equilibrium or balance", "sustainable development", "an environment suitable for development of the person", or through "aesthetic aspects of environmental quality".[30] Even more unhelpfully, the primary defenders of a general environmental human right show no *prima facie* agreement among themselves. James Nickel advocates a "right to a safe environment", while Tim Hayward defends a "right to an adequate environment for (human) health and well-being" and Richard Hiskes simply talks of "environmental rights" with no clear statement of their content.[31]

However, this disagreement and ambiguity fades as one moves from the general locutions each uses to their justificatory arguments. By shifting focus, we see that each defense and formulation of the environmental right hinges on the instrumental relationship between environmental conditions and the enjoyment of other established fundamental rights. For example, both Nickel and Hayward use similarly structured arguments focused on identifying vital interests that are universally applicable and then showing how environmental conditions are relevant to those interests. In defending their claims, both turn to health impacts, with Nickel drawing heavily on cases of severe pollution and contamination and Hayward

[29] *Rio Declaration*, Principle 1 [UN Doc. A/CONF.151/26 (vol. I); 31 ILM 874 (1992)].

[30] These examples all come from Tim Hayward's discussion of numerous sources and international documents, see his *Constitutional Environmental Rights*, 27-31.

[31] Nickel, "The Right to a Safe Environment," 281-295; Hayward, *Constitutional Environmental Rights*; and, Hiskes, *The Right to a Green Future*. Given the ambiguous nature of Hiskes' discussion, I will focus my remarks on the work of Nickel and Hayward, though I take the same worries I point out about their work as applying to Hiskes.

utilizing Nickel's argument.[32] Both continuously return to underlying human interests already protected by or connected to generally recognized human rights. From this, they conclude that potential harms to these interests justify a general right to some particular environmental standard.

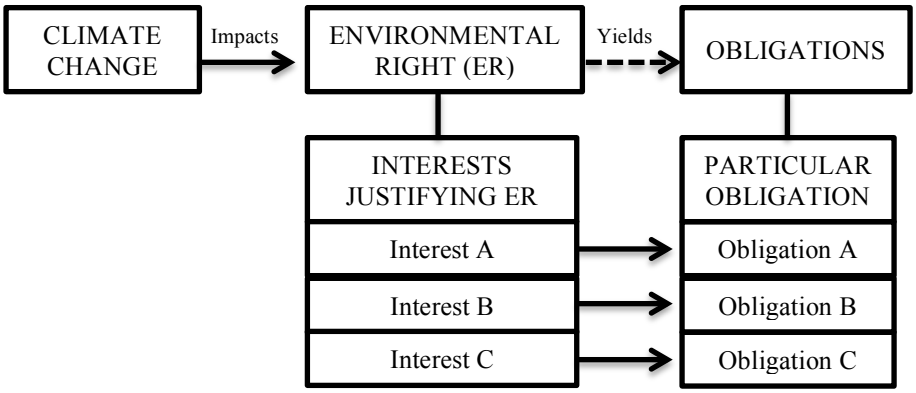
To many this might reduce the concern about vagueness or ambiguity in addressing an environmental right. Whatever locution we use is merely a placeholder for saying that we have a right to the environmental conditions that allow the satisfaction of recognized human rights. Such conditions are generally discussed via health, indicating a strategy for addressing violations and determining what obligations individuals possess. Yet, this might lead to the conclusion that an environmental right is ultimately epiphenomenal. It is something fully contained, conceptually, within other rights (e.g. the right to basic health) and can yield no additional obligations beyond those already demanded.

Think for a moment how this approach would work with respect to climate change. To claim the effects of climate change infringe on a generic environmental right, one has to show that those effects damage the fundamental interests justifying the environmental right. As such, if the environmental right is justified by our interest in basic health, we can recognize violations of the environmental right via health impacts (i.e. if climate change negatively impacts health beyond some minimal threshold, then it violates our environmental right). However, if we concede there is a right to basic health, then it is not entirely clear whether climate change is violating both our right to basic health and our environmental right or only

[32] Nickel, "The Right to a Safe Environment," 288-290; Hayward, *Constitutional Environmental Rights*, 47-49.

one of them. The unease here is that our environmental right is actually doing no work in determining human rights violations and resultant obligations; rather, it is our interest in and right to basic health doing the work, making our environmental right superfluous (see Figure 2.1). Yet, the reference to basic health begins to sound more like the second approach—the basic rights approach.

Figure 2.1. Environmental Rights Approach



The problem with the environmental rights approach can be generalized in the following manner. Assume there is some right to X for which interests A, B, and C provide complete justification. Now, assume we identify what we call a right to Y that also happens to be justified by interests A, B, and C. Even though we might use different names, X and Y, to refer to the object of the rights in question, it would seem that in line with the principle of the Identity of Indiscernibles the right to X and the right to Y must be identical. As long as they are justified through the exact same interests, the rights cannot be conceptually distinct in the moral domain.

A proponent of environmental rights might respond in one of three ways. First, she could agree that on a moral analysis there is no environmental right distinct

from other justified human rights, but still claim that the *language* of environmental rights provides a helpful tool, within certain political and policy domains, for highlighting a specific aspect of human rights (i.e. that they have ecological considerations as part of their moral claims). However, even if the language is useful, we still need a detailed analysis of particular interests involved to know what policies this language supports. Second, she might appeal to the fact that while they are extensionally equivalent, they are intensionally distinct. Yet, any such appeal is still going to require an examination of the particular interests involved for either intension (i.e. basic rights or the environmental right) in order determine which interests are relevant to environmental matters. Third, she might reject the implication in the previous paragraph that the interest(s) sufficient for justifying any particular human right would be sufficient for grounding an environmental right. On this response, a proponent of an environmental right would argue that operationalizing an environmental right via health impacts is only one of many ways to address the scope of the interests impacted. Thus, if there is a right to basic health and this right is completely justified by interests H_1, H_2, and H_3, these interests would only be necessary, but not sufficient, for justifying our environmental right. A complete justification of our environmental right would come from the conjunction of all relevant justificatory interests for human rights with ecological aspects.

This conceptualization of a fully justified environmental right distinct from other human rights can be seen in the following, where HR stands for any given human right and I stands for a justificatory interest. Suppose that HR_1 is completely justified by I_1 and I_2, and HR_2 is justified by I_3, I_4, and I_5. If both HR_1 and HR_2 have

ecological aspects built-in (and for the sake of discussion are the only human rights with such aspects), then one's environmental right would be the right that is fully justified by the conjunction of I_1, I_2, I_3, I_4, and I_5. Thus, there would be a right that is distinct from HR_1 and HR_2, while still being tied to those operational elements.

Still, this attempt to defend an environmental right as distinct and thus yielding its own obligations apart from any other right runs into a serious problem of scope. If we want to be able to claim that climate change violates an environmental right and address *all* the obligations such a violation would entail, then we will have to identify all the justificatory interests for the environmental right and analyze how climate change impacts that entire package. This can be put another way by returning to our examples of HR_1 and HR_2, and assuming there is an environmental right (ER) fully justified by the conjunction of I_1, I_2, I_3, I_4, and I_5. Assume that climate change negatively impacts I_2, I_4, and I_5. If we only understand ER through HR_1 (as it seems Nickel and Hayward do), then we would recognize the adverse impact to I_2 and claim that ER would demand some obligation related to that impact. However, even if that obligation were fulfilled, there would still be a violation of ER since the obligations of ER would be defined not only through I_2, but also through I_4 and I_5. Thus, to fully address a violation of ER, one would have to be able to identify all relevant interests, consequently identifying the complete scope of ER.

What should be clear is that any attempt by proponents of environmental rights requires a closer examination of the specific interests involved. In the case of admitting no conceptual distinction between an environmental right and other established human rights, we have to turn to the justificatory interests since they

define the scope of our obligations. In cases maintaining the conceptual distinction between an environmental right and other established human rights, we have to be able to identify all the relevant justificatory interests of other human rights that have ecological aspects in order to know the scope of an environmental right and what obligations it would entail. In either response, we see the importance of other human rights and their justificatory interests, which consequently turns our attention to the second approach for linking climate change to human rights.

4. Climate Change as a Violation of Non-Environmental Rights

The second way of understanding how effects of climate change constitute a human rights violation is straightforward and can be inferred from the discussion in the previous section. Drawing from the recent work of Simon Caney, we can outline the general argument in the following fashion:

1. "A person has a right to X when X is a fundamental interest that is sufficient to impose obligations on others."[33]
2. "Global climate change damages persons' fundamental interests."[34]
3. "Adequate protection of the interest in not suffering from the ill effects of global climate change does not impose unduly demanding obligations on others."[35]
4. Therefore, "[p]ersons have a right not to suffer from the ill effects associated with global climate change."[36]

Though Caney takes the additional step to establish a "right not to suffer from the ill effects of global climate change", this simply derives from individuals' "fundamental interests" in Step 2, which for Caney is synonymous with an individual's human

[33] Caney, "Human Rights and Global Climate Change," 25. Here we simply see an affirmation of Raz's interest theory of rights I presented in Section 1.
[34] *Ibid.*, 26.
[35] *Ibid.*, 28.
[36] *Ibid.*, 29.

rights. Thus, the moral claims involved stem from the various human rights individuals possess, without making any general environmental claims. Among the interests relevant to climate change Caney counts interests in "access to food and water", "avoiding involuntary threats to persons' health", and "not being deprived of the capacity to develop".[37] For Caney, or anyone taking this approach, these basic interests define the content and scope of human rights violations due to the effects of climate change. There is no need for a general environmental right, given that particular rights cover all necessary aspects.

While Caney's argument is generally more helpful than the first approach in terms of isolating the particular content of the rights involved, there is still a question about the completeness of his account. Caney provides no general argument for the fundamental interests he identifies as being sufficient for grounding human rights—though the interests he uses seem uncontentious. What is problematic is that he does not make it clear whether these interests exhaust those impacted by climate change. The concern is that Caney relies too much on rights (and thus the interests justifying them) generally recognized in current international law and then only addresses a handful of these, rather than attempting to get a more complete picture of all relevant moral rights or underlying interests. Though this is likely intentional on Caney's part due to the difficulties of such an inventory, the argument leaves open a question about the full extent of the obligations resulting from the relevant moral claims. Caney concludes that each generation is obligated to maintain environmental standards that "it is willing to apply to others and which it would want preceding

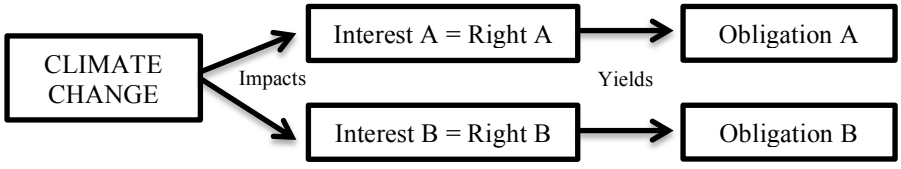
[37] *Ibid.*, 26; *cf.* Caney, "Cosmopolitan Justice, Rights and Global Climate Change," 259-261.

generations to have applied to it."[38] Yet, given the numerous options available for mitigation and adaptation, it is not entirely clear what standards ought to be maintained and which options should be selected for maintaining those standards. Moreover, given the fact that Caney derives his claim from a discussion of John Rawls' just savings principle, it is not clear the environmental standards he calls for necessarily follow from the rights violations he identifies.[39]

To make the point clear, consider the following two interpretations: the Minimalist and the Maximalist, referring to the extent of rights coverage in each.

> *Minimalist*. The only vital interests damaged by the effects of climate change are those to basic subsistence. As a result, climate change only violates rights to basic health and food, and the only protections that ought to be afforded to individuals (both present and future) are with respect to their being able to meet minimal levels of these. If this is the case, then the resultant obligations due to the effects of climate change can only be understood vis-à-vis these interests and might not entail reductions of GHGs, assuming all present individuals' minimal health and food needs could be met through technological or medical advancement (and the same could reasonably be said for all future persons). Thus, this interpretation would not necessarily require environmental protection or attempts at mitigation.

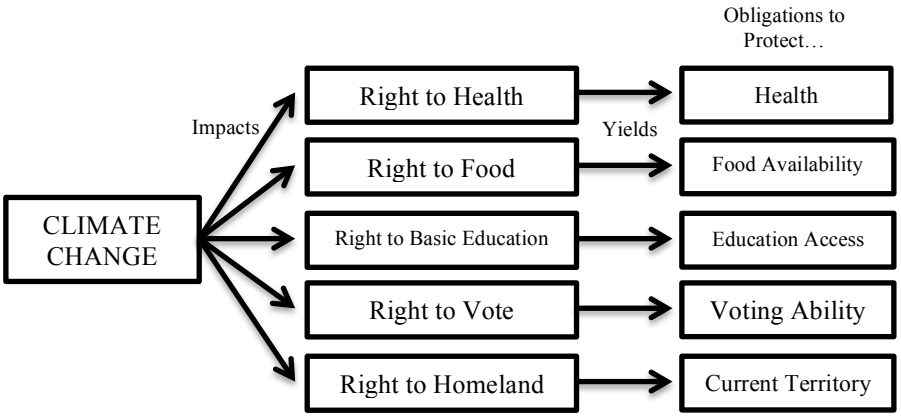
Figure 2.2. Basic Rights Approach (Minimalist)



[38] Caney, "Human Rights and Global Climate Change," 44.
[39] See particularly, Caney, "Human Rights and Global Climate Change," 41-44.

Maximalist. The vital interests and package of rights infringed includes not only basic subsistence rights, but also, social, cultural, and political rights (e.g. the right to self-determination mentioned earlier in the chapter). Consequently, the resultant obligations due to the effects of climate change on both present and future generations will cover a much larger scope than in the Minimalist Interpretation and will more than likely require both significant mitigation efforts and reduction of GHGs, as well as the development of adaptive technologies that are freely transferred to the developing world. Additionally, it is plausible that under this interpretation, the package of rights infringed would require the implementation of significant environmental protections.

Figure 2.3. Basic Rights Approach (Maximalist)



Caney's general position would most likely fall closer to the Maximalist than the Minimalist. In comparing these two scenarios, the point is simply to highlight the fact that it is not enough to establish that climate change infringes on *some* human rights. Rather, we must understand conceptually the entire package of relevant interests involved and how the environment relates to them. This is particularly important when examining the resultant obligations, since if it is only a matter of health interests there might be numerous options available that would fulfill our obligations. However, if one of these options does not also respond to climate

change's harm of another fundamental interest (or perhaps harms another interest itself), then that option ought to be ruled out, changing our obligations. Consequently, just as the first approach required us to ultimately turn our focus to the underlying interests, this approach points to the need to examine the relation between the environment and all interests fundamental to human well-being.

While acknowledging the helpful shift in focus provided by this second approach, it seems we are still unable to avoid the scope problem facing the environmental rights approach. Though we are better able to capture *some* of the specific ways in which climate change infringes on human rights, we still need an exhaustive list of human rights and an understanding of the full extent of how the effects of climate change impact those rights. Without a complete account, we are unable to identify the scope of rights violations or the scope of resultant obligations due to the effects of climate change (or any type of environmental impact for that matter).

One might object to the legitimacy of this concern for multiple reasons. First, with an issue as complex as climate change, particularly given uncertainties regarding future projections, it seems impossible to identify *all* relevant interests. Second, responding to this concern demands an exhaustive list of fundamental human interests, and thus an exhaustive list of human rights, something highly contentious. Third, one might say that even if you cannot produce an exhaustive list, a partial account like Caney's results in enough obligations to significantly reduce the extent of unknown rights violations. Lastly, it might seem at this point it is no longer a matter of theory and is instead an issue of pure empirical analysis regarding

the effects of climate change—something better left to climatologists, geographers, and other social scientists. To fully address these worries would be an impossible task. However, I will offer an alternative framework that can be used to link the environment to human rights in a way that avoids the problem of scope and need for an exhaustive listing of fundamental interests, or at least greatly diminishes the problem of scope. This task takes up the remainder of this chapter, which examines the Capabilities Approach and recent work by Breena Holland.

5. Identifying Relevant Interests: Capabilities and Human Rights[40]

Amartya Sen originally developed the Capability Approach as an alternative to the standard economic frameworks used to analyze international development policy. While Sen has continued to develop and refine his theory, it remains focused on the importance of the individual's freedom and her ability to turn things she has at her disposal into outcomes she values:

> A person's advantage in terms of opportunities is judged to be lower than that of another if she has less capability – less real opportunity – to achieve those things that she has reason to value. The focus here is on the freedom that a person actually has to do this or be that – things that he or she may value doing or being.[41]

[40] In this section discussing capabilities theory, I follow many scholars in distinguishing between Amartya Sen and Martha Nussbaum's work, by referencing the former's as the Capability Approach and the latter's as the Capabilities Approach. Capabilities theory will be used as a general reference for any work that employs a capabilities framework. I am indebted to Breena Holland for pointing out this manner of distinguishing the theories when commenting on a previous draft of the chapter. Ultimately, I focus solely on Nussbaum's Capabilities Approach.

[41] Amartya Sen, *The Idea of Justice* (Cambridge, MA: Belknap Press, 2009), 231-232. For Sen's earlier presentations of his theory and its development see his *Commodities and Capabilities* (Oxford: Blackwell, 1984); *The Standard of Living: The Tanner Lectures* (Cambridge: Cambridge University Press, 1987); "Capability and Well-Being," in *The Quality of Life*, eds. Amartya Sen and Martha Nussbaum (Oxford: Clarendon Press, 1993), 30-53; and *Development as Freedom* (Oxford: Oxford University Press, 1999).

Martha Nussbaum, with her Capabilities Approach, has further developed this key insight from Sen.[42] Nussbaum offers arguments for its philosophical roots and justification and presents a list of central human capabilities (something Sen is hesitant to provide). In doing this, she offers a partial theory of justice, rather than Sen's more evaluative version with room for plural forms of application. Regardless of focus, both Sen and Nussbaum's versions of capabilities theory offer an important insight: well-being ought to be conceptualized in terms of individuals' abilities to *actually* do things resulting in things or states they value.

This insight can be further explained by differentiating among three concepts central to capability theory: functionings, capabilities, and an individual's capability set. Sen defines the first two in the following manner, which has been taken up by Nussbaum as well:

> *Functionings* represent parts of the state of a person–in particular the various things that he or she manages to do or be in leading a life. The *capability* of a person reflects the alternative combinations of functionings the person can achieve, and from which he or she can choose one collection.[43]

Capabilities are the possible things people can do, while functionings are what people actually do. For example, if I have been accepted to both Generic State University and Typical Liberal Arts College—and can afford to attend either—I have the capability to go to college. This is a real, live option for me. This is true whether I choose to attend one of the schools or not. Now, say I choose to attend TLAC.

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[42] For Nussbaum's primary presentations of her variation of the Capabilities Approach see her *Women and Human Development: The Capabilities Approach* (Cambridge: Cambridge University Press, 2000) and *Frontiers of Justice: Disability, Nationality, Species Membership* (Cambridge, MA: Belknap Press, 2006). For more on the explicit differences between Nussbaum and Sen, see *Women and Human Development*, 11-15.

[43] Sen, "Capability and Well-Being," 31; *cf.* Nussbaum, *Women and Human Development*, 86-88.

Going to TLAC (and not GSU, or no school) is then my functioning. Expanding from this, we can then say that an individual's capability set is the set of all capabilities a person possesses, which determines the alternative functionings the individual can achieve.[44] An individual's capability set ought to be considered when determining an individual's well-being, rather than her particular functionings.

Nussbaum draws on these distinctions to define a list of central human capabilities. According to Nussbaum, this list "isolates those human capabilities that can be convincingly argued to be of central importance in any human life, whatever else the person pursues or chooses."[45] These central human capabilities consist in the following, which I quote at length:

1. *Life*. Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living.
2. *Bodily Health*. Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.
3. *Bodily Integrity*. Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.
4. *Senses, Imagination, and Thought*. Being able to use the senses, to imagine, think, and reason—and to do these things in a "truly human" way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to have pleasurable experiences and to avoid nonbeneficial pain.

[44] See Sen, "Capability and Well-Being," 36.
[45] Nussbaum, *Women and Human Development*, 74.

5. *Emotions*. Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by fear and anxiety. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development.)
6. *Practical Reason*. Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience and religious observance.)
7. *Affiliation*.
    A. Being able to live with and towards others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech.)
    B. Having the social bases of self-respect and nonhumiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails provisions of nondiscrimination on the basis of race, sex, sexual orientation, ethnicity, caste, religion, national origin.
8. *Other Species*. Being able to live with concern for and in relation to animals, plants, and the world of nature.
9. *Play*. Being able to laugh, to play, to enjoy recreational activities.
10. *Control over One's Environment*.
    A. *Political*. Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association.
    B. *Material*. Being able to hold property (both land and movable goods), and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. In work, being able to work as a human being, exercising practical reason and entering into meaningful relationships of mutual recognition with other workers.[46]

It is important to note that, for Nussbaum, moral claims are to capabilities, not actual functionings. Taking "Bodily Health" as our example, my moral claim is simply to

[46] Nussbaum, *Frontiers of Justice*, 76-78; *cf.* Nussbaum, *Women and Human Development*, 78-80.

the conditions being such that it is possible for me to be adequately nourished, if I so chose. My moral claim here is not to be to be adequately nourished, which might require force-feeding me if I choose not to eat. Rather, my moral claim is to have nothing preventing me from having adequate nourishment, if I want it. Thus, I have a right to the ability to acquire food necessary for nourishment, but not necessarily having food directly given to me. Since the claim here is to the capability, it also means that someone who is of the upper-middle class has a moral claim to food they can afford to purchase, while the individual of the lower class could have a claim to food assistance programs, when her wages do not provide the ability to purchase adequate nourishment. Moreover, Nussbaum holds that capabilities have threshold levels, "beneath which it is held that truly human functioning is not available to" individuals.[47] Thus, from these capabilities all individuals have shared moral claims to the minimal thresholds for each capability. Note, however, that in many cases these claims would generally be conceived in terms of negative rights (i.e. rights of non-interference), thus not creating overly demanding obligations (something, as we saw above, Caney regards as essential for rights claims).

With this framework in place, we can now connect the Capabilities Approach to our primary topic of human rights. Though Nussbaum regards her approach "as a species of the human rights approach," she is hesitant to make a direct correlation between the central capabilities and human rights.[48] However, this hesitancy appears

[47] Nussbaum, *Frontiers of Justice*, 71.

[48] *Ibid.*, 284. For Nussbaum's general discussions on the relation between her approach and human rights see, *Women and Human Development: The Capabilities Approach* (Cambridge: Cambridge University Press, 2000), 96-101, and "Capabilities and Human Rights," in *Global Justice and Transnational Politics: Essays on the Moral and Political Challenges of Globalization*, eds.

to come from a focus on legal rights. Nussbaum rightly highlights that a focus only on rights (in a legal sense) does not address whether an individual is actually able to engage in the activity protected by that right. I will discuss this issue in more detail in the next chapter, but as seen in this simple example, Nussbaum's reasoning is clear. Just because an individual has a legal right to vote, it is still possible she will be prevented from actually voting if there are other defeating factors (e.g., inability to get to the polling station). In a case with defeating factors, a focus on rights (in a legal sense) leads to the conclusion the individual's right to vote was not violated. Yet, this seems to miss important considerations leading Nussbaum to prefer capabilities as the primary mode of analysis.

However, if we are treating human rights in a strictly moral sense, as outlined at the beginning of the chapter, there is every reason to claim a direct correlation between the central capabilities and human rights. If human rights are defined by those interests shared universally and of fundamental importance to one's life as a human, such that they would be sufficient to ground obligations in others, then it seems Nussbaum's list of central capabilities identifies those interests.[49] I, and every other human being, have an interest in the conditions being such that those capabilities' threshold levels are met. Put generally, if X is a central human capability, then I have a human right to X, where the obligations would be spelled

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Pablo de Greiff and Ciaran Cronin (Cambridge, MA: The MIT Press, 2002), 117-149; *cf.* Amartya Sen, "Human Rights and Capabilities," *Journal of Human Development* 6, no. 2 (2005): 151-166.

[49] For Nussbaum, given her focus on a political justification and implementation of her approach, capabilities ground obligations borne by states, not individuals. However, in applying an interest theory of rights, as I do here, it seems there is no reason to exclude individuals as bearing duties stemming from rights grounded in the shared interests articulated by the central capabilities.

out in terms of protecting the conditions that allow me to actually fulfill X (i.e. make it a functioning) if I so choose.[50]

Treating human rights and capabilities in this manner allows us to have, as Bernard Williams has commented, the capabilities "do the work".[51] Human rights present minimum moral demands for human interactions, and these demands are set by the capabilities. We can see this in the example of voting given above. I have a minimum moral demand to participate in the political process, under the capability of "Control over One's Environment." Yet, since it is a capability that defines my entitlement, it is not simply that I have a legal right to participate; my demand is that I have an actual opportunity to participate, when examined in a broad context. If you steal my car so I cannot get to the polling station, you have violated my right to political participation. One's being human entitles her to threshold levels of the central capabilities identified above. Nussbaum speaks to the advantage of using capabilities in this relation to rights, noting that "thinking in terms of capability gives us a benchmark as we think about what it is to secure a right to someone."[52] If I act in a way that prevents someone from reaching her minimal threshold level for any given capability, I thereby violate her human rights. Capabilities give us an operational vocabulary for assessing whether basic human entitlements are met, and thus whether human rights, from a moral perspective, are violated.

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[50] Johannes Morsink uses this type of argument and connection between capabilities and fundamental interests to argue that the Capabilities Approach can provide the ground from the human rights identified in the Universal Declaration of Human Rights, see his *Inherent Human Rights: Philosophical Roots of the Universal Declaration* (Philadelphia, PA: University of Pennsylvania Press, 2009), 161-185.

[51] Bernard Williams, "The Standard of Living: Interests and Capabilities," in *The Standard of Living*, ed. Geoffrey Hawthorn (Cambridge: Cambridge University Press, 1987), 100; quoted in Nussbaum, *Women and Human Development*, 97-98.

[52] Nussbaum, *Women and Human Development*, 98.

At this point, it might seem that not only have we done little to help solve the scope problem identified with the human rights approaches addressed above, we have said nothing about how the Capabilities Approach helps us address environmental issues generally and climate change specifically. Unless we think Nussbaum has provided an exhaustive list of central capabilities, something she denies as she leaves open the possibility for continued cross-cultural dialogue that could alter the list, we have no answer to whether we can fully address the scope of rights violated by climate change. Moreover, only the "Other Species" capability seems suited for directly addressing environmental matters and even then, the scope of this capability is unclear, given the ambiguity of the phrase "concern for". To address how the Capabilities Approach can help provide an answer to the problem of scope and provide the grounding for a human rights approach to addressing climate change, we bring in the work of Breena Holland, who has helpfully shown how the Capabilities Approach can be expanded to include an environmental meta-capability. This environmental meta-capability makes the direct link between climate change and human rights and lessens the scope problem.

6. Bringing in the Environment: Ecological Sustainability as a Meta-Capability

Holland recognizes the absence of an account of the instrumental value of the environment in Nussbaum's theory and offers an expanded reading of the Capabilities Approach emphasizing this fact. In doing so, Holland treats "certain environmental conditions as instrumental to human capabilities in the same way that Nussbaum treats material things such as shelter, nourishment, and property as

instrumental to human capabilities."[53] More importantly, Holland offers the important insight that some environmental conditions are a pre-requisite even for the things Nussbaum treats instrumentally, and thus we ought to conceive these environmental conditions as their own "meta-capability."

Holland begins her argument by noting the role that ecological systems and the natural environment play in enabling the capabilities on Nussbaum's current list. Holland observes, regarding the capability of "Bodily Health," that:

> Being able to have good health and nourishment requires that ecological systems function at a level that can sustain the provision of soil, water, and atmospheric temperature that enable agricultural production and the absorption of human produced waste (pollution).[54]

This fits with the appeals to health that we saw from Hayward, Nickel, and Caney. However, Holland notes that the instrumental value of the environment extends to other capabilities that might not be as easily connected to the natural world. She notes regarding the fourth capability, "Senses, Imagination, and Thought," that "components of ecological systems influence the religious, spiritual, and cultural aspects of human experience, making it possible for people to use their senses, imagination, and thought in ways that make their lives meaningful."[55] Holland concludes that this relation holds for all central human capabilities and consequently they all require "a natural environment that enables the components of that capability."[56]

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[53] Breena Holland, "Justice and the Environment in Nussbaum's 'Capabilities Approach': Why Sustainable Ecological Capacity is a Meta-Capability," *Political Research Quarterly* 61, no. 2 (2008): 320.

[54] *Ibid*., 323.

[55] *Ibid*.

[56] *Ibid.*

From this observation, Holland claims that Nussbaum's account is unable to fully identify what morality demands. However, integrating the insights of the previous paragraph into the Capabilities Approach can solve this. To do this, Holland adds "Sustainable Ecological Capacity" to Nussbaum's list as a meta-capability, noting that it enables all other capabilities on the list. She defines this meta-capability in the following manner:

> Having this meta-capability involves being able *to live one's life in the context of ecological conditions that can provide environmental resources and services that enable the current generation's range of capabilities; to have these conditions now and in the future.*[57]

Holland takes this to be more fundamental than any capability on Nussbaum's list, and notes that protection of this meta-capability will require not only "the protection of ecological systems at a level that promises to sustain the conditions of life on earth," but also "the protection of ecological systems at a level that promises to sustain the particular resources and maintain the physical context for environmental experiences that enable threshold levels of other central human functional capabilities."[58]

Before making the link between this meta-capability and human rights, it is important to respond to the idea that in making this move, we have not done anything to help address the problem of scope present in the other rights approaches. While Holland's work usefully highlights the instrumental value of the environment, that value is still something operationalized via specific capabilities, and thus would require an exhaustive list of capabilities to fully address the moral claims related to

[57] *Ibid.*, 324. Emphasis original.
[58] *Ibid.*, 325.

the effects of climate change. However, this unease is lessened due to the nature of "Sustainable Ecological Capacity" as a meta-capability. Since capabilities are understood via threshold levels, then there is a base threshold level for ecological capacity, which would be the functioning of natural systems such that they enable the conditions of life and the possibility of other capabilities. This means that all local ecosystems must maintain a basic functional state, which points to, at minimum, a need to maintain and protect ecosystems that have yet to be harmed and restore those that have been harmed. This will be true regardless of the specific capabilities identified.

Sustainable ecological capacity can skirt the scope problem with respect to climate change. This is clear from Holland's own discussion of this meta-capability.[59] She notes that due to the interconnected nature of ecological systems and the fact that in a world of globalization the material needs of people in one country often are met by natural resources from others, it is likely that when people in the United States increase their capabilities beyond minimal thresholds, it decreases the likelihood for meeting the ecological capacity threshold in a place like Bangladesh. As we (in developed countries) use additional resources beyond what capability thresholds require, we create impacts that threaten the capability thresholds of those in other countries. Moreover, since "Sustainable Ecological Capacity" is more fundamental than any other capabilities (whatever they might be identified to be), it is what must be addressed in the first instance, rather than impacts to other capabilities.

[59] *Ibid.,* 327-330.

Holland notes that this fundamental role of the environment also yields maximum allowable levels of capability protection, creating "capability ceilings." She summarizes this with the following:

> The relationship between Nussbaum's capabilities and the ecological meta-capability also suggests that in a world connected by large-scale ecological interactions, Nussbaum's capabilities approach not only needs to account for the ecological conditions that enable a minimum threshold (or floor) of capability protection required for justice, as Nussbaum already argues, but also needs to account for the maximum (i.e. ceiling) level of capability protection that a society can justify without impacting ecological conditions in ways that undermine the capabilities of vulnerable populations in sometimes distant locations.[60]

While this notion of capability ceilings will feature more prominently when explicitly discussing the responsibilities that result from a right to sustainable ecological capacity, it stresses the central role of ecological capacity and the fact it would bear the same relation with any identified capabilities. Regardless of what capabilities we place on the list, due to the nature of environmental systems, we would have to support local ecologies that are both functional and sustainable.

So, what then does this mean for human rights? As the previous section argued, since human capabilities are universal and set out objective conditions necessary for individuals to attain outcomes they value, then capabilities count as interests sufficient for justifying human rights. Since sustainable ecological capacity is not only a capability, its status as a distinct meta-capability means that it is an interest clearly sufficient to generate obligations in others. Thus, all individuals have a human right to sustainable ecological capacity. We each possess a general

[60] *Ibid.*, 330. For a detailed argument for this claim, see Holland's "Ecology and the Limits of Justice: Establishing Capability Ceilings in Nussbaum's Capabilities Approach," *Journal of Human Development* 9, no. 3 (2008): 401-425.

environmental right to functioning ecological systems capable of enabling basic human capabilities.

7. Responding to the Human Rights Skeptic

Earlier, I presented three general skeptical arguments against human rights. Before concluding this chapter, it is important for me to say a bit more in response to those arguments. The first skeptical argument mentioned was the argument from culture, i.e. that we cannot assume superiority of one cultural view over another. However, by basing my human rights framework on the Capabilities Approach, I am offering an account that yields entitlements to the very basic conditions and circumstances that allow any given culture to flourish. Since the Capabilities Approach does not connect moral claims to specific functionings, space is left for multiple realizations of each capability. As previously noted, the environment creates the conditions for aspects of culture, which in turn allow for the development and use of senses, imagination, and thought (i.e. Nussbaum's fourth capability). More importantly, for the right to sustainable ecological capacity, no entitlements exist to conditions beyond the minimal threshold allowing the development of life and culture.

A similar response can be given with respect to the argument from the good of diversity. Recall that this objection holds that the world is better due to diverse understandings of life and a lack of universality. Yet, given the space allowed for the multiple realizability of capabilities just noted, diversity can still exist. Individuals are free to choose among a diverse set of functionings, each offering

different manifestations of the underlying capabilities. Additionally, we can say that without the functional ecosystems protected by the environmental meta-capability, there could be no development of diverse views and ways of life. Consequently, if one takes diversity to be good, in and of itself, then one ought to support a protection of those conditions necessary for allowing diversity to manifest itself in the world. Thus, the environment holds the same relation to diversity as any other capability does to diversity.

Lastly, there was a worry from the skeptic that any universal value or human rights claims fail to fully respect individuals' freedom—that it is too paternalistic. It should be clear by this point that the entire point of the Capabilities Approach is to protect those objective values and conditions that make it possible for individuals to choose what they want to do and be. Sen's initial focus with the Capability Approach was to focus on human freedom, specifically political freedom. Moreover, one cannot be free as an agent without the ecological conditions that make life possible. Just as rights to any capability respect an individual's freedom to choose those functionings they value, a right to a sustainable ecological capacity does not cut against individual freedom. Rather, it supports it by merely providing the requisite conditions for an individual to be able to exercise her freedom. Given the Capabilities Approach's ability to address these issues, the skeptic's worries are lessened by incorporating the Capabilities Approach into my human rights framework.

8. Concluding Remarks

The preceding portions of this chapter sought to examine whether one can affirm the claim that climate change constitutes a violation of human rights. In presenting two possible approaches present in the literature (Sections 2-4), I noted that while helpful they both fall prey to a problem of scope, i.e. they are unable to identify *all* the relevant considerations for human rights claims regarding the impacts of climate change. I proposed an alternative framework (Sections 5 & 6) that is less susceptible to this problem by providing a justificatory argument for a right to sustainable ecological capacity distinct from other rights, which operates consistently regardless of the other interests one might identify.[61] This feature provides a more complete manner of addressing the ecological aspect of human rights and lessens the need to identify *all* relevant interests. Additionally, by turning to the Capabilities Approach, this framework can draw on a well-developed literature and vocabulary for addressing human needs, be they material or otherwise. While this framework might still fail to capture some rights violations, it is less likely to do so than the other approaches. How rights violations relevant to climate change can be identified using the account offered here is the focus of the next chapter. There I will provide an affirmative answer the query in the opening section of this chapter—arguing that the phenomenon of climate change constitutes a violation of human rights. In doing so, I will address potential worries about how to understand the content of the environmental right arising from the environmental meta-capability.

[61] Perhaps one might want to argue that this account is more of a hybrid between the environmental right and basic human rights approaches highlighted above. I take it that regardless of which camp my account is placed, it is still able to better capture the interests at stake and is more apt for addressing the scope issue.

CHAPTER 3
Methods for Identifying Rights Violations Due to Climate Change

In the previous chapter, I argued that the best way to link the environment to human rights is through Breena Holland's extension of the Capabilities Approach. This modification adds an environmental meta-capability that in turn provides a clear notion of the interests and entitlements grounding the ecological aspects of human rights, justifying an "environmental right" to the ecological conditions necessary for the fulfillment of the central human capabilities. At the outset of my discussion, I noted that if such an environmental right could be adequately justified, it could be straightforwardly used to determine whether the phenomenon of climate change might constitute a violation of human rights. Providing an account of how rights violations can be identified under this framework and answering the question just posed regarding climate change is the focus of the next two chapters.

This chapter will present methods that can be employed to identify rights violations using the account of human rights I offered in the previous chapter. On my account of human rights, the capabilities themselves do the "heavy lifting." As such, the opening two sections of this chapter detail how rights violations can be identified vis-à-vis capability thresholds. I begin by presenting a method for determining violations of capabilities generally speaking (Section 1), and then move into a focused discussion related to violations of an individual's environmental meta-capability (Section 2). The third section offers a brief presentation of relevant scientific data and issues in making climate projections that are necessary for

applying the procedures identified in the first two sections to the issue of climate change.

1. Assessing Rights Violations through Capability Thresholds

Adopting a human rights framework based on the Capabilities Approach should make clear that any rights violations would be understood in terms of the capabilities themselves. Though our primary interest is in assessing violations via the environmental meta-capability, it is helpful to first examine how violations of capability thresholds are generally identified. We should remember at the outset that the Capabilities Approach is focused on the things people can actually do if they so choose (i.e. capabilities), not what they actually do (i.e. functionings).[1] Consequently, the Capabilities Approach asks us to consider the following:

> Is the person capable of this, or not? We ask not only about the person's satisfaction with what she does, but about what she does, and what she is in a position to do (what her opportunities and liberties are). And we ask not just about the resources that are sitting around, but about how those do or do not go to work, enabling [people] to function in a fully human way.[2]

The emphasis is on whether the conditions on the ground and the institutions in place are such that an individual can, if she so chooses, have functionings that meet the minimal level demanded by human dignity. She is entitled to her capability thresholds being met, which is the moral claim specified by her human rights.

[1] Nussbaum captures this focus with the following: "The person with plenty of food may always choose to fast, but there is a great difference between fasting and starving, and it is this difference that I wish to capture" [*Women and Human Development: The Capabilities Approach (Cambridge: Cambridge University Press)*, 87].

[2] Nussbaum, *Women and Human Development*, 71.

How then can we better understand what this requires? Consider the following concrete example. In discussing what it means to actually secure a right to something, Nussbaum offers an analysis of the particulars one is entitled to by a right to participate in the political process. She notes that in many nations even though women have a legal right to participate in the political process, there are other factors that prevent them from actually exercising that right (e.g. the very real threat of violence if they so act).[3] If we analyze this scenario from a purely legal rights perspective, it appears those women's right to participate is not violated. However, if we consider it from a moral rights perspective, and conceptualize rights through capabilities as I (and to a certain degree Nussbaum) propose, those women have their right to participate in the political process violated. This is because the focus is on moral entitlements and whether people can actually enjoy those entitlements, rather than a mere presence of legal or political entitlements. For those women, there is no *real* opportunity to participate and fulfill their entitlements.

If the right to political participation could be justified as a human right (in the strict moral sense of my analysis), then cases where participation is blocked are examples of human rights violations. As Nussbaum stresses, using capabilities makes clear that to secure a right "involves affirmative material and institutional support, not simply a failure to impede."[4] Consequently, people are entitled to the relevant support—material, institutional, and otherwise—necessary for the capability in question. In the case of political participation of women, this might include not only the legal right to participate, but also institutions in society that protect those

[3] Nussbaum, *Frontiers of Justice* (Cambridge, MA: Belknap Press, 2006), 287.
[4] *Ibid.*

women who exercise their right from violence, as well as basic education that provides the abilities necessary for effective participation in political processes.

While clarifying the general types of things individuals are entitled to, there is still a question of how to determine what the relevant support is for any particular capability and where the minimal threshold ought to be set. To address this we have to recall that Nussbaum intentionally presents the central human capabilities in an abstract manner, noting that different contexts will require different specifics for how capabilities are realized. This multiple realizability of any given capability is central to the approach as it accommodates cultural and geographic diversity, while still providing grounding for universal moral claims.[5] Thus, for any given capability, the specific conditions required to meet the minimal threshold will be contingent—to a certain degree—on the local context.

While Nussbaum does not offer specifics related to where threshold levels should be set for particular locales, she does offer two helpful comments in thinking about setting thresholds. First, she makes it clear that the threshold for each capability must be set "with an eye to the other capabilities."[6] The threshold levels for each capability must be coherent with one another. Second, threshold levels should be set based on what is *adequate* or "enough."[7] Here, Nussbaum points out that for some capabilities the demand of adequacy might require equality (e.g. the right of political participation under the capability "Control over One's

[5] See my previous discussion in Chapter 2 (pp. 83-84), on the issue of universality in the face of diversity. For Nussbaum's extended discussion of this issue, see *Women and Human Development*, pp. 41-59 and 76-77.

[6] Nussbaum, *Frontiers of Justice*, 402.

[7] *Ibid.*, 293.

Environment"). Other capabilities, particularly those connected with material goods, would have thresholds tied to whatever is determined to be "enough" for the maintenance of human dignity and coherent with the other capabilities.[8] From this, and Nussbaum's general reliance on similar processes elsewhere, it seems reasonable to conclude that these thresholds would be determined through a reasoning process resulting in a reflective equilibrium. One simply has to take the relevant knowledge of the context being considered and compare this to an idea of adequacy, repeating this process until one has reached a threshold that could stand up under scrutiny by any reasonable individual.[9]

To understand how this process operates, consider Nussbaum's capability of "Bodily Health," specifically its component of having adequate shelter. Given that the Capabilities Approach, as does any human rights approach, operates by setting minimal thresholds, adequacy can be understood as the minimal shelter an individual needs to function as a human being. It is clear from the outset that the definition of adequate shelter is contingent on one's geographic location. What is adequate in the Arctic will be drastically different from what is adequate in the tropics. In the Arctic, adequate shelter will demand a fully enclosed structure, with significant insulation and heating, while in the tropics it might demand only a partially enclosed structure with mosquito netting. Beyond geographic contingencies, there might be locales in the tropics that for cultural reasons—something protected under the capability "Senses, Imagination, and Thought"—do not allow the use of a specific

[8] *Ibid., 291-295.*

[9] The idea of a reflective equilibrium as a method in moral theory comes from the work of John Rawls. For his presentation of this idea see John Rawls, *A Theory of Justice* (Cambridge, MA: The Belknap Press, 1971), 48-51.

type of building material. Thus, in that context, adequate shelter would demand a partially enclosed structure with mosquito netting that is not made of this forbidden material. In such contexts, if the acceptable building materials were taken away, and all that remained was the unacceptable material, then those individuals' capability of "Bodily Health" would fall below the minimal threshold, since the conditions are not present to meet the requirement of adequate shelter.

In the above example it is important to highlight that the approach says nothing about the space above adequacy, nor does it detail the specific means for fulfilling individuals' capabilities. In both the Arctic and the tropics, there is nothing stopping individuals from building more substantial shelters, as long as their doing so does not prevent others from having access to the relevant minimum.[10] Moreover, it is possible the mechanisms used to protect capability thresholds could vary across locales. Assume that in the tropics individuals are allowed to hold private property, and those who do not have the means to acquire or rent property are provided with access to adequate shelter (e.g. monetary aid for rent). Contrast this with a hypothetical situation in the Arctic, where the holding of private property is forbidden, yet the government provides all individuals with access to adequate shelter in government owned structures. In both scenarios, we can say that individuals' entitlements are met and thus there are no rights violations, even though the mechanisms in place for protecting capabilities are vastly different.

[10] The fact that everyone is required access to the relevant minimums, coupled with the finitude of natural resources, yields the notion of "capability ceilings" introduced in the previous chapter. I will address capability ceilings in more detail in the next section.

From the discussion so far, we can identify a general process that can be followed to determine if there is a violation of one's entitlements, and consequently rights, for any given capability. First, identify the relevant cultural and geographic context for the individual(s) in question. Second, determine the standard of adequacy for the capability in question, keeping in mind this requires consideration of multiple factors, not limited to material and institutional ones. Adequacy for any given context can be estimated using a hypothetical reasoning process based on the knowledge and beliefs of individuals in that context. Whatever any reasonable individual would accept as adequate is what each is morally entitled to. Again, this merely establishes a procedure for the standard of adequacy, not the means for fulfilling it (e.g. adequate shelter does not in and of itself require individuals to be allowed to hold property). This standard can then be compared to the conditions on the ground to determine if the individual(s) in question can in actuality have that standard met. If those conditions do not allow for the standard of adequacy to be met, then there is a rights violation.

Following this practice for many, if not most, of the capabilities on Nussbaum's list would more than likely result in the verdict that most nations fall short of fulfilling the entitlements demanded by the Capabilities Approach. Consequently, most states (including those in the developed world) fall short of fulfilling *all* of their citizens' human rights. In some cases, individuals whose rights are being violated might have nominal legal or political rights, but other social institutions are structured in ways that negate those individuals' abilities to actually exercise the legal and political rights they possess. On a strict moral analysis using

the framework I am proposing, most states are guilty of human rights violations. For example, consider the implementation of policies in many U.S. states requiring individuals to present photo identification in order to vote. While it is clear no one's legal right to vote is taken away, various other factors related to obtaining an acceptable form of photo identification (e.g. lack of transport to the locations for getting a driver's license, cost of getting a license made) can be used to argue that such requirements effectively take away some individuals' ability to vote (or at least make it unduly cumbersome).[11] Thus, such policies actually work against securing one's right to vote, unless individuals are given relevant support for obtaining valid forms of photo identification. Consequently, on my framework, those citizens who do not have proper photo identification (and for whom obtaining it would be problematic) are having their right to participate in the political process violated. By allowing such policies, the U.S. is guilty of perpetuating human rights violations.

Adequately addressing the issues for each capability is a project in its own right and one I will not engage in here, other than to note that any fully satisfactory response to climate change must also consider broader institutional questions relevant to other capabilities. Rather, the focus here is to assess whether the impacts of climate change violate human rights, and this can best be done through the

[11] For example, a 2005 study by the University of Wisconsin-Milwaukee Employment and Training Institute examined not only who in the state of Wisconsin did not have driver's licenses (the most commonly required form of ID under voter photo ID laws), but also offered some explanations for why there are large discrepancies between the percent of whites with driver's licenses compared to minority groups. See John Pawasarat, *The Driver License Status of the Voting Age Population in Wisconsin* (Milwaukee, WI: University of Wisconsin-Milwaukee Employment and Training Institute, 2005); available on-line at <http://www4.uwm.edu/eti/barriers/DriversLicense.pdf> (Accessed 8 March 2012). The Institute maintains a webpage documenting various court cases challenging photo ID laws that have utilized this research; see <http://www4.uwm.edu/eti/2007/VoterID.htm> (Accessed 8 March 2012).

environmental meta-capability defended in the previous chapter. As such, we must shift our attention to how the general procedure presented in this section for identifying capability violations can be applied to the particular case of an environmental issue like climate change and violations of individuals' environmental meta-capability.

2. Identifying Violations of the Environmental Meta-Capability

It seems the procedure outlined in the previous section ought to be applicable for identifying violations of the environmental meta-capability. The unique nature of the environmental meta-capability, however, allows for a slightly different method for identifying violations. Recall that the environmental meta-capability is the ability "to live one's life in the context of ecological conditions that can provide the environmental resources and services that enable the current generation's range of capabilities."[12] Given the relation that exists between it as a meta-capability and the other capabilities, we can construct a method for identifying violations via the other general capabilities, which are more easily discussed (and already extensively evaluated in existing literature).

In clarifying the manner in which the environmental meta-capability works, it is crucial to stress that it is still something that operates and can be evaluated on an individual level. Though the environment is often viewed as a collective good, it is

[12] Breena Holland, "Justice and the Environment in Nussbaum's 'Capabilities Approach': Why Sustainable Ecological Capacity is a Meta-Capability," *Political Research Quarterly* 61, no. 2 (2008): 324. I take it that the reference here to "the current generation's range of capabilities" refers to the range of shared capabilities possessed by all individuals of the current generation; it is these universally shared capabilities that we are entitled to on my framework and that are captured by Nussbaum's list of central human capabilities. The next paragraph offers a defense of why this meta-capability is attached to individuals rather than collectives.

clear from Breena Holland's analysis that the environmental meta-capability is something that must be part of each individual's capability set, rather than some collective capability:

> …the ecological conditions that constitute the capability are a component of individual opportunity in the same way that landed property and shelter are, respectively, a component of one's capability to have "Control over One's Environment" and to have "Bodily Health."[13]

This is essential, since if the environment could not be treated at the individual level like other capabilities, then the human rights framework argued for in the previous chapter would not be applicable. Given that it can be, we can address human rights violations via the environmental meta-capability.

How, then, can these violations be identified? Just as the discussion of the previous section did not dictate specific means for protecting capabilities, the environmental meta-capability does not set any specific environmental conditions—the basic conditions for human existence notwithstanding—as the only conditions for enabling the capabilities. Consequently, the environmental meta-capability is not violated when the underlying environmental conditions are such that it is possible (through some combination of available technology, social structures, and so on) to meet the threshold levels of all other capabilities. The environmental meta-capability will only be violated when it is impossible, given the available technology and social structures, to meet the threshold levels of the other capabilities.

One way to think about violations of the environmental meta-capability is to contrast the following two possible worlds:

[13] Holland, "Justice and the Environment," 324.

> *World A*. This is a world in which no matter what institutional structures are put in place and regardless of technological advancement, it is impossible for the threshold levels of at least some capabilities to be met.
>
> *World B*. This is a world in which there are possible institutional structures and levels of technological advancement such that the threshold levels for all capabilities could be met through the right combination of available institutions and technology.

The failure to meet capability thresholds in World A is solely the result of underlying environmental conditions, since there is no social structure or technology that could transform those environmental conditions into a world where capability thresholds are met. World A is subsequently one in which there is a clear violation of the environmental meta-capability. We can contrast this with World B, where there are ways of structuring institutions and using technology to meet capability thresholds. Thus, any failures to meet capability thresholds (and thus any corresponding rights violations) in World B are not the result of environmental conditions, but are instead the result of particular institutional structures or the failure to implement available technology, both of which can be changed. The important difference between World A and World B is that the rights violations in the latter are the direct result of a failure of the people in that world's present, whereas the rights violations in the former are the direct result of a failure of the people in that world's past. The individuals in World B still have a chance to adapt, those in World A do not.

While thinking in terms of two worlds is useful, given the individual focus of rights violations and the environmental meta-capability, it is important to maintain a similar focus here. This requires examining the particular ecological contexts in which an individual might find herself, rather than the world as a whole. This is not

problematic, since we can treat Worlds A and B as different geographic locations (or ecological contexts). However, in doing so, we have to recognize the manner in which actions in one locale impact environmental conditions in another and vice versa. Actions yielding benefits in context A can yield harms in context B. Holland captures this nicely, remarking that "[m]aximizing food production in croplands and grazing lands, for instance, can alter ecological processes in ways that severely impact natural services (e.g. water purification) in places distant from the agricultural land itself."[14] Due to this fact of ecological interconnectedness, we cannot look solely at a single context, identifying violations of any capabilities and then acting to address those violations, since doing so might result in a violation of the underlying environmental meta-capability elsewhere. In Holland's example, this would mean that when deciding how to maximize food production a larger analysis must be made. It is not just about the impacts to the croplands, but also the locations that are ecologically connected to the croplands. Failure to look at anything other than the maximization of food production in the croplands, can lead to the implementation of policies or actions that produce negative environmental impacts in lands outside the croplands. Implementing such policies would be wrong under our framework, since doing so would create rights violations.

Moreover, it would be far worse to protect capabilities in one locale by making environmental sacrifices in another, for if the environmental meta-capability is violated it is then impossible to achieve threshold levels simultaneously in all capabilities. Consider the following scenario. The citizens of country A need

[14] Breena Holland, "Ecology and the Limits of Justice: Establishing Capability Ceilings in Nussbaum's Capabilities Approach," *Journal of Human Development* 9, no. 3 (2008): 404.

materials for their houses. While there are domestic resources available, the citizens of Country A decide to cut down the forests in Country B (which happens to be under Country A's power) and ship that timber to Country A. This timber will then be used as the primary building material in Country A. However, the destruction of the forests in Country B will damage the ecology in a way that impacts everything from water to food supplies. Moreover, the inhabitants of Country B treat trees as sacred objects, and their removal will no longer allow the performance of their rituals. Country A's decision to improve its citizens' capability protections at the cost of damaging the environment to the extent they did is particularly problematic since it does not just damage a particular capability of the inhabitants of Country B. Rather, it damages the possibility of enabling multiple capabilities at the same time.[15]

This relation leads to an important concept for identifying violations of the environmental meta-capability (and its corresponding right). While Nussbaum's framework operates with minimal thresholds (i.e. levels of capability protection that are necessary for a life of human dignity), as we saw in the previous chapter, Holland stresses that the finite nature of environmental resources requires maximum thresholds for capability protection.[16] In discussing the use of an SUV (i.e. a more resource intensive vehicle than other available options) as a means of exercising

[15] A similar analysis holds if Country B were not under Country A's power, and instead A bought the timber from B. The primary difference in this case, is that Country B commits the rights violation by allowing the sale of the timber. Assuming Country A was aware the transaction would damage the environment in Country B in the problematic way highlighted here, it would be wrong of Country A to participate in this harmful exploitation.

[16] Holland does note that while Nussbaum does not explicitly argue for mandatory limits on some capabilities, she does implicitly argue for the value of such limits. See Nussbaum, *Frontiers of Justice*, 403.

one's ability to realize her capability to "Bodily Integrity," Holland offers the following reasoning for setting maximal thresholds for capability protection, or "capability ceilings":

> For if some people do have this extent of mobility, then not only will their realization of that capability promote competitive tendencies that artificially inflate other's valuation of the capability to drive SUVs, it will also divert resources that could otherwise go to protecting threshold levels of more fundamental capability protections. In this instance, to fail to establish a ceiling for the bodily integrity capability is to treat moving freely from place to place in an SUV as if it were a fundamental entitlement for those who can afford it that is equivalent to achieving a threshold level of bodily health capability for those who cannot afford this threshold level of bodily health capability.[17]

Thus, when considering the fact of ecological connectedness, capability protections in one locale that exceed the requisite capability ceilings constitute a violation of the environmental meta-capability for some individuals (either in that same locale or in another locale). This will be important in Chapters 5 and 6 when addressing the obligations held by both individuals and collectives in the face of climate change. What is key at this juncture is that given the relation between the environmental meta-capability and other capabilities, violations of the former are understood through the latter.

At this point, one might protest that we are left with an entirely abstract and contingent framework for evaluating violations of fundamental capability thresholds and their corresponding rights that cannot usefully be applied to environmental matters. As the discussion above has shown, violations of the environmental meta-capability are identifiable through the other capabilities, either due to violations of other capabilities that can be attributed to environmental conditions (e.g. like the

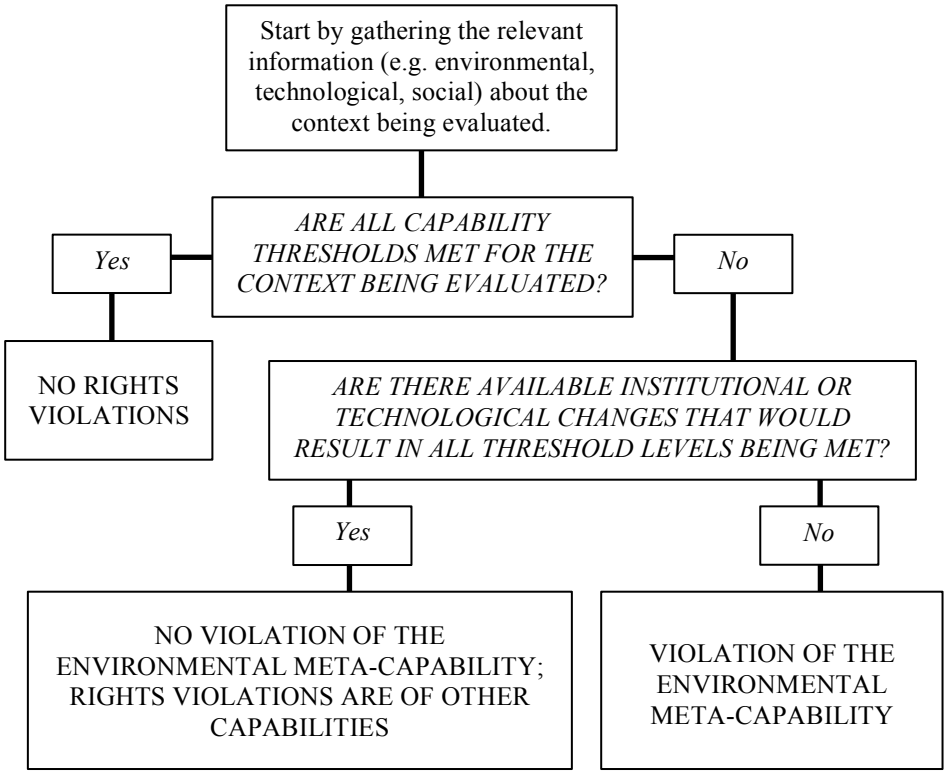
[17] Holland, "Ecology and the Limits of Justice," 417-418.

case of World B) or capability protections that surpass the requisite capability ceilings. However, identifying either requires a determination of the relevant thresholds for each locale, which in turn requires reaching the reflective equilibrium noted above. The nature of the information required for this reasoning process would require the consideration of a diverse amount of information about the local context ranging from scientific to cultural. Yet, our general aim here does not require as much.

For our purposes in this chapter, all we need to establish is that regardless of where those more contextual deliberations set the thresholds, unabated climate change will result in environmental conditions that would clearly yield in a world in which the environmental meta-capability is not met. I do not claim to be able to offer any exact cut-off point for violations stemming from climate change (e.g. a 3 ^{o}C change would not violate the environmental meta-capability, while a 3.1 ^{o}C change would). I simply seek to show that, based on most climate models, without significant action on the current generation's part there will be clear cases of violations and that understanding the entitlements protected by human rights via capabilities gives us a strong framework for working out what morality requires of us in the face of climate change.

That said, I offer the following as a test for whether violations of human rights occur due to climate change (see Figure 3.1). If we were dealing with the immediate present, we would simply examine the ecological conditions and ask whether those conditions allow the threshold levels of the general capabilities to be met. Clearly, if upon examination those threshold levels are met, the environmental

Figure 3.1. Process for Determining Rights Violations



meta-capability is not being violated. If the minimal threshold levels are not met, we then ask whether they could be met given possibly available institutions and technology.[18] If we can identify institutional or technological changes in the present that would result in individuals' capability thresholds being met, then any failure to meet those levels is not due to a violation of the environmental meta-capability (as in the case of World B above). In this scenario, any rights violations stem not from

[18] I do not use "possibly available" in a sense of strict metaphysical possibility, but rather a looser notion of what is *reasonably* possible or conceivable given the current state of affairs. To use the language of possible worlds, I would take this use to limit discussion to only close possible worlds. As such, currently, I do not take the institution of communism to be something that is possibly available to the United States. Moreover, I take this use of what is possibly available to fit the approach used by the IPCC in developing the different emissions scenarios discussed in the next section.

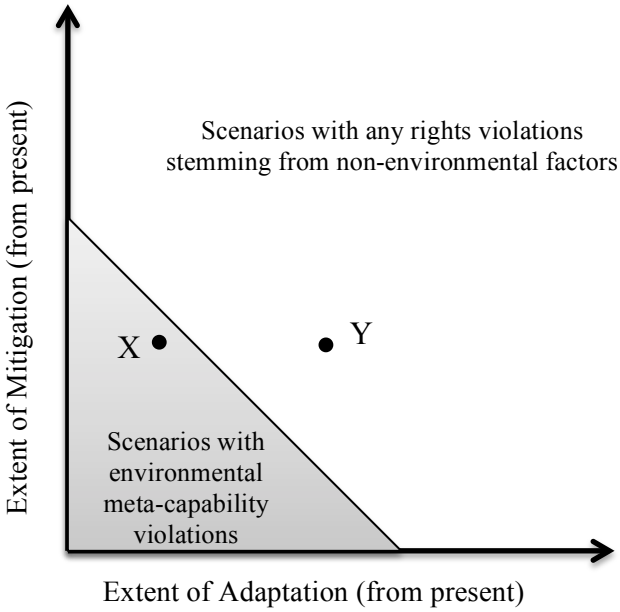
climate change itself, but from humanity's failure to properly adjust institutions and implement relevant technology in response to climate change. However, if it were the case that there are no institutions or technology reasonably available (as in the case of World A), then the violation is of the environmental meta-capability and it is the direct result of climate change and humanity's failure to engage in actions in the past that would have prevented the current environmental conditions from coming into being. Thus, in a case like World B, there is a failure to make the appropriate changes in the present, while cases like World A have a failure in the past that cannot be adequately addressed by anything in the present.

However, we must recognize that we are analyzing a future-oriented problem and in doing so are relying on various projections and assumptions about what the world will be like. This must be built into our test. Consequently, we have to operate with models that project future conditions: climatic, environmental, but also institutional. As we will see in the next section, not only are institutional projections necessary for making environmental ones, but these are also required for identifying whether a projected future rights violation is due to a failure in the past due to lack of greenhouse gas (GHG) emission reductions or due to a failure in the future to implement appropriate institutions or adaptive technologies. Thus, when we apply our framework to climate change the notion of what is possibly available in terms of institutions and technology will be based on the underlying storylines used to create the climatic models.

For example, treating future conditions as roughly a continuation of the current status quo (e.g. no robust climate policies, reliance on carbon intensive

sources for energy, little regulation, continued population growth), we can project future environmental conditions based on a continuation of our current trajectory and assess whether individuals in the future will likely have their capability thresholds met. Since this scenario is based on maintaining current institutional conditions, we can consider those institutions reasonably available to us presently, coupled with a reasonably expected advancement of technology given the institutional conditions (and the incentives for advancement under such institutions). In examining this future, we might find that there will be a relatively low reduction of GHG emissions (i.e. mitigation) and if the limit of possibly available adaptive measures were to point X, there would be a violation of individuals' environmental meta-capability. Moreover, such a case would point to the need for emission reductions in the present to respond to that violation, since that would be the only way to move out of the zone in which the environmental meta-capability is violated, assuming X is the maximum degree of adaptive measures (see Figure 3.2). However, if the reasonable advancement of adaptive measures were to point Y, there would not be a violation of the environmental meta-capability and any violations of human rights would be due to failed institutional structures or failures to actually implement technological advancements that should be reasonably available. The difference in these evaluations has to do with whether the individuals in the future, when facing rights violations, could do otherwise and eliminate those violations. If they cannot do otherwise, it is due to the environmental conditions' inability to enable the capabilities in the future, which shows a violation of the environmental meta-capability.

Figure 3.2. Assessing Violations of the Environmental Meta-Capability



Analyzing future scenarios with this framing allows us to identify those scenarios that include rights violations, given assumptions about how much technological adaptation will be possible. Moreover, this framework allows us to identify between two types of scenarios: those in which the fault lies in the environmental conditions and those in which the fault lies in a failure to implement appropriate institutions and technology to meet capability thresholds. Making such a distinction allows us to determine whether the fault lies in failures to mitigate climate change through the reduction of GHG emissions, or failures to implement appropriate institutional or technological changes. This will prove helpful in Chapter 5 when addressing the obligations that arise due to the potential harms of climate change. Our task in the remainder of the chapter will be to examine the projected

impacts of climate change to see if any future scenarios show a violation of our environmental meta-capability, or even of our general capabilities for that matter.

3. Future Climate Scenarios: Projecting GHG Emissions and their Impacts

Before turning directly to the possible impacts of climate change, it is important to offer a brief explanation of the science behind these impacts and how this relates to the framework just offered. As noted above, we are dealing with a future oriented phenomenon; as such, scientific models are necessary to create projections of likely climatic conditions in the future that can then be used to determine the impact of those conditions on human life and activity. Generally, these models function around projected levels of total CO_2 (which, recall, is the primary GHG) in the atmosphere at any given point in time.

However, projecting future levels of CO_2 requires making significant assumptions about the future. Drawing from previous work on creating CO_2 projections, Stephen Schneider offers the following formula for calculating future emissions, noting it has four components, each based on different assumptions about the future:

$$[CO_2 \text{ Emissions}](t,x) = \text{Population}(t,x) \times [\text{GDP/capita}](t,x) \times [\text{Energy/GDP}](t,x) \times [\text{Carbon/Energy}](t,x)$$

> Emissions at a time in the future, *t*, and the region, *x* (*x* could be the whole globe, or it could be one place like California), is a product of four things (this is true by definition, as it is an identity): 1) Population at that time and place; 2) The affluence as measured by gross domestic product (GDP), … 3) Energy per unit GDP, a very important term, also called energy intensity which is the amount of

> energy it takes to produce a unit of GDP; and 4) Carbon produced per unit of energy, the so-called carbon intensity.[19]

What is important here is that in order to project CO_2 emissions (and any GHG emissions for that matter) and predict future climate change, we have to make assumptions about the extent and type of not only technological advancement, but also economic and social policies. Are we talking about a world that is actively interested in developing less carbon-intensive technology? A world that places strong curbs on population growth? A world less concerned with continual economic growth? We have to bring together all these questions and make demographic, economic, technological, and social assumptions about the future in order to develop projections for GHG emissions and create climate models.

Consequently, the IPCC has constructed different sets of scenarios that do just that.[20] The IPCC's *Special Report on Emissions Scenarios* (*SRES*) presents 40 different scenarios that "represent the range of driving forces and emissions in the scenario literature so as to reflect current understanding and knowledge about underlying uncertainties."[21] Each scenario is understood to belong to a different

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[19] Stephen Schneider, "Climate Change: Do We Know Enough for Policy Action?", *Science and Engineering Ethics* 12, no. 4 (2006): 614. Schneider cites this formula as coming from the work of Yoichi Kaya. For an extended discussion of this approach to CO_2 projections, see Christopher Yang and Stephen Schneider, "Global Carbon Dioxide Emissions Scenarios: Sensitivity to Social and Technological Factors in Three Regions," *Mitigation and Adaptation Strategies for Global Change* 2, no. 4 (1997): 373-404, especially 374-379.

[20] Alternative models and approaches to analyzing future climate change have been employed in non-IPCC studies, notably a 2008 report on climate projections by the U.S. Climate Change Science Program (CCSP), see CCSP, *2008: Climate Projections Based on Emissions Scenarios for Long-Lived and Short-Lived Radiatively Active Gases and Aerosols*, eds. Hiram Levy II and others (Washington, D.C.: NOAA National Climatic Data Center, 2008). However, these results generally fall within the same ranges as those found in the IPCC's most recent assessment report. For ease and consistency, I draw primarily from IPCC data.

[21] IPCC, *Special Report on Emissions Scenarios: A Special Report of Working Group III of the Intergovernmental Panel on Climate Change*, eds. Nebojsa Nakicenovic and Robert Swart

storyline that provides the basic demographic, technological, and social assumptions necessary for constructing that storyline's climate model. The primary storylines used by the IPCC are as follows:

(A1) "The A1 storyline and scenario family describes a future world of very rapid economic growth, global population that peaks in mid-century and declines thereafter, and the rapid introduction of new and more efficient technologies. Major underlying themes are convergence among regions, capacity building, and increased cultural and social interactions, with a substantial reduction in regional differences in per capita income. The A1 scenario family develops into three groups that describe alternative directions of technological change in the energy system. The three A1 groups are distinguished by their technological emphasis: fossil intensive (A1FI), non-fossil energy sources (A1T), or a balance across all sources (A1B)."[22]

(A2) "The A2 storyline and scenario family describes a very heterogeneous world. The underlying theme is self-reliance and preservation of local identities. Fertility patterns across regions converge very slowly, which results in continuously increasing global population. Economic development is primarily regionally oriented and per capita economic growth and technological change are more fragmented and slower than in other storylines."[23]

(B1) "The B1 storyline and scenario family describes a convergent world with the same global population that peaks in midcentury and declines thereafter, as in the A1 storyline, but with rapid changes in economic structures toward a service and information economy, with reductions in material intensity, and the introduction of clean and resource-efficient technologies. The emphasis is on global solutions to economic, social, and environmental sustainability, including improved equity, but without additional climate initiatives."[24]

(B2) "The B2 storyline and scenario family describes a world in which the emphasis is on local solutions to economic, social, and environmental sustainability. It is a world with continuously increasing global population at a rate lower than A2, intermediate levels of economic development, and less rapid and more diverse technological change than

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(Cambridge: Cambridge University Press, 2000), 3. An on-line version of the report without page numbers is available at <http://www.ipcc.ch/ipccreports/sres/emission/index.php?idp=0>.

[22] *Ibid*., 4.

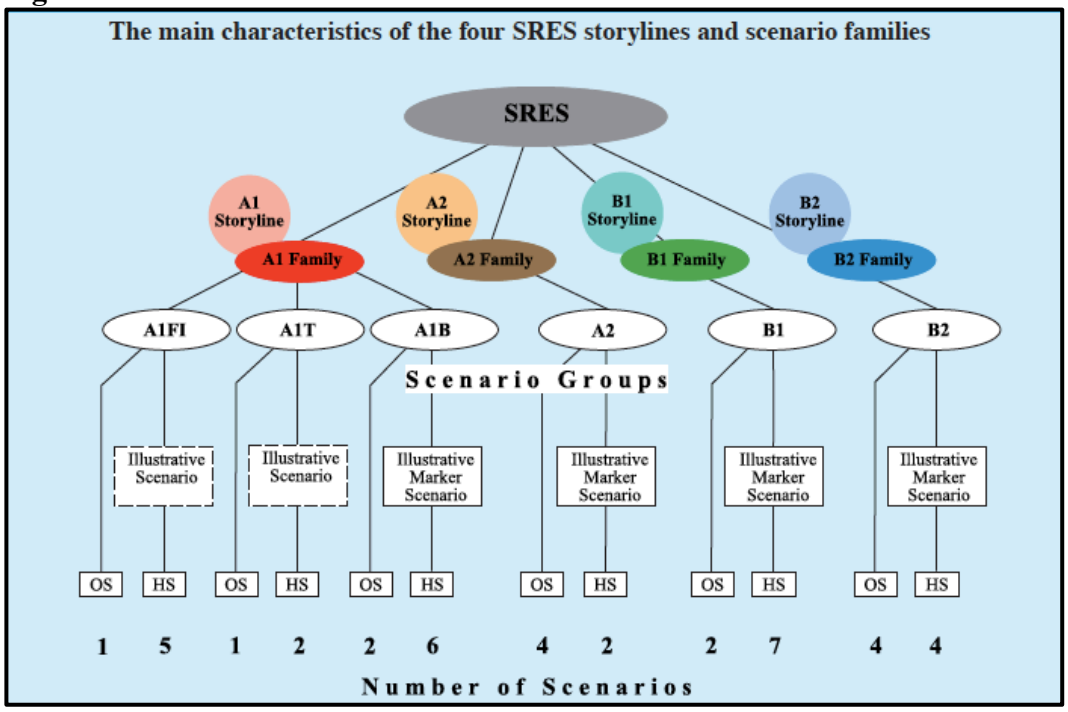
[23] *Ibid*., 5.

[24] *Ibid*.

> in the B1 and A1 storylines. While the scenario is also oriented toward environmental protection and social equity, it focuses on local and regional levels."[25]

Each of the 40 scenarios examined in the *SRES* belongs to one of these general family types, with the A1 family being generally discussed at the sub-family level (see Figure 3.3). Within each family grouping, some scenarios are created with shared assumptions about certain driving forces (those marked HS in Figure 3.3), while others seek to explore other uncertainties in driving forces (those marked OS in Figure 3.3).

Figure 3.3. Breakdown of IPCC Emissions Scenarios[26]



While these scenarios are all used in creating different ranges for possible climate outcomes, as well as the likelihood for those outcomes, focus is generally

[25] *Ibid*.
[26] *Ibid*., 4.

placed on each group's illustrative scenario. However, for our purposes we will consider the full range of possibilities. Given the manner in which the scenarios were crafted, they present themselves as a reasonable sample of the possible worlds we are interested in evaluating using the method highlighted in the preceding section.

Most discussions of climate change's impacts are framed in terms of the likelihood of a particular impact given a certain change in global temperature, rather than in terms of the amounts of atmospheric GHGs (though some discussions are framed this way). Consequently, it is most useful for our purposes to look at the various ranges of temperature change projected under the IPCC emission scenarios. Figure 3.4, taken from the most recent IPCC assessment report, shows the projected ranges of temperature change across the different scenario groups, with the dot representing the best estimate within each group.

From these projections, we see that by the end of the 21st century global average temperatures will likely be somewhere between 1.1 ^{o}C (the low range of B1 projections) to 6.4 ^{o}C (the high range of A1FI projections) warmer, with the most likely change being an increase between 1.8 ^{o}C (B1 scenario) and 4.0 ^{o}C (A1FI scenario).[27] One implication of these projections is that sea levels will likely rise anywhere from 0.18m to 0.59m, depending on the scenario under consideration.[28]

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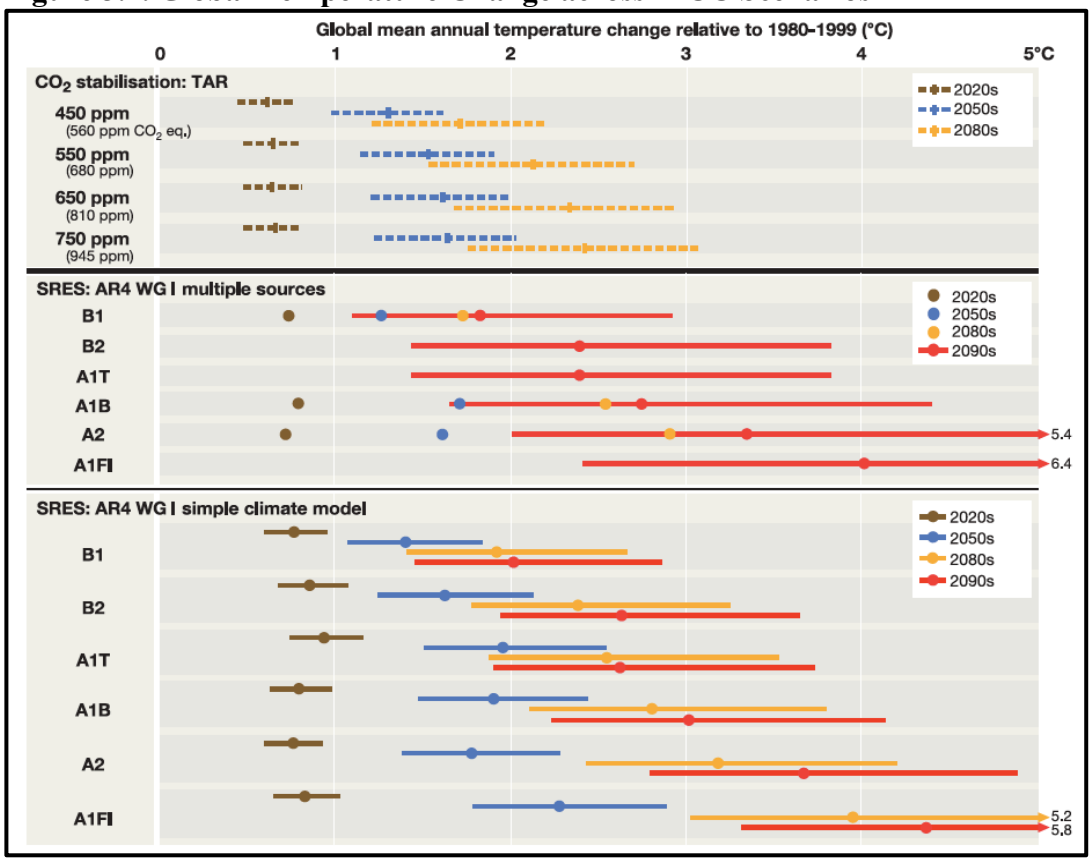
[27] IPCC, *Climate Change 2007: Synthesis Report – Contribution of Working Groups I, II, and III to the Forth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Core Writing Team, Rajendra Pachauri, and Andy Reisinger (Geneva: IPCC, 2007), 45. For expanded data see IPCC, *Climate Change 2007: The Physical Science Basis – Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Susan Solomon and others (Cambridge: Cambridge University Press, 2007), Chapters 10.5 & 10.6.

[28] IPCC, *Climate Change 2007: Synthesis Report*, 45. This change is based on projected average sea levels from 2090-2099 relative to the levels from 1980-1999, excluding "future rapid dynamical changes in ice flow" due to limitations of current research on the driving forces of sea level rise. For expanded data, see IPCC, *Climate Change 2007: The Physical Science Basis*, Chapter 10.6.

As we will see in the next section, sea level rise is one way individuals' capability sets, including their environmental meta-capability, can be violated.

Figure 3.4. Global Temperature Change across IPCC Scenarios[29]

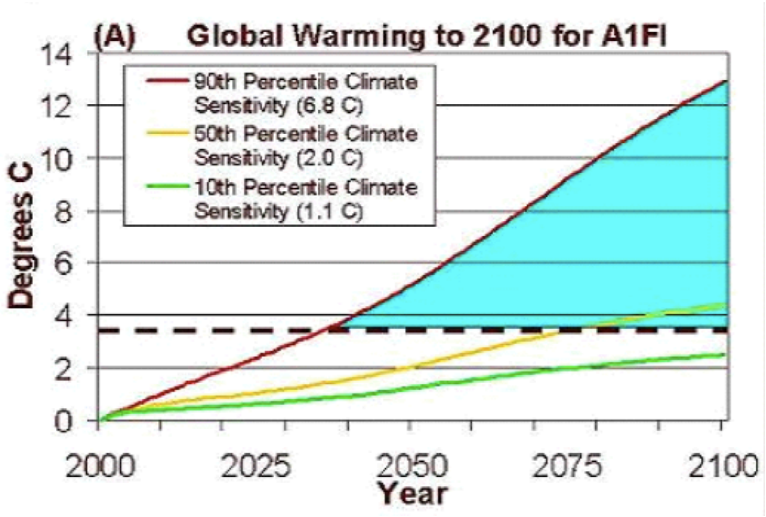


One last thing needs to be mentioned in relation to climate modeling and temperature projections. This is the issue of climate sensitivity, which is a general property of the climate system that translates the extent to which changes in GHG

[29] Martin Parry, *et al.*, "Technical Summary," in *Climate Change 2007: Impacts, Adaptation and Vulnerability – Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Martin Parry, *et al.* (Cambridge: Cambridge University Press, 2007), 34, figure TS.4. The CO_2 stabilization levels on the upper portion of the figure are taken from the IPCC's *Third Assessment Report* (TAR) and are not based on specific storylines regarding development, but rather purely on stabilizing levels of atmospheric GHG levels (regardless of how one might achieve this).

levels (and their associated radiative forcing), impact temperatures.[30] The higher the climate sensitivity, the higher the temperature increases due to GHGs. This is seen in Figure 3.5, coming from Schneider, which shows projections for the A1Fl scenario with different climate sensitivities.

Figure 3.5. Role of Climate Sensitivity in Temperature Projections[31]



A comparison of Figures 3.4 and 3.5 casts a concern for our analysis. Based on the IPCC's data, the A1FI scenario shows a maximum temperature change of +6.4 ^{o}C, while Schneider's graph shows the possibility of warming over 12 ^{o}C. This is quickly explained by the fact that the IPCC holds that climate sensitivity "is *likely* to be in the range of 2 to 4.5 ^{o}C with a best estimate of about 3 ^{o}C, and is *very unlikely* to be less than 1.5 ^{o}C," whereas Schneider uses a more expansive range (1.1

[30] The IPCC defines climate sensitivity as "a measure of the climate system response to radiative forcing" and "is defined as the equilibrium global average surface warming following a doubling of CO_2 concentration" (IPCC, *Climate Change 2007: Synthesis Report*, 38). As such, if the level of GHGs in the atmosphere were 300 parts per million (ppm) and a move to 600ppm would cause an increase in global temperatures of 1.7 ^{o}C, then the climate sensitivity would be 1.7 ^{o}C

[31] Schneider, "Climate Change: Do We Know Enough for Policy Action?", 626.

to 6.8 °C).[32] Yet, this points to a problem of uncertainty regarding our ability to accurately model future climactic conditions, since we do not know the actual value of this property. I will address the issue of uncertainty in the next chapter, but for now it is helpful to point out that the IPCC's estimate of climate sensitivity is among the more conservative employed. Operating with their measure is thus useful, since if we can show there are models resulting in human rights violations on the more conservative models, there is more reason to accept the claim that climate change violates human rights.

4. Concluding Remarks

This chapter has provided a method for identifying human rights violations under the framework I argued for in Chapter 2. Sections 1 and 2 provided a clear account of how human rights violations can be identified, both generally (Section 1) and environmentally (Section 2). The procedures identified here could be applied to any specific matter of interest. Given our interest in evaluating climate change using the methods identified in this chapter, Section 3 gave a brief overview of some of the relevant issues of climate modeling and data necessary for engaging in such an evaluation. With the methods for identifying rights violations in hand, along with the relevant information related to projecting future climate scenarios, we can shift our attention to an examination of whether these scenarios show violations of individuals' human rights and, if so, how.

[32] IPCC, *Climate Change 2007: Synthesis Report*, 38. Differences between the two can also be explained due to the fact that Schneider is drawing from much earlier analysis of climate sensitivity and treats the most likely value at 2 °C, while the IPCC places is at 3 °C. Additionally, Schneider is considering probabilities (10%) that fall outside of the IPCC's general consideration for significance.

CHAPTER 4
Climate Change as a Violation of Human Rights

With the tools in hand to ascertain potential rights violations from the previous chapter, Sections 1 and 2 of this chapter proceed to identify instances of rights violations resulting from climate change. Section 1 focuses on the time horizon of the current generation (the present to approximately 2100 CE), while the Section 2 focuses on future generations (i.e. the time at which the world is populated by individuals who never existed in the present, which I estimate as anytime beyond 2100 CE). I make this separation to avoid some philosophically contentious issues surrounding the rights of future persons during my primary analysis of climate change, as well as to show that my framework can result in calls for action even if one rejects the rights claims of future persons. The last substantial section of the chapter (Section 3) addresses issues surrounding uncertainty and why a certain degree of uncertainty does not lead to discounting and invalidation of the potential rights violations identified throughout the chapter.

1. Violations in the Current Generation Horizon

In this opening my discussion, I want to temporarily set aside philosophically contentious issues related to the rights of non-existent future persons. To do this, I split the examination of climate change's impacts into two different time horizons, the Current Generation Horizon (CGH) and the Future Generations Horizon (FGH). The former is the time from the present through the moment the last person presently

alive dies, and the latter is the period starting from that moment extending indefinitely into the future. This section will focus on the CGH, while I will take up the philosophical issues related to an extension of my framework to the FGH in the next section.

Since climate change is already producing impacts felt now and most studies focus from the present to 2100, it is helpful to adopt 2100 as an estimated endpoint for the CGH. Moreover doing so is particularly convenient since, given plausible human lifespans, it is likely that most individuals born today will live until just around the end of the century. Thus, this estimated time frame would at all times include at least one individual currently alive who would bear the rights identified in Chapter 2. Consequently, other individuals would have a duty not to infringe on those rights. Leaving the specifics of those duties aside until Chapters 5 and 6, we can simply use data from emissions scenarios and the procedures offered in the previous chapter to identify potential violations of capability entitlements, which would establish that climate change constitutes a violation of the current generation's human rights. Thus, it is not only reasonable, but extremely helpful, to estimate the CGH as the present through the end of the century.

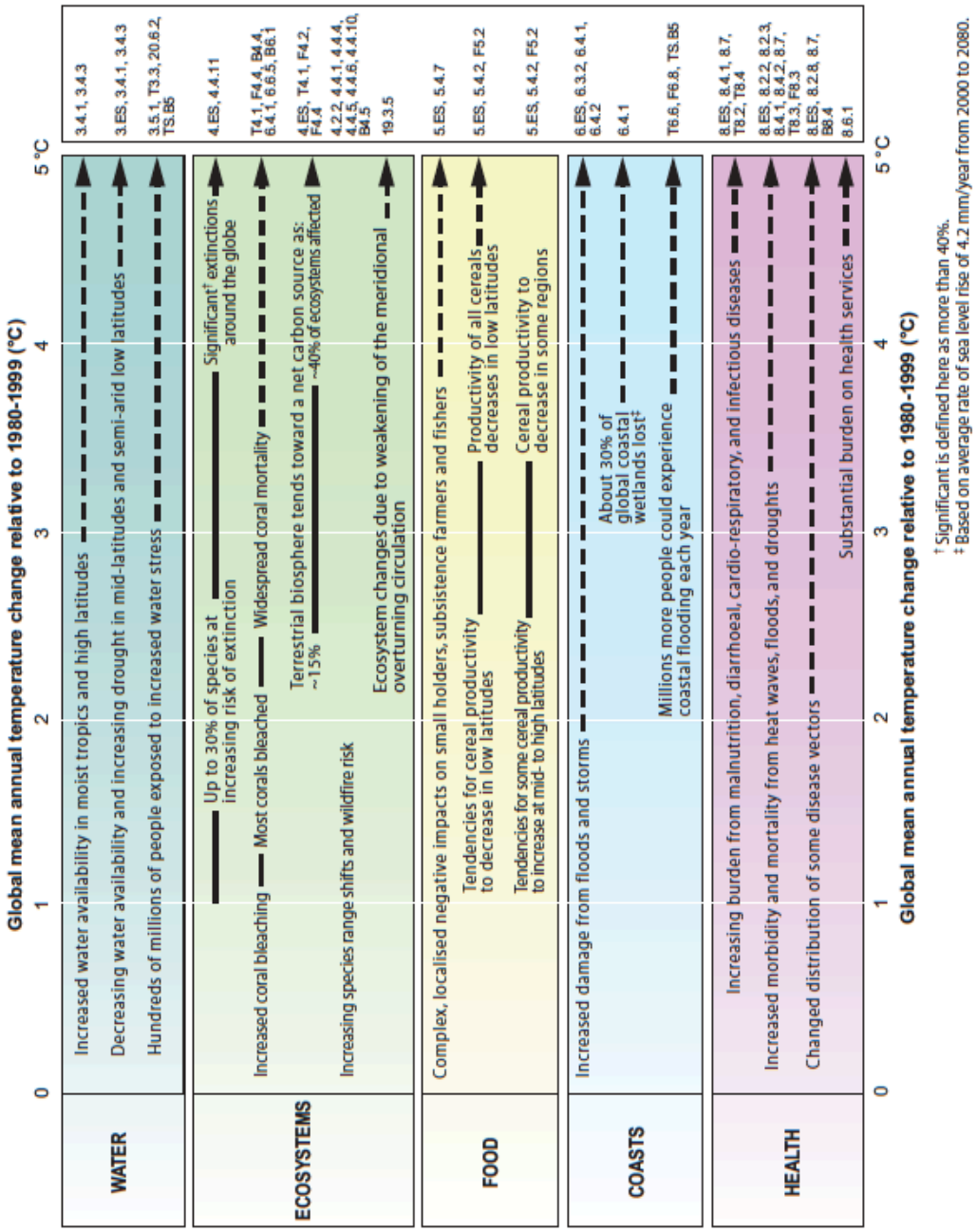
Having isolated the focus for this section, we have two general methods that can be used to show that the impacts of climate change constitute a violation of human rights. The first is to point to specific impacts that have been set forth in the scientific literature and use the procedures from the previous chapter to show that the impact in question violates a specific capability, or the impact, on its own, shows a violation of individuals' environmental meta-capability. In examining impacts this

way, the focus will be on specific geographic areas, rather than broader global implications. The second method for highlighting violations is to focus on the relation the environmental meta-capability holds to other capabilities and examine the vulnerabilities of countries in relation to their adaptive capacities (i.e. a measure that shows the probability that purely adaptive measures within a given country can prevent harm from climate change). If a country can be shown to have its adaptive capacity outstripped on a given model, then it is reasonable to conclude that the environmental meta-capability of its citizens will be violated, as it would be similar to the previous chapter's World A.

In the discussion that follows, I will move from selected highlights of some general impacts of climate change to a more focused examination of a few specific locales using the first approach focused on specific impacts and capabilities. I will conclude with a look at adaptive capacities and the second method for identifying potential violations. I should be clear from the outset that I am not seeking to offer definitive proof of violations; rather, my goal is to merely show it is reasonable to consider climate change a human rights issue and that my framework can be used to defend such a claim. To definitively prove the point would require more space and scientific knowledge than I possess and would require the inclusion of local stakeholders in assessing capability impacts in particular contexts.

When examining the impacts of differing scenarios of climate change globally, it can be difficult to see whether this framework can offer any definitive claim regarding violations of human rights via the capabilities framework. As Figure 4.1 summarizing some of the projections for global impacts from the IPCC shows,

Figure 4.1. Summary of Key Impacts for Varying Degrees of Warming[1]



[1] IPCC, "Summary for Policymakers," in *Climate Change 2007: Impacts, Adaptation and Vulnerability – Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Martin Parry, *et al.* (Cambridge: Cambridge University Press, 2007), 16, Figure SPM.2. The numbers in the right sidebar of the figure provide the references for where in the full report that issue is discussed. Thus, the substantial burden on health services noted in the figure draws from chapter 8, section 6.1 of the full report.

many of the impacts do not directly affect humans (e.g. coral bleaching) and thus do not fall under the scope of the framework offered here; or, they show a mix of benefits and burdens (e.g. water availability at given latitudes). However, since we are dealing with a framework of human rights, rather than a cost-benefit analysis, there is no moral justification for a trade-off that benefits one person at the cost of another's human rights. Additionally, there are impacts that clearly touch on things specifically highlighted by the Capabilities Approach, and thus covered under the rights framework being employed. This includes the potential harms noted under both "Food" (e.g. a decrease in all cereal production) and "Health" (e.g. increased morbidity) in Figure 4.1, as well as the fact that projected decreases in water availability and increased drought in certain areas would clearly threaten individuals' capabilities of "Life" and "Bodily Health." We could even begin to imagine how, depending on the context, increased drought could decrease river flows to the point it infringes on an individual's ability to pursue recreational activities part of the capability of "Play."

While this general information provides reason to employ the framework in a more detailed examination that would likely uncover particular rights violations, it does little to establish violations on its own. Looking for particular rights violations requires a more detailed examination of a particular setting or context, since the particulars related to threshold levels are contingent on local factors. Taking a localized focus looking only at negative impacts is unproblematic given our framework. Violations of human rights are not something that can be compensated for in any other way than to change institutions and, in our case, ecological

conditions to the point that any violations cease (or will not occur, given the future-orientation of the analysis). Thus, if we find evidence of even one violation due to climate change, *and* we can make changes now that would result in that violation not occuring and doing so would not cause rights violations in the present (or different violations in the future), there is a responsibility for that violation to be remedied, or more specifically prevented. As we will see in Chapter 6, this is a responsibility that lies primarily in states.

The first locale for closer examination is Bangladesh, home to the Ganges-Brahmaputra-Meghna delta system.[2] In this area, the more common impacts facing individuals include increased vulnerability to storm surges, increased flooding (highlighted by the 2004 flood that put nearly 75% of the country underwater), and complete loss of land, mostly due to increases in sea levels, a primary consequence of climate change. A 2006 study measuring the impacts of sea-level rise shows that, based on the scenarios above, it is likely 3.4 million people will be directly affected in the delta alone, with potentially 5.5% of the delta area lost entirely.[3] Furthermore, as reported by John Houghton, the numbers are even starker using other models and considering the country as a whole: "About 10% of the country's habitable land (with about 6 million population) would be lost with half a metre of sea level rise

[2] While I am focusing specifically on Bangladesh, many similar issues and vulnerabilities apply to other low-lying coastal areas and mega-deltas throughout the world, including the Mississippi River delta and the Nile River delta. It has been projected that the latter, along with the Ganges-Brahmaputra and Mekong deltas, will each directly affect more than one million people by 2050. See Robert Nicholls, Poh, Poh Wong, *et al.*, "Coastal Systems and Low-Lying Areas*,"* in *Climate Change 2007: Impacts, Adaptation and Vulnerability – Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Martin Parry, *et al.* (Cambridge: Cambridge University Press, 2007), 327.

[3] Jason Ericson and others, "Effective Sea-Level Rise and Deltas: Causes of Change and Human Dimension Implications," *Global and Planetary Change* 50, no. 1 (2006): 78. This study is cited in the IPCC's 2007 assessment report.

and about 20% (with about 15 million population) would be lost with a 1-m rise."[4] Even more conservative estimates for sea-level rise in this portion of the world, place it near the half a metre noted by Houghton.[5] Consequently, Bangladesh will more than likely face significant impacts due to climate change.

Using these basic assumptions, we can apply the general methods provided in the previous chapter to determine whether these impacts show rights violations, and if so whether these violations are of Bangladeshis' environmental meta-capability or mere failures to implement the appropriate protections for other capabilities. The first step in this process is to identify which capabilities are harmed by these impacts. It is obvious that the potential for increased flooding and loss of land threatens multiple capabilities of Bangladeshis. First and foremost, their basic means of subsistence would be under threat. As Houghton notes, "half the country's economy comes from agriculture and 83% of the nation's population depends on agriculture for its livelihood," and the likely changes in sea level would destroy much of the country's suitible farmland.[6] However, not only would their livelihoods be at risk, but their access to adequate shelter and health would decrease in the face of extreme flooding and other weather events. Regardless of where the level of adequacy is set through the procedure identified in the previous chapter, it seems unconvtroversial to

[4] John Houghton, *Global Warming: The Complete Briefing*, 4th edition (Cambridge: Cambridge University Press, 2009), 181-182.

[5] The IPCC notes that due to the geographic variability of sea level rise in Asia, it is difficult to project the rise for a specific coastal area. However, they note that "[e]ven under the most conservative scenario, sea level will be about 40cm higher than today by the end of 21st century" [Rex Victor Cruz and others, "Asia," in *Climate Change 2007: Impacts, Adaptation and Vulnerability – Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Martin Parry and others (Cambridge: Cambridge University Press, 2007), 484].

[6] John Houghton, *Global Warming*, 183.

claim that without some type of adaptive response, these impacts would constitute a violations of Bangladeshies' human rights.

However, it is more difficult to say whether this violation would be merely a failure of those in the future to implement reasonably available adaptive measures (e.g. new technologies or institutional structures) or a failure of those in the past for engaging in actions leading to environmental conditions that do not allow for any measure of reasonable adaptation to enable the capabilities (i.e. a violation of Bangladeshis' environmental meta-capability in the future). Part of this determination depends on whether the threats to Bangladeshis' health and safety can be prevented through the introduction of new building methods, additional sea walls, or other technologies that would diminish the impact of increased storm surges and flooding. For the moment, assume this is the case and we are dealing with only a 0.5m rise in sea level. If the impacts of this rise in sea level can be addressed via adaptive measures (e.g. new sea walls), then any failures to fulfill Bangladeshis' capabilities of "Life" and "Bodily Health" would be not the result of the sea level rise. Instead, any violation of an individuals' capabilty thresholds would be due to a failure to put the appropriate adaptive measures in place. Here, the harm is not the sea level rise itself, but rather the failure in the future to utilize reasonably available measures to counteract the sea level rise.

However, under the assumptions of the scenarios being evaluated it is likely that the Bangladeshis, on their own, will not be able to implement helpful adaptive measures and the rise in sea level will result in 10% of land that was previously habitable now being uninhabitable and 6 million Bangladeshis becoming

environmental refugees requiring relocation. While relocation (as an adaptive measure) might prevent violations of those Bengladeshies' capabilities of "Life" and "Bodily Health," it runs into a problem highlighted by Holland. Relocation potentially violates their capability of "Emotions," requiring them to "sever attachments to things and people outside themselves, such as the physical geography that makes a place meaningful and the familiar relationships to others that routinely make a place or a home familiar and safe."[7] Since forced relocation of individuals is a violation of their human rights under our framework, this would serve as a case where adaptive measures (e.g. relocation) cannot prevent all violations of the capability thresholds. Thus, the violation is of the environmental meta-capabiltiy, since the environmental conditions would fail to enable *all* the individuals' capabilities in those areas of the delta rendered uninhabitable. This is an important distinction, since it places the failure in the past and points to a need to prevent bringing those environmental conditions into being. As such, the only way to avoid the rights violation is to engage in mitigation efforts in the present avoiding the scenarios evaluated here.

This point can be made with more clarity and thrust when we consider the case of low-lying island states, particularly atoll states in the Pacific. As just discussed, determining whether violations are of an individual's environmental meta-capability or just her general capabilities turns on adaptive capacity. However, atoll islands highlight the fact that we are more than likely dealing with violations of the

[7] Holland, "Justice and the Environment in Nussbaum's 'Capabilities Approach': Why Sustainable Ecological Capacity is a Meta-Capability," *Political Research Quarterly* 61, no. 2 (2008): 329.

environmental meta-capability. Discussing the limits of adaptation, Jon Barnett notes the following problem:

> For example, if recent estimates of a 140 cm rise in sea-level rise (Rahmstorf, 2007) and annual coral bleaching (Donner *et al*., 2005) are correct, then there is little that can be done to avoid or adapt to losses of land on low-lying atoll islands. The result may be increases in morbidity and mortality, and increased demand for migration, with a worst case outcome being the collapse of the ability of island ecosystems to sustain human habitation and subsequent risks to the sovereignty of the world's five atoll-island states (Barnett and Adger, 2003).[8]

Additionally, Barnett notes that in these cases "migration cannot be seen as an 'adaptation' but rather as a loss – of culture, livelihood, place and the right to a home."[9] This affirms Holland's point above that forced relocation is itself a violation; it is a loss of some basic rights. Faced with data pointing to scenarios like this, it is reasonable to conclude that on most projections climate change results in a violation of individuals' environmental meta-capability. Regardless of any reasonably available adaptive measures taken in the future, it will still not be possible given the environmental conditions to fulfill all individuals' capability thresholds. Thus, it would seem that if the only way to prevent these future rights violations were through a reduction of GHG emissions in the present, and making such reductions would not result in any rights violations in the present, then it would seem morality would demand that such actions be taken in the present. I will say

[8] Jon Barnett, "Climate Change Science and Policy, as if People Mattered," in *Climate Change, Ethics, and Human Security*, eds. Karen O'Brien, Asuncion Lera St. Clair, and Berit Kristoffersen (Cambridge: Cambridge University Press, 2010), 50. Barnett cites the following sources, in order of appearance: Stefan Rahmstorf, "A Semi-Empirical Approach to Projecting Future Sea-Level Rise," *Science* 315, no. 5810 (2007): 368-70; Simon Donner and others, "Global Assessment of Coral Bleaching and Required Rates of Adaptation under Climate Change," *Global Change Biology* 64, no. 1-2 (2005): 11-25; and Jon Barnett and Neil Adger, "Climate Dangers and Atoll Countries," *Climatic Change* 61, no. 3 (2003): 321-337.

[9] Jon Barnett, "Climate Change Science and Policy," 50.

more about what obligations this creates and who bears them in Chapter 6, but for now we can operate with the general claim that some future scenarios will result in future environmental conditions that violate individuals' environmental meta-capability and we are obligated to avoid bringing those scenarios into being.

By focusing on the role adaptive measures play in identifying whether the environmental meta-capability is violated in a particular scenario, a second method for identifying violations of the environmental meta-capability can be offered. In the previous chapter, I used the examples of Worlds A and B as a means to identify whether violations of individuals' environmental meta-capability occur. World A was the world in which no reasonably available institutions or technology would be able to address any violations of capability thresholds, while World B was one in which the needed institutions or technology were reasonably available. Consequently, in World B there are measures available to prevent any rights violations, whereas in World A there are no such available measures. Consequently, World A is a world in which individuals' environmental meta-capability is violated. Moreover, we can say that World A is a world that has outstripped its adaptive capacity—a term referring to any given locale's ability to respond to climatic changes without suffering significant negative impacts.[10] Thus, the more limited a country's adaptive capacity, the higher the likelihood climate change will result in violations of its citizens' environmental meta-capability. Under any particular scenario, if a country shows a significant chance of having its adaptive capacity

[10] "Adaptive Capacity" is a technical term used by those studying countries' ability to respond through various measures (primarily technological), and should not be confused as a capacity or capability covered by the Capabilities Approach. Furthermore, adaptive capacity as it is used here is not something that would belong to an individual in the same manner the capabilities do.

outstripped, then we can treat that as an indicator of environmental meta-capability violations. Examining countries' chances of having their adaptive capacity outstripped, we can integrate recent studies on adaptive capacity and vulnerability (i.e. the chance of having adaptive capacity outstripped) into our framework.

While there are numerous indices determining countries' adaptive capacity and climate vulnerability, recent work by Gary Yohe and his collaborators offers an extremely helpful analysis using Antoinette Brenkert and Elizabeth Malone's Vulnerability-Resilience Model (VRIM).[11] Yohe *et al*. note that the VRIM uses multiple measures for both countries' sensitivity to environmental stresses and their adaptive capacity, which then produce its vulnerability index.[12] Coupling these vulnerability indices for countries with possible temperature changes based on the IPCC's A2 and B2 scenarios, Yohe *et al.* "offer mapping portraits of relative vulnerability to climate change."[13] Additionally, these portraits are made using two different climate sensitivities (1.5 ^{o}C and 5.5 ^{o}C), representing the lower and upper bounds of estimates at that time. These scenarios and climate sensitivities were

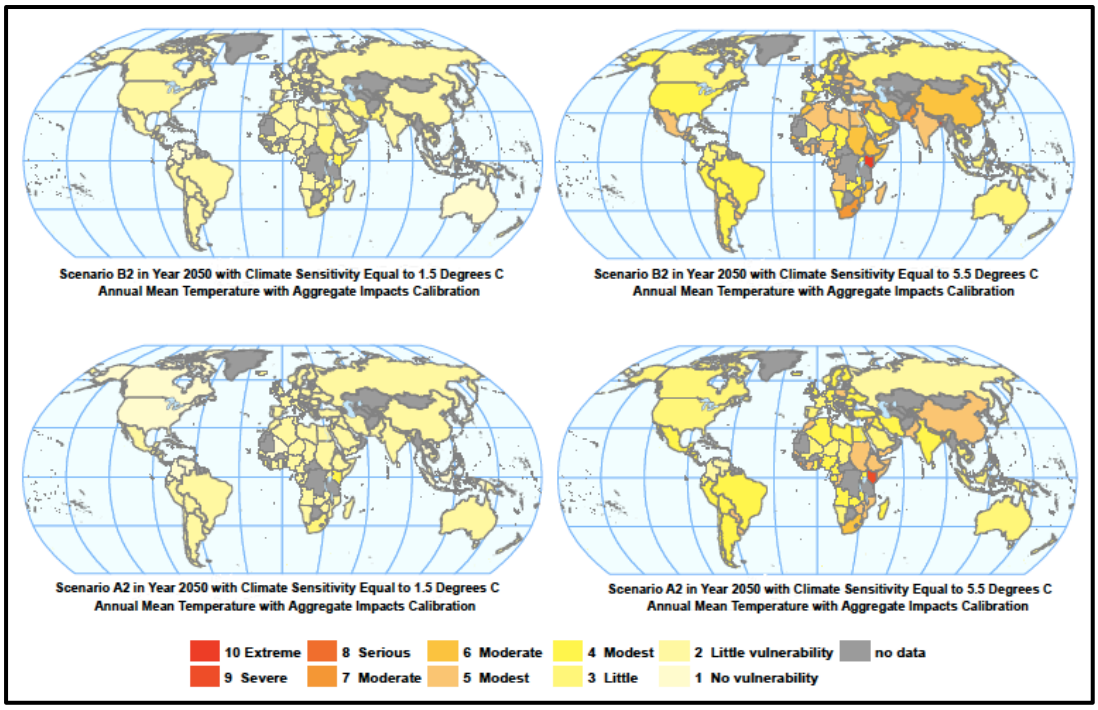
[11] See Gary Yohe and others, *A Synthetic Assessment of the Global Distribution of Vulnerability to Climate Change from the IPCC Perspective that Reflects Exposure and Adaptive Capacity* (New York: Columbia University and CIESIN, 2006); Gary Yohe *et al.,* "Global Distributions of Vulnerability to Climate Change," *Integrated Assessment Journal* 6, no. 3 (2006): 35-44; and Antoinette Brenkert and Elizabeth Malone, "Modeling Vulnerability and Resilience to Climate Change: A Case Study of India and Indian States," *Climatic Change* 72, no. 1-2 (2005): 57-102. Two other common measures for climate, or more generally environmental, vulnerability are the "Environmental Sustainability Index" (ESI) created by the Yale Center for Environmental Law and Policy and Columbia University's Center for International Earth Science Information Network (CIESIN) and the South Pacific Applied Geosciences Commission's "Environmental Vulnerability Index" (EVI).

[12] As with climate projections, this model considers technological, economic, and social factors in its analysis.

[13] Yohe and others, *A Synthetic Assessment of the Global Distribution of Vulnerability to Climate Change,* 2. In addition to the A2 and B2 scenarios, their assessment also includes modified A2 and B2 scenarios that include mitigation efforts that would stabilize CO_2e at 550ppm.

chosen, as they are "not-implausible" and offer "glimpses of exposure to relatively modest and potentially severe climate change."[14]

Figure 4.2. Global Vulnerability for Varying Degrees of Warming in 2050[15]

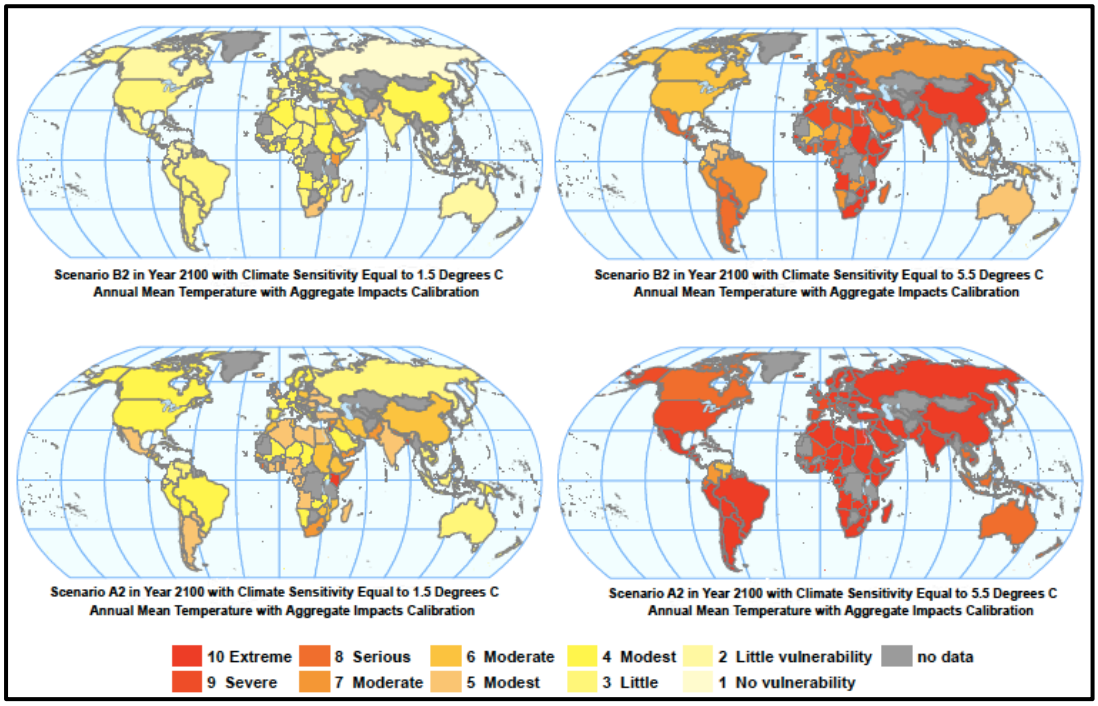


Yohe *et al.*'s work shows that while developing countries are at significant risk from climate change, the developed world is not immune either. When looking to mid-century, their models show that with a climate sensitivity of 1.5 ^{o}C both the A2 and B2 scenarios show little to no vulnerability throughout most of the world, though parts of Western Africa, the Middle East, and Eastern Asia show modest vulnerability (Figure 4.2 left-side), pointing to the unlikelihood of environmental meta-capability violations. Yet, if climate sensitivity is on the higher end (Figure 4.2 right-side), then most of the world faces at least modest vulnerability, with much of

[14] *Ibid.*
[15] *Ibid.,* Figure 4.

Africa and Asia facing moderate vulnerability. If we extend projections to the end of the century, Figure 4.3 shows that on the low end of climate sensitivity with the A2 scenario, some countries will face extreme vulnerability (showing a high likelihood of environmental meta-capability violations) with most facing at least modest vulnerability. Worse, the high end of climate sensitivity shows that on either the A2 or the B2 scenario most of the world would be facing extreme vulnerability by 2100. Thus, under these scenarios, there would be significant violations of individuals' environmental meta-capability, and states would be under an obligation to not allow such scenarios to come into being.

Figure 4.3. Global Vulnerability for Varying Degrees of Warming in 2100[16]



[16] *Ibid.,* Figure 5.

These models are particularly useful for our purposes since to advance the claim that climate change violates human rights, we only need to show that there is at least one locale in a given scenario that has its adaptive capacity outstripped. If this were the case, to allow such a scenario to come into being would constitute a violation of that locale's individuals' environmental meta-capability and consequently their human rights. Yet, not only does Yohe *et al.*'s data show that there *are* contexts under this type of threat even on conservative projections, it shows that the developed world is under threat, which under our framework would mean widespread human rights violations. Yohe *et al.* offer the following summarizing this point:

> Our results have shown that some developing countries are projected to experience impacts of climate change that stress their capacities to adapt before 2050 even at low climate sensitivity; at high climate sensitivity, some of these countries may be overwhelmed, and even developed countries will become increasingly vulnerable. With high climate sensitivity, by 2100 much of the world may need not only high adaptive capacity but also significant emissions mitigation to have been implemented in order to avoid high levels of vulnerability.[17]

A similar conclusion, regarding the immediate need for mitigation now, is echoed by Michael Mann, who highlights that "'[b]usiness as usual' climate-change projections for 2100 indicate that the adaptive capacities of even the developed world are likely to be exceeded."[18] Consequently, it seems that without some level of action now, climate change will cause violations of individuals' environmental meta-capability,

[17] Yohe *et al.*, "Global Distributions of Vulnerability to Climate Change," 43.

[18] Michael Mann, "Do Global Warming and Climate Change Represent a Serious Threat to Our Welfare and Environment?", *Social Philosophy and Policy* 26, no. 1 (2009): 222. Earlier in the article Mann notes that the IPCC scenario most closely resembling "business as usual" is the A1B scenario.

as seen through examinations of both individual impacts and the likelihood of adaptive capacity being outstripped.

2. Violations in the Future Generations Horizon

The previous section offered evidence showing it is reasonable to conclude that climate change will violate individuals' environmental meta-capability over the course of the current generation's lifetimes. Focusing only on the CGH, I capped the time frame under consideration at the year 2100 and avoided contentious philosophical claims regarding the rights of currently non-existent people. However, if the projected impacts of the previous section hold true, significant negative impacts due to climate change will likely continue well beyond 2100 (though they might start to lessen due to GHG stabilization efforts or additional technological advances). In this section, I assume such impacts and rights violations will continue, to some degree, beyond the end of the century and focus solely on the philosophical issues surrounding future persons and rights. It is essential to address this matter, since if my framework can only speak through 2100, it might present different moral obligations and recommend alternative policy choices than if it speaks beyond 2100.

To fully address the issues surrounding rights and future generations is far beyond the scope of this study, and I do not seek to offer any original contribution to the debate at large. Rather, for my purposes, I simply highlight some common objections to claims that currently non-existent persons bear rights and the responses offered in support of the rights of future persons. Generally, I find the arguments, particularly those offered by Joel Feinberg and Ernest Partridge, in favor of future

persons possessing some rights compelling.[19] As such, my primary goal in this chapter is to highlight why it is reasonable to think that future people have rights, rather than offer a full-fledged defense of such a claim.

Though there are many ways one might object to future persons bearing rights, these protestations are generally based on the premise that there is an essential difference between human beings currently living and those that will eventually come into existence in the distant (or not too distant) future. Partridge identifies four general foci that distinguish objections: indeterminacy, non-actuality, incapacity, and temporal remoteness.[20] While these issues can be interrelated (e.g. future generations' incapacity might be related to their indeterminacy), most objections highlight a single focus as the morally relevant fact for rejecting the rights of future generations. Consequently, I will address each in turn, showing why one ought to reject it as a morally relevant factor assuming one accepts the interest-based account of human rights I offered in Chapter 2.

The most typical presentation of an indeterminacy objection is the Non-Identity Problem, commonly attributed to Derek Parfit.[21] Parfit's work on this issue, however, is actually a response to Thomas Schwartz's earlier argument that the indeterminacy of future persons severs all moral ties between current and future

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[19] See especially, Joel Feinberg, "The Rights of Animals and Unborn Generations," in *Rights, Justice, and the Bounds of Liberty: Essays in Social Philosophy* (Princeton, NJ: Princeton University Press, 1980), 159-184 [this essay originally appeared in *Philosophy and Environmental Crisis*, ed. William Blackstone (Athens, GA: University of Georgia Press, 1974), 43-68; all references are to the reprint in Feinberg's own book]; and Ernest Partridge, "On the Rights of Future Generations," in *Upstream/Downstream: Issues in Environmental Ethics*, ed. Donald Scherer (Philadelphia, PA: Temple University Press, 1990), 40-66. Partridge's essay offers an excellent overview of the general objections and responses to them, and this section is greatly indebted to it.

[20] Partridge, "On the Rights of Future Generations," 41.

[21] See Derek Parfit, *Reasons and Persons* (Oxford: Clarendon Press, 1984), 351-377.

generations.[22] Schwartz's argument rests on the claim that any change in policies or way of life in the present will cause the future to be populated by an entirely different set of individuals than if the status quo had been maintained. This is based on the claim that even the slightest change in conditions at conception will result in a different genetic individual being brought into existence. Any children this "new" genetic individual has will be different genetically speaking than if the status quo had been maintained, and the same would follow for any grandchildren of the "new" genetic individual. Moreover, any change in policies or way of life is likely to start a change like this for multiple individuals. Consequently, over time, any changes in policies or way of life results in an entirely different genetic future than had things been otherwise. Using the example of a debate between two population policies, a "laissez-faire policy" and a "restrictive policy," Schwartz summarizes the matter as follows:

> Suppose the laissez-faire policy has been adopted. Consider those of our distant descendants whose lives will have been significantly affected thereby. Let *X* be any one of them. Then it is quite certain that *X* would *not have existed* under the restrictive policy and hence will not lack any benefit he would have enjoyed under the restrictive policy.[23]

Thus, for Schwartz you can neither harm nor benefit *particular* future individuals, and this fact absolves us of any moral obligations towards future persons. Moral obligation relies on the ability to identify harms and/or benefits to particular persons.

[22] See Thomas Schwartz, "Obligations to Posterity," in *Obligations to Future Generations*, eds. R.I. Sikora and Brian Barry (Philadelphia, PA: Temple University Press, 1978), 3-13. Here, Schwartz terms it the problem of "disappearing beneficiaries."

[23] Schwartz, "Obligations to Posterity," 4.

There are two general rebuttals to Schwartz's argument: reject his conclusion that one cannot harm (or benefit) future persons, or accept the claim that one cannot harm or benefit *particular* future persons and show how this does not sever moral ties between current and future generations. Alan Carter takes the first route, arguing that Schwartz's argument fails because he treats presently existing individuals as a collective entity, whereas he should have treated them as individuals.[24] Considering environmental issues, Carter notes the following:

> Certainly, a person would be unable to harm any future person if *every* future person's existence was dependent upon *every* one of his or her otherwise harmful actions. But it is absurd to think that anyone has the power through *every* one of his or her environmentally destructive activities to determine the coming into existence of *every* future person. Moreover, a person would *only* be *unable* to harm future persons if, for every otherwise harmful action which he or she might perform, the existence of every person who would otherwise have been harmed by the action in question was dependent upon *that* particular action.[25]

Consequently, we could take Carter's argument to show that my individual acts of polluting can harm particular future persons and thus can be seen to violate their environmental meta-capability (insofar as that is how we understand the harm of polluting). This in and of itself is most likely unsatisfactory for a skeptic about future generations' rights.[26] However, at this point, it becomes clear the opponent is no longer focused on grounds of indeterminacy, but on some other consideration for why future persons do not have rights that bear on the present. Just because we can

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[24] Alan Carter, "Can We Harm Future People?" *Environmental Values* 10, no. 4 (2001): 429-454. Carter's argument against Schwartz is most explicitly stated on pages 441-446.

[25] *Ibid.*, 443-444.

[26] Moreover, it requires a purely reductive account of the responsibility for climate change, a contentious claim that will be discussed in the next chapter. I ultimately reject a reductive account, in favor of a model that allows both individual and collective responsibility to exist in a non-reductive relationship.

harm particular future persons does not mean they have human rights that create duties for the current generation.

The second route for addressing objections relating to indeterminacy is more straightforward than the first. Given our focus on human rights, our concern is with rights stemming from universally shared human interests.[27] All individuals by virtue of their being human possess these interests (to the extent they serve to ground human rights). Moreover, as Feinberg notes, these interests are ones we can clearly identify and "affect, for better or worse, right now."[28] The rights of future generations do not require knowledge of the particular individuals' identities, but rather only that they are human. Feinberg offers the following analogy to drive the point home:

> We can tell, sometimes, that shadowy forms in the spatial distance belong to human beings, though we know not who or how many they are; and this imposes a duty on us not to throw bombs, for example, in their direction. In like manner, the vagueness of the human future does not weaken its claim on us in light of the nearly certain knowledge that it will, after all, be human.[29]

Since future generations will possess the same general interests in having their capabilities protected irrespective of their particular identities and this in turn requires the fulfillment of their environmental meta-capability, then regardless of

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[27] While Chapter 2 highlighted the work of Joseph Raz in presenting an interest-based account of human rights, Feinberg shares a similar understanding of the nature of rights.

[28] Feinberg, "The Rights of Animals and Unborn Generations," 181; *cf.* Annette Baier, "For the Sake of Future Generations," in *Reflections on How We Live* (Oxford: Oxford University Press, 2010), 32-33.

[29] Feinberg, "The Rights of Animals and Unborn Generations," 181-182. An extended version of this type of example is offered by Galen Pletcher, which Partridge discusses in his "On the Rights of Future Generations" (see pp. 57-58). Pletcher offers the "paradigm of the campsite," noting that if camper's have a right to a clean campsite, then one ought to leave a campsite clean not for any particular camper, but simply for the next camper whomever he or she may be. For Pletcher's original example, see Galen Pletcher, "The Rights of Future Generations," in *Responsibilities to Future Generations*, ed. Ernest Partridge (Buffalo, NY: Prometheus Books, 1981), 168.

who they each turn out to be they have a fundamental interest in their environmental meta-capability being met. Consequently, we can coherently say that those unknown persons have a right to their environmental meta-capability being met, just as Feinberg's shadowy forms have a right to not be harmed by bombs thrown in their direction.

It is clear, on this analysis, that indeterminacy cannot be a morally relevant factor. An individual possesses human rights "not because *who* he [or she] is (as an identifiable person), or *when* he [or she] is, but for *what* he [or she] is."[30] All that is relevant from this perspective is that the individual is a human being. Thus, if you accept the rights of current generations by virtue of their being human, you must also accept the rights of future generations for the same reason. However, it is possible that conceding this does not require one to hold that these rights create duties in the present. While indeterminacy focuses more on the coherence of future rights and their possibility, the remaining foci of objections turn to reasons why these rights do not create moral claims in the present.

Two of the remaining three reasons identified by Partridge for rejecting the claims of future generations' rights are much more easily dealt with than the third. These are the issues of temporal remoteness and incapacity. Temporal remoteness objections are based on the assertion that time creates a disconnect between the present and the distant future that negates moral responsibility. While in some cases the gap caused by time can outstrip a given generation's ability to reasonably foresee harmful impacts of its actions on future generations, it is not the time between the

[30] Partridge, "On the Rights of Future Generations," 58. Gender neutral additions my own.

two generations that negates responsibility. If it is true that A is morally responsible for some harm to B in the present due to the fact that A ought to have reasonably foreseen the harm, then it should also be true even if A and B are separated by hundreds of years. It is the horizon of reasonable foresight that matters (along with an ability to act as necessary to avoid the harm, since ought implies can). As Partridge concludes, "foresight, capacity, and choice, not time (however long) are the morally relevant factors here."[31] Thus, there might be reasons that the rights of future generations do not create duties requiring action by current generations due to the current generations' lack of knowledge or technology. In such cases, however, it is the lack of knowledge or technology that has to be the relevant consideration, not time itself.

Applying this to the issue of climate change and future generations' right to their respective environmental meta-capability, an objection grounded in the proper criteria of foresight, capacity, and choice would fail. As the scientific data and projections offered to this point have made clear, foresight is present. Additionally, I would propose that we have the capacity to make the necessary changes. We simply fail to choose to implement that capacity, even though the choice is present. Thus, at least in the case of climate change and future generations' rights stemming from their environmental meta-capability, we cannot object on these grounds.

Objections based on incapacity can be addressed with similar ease. This type of argument hinges on the fact that future generations cannot claim their rights in the present. Since future generations are incapable of making claims in the present,

[31] *Ibid.,* 48.

those in the present cannot incur any duties related to future generations' rights. Partridge points out that the most powerful response to this argument "is that individuals incapable of claiming their rights may have these rights defended by others acting in their behalf."[32] This is something we clearly see when dealing with legal rights (e.g. when someone signs a Power of Attorney giving another individual authority to act on their behalf). Following this line of response in our particular examination, the incapacity objection fails as long as there is a spokesperson for future generations' environmental meta-capability. Even the most cursory glance at the world today shows that this is clearly true. Numerous scientists, activists, and politicians act as advocates on behalf of posterity.

Feinberg gives us an even more compelling reason for rejecting this type of argument against future rights. He argues that when dealing with moral rights the recognition of claims is called for "by moral principles, or the principles of an enlightened conscience."[33] Thus, the principles themselves serve metaphorically as advocates. Again, this is true for both current and future generations. The fact that I can speak up on my own behalf is irrelevant on a moral analysis, given the framework offered. Moral rights exist and can create obligations regardless of explicit recognition of them by individuals. Consequently, the incapacity argument against future individuals' right to their environmental meta-capability fails.

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[32] *Ibid.,* 49. For an example of such an argument see, Annette Baier, "The Rights of Past and Future Persons," in *Reflections on How we Live*, 2-4.

[33] Joel Feinberg, "The Nature and Value of Rights," in *Rights, Justice, and the Bounds of Liberty: Essays in Social Philosophy* (Princeton, NJ: Princeton University Press, 1980), 154. This essay originally appeared in *The Journal of Value Inquiry* 4, no. 2 (1970), 243-257.

The remaining objection based on the non-actuality of future generations' rights appears the most forceful. Arguments of this type might run something like the following:

1. While future generations can possess rights, these rights are contingent on there being future human beings.
2. Since these rights are contingent on there being future human beings, these rights do not actually exist until future generations come to exist.
3. A right cannot create a duty unless it exists in actuality (i.e. is non-contingent).
4. Future generations do not exist in the present, and thus their rights do not exist in actuality in the present.
5. Thus, future generations rights cannot create duties in the present.

Examining the argument, it is clear the first premise is true. If it were known that the current generation of human beings would be the last generation (for whatever reason), it is obvious there would be no rights of future generations that could generate any duties whatsoever since there would be no interests of future humans (even general ones) to generate rights.[34] Premise 2 seems to be reasonable when considering cases in which there are no future generations, and premise 4 is an empirical fact coupled with the implications of premises 1 and 2. As such, it seems that if non-actuality is to be rejected as a morally relevant factor, premise 3 will have to be the target.

At first glance, however, premise 3 seems plausible. If the rights claim does not actually exist in the present and can turn out to never come into existence (i.e. cases in which there are no future generations for whatever reasons), then one might

[34] See Feinberg, "On the Rights of Future Generations," 182. This assumes that there is no right to be born or brought into existence. For a more detailed discussion of why there is no such right under an interest-based account see Joel Feinberg, "Is There a Right to Be Born?" in *Rights, Justice, and the Bounds of Liberty: Essays in Social Philosophy* (Princeton, NJ: Princeton University Press, 1980), 207-220.

question how it can generate duties in the present. Yet, once we consider the preceding discussion of this section, particularly the responses to the problems of temporal remoteness and incapacity, this premise seems less plausible as a moral principle. Taking seriously the facts of the matter related to climate change, namely that we can harm future individuals by our actions and we have reasonable foresight, capacity, and choice, it is not clear why this is any different from presently existing rights.

Consider the case of a typical rights claim. If A has a right to X, we would say that B has a corresponding duty to A (be it positive or negative) only if B is in a position to actually fulfill the duty to A should B choose to do so. As such, B's capacity and choice are factors in A's rights claim creating a duty in B. Moreover, certain epistemic conditions are also relevant in determining whether A's rights claim creates a duty in B that B can be held morally responsible for. If B had the requisite capacity and choice to create the duty, yet was in an epistemic position such that she could not have been aware of her duty (or at least of the harm she would cause to A), then B could not be considered responsible for not fulfilling her duty to A. Thus, in the case of a typical rights claim the morally relevant factors are once again an individual's reasonable foresight, capacity, and choice.

If this analysis is correct, then time is irrelevant. As long as current generations possess (or, more accurately, ought to possess) reasonable foresight about their actions and they have the capacity and choice to act appropriately in light of that, then the morally relevant factors are present. Just because some other series of events beyond the current generation's control might result in future generations

never coming into existence (and thus their rights never coming into actuality), this should not alter the current generation's duties based on their reasonable assumption that there will be future generations of humans. If it is reasonable for current generations to expect (or desire) future generations to come into existence, then they ought to act on those duties created by future generations' rights.

From the discussion of each focus, it is clear they are closely related and responding to one often responds to (or at least raises problems for) another. While each objection has been addressed theoretically, many might remain skeptical when moving to application. Kerri Woods offers this type of worry in her new book on environmental sustainability and human rights:

> If I face a trade-off between the concrete rights of actually existing persons, and the contingent rights of non-existing persons, it is clear which rights should take priority. To imagine that I need not face such a trade-off is to imagine that the problems of global poverty will spontaneously resolve themselves without assistance from environmentally burdensome economic development.[35]

Woods objects to the rights of future generations here because their recognition would result in a tragic conflict of rights, which according to her has a clear victor (i.e. the rights of the present). While it seems reasonable to say that in cases of conflicting rights actually existing rights would trump contingent rights, it is not clear why this itself would be a reason to reject future rights and duties on current generations. Moreover, Woods assumes that to address the rights of current generations would require violating the rights of future generations (at least in an environmental sense). This does not have to be the case. While we often associate

[35] Kerri Woods, *Human Rights and Environmental Sustainability* (Cheltenham, UK: Edward Elgar, 2010), 123.

environmentally destructive behavior with economic development, the two do not have to be linked. There might be a course of action and way of addressing global poverty that can still protect future generations' environmental meta-capability.

Consequently, we need a framework to identify rights violations and how to appropriately respond in order to know if we are facing a tragic choice between respecting the rights of some while violating the rights of others. Moreover, the existence of a tragic scenario in which a human rights violation will occur regardless of one's action is not an argument against the existence of either of the rights involved. In fact, to refer to such a scenario as "tragic" is to recognize the moral force of both rights claims. A human rights framework does not have to claim there can never be tragic scenarios in which one is forced to choose between rights, nor does it offer moral guidance for those scenarios. As such, it is reasonable to apply the framework being offered here in examining the impacts of climate change on both current and future generations.

3. Uncertainty and Discounting

Even if one does not take the extreme position of rejecting the rights of future generations, one might read Woods' objection as showing that in granting future generations rights, those rights do not bear as much moral significance as the rights of currently existing individuals.[36] To claim this is to hold that there are morally relevant reasons for engaging in discounting. When engaging in this practice, one

[36] Simon Caney remarks that this notion does not only hold to future generations who do not yet exist, but also currently existing individuals' future situations. See Simon Caney, "Climate Change and the Future: Discounting for Time, Wealth, and Risk," *Journal of Social Philosophy* 40, no. 2 (2009): 182, note 8.

employs a social discount rate to determine the weight of future persons' interests on the present. Simon Caney explains this practice and the social discount rate in the following manner:

> [The social discount rate] refers to the rate by which the claims of future generations to resources currently held by current generations diminishes or increases or remains constant over time. A social discount rate, thus, determines the extent to which resources should be devoted to people's interests now in preference to people's interests at a later date. The higher the positive social discount rate the less should be spent on the future.

If you think current persons deserve more moral consideration than future persons do, then you employ a positive discount rate, whereas if you think future persons deserve equal moral consideration then you employ a zero discount rate (i.e. you do not engage in discounting).

Proponents of discounting generally point to various issues of uncertainty regarding future conditions as reason for adopting their position. As we saw in the previous chapter, there is obvious uncertainty regarding the future impacts of global climate change. The models used to determine future emissions are based on guesses of what the world might be like economically, socially, and technologically; estimates of the extent to which GHG emissions will impact temperatures are based on a range of possible values of climate sensitivity, the actual value of which is currently unknown. Most analyses of climate change offer spectra of possible impacts across ranges of "likely" emission levels and temperature changes. As the IPCC's most recent assessment report notes, the ranges it offers for projections such as temperature changes "indicate 90% uncertainty intervals (i.e. there is an estimated 5% likelihood that the value could be above the range given in square brackets and

5% likelihood that the value could be below that range)."[37] Since we do not know for certain what will happen, it seems sensible to discount, though perhaps only at a very low rate.

Yet, even in the face of uncertainty surrounding analyses of climate change, there is motive to reject calls for discounting. Here, I follow Simon Caney who has convincingly argued that when framing the issue in terms of fundamental human rights there are no morally relevant reasons for discounting.[38] Caney argues that while other interests or values might be subject to discounting, those that ground fundamental human rights cannot be. As I find Caney's arguments compelling, and since he employs an interest-based account of rights similar to my own, my focus in the remaining portion of this section is to briefly highlight why one ought not discount future generations' human rights.

Caney highlights four components of discounting that are often appealed to as morally relevant factors: (1) pure time preference, (2) distributive principles of intergenerational justice, (3) risk, and (4) uncertainty. The first relies on the idea that time itself is a morally relevant factor. However, we have already seen in the preceding section that this is not the case. The interests grounding human rights, particularly individuals' environmental meta-capability, are independent of particular individuals' temporal location. As Caney notes, "being born earlier in time is just not the right kind of property to justify favoritism."[39] Distributive principles cannot

[37] IPCC, *Climate Change 2007: Synthesis Report*, 27.

[38] See particularly Simony Caney, "Human Rights, Climate Change, and Discounting," *Environmental Politics* 17, no. 4 (2008): 536-555, and Caney, "Climate Change and the Future," 163-186.

[39] Caney, "Climate Change and the Future," 169.

be relevant for a rights based approach, since human rights are not something that can be compensated purely with resources (i.e. money).[40] Moreover, if the environmental conditions were such that future generations' environmental meta-capability is not met, then it would be impossible for all of their human rights to be fulfilled, particularly if the environmental damage were irreversible (as many say is the case with climate change).

With these two factors out of the way, we are left with the problem of general uncertainty highlighted just above. Here, I say general uncertainty since Caney breaks this into the two remaining factors: risk and uncertainty. The former "refers to cases where one identifies an outcome and can determine the probability that it will occur," while the latter "refers to cases where one identifies an outcome but is not able to determine the probability of its coming to pass."[41] In both cases, it is our lack of a guarantee (i.e. 100% probability) about future events that serves as a reason to discount. If we do not know for certain that future persons' rights will be violated, then it seems fair to treat those rights with less significance than those of currently existing persons whose situation we can identify with certainty.

Caney responds to this by presenting four considerations applying to a rights-based approach to climate change that taken in conjunction offer compelling reasons for rejecting risk and uncertainty as morally relevant, thereby rejecting any call for discounting. They are as follows:

> (R1) The changes to the climate involve both (a) a high probability of severe threats to large numbers of persons' fundamental human rights

[40] For Caney's argument against distributive principles of intergenerational justice, see Section III of his "Climate Change and the Future."

[41] Caney, "Climate Change and the Future," 166.

> and (b) a possibility of even more catastrophic threats to fundamental human rights.[42]
>
> (R2) Affluent members of the world can abstain from emitting high levels of greenhouse gases, and thereby exposing others to risk, without violation of their own human rights.[43]
>
> (R3) The risks of dangerous climate change will fall disproportionately on those whose human rights are already violated.[44]
>
> (R4) The benefits that arise when the affluent of the world emit high levels of greenhouse gases fall almost entirely to them, and not to those most at risk from climate change.[45]

My discussion in the previous chapter shows R1 and R3 to be true, given that, as Caney highlights, most of the dangerous impacts of global climate change have a 66% or higher likelihood of occurrence according to the IPCC's Fourth Assessment Report.[46] R2 is easily supported by our framework when comparing the capability levels of individuals in the United States (or any developed country) to the minimal threshold levels. The comparison would show a large gap representing a clear ability to reduce capability levels without going below minimal thresholds. R4 is also obviously true as shown by comparisons of development and capability levels for high and low emitters (recall the discussion in Chapter 1 comparing GHG emissions with the Human Development Indices for the top ten GHG emitting countries).

Human rights signify the minimal moral entitlements humans owe one another. As such you cannot justify the violation of some individual's rights as the result of risk or uncertainty "in situations where the risk-takers need not engage in

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[42] *Ibid.,* 177.
[43] *Ibid.,* 178.
[44] *Ibid.,* 179.
[45] *Ibid.*
[46] *Ibid.,* 177-178.

the risky behavior and can avert it without forfeiting their own human rights, when the risk-bearers already lack fundamental human rights, and when the benefits of the risky behavior fall to the risk-takers and not the risk-bearers."[47] The reality of R1-R4 shows climate change presents such a situation. Consequently, it is wrong to engage in discounting the rights of those in the future and individuals in the present ought to engage in actions to protect future generations' rights. However, it should be noted that this only applies to those who currently have their fundamental human rights fulfilled. This allows those who do not have their fundamental rights currently fulfilled to continue to emit and even increase emissions in an attempt to meet their minimal capability thresholds. Thus, those in the Global South would still be allowed to continue their development, even if doing so requires increasing GHG emissions. It is those in the North, however, who can avert the risks of climate change without sacrificing their own human rights fulfillment. What should be clear is that the rights of others cannot be discounted when dealing with matters of affluence or luxury. This is why, in Chapters 2 and 3, we saw the need for capability ceilings, which will be taken up in more detail in the next chapter's discussion of the obligations stemming from the potential rights violations identified in this chapter.

4. Concluding Remarks

This chapter focused on applying the methods of the previous chapter to the case of climate change. Section 1 focused on a time horizon covering the present up to the death of the last presently existing person (approximated as 2100 CE for ease of discussion). This was done to avoid the philosophically contentious issues related

[47] *Ibid.,* 180.

to the rights of future persons and to show that even if one is skeptical of such rights, my framework still facilitates an ethical evaluation of climate change. Moreover, this section offered a glimpse of the type of data that provides evidence for the claim that unabated climate change constitutes a violation of human rights. Section 2 provided a philosophical defense of the claims that future generations are the bearers of rights, and that these rights create duties in the present. In defending this, I offered reasons for rejecting the four primary objections to future persons' rights: indeterminacy, temporal remoteness, incapacity, and non-actuality. After addressing this stronger objection (i.e. that the rights of future generations cannot exist), Section 3 provided a defense against the weaker objection that due to the uncertainty surrounding climate projections we ought to discount those future rights. This was rejected primarily because there is a high likelihood of human rights violations in the future that can be averted without causing presently existing individuals to sacrifice their own human rights fulfillment. Since human rights are not something that can be compensated, this fact causes us to not discount the moral claims of future persons.

What is important to highlight is that the framework and arguments I have offered here do not assume that climate change will necessarily result in a violation of human rights. Rather, I have offered a framework for evaluating possible future scenarios in order to determine which particular scenarios are morally acceptable. The general argument of this chapter is that under many of the more likely scenarios offered by the IPCC and other scientists, climate change will result in violations of some individuals' human rights, particularly via those individuals' environmental

meta-capability. Thus, it would be morally wrong for current generations to continue down the paths that produce those scenarios. What this chapter offers is a way to evaluate which paths are morally acceptable and what steps we need to take given that the status quo is clearly not acceptable under this framework. It is important to stress that what I am offering is a vocabulary for talking about the impacts of climate change and evaluating which routes are morally acceptable. If there are multiple scenarios that meet the criteria offered in this and the previous chapter, my account will take a neutral stance regarding those particular scenarios.

Having shown over the past two chapters how the evaluative system I am offering applies to both current and future generations and why the current path we are on is morally unacceptable, I shift my focus in the remaining two chapters of the dissertation to what is required of current generations in light of the moral harms I have identified to this point. Does moral responsibility demand reductions in emissions by all countries? In Section 3, I claimed that those who do not have their current human rights fulfilled are allowed to continue their levels of emissions (and even increase them). As such, it might seem that responsibility will fall squarely on affluent countries. Identifying who is responsible for the harms brought by climate change and the moral obligations that follow from that responsibility is the focus of the next two chapters.

CHAPTER 5
Moral Obligation in the Case of Climate Change: Theory

Unabated climate change will cause violations of individuals' human rights, particularly via their environmental meta-capability. This claim was demonstrated in the previous chapter's presentation of possible scenarios under various climate projections and the negative impacts that would be faced under those scenarios. Moreover, it is reasonable to extend the analysis to the rights of future generations. Applying the method for identifying rights violations to the various projected scenarios, we can distinguish three types of scenarios: (1) those in which there are no rights violations; (2) those in which there are violations of other capabilities, but not a violation of any individual's environmental meta-capability; and (3) those in which there is a violation of at least one individual's environmental meta-capability. In the first type of scenario, no moral failure exists. While it is clear there is a moral failure in the second type of scenario, the moral failure lies in the actions of the future, rather than the present. It is true the fulfillment of future individuals' human rights might be easier had there been more environmental protection in the present, but since there are no violations of individuals' environmental meta-capability the moral failure lies in future institutions, not in the environmental impacts of actions in the present.[1] Consequently, it might be good for those in the present to act in ways that

[1] This point can be made clear with the following case. Consider a future in which the world has in place a set of institutions A (where technological advancements are included as part of this set) and environmental conditions X, where the combination of A and X does not allow for individuals' minimal capability thresholds to be met. However, if a different set of institutions, B, were implemented, the combination of B and X would allow individuals' capability thresholds to be met.

lessen the impacts of climate change, but there would be no obligation to do so. The third type is the most serious, given that a violation of individuals' environmental meta-capability necessarily entails that those individuals' capability thresholds cannot be fulfilled simultaneously, resulting in human rights violations. Moreover, this violation of individuals' environmental meta-capability is attributable to actions in the present, since it is our actions now that either add to or lessen the impacts of climate change. Given that in such cases the moral failure clearly lies in the actions of present generations, it is an open question as to what moral obligations this creates in current generations and who bears these duties. Providing the theoretical background to answer this is the task of the present chapter. The next chapter will then apply the theory offered here to the case of climate change.

Before advancing my discussion, I want to clarify my use of the term "responsibility" by distinguishing between two types of moral responsibility identified by Tracy Isaacs: (1) moral responsibility as blameworthiness and praiseworthiness and (2) moral responsibility as moral obligations and duties.[2] The former is generally evaluative and past-oriented, whereas the latter is prescriptive

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Thus, the fault is not in the present for bringing about X, but rather in the future for their failure to implement B. Now, consider that the combination of environmental conditions Y (the result of actions in the present to protect ecological systems) and A would have allowed for individuals' capability thresholds to be met. While the actions in the present to bring about Y might be good, the failure to do so is not a moral harm, since B allows capability thresholds to be met even in the case of X. Given that actions in the present can impact the set of available institutions, it is important to note this assumes the set of institutions B would be reasonably available given the economic, social, and technological assumptions made under the scenario evaluated. If it were the case that the set of institutions B were not reasonably available, then we are dealing with a different set of assumptions and therefore a different scenario—one that would be an example of the third type of scenario.

[2] Tracy Isaacs, *Moral Responsibility in Collective Contexts* (Oxford: Oxford University Press, 2011), 12-16. John Parrish makes a similar distinction in a recent paper, identifying what he calls "attributive responsibility" and "assignment responsibility," which fit Isaacs's categories respectively. See John Parrish, "Collective Responsibility and the State," *International Theory* 1, no. 1 (2009): 121-123.

and future-oriented. Moral responsibility in this second sense tells us what we ought to do regarding future actions. As such, it is this second sense that is of primary relevance to our study, and, unless otherwise noted, I use "moral responsibility" and "responsibility" in this second sense of one's moral obligation or duty. The rights framework of Chapter 2 and the method for evaluating outcomes of future climate scenarios presented in Chapter 3 can be applied to tell us what actions in the present and near future are morally acceptable (i.e. those that result in scenarios in which there are not violations of individuals' environmental meta-capability) and what actions are not (i.e. those that result in scenarios in which there *are* violations of individuals' environmental meta-capability). Thus, we have a moral responsibility to refrain from those actions in the latter grouping, while staying within the domain of the former.

One final caveat must be put forward. The discussion in this chapter focuses on theoretical moral issues rather than more practical political or legal ones. While political and legal matters might appear as examples to aid in understanding the moral obligations I seek to identify, I remain neutral about specific political or legal responses to climate change. This chapter makes clear that there is a moral obligation to act in a way that does not bring into being any future scenario that would result in violations of individuals' environmental meta-capability. However, if there are multiple types of actions (political, legal, or otherwise) that would fulfill this obligation, then the account offered here cannot choose among those means. I am merely providing a procedure for identifying obligations that operates in conjunction with the evaluative framework of the previous chapters. Additionally, in

taking a purely moral perspective, I do not consider the feasibility of meeting these obligations under current institutional structures (particularly since these structures themselves might need to be changed). Given that ought implies can, all that matters for my discussion is that it is *possible* for the obligations I identify to be fulfilled, however likely or unlikely it might be given current geopolitical realities.

With the target of discussion clear, the chapter will progress as follows. Section 1 highlights some general problems climate change poses for isolating and assigning obligations resulting from its harm. Showing that analyses of moral responsibility engaged only at the individual or only at the collective level—what Isaacs refers to as "single level" analyses—run into problems, I spend the remainder of the chapter advancing a two-level approach for understanding the current generation's obligations in the face of climate change. Section 2 offers an overview of Isaacs's general two-level approach to moral obligation in collective contexts. I will end the theoretical discussions here by offering, in Section 3, a brief summary of principles of collective action relevant for applying Isaacs's theory.

1. Problems Identifying Moral Obligations in the Case of Climate Change

Due to the nature of the phenomenon, climate change offers a significant challenge for determining and locating what, if any, obligations result from its negative impacts. Consider a typical analysis of a rights claim under the interest theory of rights I employed in Chapter 2. For X to have a right to something, X must have some interest that justifies "holding some person(s) to be under a duty."[3] Thus, if we have a right to the fulfillment of our environmental meta-capability, as I have

[3] Joseph Raz, *The Morality of Freedom* (Oxford: Clarendon Press, 1986), 166.

argued, then it must create a duty in some other moral agent(s).[4] Avoiding the contentious nature of positive duties, it is clear, at minimum, that this right creates a negative duty to refrain from acting in a manner that creates environmental conditions resulting in the inability of the rights bearers' environmental meta-capability to be fulfilled.[5] Consequently, X has a right to the fulfillment of her environmental meta-capability, and Y has a corresponding duty not to act in a way that prevents the fulfillment of X's right.

As the previous chapter has shown, under certain emissions scenarios, the fulfillment of X's right will be prevented. Given the analysis above, there is a clear obligation for Y to avoid those scenarios. But, who is the Y that bears this obligation? In previous chapters, when identifying the harm to X, climate change has simply been treated as though it were the single act of a single agent. Obviously, this is not the case. The harm posed by climate change (and what violates X's right) is not one of a single origin; rather, it is a case of what Joel Feinberg terms an "accumulative harm." Using air pollution as a paradigm case, Feinberg offers the following explanation:

> If there were only one automobile allowed to operate in the entire state of California, its exhaust fumes would soon be dissipated and no harm to the ambient air would even be worth mentioning. One hundred cars might begin to threaten the air quality but it is unlikely that they would bring it to the threshold of harmfulness. But somewhere between those minor exhaust emissions and those

[4] Here, I switch from talk of persons to moral agents given that this chapter considers the moral obligations of both individuals and collective entities. All that matters for my discussion is whether the entity in question can be treated as a moral agent.

[5] In focusing on negative duties, I take my cue from Thomas Pogge's work addressing world poverty. Doing so allows Pogge (as well as my account here) to meet the libertarian's minimalist constraint that "human rights require that we not harm others in certain ways – not that we protect, rescue, feed, clothe, and house them" [Thomas Pogge, *World Poverty and Human Rights* (Cambridge: Polity, 2002), 66-67].

> produced by millions of cars without catalytic converters the threshold of harm is reached.[6]

This example highlights the nature of accumulative harms as resulting from actions of collections of agents where no single agent's action(s) can cause the harm on its own.[7] Climate change clearly fits this bill. In fact, Feinberg's own example can be made to represent the accumulative nature of climate change. Taking GHG emissions as the primary driver of anthropogenic climate change, the emissions of one car (or one person) would not be of any consequence. Even the emissions of hundreds of thousands of people would not be able to produce the type of harmful scenarios identified in Chapter 4. Rather, it is the accumulative emissions of billions of people, year after year, that result in the harm.

Unfortunately, this poses a problem for understanding moral responsibility. If the harm of climate change is accumulative and *my* individual emissions are not sufficient for bringing about this harm, then it seems my emissions do not prevent the fulfillment of X's right to her environmental meta-capability. Proponents of collective, rather than individual, responsibility for climate change take this line.[8] Such arguments are driven by the claim that we cannot ascribe causal responsibility

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[6] Joel Feinberg, *The Moral Limits of the Criminal Law, Volume One: Harm to Others* (Oxford: Oxford University Press, 1984), 228.

[7] This echoes Andrew Kernohan's definition of an accumulative harm, which he draws from Feinberg's work: "It is a harm to another person brought about by the actions of a group of people where the action of no single member of that group is sufficient, by itself, to cause the harm" [Andrew Kernohan, "Accumulative Harms and the Interpretation of the Harm Principle," *Social Theory and Practice* 19, no. 1 (1993): 52].

[8] See, particularly, Walter Sinnott-Armstrong, "It's Not *My* Fault: Global Warming and Individual Moral Obligations," in *Perspectives on Climate Change: Science, Economics, Politics and Ethics, Advances in the Economics of Environmental Resources, Vol. 5*, eds. Walter Sinnott-Armstrong and Richard B. Howarth (Amsterdam: Elsevier, 2005), 285-307.

for an accumulative harm to any singular agent. As Andrew Kernohan has forcefully argued:

> Because of the limitation of our cognition apparatus, we can never have a metaphysical theory of imputation for accumulative consequences. We will never be able to say who the *real* perpetrator is, or to say what the share of causal responsibility someone *really* bears. Accumulative consequences are not reducible to individual consequences.[9]

It seems that if we cannot ascribe causal responsibility in whole, or even in part, to individuals, then we have to place responsibility on some collective entity to which causal responsibility can be assigned. Consequently, it would be this entity that bears the obligation not to act in a manner that brings about the types of harmful emissions scenarios identified in the previous chapter.

Yet, placing obligation on some collective entity also generates problems. As Anna Stilz notes, under typical theories of moral responsibility, the following four conditions must be fulfilled in order for an entity to be treated as a moral agent: "1) it intended the act that resulted in harm; 2) it had the capacity to grasp moral and other reasons; 3) it was in deliberative control of its own actions; and 4) it acted voluntarily, without duress."[10] Anytime a collective entity fulfills these conditions it

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[9] Andrew Kernohan, "Individual Acts and Accumulative Consequences," *Philosophical Studies* 97, no. 3 (2000): 345.

[10] Anna Stilz, "Collective Responsibility and the State," *The Journal of Political Philosophy* 19, no. 2 (2011): 191-192. Here, Stilz cites work by Philip Pettit and J. Angelo Corlett, as offering detailed defenses of these conditions. See Philip Pettit, "Responsibility Incorporated," *Ethics* 117, no. 2 (2007): 177-192, and J. Angelo Corlett, "Collective Moral Responsibility," *Journal of Social Philosophy* 32, no. 4 (2001): 573-584. For the purposes of this chapter, I will not engage in any defense of these conditions, deferring instead to the literature cited. Moreover, I generally assume that there are collective entities that meet these conditions, thus accepting the general premise of theories of collective moral responsibility. For general discussions regarding the possibility of collective agency and responsibility see Peter French, *Collective and Corporate Responsibility* (New York: Columbia University Press, 1984); Larry May, *The Morality of Groups: Collective Responsibility, Group-Based Harm, and Corporate Rights* (South Bend, IN: University of Notre Dame Press, 1987); Larry May and Stacy Hoffman, eds., *Collective Responsibility: Five Decades of*

can be treated as a moral agent, and thus be a bearer of moral obligations. For example, consider BP, the global oil and gas company. Without getting into the conceptual details of collective intention, it is clear in some general sense that, as a company, BP engages in intentional actions (e.g. choosing to drill a new well) determined through deliberative mechanisms within the company. Given this, BP meets conditions 1 and 3. Additionally, condition 2 seems to be met due to the fact that, in the wake of the Deepwater Horizon oil spill in the Gulf of Mexico, BP accepted responsibility and expressed regret over their wrongful actions related to the spill. This leaves only condition 4, and even a cursory glance at BP's corporate decisions seems to show this to be met. Thus, we can hold BP morally responsible for its corporate decisions.[11]

However, while it is clear corporations like BP can be treated as moral agents, this does not get us much traction when analyzing the harm of climate change. The difficulty here lies in identifying a collective that not only satisfies the conditions just noted, but also engages in actions sufficient for bringing about harmful emissions scenarios. Otherwise, we are left with the same problem facing individualist accounts highlighted above. The inability to identify such a collective can be seen in many of the "Jack and Jill" examples Dale Jamieson uses to argue that

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Debates in Theoretical and Applied Ethics (Lanham, MD: Rowman & Littlefield, 1991); and Peter French and Howard Wettstein, eds., *Shared Intentions and Collective Responsibility: Midwest Studies in Philosophy, Volume XXX* (Oxford: Blackwell, 2006).

[11] For seminal discussions of corporations, like BP, as meeting the criteria of moral agency, see Peter French, "The Corporation as a Moral Person," *American Philosophical Quarterly* 16, no. 3 (1979): 207-215; and Kenneth Goodpaster, "The Concept of Corporate Responsibility," *Journal of Business Ethics* 2, no. 1 (1983): 1-22. Goodpaster helpfully presents a court case involving the Ford Motor Company as an entry point for his discussion. For a succinct summary of French's argument, see his entry on "Corporate Moral Agency," in *The Blackwell Encyclopedic Dictionary of Business Ethics*, eds. Patricia Werhane and Edward Freeman (Cambridge, MA: Blackwell Business, 1997), 148-151.

our normal modes of moral analysis cannot fit climate change.[12] In these examples, Jamieson presents different variations on the harm of Jack stealing Jill's bike (or depriving her of it), noting how as the examples get more varied it is difficult to identify the moral culprit. By the time he arrives at the example he takes to be most analogous to the case of climate change, we clearly see the problem for using typical collectivist analyses. The example runs as follows: "acting independently, Jack and a large number of other unacquainted people set in motion a chain of events that causes a large number of future people who will live in another part of the world from ever having bikes."[13] In such a scenario, there is no shared, collective deliberation by the unacquainted individuals. Thus, the group that appears to cause the harm of climate change cannot meet the criteria for moral personhood given in the previous paragraph. The same is true for Feinberg's pollution case above.

Consequently, climate change presents difficulties for identifying moral obligation both in individuals, given that we can show they themselves are not bringing about the harm we have identified, and collectives, given that we cannot

[12] Dale Jamieson, "Climate Change, Responsibility, and Justice," *Science and Engineering Ethics* 16, no. 2 (2010): 436-437. In these examples, Jamieson starts with the case of a single individual causing a single intentional harm (i.e. Jack stealing Jill's bike) and then adds modifications related to the cause of the harm (e.g. in Example 2 the bike's disappearance is the result of the uncoordinated action of strangers), the geographic distance between Jack and Jill (e.g. in Example 4 while Jack's actions result in Jill's bike being stolen, Jack is located on a different continent), and the temporal distance between Jack and Jill (e.g. in Example 5 Jack lived in the past and engaged in actions that prevented Jill from having a bike in the present). For a detailed response to Jamieson's "Jack and Jill" examples, see Stephen Gardiner, "Is No One Responsible for Global Environmental Tragedy? Climate Change as a Challenge to Our Ethical Concepts," in *The Ethics of Global Climate Change*, ed. Denis Arnold (Cambridge: Cambridge University Press, 2011): 38-59. Gardiner argues that Jamieson's examples to not as analogous to the present situation regarding climate change as Jamieson takes them to be, and that with more analogous examples we can fit the scenario under normal paradigms of moral analysis. As will be seen in this chapter, I agree with Gardiner that climate change can fit under current understandings of moral responsibility, though my use of Isaacs's account results in a different approach than Gardiner's.

[13] Jamieson, "Climate Change, Responsibility, and Justice," 436.

identify a cohesive collective to hold accountable for the harm that also meets the criteria of moral personhood. These difficulties, however, only come about when trying to tie moral obligation related to climate change to causing the harm itself. Additionally, the issue is made more difficult by a myopic focus on a single level of responsibility (i.e. either collective or individual). Isaacs pushes against this paradigm for phenomena like climate change, in favor of one that treats moral responsibility as existing simultaneously in both individuals and collectives. She does this by focusing not on the cause of the harm itself, but rather on the failure to prevent an avoidable harm. Her approach complements the framework presented in the previous chapters. The target of moral analysis for climate change is not individuals' actions causing the harm, but the failure of individual and collective actions to prevent it (i.e. the failure to prevent emissions scenarios resulting in violations of individuals' environmental meta-capability). This is the negative duty highlighted in the opening of this section. If we can use Isaacs's theory to detail the obligations we bear vis-à-vis climate change, then we will have described the correlative duty created by our right to our environmental meta-capability. By offering an account of our duties, along with the previous chapters' discussion of our rights and method for identifying violations of those rights, this project can be viewed as presenting a complete moral framework for evaluating climate change. As such, we turn to a brief overview of Isaacs's general theory of individual and collective moral obligation, before spending the rest of the chapter addressing its application to the case of climate change.

2. Isaacs's Two-Level Theory of Moral Obligation

In her recent book, *Moral Responsibility in Collective Contexts*, Isaacs offers a two-level theory of moral responsibility for cases involving some form of collective action (or inaction). It is important to note that in her analysis, Isaacs treats neither collective nor individual responsibility as primary. While each level can inform the other, they are distinct—each capturing a portion of normative significance. For Isaacs, "[i]ndividual moral responsibility is not a function of collective moral responsibility (or vice versa) and claims about the responsibility of collectives do not entail (or erase) claims about the responsibility of individual members."[14] Focusing on a single level "will inevitably leave out an area of normative significance, resulting in an incomplete account of moral responsibility."[15] Thus, Isaacs's simultaneous consideration of both individual and collective responsibility makes her theory "two-level."

Although Isaacs's theory addresses both responsibility as blameworthiness and responsibility as obligation, our primary interest is her account of the latter. This is because previous chapters offered a future-oriented method for identifying potential harms and we therefore need an account of responsibility that shares this future orientation. We need to be able to determine what an individual or collective entity can (or cannot) do, morally speaking, given that certain actions entail harmful emissions scenarios. This requires staying in the realm of responsibility as obligation.

[14] Isaacs, *Moral Responsibility in Collective Contexts*, 19.
[15] *Ibid.*, 12.

While Isaacs identifies environmental degradation (or climate change) as a case in which there is no actual collective agent (i.e. an organized institutional actor), it is important to first present her theory of responsibility in cases where there is one. This is for two reasons. First, cases that lack a collective agent operate, to a certain extent, in the same manner as those in which there is a collective agent. Thus, to understand the former, we must have an understanding of the latter. Second, as I show in the next chapter, applying Isaacs's theory to the case of climate change requires modification, as we have to run her account multiple times: first, where there is no actual collective agent, and then in cases were there are actual collective agents. Thus, we need the method for addressing obligation in both types of cases (i.e. those with a collective agent and those without a collective agent) in our toolkit.

Cases involving the existence of an identifiable collective agent operate in a straightforward manner. Isaacs summarizes this with the following:

> Understood in the terms of the two-level account I have developed…collective obligation operates at a level distinct from individual obligation. In order to discharge its obligations at the collective level, a collective agent requires that its members fulfill their functions. The duties associated with roles within a collective will be in large part determined by, though they are distinct from, the obligations of the collective as a whole.[16]

We can see this in the case of any given corporation. Consider Apple. First, we identify the duties of Apple as a whole. For the sake of discussion, we will stipulate that Apple has a singular duty: make a profit for its shareholders. This duty is one that clearly does not belong to a single individual Apple employee, regardless of rank. No one individual's actions are sufficient for Apple as a company to make a

[16] *Ibid.*, 132.

profit. Rather, each individual has specific duties to satisfy associated with his or her place in the company (e.g. the person in payroll doing the appropriate tasks to ensure other employees get their paychecks; the person in the store selling products to generate revenue). These specific roles are dictated by the general collective obligations of the organization (in this case, making its shareholders profit), and, according to Isaacs, "the individuals' obligations in the organizational context are exhausted by the requirements of their roles."[17] Thus, Apple employees' duties are determined exclusively by Apple's general duty as a company. Moreover, no single employee has to fulfill the duty of Apple; in fact, to do so is conceptually impossible.

While this approach seems clear at the outset, it becomes more muddled at the individual level. When examining various roles within collective structures, it is not always clear what the specific individual duties are. Taking the example of a university, Isaacs contrasts the roles of a payroll clerk and a faculty member.[18] She notes that while the duties of the former are laid out clearly in a job description, those of the latter can be less clear or at least there can be more variation in how they can be fulfilled. This results in the following claims regarding the relation between individual obligations and organizational hierarchies:

> The more responsibility one has within the collective, the less obvious the specifics are of what one is required to do and how one is required to do it. Moreover, the roles in which it is less clear and there is more latitude are precisely the roles that are likely to be most directly responsible to the collective's obligations. Those in power are in a better position to ensure that the collective acts as it ought.[19]

[17] *Ibid*., 133.
[18] *Ibid.*, 133-134.
[19] *Ibid.*, 134.

Though the individual in a position of power might have a greater role in making sure the collective fulfills its obligations, it is still not possible for their actions to singlehandedly fulfill the collective obligations.

We can apply this power-obligation relation to the example of Apple above. While it might be clear what the employee at the Apple Genius Bar must do to facilitate Apple meeting its collective obligation, it is far less clear what Apple's CEO Tim Cook ought to do, other than to say he bears greater obligations than the employee at the Genius Bar given his greater power and over-arching control. Yet, even with this greater power, given the collective institutional structure Tim Cook's individual actions cannot fulfill all the particular actions Apple employees must take in order for Apple to meet its obligation and make a profit for its shareholders (i.e. he cannot himself build the computers and pay the employees). This occasional vagueness related to the obligations of those in power is not a reason for rejecting Isaacs's theory. It simply highlights the differential obligations that exist within a collective, both in kind and degree of importance, and the fact that any moral analysis of collective action will require specific attention to those in positions of greater power.

Some might object that this understanding of responsibility allows individuals lacking power to be absolved of moral blameworthiness, in cases where the company engages in wrongful behavior, by professing they were merely following orders. If Isaacs's theory understands moral responsibility as only "doing one's job" in fulfilling collective goals, we might be hesitant to accept it. However, Isaacs points out that simply doing one's job, or following orders, does not exhaust

individual moral responsibility. We still have broader moral obligations arising from outside of the organizational context. Here, Isaacs offers whistle-blower cases as an example of a scenario where individuals have additional responsibilities beyond those dictated by their organizational role: "In these cases, the collective's failure to fulfill its collective obligations creates a scenario in which individuals, as moral agents, are morally required to do something that goes beyond their usual duties in order to 'help' the collective fulfill its obligations."[20] Consequently, it is important to recognize that fulfilling one's role only yields right action in normal cases (i.e. those cases in which the collective is not in violation of its duties). In cases where a collective is in violation of its duties (or is openly engaged in harmful behavior), individual moral obligation goes beyond the organizational context and requires proactive attempts to get the collective to change its practices.

With this brief overview of Isaacs's theory for cases in which a collective agent exists complete, we can move to addressing those where an organized institutional agent does not already exist. Examples of such cases, according to Isaacs, are the issues of global warming and global poverty. Just as no single individual is responsible for the harms in these cases, neither is there a collective entity clearly responsible for their cause or continuation that meets the requirements of moral agency presented in Section 1. No single corporation or state intentionally acts in a manner sufficient for creating global poverty (or allowing it to continue), though it is a clear unintended consequence of many corporate or state policies and actions. While no individual or collective appears to bear responsibility, these

[20] *Ibid.*, 136.

problems have collective solutions readily available should the necessary parties act in a coordinated manner.[21] In such circumstances, moral obligation is not focused on direct causal responsibility, but rather the need for collective action to alleviate the harms (or prevent them from coming into being, when considering possible future harms).[22]

To clarify where moral obligation lies in such situations, Isaacs offers a discussion of what she terms "bystander cases."[23] Using a series of cases, building up to what she refers to as a "Coordinated Bystander Case," Isaacs shows how we can identify both collective and individual obligation in cases lacking a collective agent, but requiring a collective solution. The case she offers is as follows:

> Coordinated Bystander Case: Four bystanders are relaxing on the riverbank when six children on a raft run into trouble when they and their raft end up in rapids. They are hurtling helplessly toward a

[21] In both cases, it is true there is disagreement about which solutions might be the most effective or "right"; however, this does not take away from the fact that there are solutions on offer. In the case of global poverty, it is generally accepted that a mix of institutional reforms and assistance in the amount of 1% of the gross national product of the high-income world would be sufficient to end global poverty. For a detailed discussion of how global poverty can be addressed, with references to numerous other studies and relevant data, see Jeffery Sachs, *The End of Poverty: Economic Possibilities for Our Time* (New York: Penguin Books, 2005). While solutions to climate change are admittedly more contentious in terms of particulars, there is general agreement regarding the need for a reduction of GHG emissions to some degree allowing atmospheric GHG levels to stabilize; on this point, see Chapter 10 of John Houghton, *Global Warming: The Complete Briefing*, 4th Edition (Cambridge: Cambridge University Press, 2009). For a helpful summary of information related to the viability of mitigation as a collective solution, see the IPCC, *Climate Change 2007: Mitigation of Climate Change - Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Bert Metz, Ogunlade Davidson, Peter Bosch, Rutu Dave, and Leo Meyer (Cambridge: CUP, 2007), 1-23; available on-line at <http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg3_report_mitigation_of_climate_change.htm>.

[22] It is true that there still must be a link (at least counterfactually) between the actions of the agents bearing the responsibility and the outcomes of concern. In the case of climate change, I take it that comparisons between the various climate scenarios, in terms of showing how changes in actions (particularly, GHG reductions) result in changes in outcomes, provides such a link. Not only do my arguments to this point support such a link, the various detailed analyses in IPCC reports provide more robust support.

[23] Isaacs, *Moral Responsibility in Collective Contexts*, 141-144. The first of these cases is similar in structure to Peter Singer's drowning child case, see Peter Singer, "Famine, Affluence, and Morality," *Philosophy and Public Affairs* 1, no. 1 (1972): 229-243.

> dangerous waterfall downriver and are unlikely to survive if they go over it. Nothing any of the four bystanders can do as an individual will make a difference, but there is an obvious course of coordinated action they could take to divert the raft into calmer waters. This measure would pose little risk to the bystanders and would save all of the children.[24]

In such a case, since it is stipulated that the individuals cannot accomplish anything acting alone, and given that ought implies can, there cannot be any moral obligation from a purely individual focus. However, taken from a collective perspective and treating the four bystanders as an "it" (something meeting the guidelines for collective agency), the same type of role-base mapping (i.e. the identification of obligation based on one's role within a collective structure) we saw above applies. Viewed this way, the group has the obligation of taking the coordinated action that saves the children, while each individual has an obligation shaped by their role in whatever the necessary coordinated action is.[25] As with the above discussion of the role organizational hierarchy plays in mediating responsibility, it is important to keep in mind that given each bystander's situation, they may not all bear the same roles or obligations (e.g. the physical condition of one might result in a different obligation than one who is more frail). Isaacs's primary point with these cases is that under certain circumstances a random group of individuals can be reconfigured into a

[24] Isaacs, *Moral Responsibility in Collective Contexts*, 143.

[25] Here, we are merely treating the counterfactual case where the individual's have decided to form a collective to save the children. Without such an agreement of the individuals, we would have to add a prior individual obligation to participate in the collective action itself. Adding this prior obligation arises from considering the group as a putative group, rather than an already existing group, which is the focus of the rest of this section.

"collective capable of intentional action," which then allows for the assignment of both individual and collective responsibility, as presented above.[26]

Although this is helpful for analyzing cases in which a random group of individuals *actually does* reconfigure itself into a collective, it does not seem of much help when such a reconfiguration does not occur. Without an actual collective, it seems that Isaacs's theory is only able to offer obligations that are contingent on the forming of a collective moral agent, and without such action these obligations bear no moral force. To address this issue, and argue that these obligations are actual rather than contingent, Isaacs turns to Larry May's work on moral responsibility, collective inaction, and the notion of "putative groups."[27] According to May, a putative group exists in cases where "there is not yet an organized group with a decision-making procedure," but there is potential for the development of such a group with the ability to address some harm.[28] Putative groups can then be used to address cases, like climate change, where there is collective inaction, referring to

[26] Isaacs, *Moral Responsibility in Collective Contexts*, 145. One circumstance that might prove particularly relevant for the application of Isaacs's theory is group size, given that collective action might prove impossible in extremely large groups. If collective action were to prove impossible, then there could be no responsibility, neither collective nor individual, given that ought implies can. I will take this issue up in the next section when seeking to apply Isaacs's theory to the case of climate change. My primary focus in this section is to present the general theory behind Isaacs's account, recognizing it might not apply in all cases where collective action could in an ideal world alleviate harm.

[27] See Larry May, "Collective Inaction and Shared Responsibility," *Nous* 24, no. 2 (1990): 269-277. A revised and slightly expanded version of this paper was published in Larry May, *Sharing Responsibility* (Chicago, IL: University of Chicago Press, 1992), 105-124. Isaacs' cites a reprinting of the original article that is slightly revised yet lacks the fifth section found in the expanded version in *Sharing Responsibility*; see Larry May, "Collective Inaction and Responsibility," in *Individual and Collective Responsibility*, 2nd edition, ed. Peter French (Rochester, VT: Schenkman Books, 1998), 211-231. All further reference and citations of May's work on putative groups will come from the expanded chapter in *Sharing Responsibility*.

[28] May, *Sharing Responsibility*, 105.

"the failure to act of a collection of people that did not choose *as a group* to remain inactive but that could have acted as a group."[29]

The concept of putative groups can be used to argue that in some cases of collective inaction, the putative group bears collective responsibility.[30] May is quick to note that this only works in a limited set of cases where it is clear that the putative group "could have developed a sufficient structure in time to avoid inaction."[31] To clarify this condition, May offers the following, which I quote at length:

> During some famines, too little time elapsed from the time people learned about the problem, for example in June, until all the harms occurred, in July, for an effective relief effort to be mounted. Even though the collection of people might have been able in other cases to act as a group, they were not responsible for failing to take steps in June to prevent the harms of July. But in other cases, history will indicate that the people could have done something collectively in June, when they learned of the famine, to prevent harm from occurring in August. As a result, those people may be collectively responsible for the harmful consequences of their collective inaction. No rescue was possible in August, once June had passed with no organization activity; nonetheless, these people might be collectively responsible for the August famine deaths because of what they could have done in June to form themselves into an organized group that could have prevented the harms in August.[32]

Here, May employs a "plausibility condition" for assigning blame. If counterfactual action could plausibly have made a difference, then the putative group bears responsibility. This condition is clearly met in the second case of May's example,

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[29] *Ibid.*, 107. Collective inaction is distinct from collective omission, which refers to "the failure of a group that collectively chooses not to act" (107). In cases of collective omission, there already exists a collective and thus Isaacs's theory would be clearly applicable.

[30] Both May and Held are focused on moral responsibility as blameworthiness and praiseworthiness. Consequently, the subsequent paragraphs discussing their accounts use "responsibility" in this sense. Examining responsibility in this sense, as it relates to putative groups, is still helpful since a similar relation ought to hold between responsibility in the sense of obligation and putative groups.

[31] May, *Sharing Responsibility*, 109.

[32] *Ibid.*, 111.

but not the first. More importantly, while available data and projections regarding climate change show the window for action as continually closing, it is still generally accepted that such a window does exist. Thus, a putative group would bear blame in the case of the climate change (assuming one can show it satisfies other relevant conditions for successful collective action that I take up in the next section).

However, May only places blame on the putative group (and its members) for its failure to organize, rather than its failure to actually engage in the particular actions necessary for preventing the harm. This distinction is important, particularly if thought about in terms of obligation, which we can reasonably infer from his assignment of blame. If you are morally blameworthy for doing X then it is reasonable to conclude you had an obligation to not do X. If a putative group only has an obligation to organize into a collective agent, then its members can only be said to have a duty to organize themselves and then decide how to act. However, if the putative group has an obligation for the particular actions necessary to prevent the harm in question, then its members have obligations to engage in activities appropriate to their role in that action. Assume that in addressing climate change the role most individuals would play is to decrease the amount of time they drive their cars by 50%. If the putative group (i.e. the collective formed by individuals) is only obligated to organize, then the individuals do not have an obligation to reduce the amount of time they drive their cars; they only have an obligation to form a collective group.[33] However, if putative groups have an obligation not just to

[33] The obligations of the individuals comprising the putative group would of course change should they fulfill their obligations to form an actual collective. Only when there is an actual

organize, but to engage in the particular actions as well, then individuals possess an obligation to reduce their car use, even when they do not form a collective group.

Wanting to establish obligations for the particular actions rather than only organizing, Isaacs turns to Virginia Held's work. Held moves beyond May's claim, arguing that if "the action called for in a given situation is obvious to the reasonable person, it seems that we can sometimes conclude that the judgment "Random collection of individuals *R* is morally responsible for not doing *A*' is valid," where *A* is the action itself, not the failure to organize.[34] To demonstrate how this condition applies, Held offers three cases involving random collectives, which I summarize as follows:

> *Case 1*. There are seven people in a subway car. The second smallest of the seven suddenly begins to violently beat the smallest. While this happens in full view of the others, they do nothing. After ten minutes, the individual is dead. Though one individual could not have safely subdued the person engaged in the beating, two or more could have easily done so.[35]
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> *Case 2.* There are five persons in a train compartment. One, a doctor, goes to another compartment, leaving his bag with medical supplies. While he is gone, one of the remaining 4 has convulsions and in struggling for air hits against an exterior door and falls out of the train to his death, while the other three passengers watch. The doctor returns and is told what happened. He tells the others they could have saved the man's life if they had held him down and administered some medicine from the doctor's bag.[36]
>
> *Case 3.* There are three individuals on an isolated street that witness a building collapse, which traps a fourth person inside, injuring her leg. The observers know that applying a tourniquet to the injured person

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collective, rather than a putative one, can individuals have an obligation to reduce the amount of time they drive their cars on May's account.

[34] Virginia Held, "Can a Random Collection be Responsible?" in *Collective Responsibility: Five Decades of Debate in Theoretical and Applied Ethics*, eds. Larry May and Stacey Hoffman (Lanham, MD: Rowman & Littlefield, 1991), 96.

[35] *Ibid.*, 94-95.

[36] *Ibid.*, 96.

> will save her life. However, to get in a position to do so requires moving a piece of rubble. Each of the three observers argues for moving a different piece of rubble (the moving of which requires all three's simultaneous efforts), and while they argue, the fourth person dies. The removal of any one of the pieces would have allowed for the fourth individual's survival.[37]

Case 1 provides a clear example of a situation in which the course of action is not only obvious, but also readily available to the individuals. Any reasonable person would see that a group of individuals (all of whom are larger than the attacker) could subdue an unarmed assailant and that there is a moral principle in play (namely preventing innocent death). Case 2, according to Held, is a case in which the reasonable person cannot be said to see the solution. Two things here cannot be reasonably expected of the individuals: (1) having the foresight that the individual will hit against the door and fall out of the train, and (2) having the knowledge that there medicine in the doctor's bag that can save the individual, and knowing which medicine that is. The solution to the harm in this case is something that would require very specific knowledge, far beyond what can be expected of a reasonable person without medical training. Case 3 presents more complexity. While it is obvious that some action would have saved the person's life, it is not obvious to the reasonable person which specific action is necessary since any removal of debris would have sufficed. Held argues that in this type of case, while the reasonable person would find it obvious that *some* action needs to be taken, she would not be able to determine which specific action was necessary. Thus, we cannot hold the individuals responsible for failing to removing the rubble and save the individual's

[37] *Ibid.*, 96-97.

life; we can only hold them responsible for not taking a decision between equally sufficient, but not necessary, actions.

Isaacs takes both May's and Held's arguments to support the application of her theory to cases involving putative groups. When the clarity condition outlined by Held is met, putative groups can be seen as having putative collective obligations. For Isaacs, these putative obligations have "exactly the same ordering and mediating potential for individual action that an actual collective obligation would."[38] Furthermore, since a putative obligation holds the same potential for the role-based mapping of responsibility as an actual obligation, it grounds *actual* individual obligations. This is the primary advantage of Isaacs's view. It is only when considered through the lens of the collective context that we can understand individual obligation. While Isaacs might be too quick in assuming the proper action with respect to climate change is evident, she offers the following summary linking her view to climate change:

> Mediated by a putative collective obligation in which she could participate, her failing is not that she did not solve the problem of global warming—that is something we could never expect her to do. Instead, her failure is that she did not do her part in a collective action that could solve global warming. Because a clear collective action to address this issue is possible and evident to the reasonable person, a putative collective obligation exists. More important, this putative obligation, as much as an actual collective obligation would be, is a starting point for bridging the apparent gap between seemingly inconsequential individual contributions and new understandings of the part they play in more powerful collective undertakings.[39]

Whether Isaacs's view addresses climate change with the ease she suggests here will be the focus of the next chapter. What is important at this stage is the manner in

[38] Isaacs, *Moral Responsibility in Collective Contexts*, 149.
[39] *Ibid.,* 150-151.

which collective and individual obligation are distinct, and that the former can be used to understand the latter, even in cases involving putative groups.

3. Principles of Collective Action

While Isaacs's employment of May and Held's work is useful, one might object it is only useful for cases of small-scale collective action. Climate change requires collective action on a scale that seems to make cases involving a subway car filled with seven people meaningless. However, this worry can be set aside through an analysis of basic principles of collective action. As long as the principles of collective action point to a likelihood for success (or at least a legitimate ability to act) we do not have to worry about the numerical difference between the cases discussed in the previous section and the collective action for addressing climate change.

Consequently, this section will provide a brief overview of some fundamental issues related to collective action that show how large-scale collective action is possible. Doing so will be essential in the next section when identifying the appropriate putative group associated with the collective action sufficient to adequately address climate change (i.e. sufficient for preventing future scenarios involving violations of individuals' environmental meta-capability). In this section, I will address two key issues related to collective action that apply in the case of climate change: (1) group size and the likelihood for successful collective action, and (2) extrarational motivation. In doing so, I will typically use language indicating individual persons as the agents of collective action, as this is the common mode of

analysis in the literature I draw from. However, as Todd Sandler notes, "[a]ll of the collective action principles for two or more agents also apply for nations as agents."[40] Thus, the principles discussed here will apply in the next chapter applying Isaacs's theory in instances with both individuals as agents and nations as agents.

The most important issue related to collective action is the role group size plays in the likelihood of successful collective action. In his seminal work *The Logic of Collective Action*, Mancur Olson argues that *ceteris paribus* small groups will be more successful in collective action to further their interests than large groups. Olson highlights this with the following conclusion: "The larger a group is, the farther it will fall short of obtaining an optimal supply of any collective good, and the less likely that it will act to obtain even a minimal amount of such a good. In short, the larger the group, the less it will further its common interests."[41] However, Olson's use of the terms "small" and "large" is not strictly about numerical size, but rather whether a group is "privileged" or "latent" (representing small and large respectively).[42] A group is privileged if there is at least one individual *i* for whom the value she receives from the collective good is greater than the cost of her contribution to obtain the good, and a group is latent if for all *i* the value of the good less the cost of contribution is negative.[43] While there is generally an empirical

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[40] Todd Sandler, *Global Collective Action* (Cambridge: Cambridge University Press, 2004), 43.

[41] Mancur Olson, Jr., *The Logic of Collective Action: Public Goods and the Theory of Groups* (Cambridge, MA: Harvard University Press, 1965), 36.

[42] *Ibid.*, 45-51. For a helpful summary of Olson's theory on this issue, see Russell Hardin, *Collective Action* (Baltimore, MD: Resources for the Future & The Johns Hopkins University Press, 1982), 38-49.

[43] This can be captured by the following formula: $A_i = V_i - C$, where A_i is the advantage to *i*, V_i is the return to *i*, and C is the amount *i has* to contribute. A group is then privileged if there is at least one individual group member for whom $A_i > 0$, and latent when $A_i < 0$ for all members; see Olson, *The Logic of Collective Action*, 23-25, and Hardin, *Collective Action*, 38-39.

correlation between group size and latency, it is possible for large privileged groups to exist.[44]

Considering the case of climate change, it seems any identifiable grouping capable of taking actions sufficient to address climate change will be latent. For those whose environmental meta-capability would not be harmed, there would be no value to the collective good and thus any cost on their part makes their total advantage negative. Moreover, for those whose environmental meta-capability would be harmed, while the value of the collective good would be immeasurable, those individuals would not be able to obtain that good. To say that the individuals harmed would not be able to obtain the good is to say that there is no cost they could pay individually that would result in the action.[45] Thus, it seems in the case of climate change, any group is doomed to latency, diminishing its likelihood of success. Such a conclusion is troubling since if the collective action is not possible (or is highly unlikely to succeed), that group cannot be held under an obligation to do the impossible (or highly unlikely).

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[44] Hardin presents an example of a large privileged group through that actual case of Howard Hughes's wanting to watch movies on television after the local television station went off air. Hughes ended up buying the station and keeping them open because the value he gained (given the level of his desire to watch movies) was more than the cost of buying the station. However, this good applied to another quarter million people. While the value these individuals got would not have outweighed what it would have cost them to keep the station on air overnight (i.e. for all others $A_i < 0$), the collective group of nearly a quarter million people was privileged because of Hughes's level of interest and willingness to pay whatever it took. See Hardin, *Collective Action*, 42.

[45] In the example in the previous note, the group was privileged because Hughes could make a contribution that addressed the issue and still resulted in a net advantage for him. No singular cost by a developing country could result in a net advantage. There is also an asymmetry at work here between the costs and benefits and the nonfungibility of human rights. Such asymmetry requires additional detail regarding the preferences of all members of a group in order to determine whether a particular group is latent. Hardin notes that when asymmetries of interest in collective action, asymmetric collectives prove more successful in political action for the good in question, compared to symmetric collectives; see Chapter 5 of Hardin, *Collective Action*, esp. 83-89. I will not take this issue up here, particularly since the remainder of the section offers reasons for even latent groups have success in collective action.

However, Olson notes there is a type of latent group—what he terms the "intermediate group"—that possesses certain sociopolitical advantages that allow it to overcome its latency. For Olson, such a group is defined as follows:

> An "intermediate" group is a group in which no single member gets a share of the benefit sufficient to give him an incentive to provide the good himself, but which does not have so many members that no one member will notice whether any other member is or is not helping to provide the collective good.[46]

As long as the group size and the relevant actions are such that no member can hide its failure to participate, then there is an intermediate group, for which successful collective action can be possible. Thus, if in the case of climate change a group can meet the requirements of Olson's intermediate group, there is less worry of a gap between the "ought" and the "can." This is because collective action is reasonably possible for intermediate groups. As such, we can say that an intermediate group *could* act in a collective manner, should they so choose. Given this possibility, if there are moral reasons demanding some action by an intermediate group, we can hold them under an obligation to engage in that action.

In addition to a group being an intermediate group, a second aspect of collective action can increase the likelihood of success for a latent group. Olson's analysis vis-à-vis privileged and latent groups assumes the individuals in such groups act under narrow self-interest. However, "extrarational intrusions," as Russell Hardin calls them, such as moral motivations, can cause some members of the group who would not participate on self-interested grounds (i.e. those individuals for whom

[46] Olson, *The Logic of Collective Action*, 50.

the advantage gained minus the cost is negative) to participate anyway.[47] Consequently, the moral motivations an individual might gain from the preceding argument regarding the moral harm of climate change, can improve the likelihood of her participation in collective action to address climate change. Moral analyses are thus important not only for trying to determine the right course of action, but also for motivating that action for those who would not be motivated out of self-interest. Hardin also notes that extrarational cooperation in collective action makes one "more likely to oppose a loss or collective bad (such as pollution) than to support a gain."[48] Given climate change's nature as a future collective harm to be avoided (at least on the most extreme scenarios where all nations are vulnerable), extrarational cooperation would then be more likely.

Based on the general principles discussed above, one can conclude that collective action to address climate change could have a reasonable chance of success, assuming certain conditions are met. First, the group necessary for the collective action must be either a privileged group or an intermediate group. Second, there must be rational self-interest for the majority of the members to participate in the collective action. Third, there must be extrarational motivations for most of the remaining minority. I will argue in the next chapter that whether these conditions are met depends on the putative group identified when applying Isaacs's theory. I take it that if one selects a putative group meeting these criteria, Isaacs's theory and

[47] Hardin, *Collective Action*, 102. For his detailed discussion of extrarational motives, see pp. 101-124.

[48] *Ibid.*, 120-121.

therefore the principles of May and Held can be taken to apply without a problematic gap between the ought and the can.

4. Concluding Remarks

This chapter has provided the theoretical background necessary for identifying who bears the duty, identified in the opening of the chapter, to avoid bringing harmful climate scenarios into being. Assuming an appropriate putative group can be identified, employing Isaacs's theory, as it is presented in Section 2, allows for the identification of both collective and individual responsibility. Moreover, employing her account allows us to avoid the pitfalls of single level analyses identified in Section 1. Given my discussion in Section 3, however, it is important to identify a putative group that meets the criteria of an intermediate group, since otherwise the putative group falls prey to its latency and we cannot hold it under an obligation to act. The task of identifying an appropriate putative group and applying the theory presented here is the task of the next chapter.

CHAPTER 6
Moral Obligation in the Case of Climate Change: Application

The previous chapter offered theoretical considerations necessary for identifying moral obligations in cases involving putative groups. It was clear from the quote at the end of my discussion of Tracy Isaacs's account that she thinks climate change fits this bill. This chapter takes up that consideration. I argue in Section 1 that while Isaacs's theory does not fit the case of climate change with the ease she suggests, upon modification it can be applied to climate change. In arguing for its application, I use the principles of collective action discussed at the end of the last chapter to address worries that might arise related to the scale of collective action necessary to address climate change. Section 2 continues to address the application of Isaac's account, focusing particularly on whether the conditions are met to yield only an obligation for the participants in the collective action to develop a decision structure or more expansive obligations related to the particular actions the members need to take beyond organizing. Following this, Section 3 identifies four general locations of obligation—states, non-state collectives, individuals qua citizens, and individuals qua member of the private sphere—briefly sketching the duties borne by each. The last substantive section of the chapter addresses an epistemic objection to my account, related to whether one can bear moral obligations without the belief or knowledge that anthropogenic climate change is occurring. Here, I respond to this objection and highlight the need for "green education" and the role testimonial knowledge plays in the preceding sections.

1. Applying Isaacs's Theory: Identifying a Putative Group

The quotation at the end of Section 2 in the previous chapter made it clear that Isaacs takes her theory of putative collective obligation and actual individual obligation to apply in the case of climate change. She rightly points out that an individual's moral failure with regard to climate change is primarily a failure not to be part of a collective effort that sufficiently addresses the problem. However, her analysis of the mapping that exists in the case of climate change fails to properly capture a sufficient response to the potential harm, nor does it capture a group that meets the requirements just outlined for successful collective action. Moreover, the skeptic might charge that the clarity condition vis-à-vis climate change is actually not met, contrary to Isaacs's claim. I will address each of these in turn, first arguing in this section that Isaacs's theory for mapping responsibility can be properly applied to the case of climate change following a slight modification. Second, in the next section, I argue that based on the testimony of relevant experts the clarity condition should be treated as being met. It is worth noting that even if the clarity condition is not met, the theory can, at minimum, still yield an obligation to organize collectively and create a decision procedure to decide between equally sufficient actions (as we saw in the last chapter during the discussion of Virginia Held's Case 3).

The primary reason for skepticism regarding Isaacs's application of her theory to climate change centers on the identity of the putative group. As we saw previously, for individual obligation to be mapped based on the collective's obligations, one must identify the collective that would be able to advance action sufficient for preventing the harm in question. However, if mapping is done directly

from the putative group to the individual, it seems that one possible putative group is humanity as a whole (and I take it this is the putative group Isaacs has in mind). Yet, if humanity is to serve as the putative group, mapping to individual obligation is exceedingly obscure, if not impossible. Perhaps one might defend Isaacs on this point by noting that, in cases like those of a corporate CEO or university faculty member, individual obligation was not always clear. Moreover, we can at least identify individuals in positions of power (e.g. CEOs, heads of state) as those who bear more responsibility for bringing about collective action to address the problem. Yet, this type of response fails to recognize not only the role that states and corporations play in the increase of GHG emissions levels—through the manner in which they perpetuate social and economic institutions that give individuals no choice but to contribute heavily to climate change—but also the role they will be required to play in the solution. Moreover, it is highly unlikely humanity as a whole could meet the criteria necessary for successful collective action set forth in the previous section. Thus, humanity, as a whole, is not fitting as the putative group for addressing climate change.

What other options are there for a putative group able to sufficiently address climate change? One might be a specific grouping of countries, such as "developed" countries. As we saw in Chapter 1, the developed countries of the world (i.e. the Global North) emit far more per capita than those that are developing, and most of these emissions are based on things that could easily be identified as luxuries. Thus, if this group of people came together to collectively reduce their emissions, it might

be possible to reduce the impacts of climate change to a level not resulting in violations of individuals' environmental meta-capability.

However, this putative group is unsatisfactory for three reasons. First, such an approach is not sensitive to those who are most vulnerable in the developed countries and lets those in the developing world who are wealthy and emitting far beyond what they need off the hook, morally speaking. Second, it is not entirely clear that action only by the developed world would be able to prevent climate scenarios resulting in human rights violations, given many developing countries' high emission levels (e.g. China emits nearly one-fifth of the world's total GHGs). Third, if we are only addressing the developed countries, it is unlikely there would be sufficient motivation for the group to overcome its latency. While some developed countries might be motivated by moral considerations, there would not be enough self-interested countries to get the collective action off the ground.

To better capture what is required to effectively address climate change, I propose that the group consisting of all the countries of the world should serve as the appropriate putative group, since actions by this group could clearly address climate change. While the collective actions of corporations and private citizens could, in an ideal setting, be altered to address climate change, the principles of collective action discussed at the end of the last chapter raise serious questions about the likelihood of such action. Even if we consider the citizens and corporations found within a single country, it seems obvious that not only would such a group be latent, but also its size would be so vast that members of the group would be able to conceal their lack of participation. As such, we cannot legitimately conceive of this as an intermediate

group. However, the latency of such a group (i.e. the individuals and corporations of a particular country) could be overcome through the imposition of sanctions and coercion by the state, as an already existing coercive force. Since coercion would be necessary to motivate the action of individual citizens and corporations, the collective action we are primarily interested in would be that of the various nations of the world engaging in the action of developing and enforcing an environmental regulatory framework, capable of imposing relevant incentives and coercion to get others to act appropriately (both amongst themselves and within their own countries).[1]

In order for the nations of the world to be a potentially successful (and therefore applicable) putative group, they must meet the general criteria from Section 3. Currently, it seems reasonable to conclude that such a group is not a privileged group when considering the collective good of preventing harmful climate change.[2] However, in looking at how states interact and form various treaties, a grouping of all nations appears to meet the criteria of an intermediate group. While there are currently around 200 countries making up this putative group, it is unlikely any one state would be able to hide a decision to not engage in the necessary actions for alleviating climate change. Thus, the putative group comprised of the states of the world would have the sociopolitical advantages that allow intermediate groups to

[1] For more on the role sanctions play in maintaining collective action, particularly through the creation of conventions, see Russell Hardin, *Collective Action* (Baltimore, MD: Resources for the Future & The Johns Hopkins University Press, 1982), 174-180.

[2] Though this could change as time goes by and the impacts of climate change are more evident. Should the negative impacts of climate change become more felt or the projections point to a high likelihood of catastrophic harm across all countries, it is possible the value of acting to prevent that harm compared to the cost would become such that the international community would then be a privileged group; *cf.* Todd Sandler, *Global Collective Action* (Cambridge: Cambridge University Press, 2004), 43.

overcome their latency. Moreover, based on the presentation in Chapter 4, it is clear that under the types of harmful scenarios we are most interested in, most countries would have self-interested reasons for joining a global climate regime. For those countries like the United States, who would face less harm, the moral arguments offered in the preceding chapters could potentially function as extrarational motivations. When all of the considerations (i.e. the sociopolitical pressures of an intermediate group, the rational self-interest of a majority of countries, and extrarational moral considerations) are conjoined it is reasonable to conclude that the collective action to establish a global environmental regime (which could then in turn provide the incentives or sanctions to motivate the subgroup of citizens and corporations that would be otherwise latent) has a reasonable chance of success, satisfying the consequent of "ought implies can."

Yet, treating the states of the world as a putative group raises a problem for Isaacs's application of her theory to climate change, as she presents it. Putative groups mediate responsibility to individuals, grounding actual *individual* obligations. If the putative group is composed of collectives, then the putative group cannot mediate responsibility directly to individuals. There can be no mapping in this scenario from group to individual. Rather, the mapping can only be from the putative group to the collectives (i.e. states) composing it.

However, there is no reason why Isaacs's theory cannot apply to both putative groups comprised of individuals and putative groups composed of collectives. What allows the individual obligations, in Isaacs's account, to be actual rather than putative has to be the fact that individuals *actually exist* as moral agents.

The collective obligations borne by putative groups are not actual, since the putative group is only a potential moral agent (though a special kind of one). Individuals, on the other hand, are already moral agents. Consequently, any obligations that are distinctly tied to these existing moral agents will have to exist in actuality as well. If this is the case, then we can reasonably conclude that a putative group can mediate responsibility and create actual obligations in its members insofar as its members already exist as moral agents. Thus, a putative group comprising existing collective moral agents can mediate *actual* obligations to those collectives based on the roles they would play in the putative group. The mapping from putative group to moral agent applies regardless of the type of moral agent.

With this alteration, we can see how Isaacs's theory can operate in the case of putative groups made of collectives. In such scenarios, we identify the collectives composing the putative group and the sufficient course of action. If the clarity condition is not met (recall Held's Case 3 from the previous chapter), then the collectives would only bear an obligation to organize themselves and develop a decision procedure for determining which action, among possible sufficient actions, to take. If the clarity condition is met, then each collective would be obligated to fulfill those actions relevant to its role in the overall collective action. At this stage, the result would be a putative group with a putative obligation (i.e. the sufficient course of collective action to address the problem) and a group of collectives, each bearing *actual* collective obligations based on its role in the putative group. Using this as an intermediary step, we can move to assigning obligations to individuals by applying Isaacs's original account for mapping actual collective obligations to

individuals. For example, if the first stage of this process identifies Apple as having a collective obligation to reduce its carbon footprint, then this obligation operates no differently than its obligation to make a profit for its shareholders. Whatever the actual collective obligations are, we can identify corresponding actual obligations in individuals that are distinct from both the putative obligation and the collective obligations. Moreover, there is no reason this process could not be repeated again in the case of a putative group made up of collectives, which are themselves made up of collectives.

This multi-step variant of Isaacs's method allows for an application to climate change that better fits the general scope of discussion regarding necessary and sufficient action, while still providing a way to identify individual responsibilities. As already noted, the action required to adequately address climate change is typically addressed at a collective level. To avoid scenarios that result in human rights violations of the type we are interested in, global GHG emissions must be reduced. Given the social and economic institutional constraints placed on individuals, a reduction of global GHG emissions will require change to these institutions. If food is produced in a way that results in unacceptable GHG emissions, then many individuals will have no choice but to purchase this food and contribute to the problem. Thus, rather than identifying the putative group required for sufficient action as the aggregate of all existing individuals, it is better to identify the agents of change as those who regulate the collective economic and social institutions within each society.

Having identified the putative group as the various countries of the world, each with an obligation to enter into and enforce a global climate regime that prevents future scenarios identified as harmful, we can run a second step to identify the obligations mediated by these overarching collective obligations. Taking the United States as our example, the federal government would have an obligation to ratify and then enforce the global climate treaty. Given the role of a member of Congress, they would have an obligation to propose or support relevant legislation to keep the United States within the guidelines of the global climate treaty, while a typical citizen might have an obligation to vote against those who do not support such legislation. Moreover, as part of the federal government's enforcement of standards set by the global climate treaty, corporations will likely be given new regulations to follow. Corporations in their varied roles in the United States might have new obligations to reduce emissions. This would then require Isaacs's method to be run a third time, in order to identify the obligations possessed by individuals in their roles in the collective structures of corporations (including both as employee and consumer). While a complete presentation of the varied obligations cannot be offered here, it is clear this framework can be used in conjunction with the method offered in Chapter 3 for determining when rights violations occur to offer a more complete picture of the necessary solutions and requisite moral obligations.

2. Evaluating the Clarity Condition

To this point, I have been vague regarding the specific course of action the putative group needs to take, which would in turn allow us to identify the collective

obligations borne by the members of the putative group and the individual obligations of individuals qua their roles in various collective groups. I have intentionally done this for two reasons. First, to do otherwise would assume that the clarity condition vis-à-vis the sufficient action to prevent harmful emissions scenarios is met. Second, offering a specific detailed course of action is beyond the purview of this examination and my expertise. To offer such details would require careful dialogue with experts at both local and international levels in accordance with the method identified in Chapter 3 to identify those scenarios we have an obligation to avoid. What I seek to offer in this project, as a whole, is a framework that can be used in future dialogue with the relevant experts to isolate the right action and craft appropriate policy specifics. While it is clear future dialogue is necessary, I will offer reasons here to think that following the overall framework provided in the preceding chapters will allow for the clarity condition to be met in the case of climate change and that moral obligations extend beyond an obligation for the members of the putative group to merely organize themselves, creating a decision procedure for determining what action to take.

Whether the clarity condition is met, regarding the course of action necessary to prevent bringing into being scenarios necessarily resulting in human rights violations (i.e. future worlds in which one or more individuals' environmental meta-capability are not met), depends on whether climate change fulfills Held's clarity condition. To help isolate the requirements for fulfilling the clarity condition, we need to make explicit the difference in Held's Case 1 and Case 3 that makes the former fulfill the clarity condition while the latter does not. To recall, Case 1

involves the bystanders failing to intervene in a beating that results in the victim's death. Case 3, on the other hand, involves an individual trapped under rubble where the bystanders argue over which piece of rubble to move in order to save the individual, where any of the actions would have been sufficient.

It seems that what is of primary relevance in distinguishing these two cases is the epistemological position of the individuals who could intervene.[3] In Case 1, an individual in the case who witnesses this event, would reasonably possess all the relevant information to not only realize something needs to be done, but also realize the group should act directly to stop it. A reasonable person would be aware that five individuals all larger than the assailant could stop the attack and that there is some general moral reason for doing so. Assume for the moment that calling the police, or calling for those in another car to help, might have proven sufficient for saving the victim's life (or at least the bystanders had good reason to think that would be the case) but the continued beating would clearly result in greater harm to the victim. Thus, while the reasonable individual would be able to recognize there are two possible courses of action sufficient for preventing the harm, they would

[3] Held's own discussion appears to point more to the fact that in one case there is a clear necessary and sufficient action (Case 1), and in the other (Case 3) there is not a clearly necessary action; see, Virginia Held, "Can a Random Collection be Responsible?" in *Collective Responsibility: Five Decades of Debate in Theoretical and Applied Ethics*, eds. Larry May and Stacey Hoffman (Lanham, MD: Rowman & Littlefield, 1991), 95-97. However, on reflection, it seems that the primary determinate is the epistemological position of the intervening agents, which is aided in Case 1 by the fact there is a clear necessary and sufficient action. Alternatively, in Case 2 it is not that there are multiple sufficient actions, but that the individuals are not in an epistemic position to reasonably favor one over the other. On this point, I am particularly grateful for many helpful comments and discussion from my colleagues after presenting a paper based on an earlier draft of this chapter to the Department of Philosophy. This earlier draft focused more on the necessary-sufficient action distinction.

have good reason to favor the immediate intervention over the calling for police, in that not only does it save the victim's life it also reduces the overall harm caused.

Now compare this to the position of the individuals in Case 3. There are two ways of interpreting the relevant facts in Held's presentation. First, each individual, while aware that all three are required to move one piece of rubble, that doing so will save the victim's life, and that there is a general moral principle in play giving reason to save the victim's life, is unaware that moving any of the pieces of rubble is sufficient. Thus, Individual 1 is only aware that moving Rubble 1 is sufficient, which is also true of Individual 2 and Rubble 2 and Individual 3 and Rubble 3. However, Held remarks that it is clear to the reasonable individual in such a situation that *some* action needs to be taken.[4] If Individual 1 is only aware that moving Rubble 1 is sufficient, then he would not conclude that some action or other needs to be taken. Rather, he would have good reason to continue to argue for moving Rubble 1. However, if we interpret the situation as each individual having the knowledge that moving any of the pieces of rubble will be sufficient, then Held's conclusion that *some* action needs to be taken follows. Each individual would be in an epistemic position to know that something needs to be done, but they would not have any reason to select one piece of rubble over the others.

On this analysis, Case 1 fulfills the clarity condition since not only does a reasonable individual in the situation have the facts making them aware of the sufficient action(s), they are also in an epistemic position that gives them reason to favor one action over all others. Case 3 fails to meet the clarity condition since the

[4] Held, "Can a Random Collective Be Responsible?", 97.

reasonable individual is in an epistemic position making her aware of available courses of action, each sufficient for preventing the harm, yet providing no reason for selecting one over the other. From this distinction, we can make the following claim related to the clarity condition and moral obligation. In a particular collective action situation, if an individual is in an epistemic position that presents sufficient courses of action to alleviate some harm and includes some reason(s) for favoring one above all others, then that individual is responsible for not engaging in that reasonably favored course of action. If, however, the epistemic position of the individual only presents equally sufficient courses of action, with no reason(s) for favoring one above all others, then that individual is only responsible for not engaging the other members who would be part of the collective action and making a decision procedure amongst themselves for selecting which sufficient course of action to follow.

With the circumstances for meeting the clarity condition clear, we can determine whether climate change as understood under the framework on offer here is a case in which the clarity condition is met. In doing this, it is important to highlight the role that testimonial knowledge plays. For Held, whether the clarity condition is met depends on the epistemic position of the reasonable individual. This is to say that we are concerned with the conclusions a normally functioning epistemic agent would reach given the relevant information available to her. Thus, the individual in the given situation does not have to have direct knowledge. Rather, they simply have to have the relevant knowledge available. This is important for considering climate change given that few individuals other than the relevant

scientific experts have direct knowledge relating to future climate scenarios. However, this information is now so freely available and there is such a large scientific consensus that the conclusions of these experts would be included in the reasonable individual's deliberations. In this instance, it is important for non-specialists to take specialists at their word, accepting their testimonial knowledge.

Having clarified a key component of the epistemic position to be considered, we can ask whether climate change presents a case in which there are sufficient courses of action for addressing the harm readily available to a reasonable individual and if there is reason to favor one particular action over the other. The first issue here seems rather straightforward. Once the testimony of scientists is included in the epistemic position of the reasonable individual, based on the projections discussed in Chapter 3, it is clear that there are courses of action available (i.e. those scenarios that do not result in violations of individuals' environmental meta-capability) to prevent the potential harm of climate change. Thus, the relevant course of action would be to engage in the types of policies and actions that are assumed under the acceptable scenarios, which would typically be done through significant reductions of GHG emissions. On another approach, based on the notion of capability ceilings that has been employed through this project, one might even say that the sufficient action is simply keeping levels of capability protections under the relevant capability ceilings. In this case, each particular climate scenario that does not yield violations of individuals' environmental meta-capability might be seen simply as a different way of achieving this desired outcome. Regardless, we can conclude that the

epistemic position of the reasonable individual includes knowledge of courses of action sufficient for avoiding harmful climate scenarios.

Turning to the second issue—whether there is reason to favor one course of action over another—things become less clear. How one responds here seems to hinge on the understanding of the specificity of "the action."[5] If the action clear to the reasonable individual is merely maintaining levels of capability protections under the capability ceilings, then there is clear reason for favoring this action under the epistemic position of the reasonable individual since on this framework it would be the only sufficient (and therefore necessary) action. Moreover, if the methods offered in Chapter 3 were followed in dialogue with relevant experts, then the required identification of capability thresholds and ceilings could be expected to be included in the testimonial knowledge possessed by the reasonable individual. In this case, the various acceptable scenarios would just be seen as different ways of achieving the relevant action. However, one might prefer to think of "the action" as any one of the particular climate scenarios that do not yield violations of individuals' environmental meta-capability. On this view, it would appear the framework on offer here and the testimonial knowledge available from experts following the application of Chapter 3's method for determining capability thresholds would not provide a particular reason for selecting one acceptable climate scenario over another.

[5] This is an issue noted by Held, yet she does little to respond to it other than say that in some cases it will still be obvious what ought to be done, regardless of whether it means "the action" itself, or the various "sub-acts" that comprise the full action and are necessary for completing "the action"; see Held, "Can a Random Collection be Morally Responsible?", 95.

Clearly there is room for future discussion regarding the clarity condition and the appropriate interpretation of "the action" required to prevent the harm of climate change. However, there are two reasons to favor an interpretation according to which the situation regarding climate change meets the clarity condition, until we have a definitive reason to think otherwise. First, as discussed in the preceding section, the nations of the world were selected as the putative group because such a group makes the likelihood of collective action getting off the ground reasonable and then allows for the states to coerce the necessary actions to be taken by their citizens and the corporations found within their borders. The creation of a global climate regime that will then demand that states regulate actions within their borders (i.e. keep capability protections under capability ceilings) seems to point to a necessary and sufficient action. There do not appear to be other viable options that would yield the appropriate collective action. Second, the types of climate scenarios that would likely prove acceptable are those that require clear reductions of GHG emissions. Coupling this with the need for states to enforce regulatory standards, it seems that given the knowledge readily available to the reasonable individual it should be clear that GHG reductions are a necessary action, and there is an obligation to engage in reductions in addition to organizing collectively.

Consequently, not only can we apply a modified version of Isaacs's theory to the case of climate change to identify the duties corresponding to the rights discussed in previous chapters, but we can also say that the nature of the framework used in identifying the moral harm of climate change likely allows the clarity condition to be met. Even if it were to turn out the clarity condition is not fully met, this account

still yields an obligation for states to create a global environmental regulatory framework, with a clear decision procedure for selecting among any available options. Based on the knowledge readily available from experts (in both the natural and social sciences) once the methods of Chapter 3 would be applied, any reasonable person would be in an epistemic position to see that social and economic institutions must not allow for the extension of capabilities beyond capability ceilings. Thus, we have a point from which to derive the specifics of both collective and individual obligations and the policies that need to be implemented in order to avoid future human rights violations due to climate change. While acknowledging that offering such detail is beyond the scope of this inquiry, the next section further clarifies these obligations by isolating four different moral agents and the general types of obligations borne by each.

3. A Typology of Moral Obligations vis-à-vis Climate Change

The previous sections showed how it is possible to identify both collective and individual agents who bear moral obligations stemming from the future harm posed by climate change. From this, we can generalize four locations of moral obligation—two at the collective level and two at the individual level. The bearers of moral obligation at the collective level come from the first two steps of the multi-step modification to Isaacs's theory presented above. They are the collective entities that compose the putative group, which are the various states of the world, and the collective entities (primarily corporations) that bear obligations stemming from their roles in fulfilling the framework put in place by states. While each type of collective

(i.e. states and non-states) plays a role in the actions necessary to prevent violations of individuals' environmental meta-capability, they cover distinct spheres of life, public and private, respectively. From these two types of collective groups, we can isolate two corresponding roles of individuals who bear obligations: individuals qua citizens (mapped in the second step) and individuals qua members of the private sphere (mapped in the third step). While both roles apply to every person, it is important to identify them as distinct locations of obligation resulting from different types of collective entities individuals participate in.[6] This gives us a four-fold taxonomy of the bearers of moral obligation: (1) states; (2) non-state collectives; (3) individuals qua citizens; and (4) individuals qua members of the private sphere.

Table 6.1. Taxonomy of Moral Obligations for Climate Change

MORAL AGENT	SOURCE OF OBLIGATION	PRIMARY OBLIGATIONS
State	Role in Putative Group	Ratify & Enforce Climate Treaty; Regulate Domestic Activities
Non-State Collective (e.g. Corporation)	Dictated by State Regulations	Act According to Gov't Regulations (e.g. reduce carbon footprint)
Individual qua Citizen	Role in the State	Promote/Support Environmental Regulation through Political Action; Comply with those Regulations
Individual qua Member of the Private Sphere	Role in Non-State Collectives, especially Corporations	Encourage Compliance with Government Regulation (e.g. refuse to purchase from non-compliant companies)

[6] *cf.* Mark Sagoff, *The Economy of the Earth: Philosophy, Law, and the Environment*, 2nd edition (Cambridge: Cambridge University Press, 2008), esp. 46-66. Sagoff stresses that the recognition of the citizen role, beyond the typical consumer role, requires us to abandon the use of mere cost-benefit-analysis in favor of a broader public reasoning that includes ethical, aesthetic, and religious values. This is similar in many ways to the holistic considerations included in my framework.

If the putative collective obligation in the case of climate change is to keep capability protections under the allowed capability ceilings, then the collectives composing the putative group bear obligations based on their roles in bringing such action to fruition. When considering states, it is clear their primary role is one of regulators and enforcers. Under the typical capitalist paradigm, states operate not by producing their own goods for their citizens, but by setting up rules for the private sector in producing goods. States set the regulatory environment for social and economic institutions and interactions, and have the right to levy punishment for those who fail to follow the rules of the game. Moreover, states are the only collective body capable of binding themselves with other states to create enforceable transnational regulatory environments. Thus, not only do states have obligations to set and enforce the necessary regulatory environments domestically, but they also have an obligation to do so internationally. This means states bear an obligation to enter into a global climate treaty, creating a binding regulatory and enforcement framework based on protecting individuals' environmental meta-capability. Since this includes an obligation to not extend the protection of capabilities beyond capability ceilings, more developed states would most likely be required to make significant reductions in overall emissions (given limitations on "luxury" items or activities), while developing countries would have space for continued development to bring their citizens' capability protections up to minimum thresholds.[7]

[7] One might argue that the standard state institutions employed in developed liberal democracies are unable to produce the type of change demanded here. If true, this would point to a need for radical political change in light of the moral harm presented by climate change. I will not engage the point here in more detail, other than to say that while I think changes in institutional structures would be required, I do not think they would result in the type of radical change potentially demanded here.

The roles of non-state collectives are more varied with respect to effective climate action. Here, I consider corporations as the primary bearers of non-state collective obligation, though other non-state collectives such as NGOs would be subject to similar analysis.[8] First and foremost, non-state collectives would have an obligation to operate in a manner preventing their own actions (or, if they produce some product, the actions of their consumers in using their product) from producing environmental conditions that violate individuals' environmental meta-capability. The obvious example here would be that corporations would have an obligation to reduce their GHG emissions to whatever allowable levels are required to maintain the fulfillment of individuals' environmental meta-capability both now and in the future. The levels would be dictated by the states in enforcing a global climate regime. It is important to note that this obligation would place different requirements on different corporations, depending on their operations. Moreover, non-state collectives would also be obligated to pursue alternative methods for providing their goods in a more environmentally friendly manner. For example, car manufacturers would likely be obligated to improve gas mileage and move to vehicles powered by renewable energy sources. Additionally, given capability ceilings, they might have obligations to not provide certain types of vehicles to the general consumer (e.g. inefficient "status" symbol vehicles like Hummers). Lastly, non-state collectives would bear some obligation to pressure other non-compliant

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For an example of a detailed account arguing for a radical restructuring of standard state institutions, see Alan Carter, *A Radical Green Political Theory* (London: Routledge, 1999).

[8] Many NGOs can be thought of as providing a product for some consumer, be it something abstract like knowledge or organizational capacity or concrete like food or a building. Thus, in providing these goods, they would bear the same types of obligations typical corporations bear.

collectives to fulfill their obligations, something that could be achieved by an act as simple as refusing to use a certain supplier until the supplier meets specific environmental standards.

Moving from the collective to the individual level, we can outline some of the general obligations borne by individuals based on their varied roles within collectives. The easiest case to address is that of the obligations borne by an individual qua citizen of a state.[9] If the state bears a responsibility to create and enforce the relevant regulatory environment, then the individual qua citizen bears an obligation based on their role within the state for bringing about such action. For the everyday citizen, this is fairly easy to identify. Citizens have an obligation to participate in the political process to push for the necessary environmental policies. In a democracy, this could entail writing letters to or meeting with one's representative, voting against those who do not support the morally obligatory policies as defined by this framework, participating in protests to raise awareness, and other activities geared at motivating political action. For someone whose role as a citizen includes holding public office, it is clear they bear further obligations. The specific actions required by these obligations might not be as clear as for the everyday citizen, particularly for roles higher up in the political hierarchy.[10] What is clear is that these obligations will continually be about using one's role to get the necessary political action to happen. For example, an individual in Congress would

[9] Here, it should be obvious I am thinking of democratic states, particularly since under the Capabilities Approach individuals are entitled to political participation via the capability "Control over One's Environment." Thus, this approach would count nondemocratic states as illegitimate.

[10] Recall the discussion in the Section 2 of the previous chapter regarding the difference between identifying the individual obligations of a payroll clerk versus the a faculty member and Isaacs's claim that the clarity of specific actions required can diminish as one's power in an organizational hierarchy increases.

have an obligation to draft appropriate domestic legislation and ratify a comprehensive climate treaty, while the president would have an obligation to work with other countries to create and enforce a comprehensive climate treaty.

The final bearer of moral obligation is the individual as a member of the private sphere. This category consists of the obligations borne by individuals that are mediated by the collective obligations of non-state entities. Here, an individual's obligations come primarily through their role as consumer. If a corporation has an obligation to alter production practices to meet certain standards, then the role of the consumer is to pressure them to do so by refraining from purchasing those products. As such, if a corporation is failing to meet the requisite standards, individuals should purchase alternative products. However, there are some cases in which it is not possible for consumers to purchase alternative products (e.g. the consumer is priced out of alternatives; the consumer's location makes getting other alternatives impossible). In these instances, individuals would have an obligation to use other means to pressure corporations (e.g. letter writing, protests, calls for political action against them). For those individuals who do not work in the public sector, their obligations will also be informed by their roles as employees. An individual who is CEO of an energy company might face an obligation to drive the company to pursue renewable types of energy. Such "employee-grounded" obligations would be in addition to the "consumer-grounded" obligations borne by the individual. In its most general formulation, the obligations borne by individuals qua members of the private sphere would require them to not extend their own capabilities beyond capability ceilings—something likely entailing minimizing luxury activities and altering their

general patterns of consumption.[11] For most individuals, these demands would not be overly demanding.

One final comment can be made here about this typology. Since climate change is inherently a collective problem and requires collective solutions, the obligations borne by collectives are more pressing, morally speaking, than those borne by individuals. If states set and enforce the necessary regulatory framework and corporations alter their practices to facilitate individuals' ability to live within appropriate levels of consumption, then individual initiative becomes less important. With the right structures and incentives, individuals' actions will tend to aggregate in positive ways, rather than negative ones. Additionally, there are certain necessary actions that simply cannot be done at an individual level (e.g. establishing a comprehensive climate treaty). Thus, we can say that not only does the typology identify four distinct types of obligations; it also gives each a level of priority. Collective obligations hold priority over individual obligations, but at the collective level, states' obligations hold priority over non-state obligations since states possess the ability to coerce and punish non-state actors. Given that, states bear the strongest obligations, followed by non-state collectives, in turn followed by individuals in their roles as citizens and then members of the private sphere. This ordering is not

[11] Many of the ideas in the previous two paragraphs related to individual responsibility are also discussed in the literature that has recently developed on environmental citizenship. Any future examination of individual responsibility under my framework would be well served by appeals to this literature. For some key works on environmental citizenship see, Andrew Dobson, *Citizenship and the Environment* (Oxford: Oxford University Press, 2003); Angel Valencia Siaz, "Globalisation, Cosmopolitanism, and Ecological Citizenship," *Environmental Politics* 14, no. 2 (2005): 163-178; Derek Bell, "Liberal Environmental Citizenship," *Environmental Politics* 14, no. 2 (2005): 179-194; Andrew Dobson and Derek Bell, eds., *Environmental Citizenship* (Cambridge, MA: The MIT Press, 2006). Additionally, a forthcoming book by James Connelly looks helpful for future discussion of the expectations placed on individuals; see, James Connelly, *Sustainability and the Virtues of Environmental Citizenship* (New York: Routledge, Forthcoming 2012).

intended to let those on the lower end of the ladder "off the hook," since all parties still bear moral obligations. Rather, it is offered to help think about the most important changes required to prevent bringing about harmful climate scenarios, stressing the collective nature of the problem.

4. Why Personal Ignorance Does Not Dissolve Obligation

Before concluding this chapter, it is important to address an epistemic issue related to my framework for identifying moral obligation: does ignorance by an agent (either collective or individual) of the situation generally, or the facts related to sufficient action specifically, dissolve that agent's obligations? Being able to answer the question in the negative is of particular importance due to the number of individuals who doubt anthropogenic climate change is occurring.[12] Additionally, as I have frequently highlighted throughout my discussions, to offer full accounts of both the harm and the specific obligations, one would require levels of knowledge regarding climate change that are not commonly possessed. Thus, while many people have a general sense of the problem and need for collective action, if an individual who lacked some specific piece of knowledge related to climate change were to not bear any moral obligations due to that lack of knowledge, we might be hard pressed to find those individuals who would actually bear moral obligations stemming from climate change.

[12] The most recent PEW Research Center national poll on climate change, shows that 28% of Americans do not believe there is solid evidence the earth is warming, while another 18% believe that there is solid evidence the earth is warming due to only natural causes [see PEW Research Center, "More Moderate Republicans See Evidence of Warming: Modest Rise in Number Saying There Is 'Solid Evidence' of Global Warming," 1 December 2011; available on-line at <http://www.people-press.org/files/legacy-pdf/12-1-11%20Global%20warming%20release.pdf> (accessed 10 December 2011)].

The framework I presented in Chapter 3 for identifying capability and meta-capability violations and this chapter's presentation of Isaacs's use of putative groups and the clarity condition are helpful in addressing this worry due to their deployment of a reasonable persons test. Consequently, what matters for the moral analysis is not whether a given individual is in an epistemic position such that she believes climate change is occurring or has an understanding of the specific details needed for action, but whether the reasonable person, given the information readily available, is in an epistemic position to know climate change is occurring and is problematic in the ways I have identified in this project. Given the consensus that exists among relevant scientific experts, this dimension of my account points to a need to defer to highly specialized experts in the case of climate change. Without other experts presenting significant counterevidence or other reasons that might legitimately serve as defeaters, we ought to accept the testimony of scientists. Given this, it is irrelevant from a moral perspective whether you personally are aware of or believe these facts and conclusions. You bear the same moral obligations regardless.

While it seems fair to conclude that individual ignorance cannot dissolve the moral obligations laid out above, as long as the situation passes the reasonable person test, one could attempt to argue that we do not actually possess enough knowledge of the situation for it to pass this test. There are two potential targets for this type of objection: (1) the underlying scientific data, and (2) the levels for capability ceilings, which require extensive local input. It is true I have not provided the second, but I have offered a methodology that can be applied to gain the relevant knowledge that would then be used to inform specific policies or the identification of

specific harmful warming thresholds (e.g., any warming over 2.37 ^{o}C would result in violations of individuals' environmental meta-capability). Given that I am not offering specific policy prescriptions without this knowledge in hand, this is not a viable target of the objection unless one claims such information is impossible to gain. This impossibility claim seems implausible given the amount of existing knowledge about what warming thresholds result in harms to vulnerable populations, along with the existing literature on applying the Capabilities Approach.[13]

Consequently, it seems that the target of this objection is the underlying scientific data. While it could be the case that the IPCC reports do not actually represent the relevant facts, as a philosopher, I lack a good reason to operate under such an assumption. Given the high level of consensus, even across different analyses, it seems unlikely that the IPCC reports are drastically different from the reality we are facing. For example, the Berkeley Earth Surface Temperature (BEST) study, a recent analysis funded by individuals with a history of being known climate deniers, offered preliminary results matching those of various other scientific bodies, including NASA and the IPCC.[14] In fact, many scientists feel that if there is any

[13] For the general scientific consensus regarding harmful warming thresholds, including detailed case studies, see IPCC, *Climate Change 2007: Impacts, Adaptation and Vulnerability – Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Martin Parry and others (Cambridge: Cambridge University Press, 2007). Other prominent discussions of the thresholds for various negative impacts of climate change include, John Houghton, *Global Warming: The Complete Briefing,* 4th ed. (Cambridge: Cambridge University Press, 2009), 172-234, and Hans Joachim Schellnhuber and others, eds., *Avoiding Dangerous Climate Change* (Cambridge: Cambridge University Press, 2006), esp. 1-93. For a sampling of discussions related to the application of the Capabilities Approach, see Part 3 of Flavio Comim, Mozaffar Qizilbash, and Sabina Alkire, eds., *The Capability Approach: Concepts, Measures, and Applications* (Cambridge: Cambridge University Press, 2008).

[14] For more information on the BEST study, including an explanation of its methodology, access to its data sets, and results, see its website (http://www.berkeleyearth.org). Not only was the study partially funded by the Koch brothers, who are outspoken climate-deniers, but also its lead

difference between the facts of the matter and the IPCC reports, it is that the IPCC reports are actually underplaying some impacts and offering a more conservative picture of likely climate scenarios. Moreover, if we utilize the scientific facts presented by the IPCC reports and were to complete the methods for identifying acceptable climate scenarios in Chapter 3, we would be in possession not only of information relevant to the harm but of the needed responses, as well. Thus, it is sensible to assume the reasonable person test to be met, which in turn allows for the framework offered here to function.

In closing this section, it is worth noting that this type of objection points to another important issue related to the fulfillment of both collective and individual obligations vis-à-vis climate change. If obligations are borne in the face of personal ignorance, it is likely that without some type of education and awareness of the situation, individuals will not act in ways that fulfill their obligations. Consequently, there is a need for what can be termed "green education." This education would be focused on helping individuals understand the role the environment plays in the fulfillment of their human rights (i.e. understanding the environmental meta-capability), as well as providing the relevant information regarding the harms of climate change and other types of environmental degradation and ways in which we can respond to these harms. It would take more discussion than I can offer here to determine whether the provision of "green education" is something that would be morally obligatory under the framework I have provided and who would bear that obligation. For the time being, it is satisfactory to simply say that "green education"

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investigator, Richard Muller, had previously expressed some skepticism regarding previous analyses related to climate change.

would serve as an advantageous and important tool in helping individuals gain the knowledge they need to fulfill their moral obligations.

5. Concluding Remarks

This chapter has laid out an approach for identifying both collective and individual moral obligations in light of the potential harms posed by climate change. By identifying obligations at both levels and showing how they are distinct, this approach is able to emphasize the need for collective solutions without letting individuals off the hook at the same time. Such an approach can give us hope and show us how our individual actions can make a difference in what might seem like an otherwise hopeless scenario. As Isaacs notes:

> …when we reorient ourselves in relation to others and take the broader perspectives of collective action, new moral possibilities present themselves, and our contributions, small though they may be, gain greater significance from the collective contexts in which they take place.[15]

With this account, we are offered a way to move forward and identify what paths are morally open to us. Moreover, by tying obligation to human rights, this framework is sensitive to the needs of vulnerable communities and cultural/geographic contexts, while also providing an account that can place strong obligations on individuals who are living above morally acceptable levels of functionings regardless of their geographic locations. With this general account of moral obligations, as well as the framework of the previous chapters, we have a way of moving discussion on climate policy matters forward in a manner that complements the methodology of climate projections and respects our moral duties.

[15] Isaacs, *Moral Responsibility in Collective Contexts*, 20.

CONCLUSION

The project set out to offer a framework that can provide a moral analysis of climate, which could then be used to help evaluate current climate policies and craft a policy that would be just. In developing my framework, I sought to answer three normative questions that underlie the current political stalemate in climate negotiations: (1) What is the harm of climate change? (2) What obligations exist in light of that harm? (3) Who bears those obligations? The preceding chapters have provided answers (or at least methods for obtaining the answers) to those questions. Following a general introduction to the political and ethical issues related to climate policy, Chapters 2 through 4 provided the answer to the question of harm, while Chapters 5 and 6 took up the two questions about obligation. While a complete application of the project's framework was not provided (i.e. every particular climate scenario resulting in violations of the environmental meta-capability has not been identified), such an application could be conducted through future dialogue with relevant experts. This future dialogue could then culminate in the development of a just climate policy. Consequently, I have completed what I set out to do.

However, I would be remiss to end the project here without noting an important question following from the application of my framework. I claimed in the previous chapter that according to my analysis states bear an important duty to enforce a mandatory climate regime and regulate activities within their borders in accordance with that regime. Yet, what about states that choose not to fulfill that

duty and appropriately regulate activities within their borders? I call this the problem of non-compliant states and will offer a brief discussion of it in concluding the dissertation by posing questions, which could be answered by future research. In making the problem clear, I will offer a brief recap of my overall argument in Section 1, followed by a more detailed explanation of the problem itself in Section 2. In the final section, I will highlight a conceptual tension in my framework between a need for simultaneously strong and weak conceptions of sovereignty, offering potential directions for future discussions related to sovereignty.

1. Climate Change, Harm, & Responsibility: A Recap

Climate change is a pressing threat to humanity, yet little has been achieved in attempts to address it through a global climate treaty. The failures of the Kyoto Protocol and recent talks aimed at reaching agreement on a new binding, climate treaty in Copenhagen (COP15) and Durban (COP17) show a disagreement related to underlying normative issues. Chapter 1 provided an examination of this disagreement, paying particular attention to the role inequalities in GHG emissions between the global North and South play in the debate. Ultimately, the disagreement between the North and South was shown to hinge on differing value judgments related to both the harm of climate change and responsibility for it. In making this normative turn, philosophers and theorists have entered the fray, offering what I identified as two types of analyses: equity approaches and rights-based approaches. I made it clear that I favor rights-based approaches, and set out to offer a rights-based

approach in providing a satisfactory answer to the questions of harm and responsibility as they relate to climate change.

Wanting to operate with a rights-based approach, Chapter 2 set out to explore the viability of a rights-based approach to climate change (or environmental issues more generally). Following other scholars in employing an interest theory of rights, and focusing only on human rights as universal moral rights, I examined two different ways one might link the environment to human rights. The first linked the environment to human rights through a single, generic "environmental right," while the second focused on the way environmental impacts harm particular human rights. Ultimately, I concluded that both ways of linking the environment to human rights fell prey to a problem of scope, since in analyzing climate change we would need a detailed listing of all relevant interests grounding human rights that would be impacted by climate change. To lessen this worry, I closed the chapter by offering an account of human rights based on Breena Holland's environmental extension of Martha Nussbaum's Capabilities Approach. Doing so resulted in individuals possessing a right an environmental meta-capability, along with rights to the central capabilities identified by Nussbaum. I argued that this conception of human rights could avoid the scope problem, or at least offer a more detailed analysis than the other approaches discussed in the chapter.

Chapter 3 took this rights framework and offered methods for identifying rights violations caused by climate change. Since it is the capabilities themselves that do the primary work in my account, this chapter focused on identifying violations of capability thresholds. The first method I offered looked at particular

impacts of climate change (i.e. increased flooding in low-lying areas) and determine whether they result, for any given capability, in individuals' threshold levels not being met. The second method focused on violations of the environmental meta-capability through an examination of countries' overall vulnerability to climate change. Here, if a state, given its general institutional structures and reasonable adaptive abilities, is at high risk of negative impacts from climate change, it is a sign its citizens' environmental meta-capability is violated. In addition to offering these two methods, Chapter 3 offered a brief presentation of how climate projections are made using various scenarios offered by the IPCC. Consequently, my framework and the methods offered in this chapter serve as an evaluative tool for particular climate scenarios, allowing one to determine whether any given scenario is morally acceptable (i.e. not resulting in violations of individuals' environmental meta-capability). By operating in this manner, my framework is able to help identify which, if any, of the IPCC scenarios is an acceptable pathway for the current generation to embark upon.

The methodology of Chapter 3 was then applied in Chapter 4 in defense of the claim that climate change (in many of the project scenarios) will result in violations of individuals' environmental meta-capability. This was done by employing both methods from Chapter 3, using mini-case studies to examine particular impacts under the first method and a general study on countries' climate vulnerability under the second method. It is important to stress that the chapter did not offer a complete analysis of *all* climate scenarios, but rather served to show how the framework operates and that it is reasonable to treat unabated climate change as a

violations of individuals' right to their environmental meta-capability. While the first part of the chapter focused on applying the methods of Chapter 3, the second offered a philosophical defense of the rights of future generations. Doing so allows my framework to apply when examining climate projections beyond the end of the century. This is important since if future generations are not said to have rights that place moral claims on those in the present, our duties related to climate change could be dramatically altered.

The end of Chapter 4 brought with it the end of my analysis of the first question: what is the harm of climate change? Consequently, Chapters 5 and 6 turned to the remaining questions of responsibility: what obligations exist in light of the potential for harmful climate scenarios and who bears those obligations. Given that only some future climate scenarios are harmful under my analysis, the obligation borne by whatever relevant moral agent we identify is to not bring about those scenarios that are harmful. Thus, the avoidable harm of climate change results in a negative duty—though one that calls for substantial changes in behavior given the projected trajectory of current practices. With this general duty in mind, Chapter 5 provided the theoretical background necessary for identifying the appropriate agent bearing this duty, as well as any additional duties that might result once the appropriate agent is identified, while Chapter 6 made the actual identification.

Identifying the relevant moral agent in the case of climate change is particularly problematic due to climate change's nature as an aggregative harm. After rejecting both purely individualist and collectivist "single level" analyses of moral obligation in the case of climate change, Chapter 5 presented Tracy Isaacs's

"two level" account of moral obligation, as a means for addressing the theoretical difficulties posed by climate change. Isaacs's theory allows obligation to exist at both the individual and collective level simultaneously, using general collective obligations to map distinct and differentiated individual responsibilities based on individuals' roles within the collective organization. Moreover, Isaacs's theory allows for the ascription of moral obligation in cases, like climate change, where there is a harm that can be prevented through collective action yet the relevant collective entity does not exist. This is achieved through work by Larry May and Virginia Held on putative groups. In the cases involving putative groups, the same role-based mapping that applies when dealing with existing collective entities applies, with individuals having moral obligations based on whatever their role would be in the putative group. Isaacs's theory, however, focuses on what is small-scale collective action, especially when compared to climate change. To avoid objections that her theory cannot apply to the scale of collective action demanded by climate change, I closed the chapter with a discussion of some basic conditions that if met make the possibility of successful collective action likely. As long as the putative group identified in the case of climate change meets these conditions, Isaacs's theory ought to apply.

The task of applying Isaacs's theory to the case of climate change was the task of Chapter 6. Here, I offered an argument for treating all the countries of the world as the appropriate putative group. An important consideration in defending the use of this putative group was the fact that such a group met the basic conditions for successful collective action outlined in Chapter 5 and that states are able through

regulation to force corporations and individuals within their borders to cease harmful practices when those corporations and individuals would not do so otherwise. Having identified the relevant putative group and argued that epistemic position of a reasonable agent in this group allows us to ascribe obligations beyond an obligation to organize as a collective entity, I applied a multi-step variant of Isaacs's theory. First, the collective obligation of the putative group creates differentiated responsibilities among countries, as some will have to make more emissions reductions than others—primarily due to the fact that many developed countries will be well over allowable levels of capability protections (i.e. over capability ceilings). Individuals gain obligations here, as we can run the collective-to-individual mapping process from Isaacs's theory to identify the obligations of individuals in their roles as citizens. Additionally, since part of states' obligations will be to regulate private actions, new obligations will be created for non-state collectives (primarily corporations). Here, we run Isaacs's collective-to-individual mapping process again, using the new obligations of non-state collectives to identify the obligations of individuals in their roles as consumer. This application results in a four-fold taxonomy that can be used to roughly capture the obligations that exist in the case of climate change: (1) those of states; (2) those of non-state collectives (primarily corporations); (3) those of individuals qua citizens; and, (4) those of individuals qua consumer. While I did not provide a complete listing of all the obligations resulting from climate change, as that would require a complete analysis of which climate scenarios are harmful, we were at least left with a sketch of the general types of obligations possessed by the relevant agents, which could then be used in crafting

ethical climate policy and making ethical decisions about individual actions moving forward.

2. Global Regulation and the Problem of Non-Compliant States

In reaching its end in Chapter 6, this project culminated with an argument that states bear a strong moral obligation to create and enforce a global climate regime. Yet, this call for global environmental regulation runs into a potential problem. As I have made clear throughout, climate change is a global issue requiring global collective action on the part of all states. If one or more states fail to act appropriately and properly regulate activities within their borders, there is a possibility that harmful climate scenarios will not be avoided. Consequently, it seems the global regulations need to be enforced even upon those states that elect not to participate. If so, what do we do about states that fail to fulfill the obligations outlined in the previous chapter?

This worry seems pressing given the prevalence of states in the world today that refuse to participate in binding climate treaties. For example, the United States has consistently refused to comply by any climate treaty that exempts some countries from setting significant reduction targets. This is driven primarily by economic self-interest, as made clear by the Byrd-Hagel Resolution, passed unanimously by the United States Senate in the lead up to the negotiations that established the Kyoto Protocol. The resolution explicitly states that the Senate would not ratify any treaty that did not require reductions by developing countries and "would result in serious

harm to the economy of the United States."[1] Given that reductions by countries under my framework would be tied to capability ceilings, likely resulting in countries like the United States being required to make significant reductions while many developed nations would be morally justified in making no (or very limited) reductions, it would seem the United States would not voluntarily participate in the necessary regulatory regime barring some additional motivation (e.g. sanctions by other countries, extrarational moral motivations).

More recently, we have seen the problem of non-compliant states manifest even when a state initially agreed to be compliant. On December 12, 2011, just one day after the conclusion of the most recent session of the Conference of Parties (COP17) to the UNFCCC in Durban, Peter Kent, Canada's Minister of the Environment, announced that Canada was formally withdrawing from the Kyoto Protocol. Canada's decision to withdraw from the world's only legally binding climate treaty was heavily motivated the fact that doing so would prevent them from paying nearly C$14 billion in penalties for failing to meet their emissions targets.[2] Moreover, as Kent noted, too many of the world's emitters of greenhouse gases (GHGs) are not covered under the treaty:

> Before this week [the COP 17 meeting], the Kyoto Protocol covered less than 30% of global emissions. Now it covers less than 13%—and that number is only shrinking. The Kyoto Protocol does not cover the world's two largest emitters – the United States and China – and therefore will not work.[3]

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[1] United States Senate, *Byrd-Hagel Resolution*, 105th Congress, 1st Session, S. Res. 98.

[2] Peter Kent, "Statement by Minister Kent," 12 December 2011, Foyer of the House of Commons; available on-line at <http://www.ec.gc.ca/default.asp?lang=En&n=FFE36B6D-1&news=6B04014B-54FC-4739-B22C-F9CD9A840800> (Accessed 6 January 2012).

[3] *Ibid.*

While this decision is currently being challenged in court, it is only being done so domestically, with opponents of the move arguing "the decision goes against a federal law passed in the House of Commons in 2007 that stipulates Canada has to enforce the treaty."[4] Though other countries have expressed annoyance and displeasure with Canada's decision, they currently can do nothing to prevent this move by Canada.

Both types of cases (i.e. those in which the country chooses not to participate from the outset and those in which the country participates and later withdraws to avoid punishment) point to the fact that the regulation called for in Chapter 6 needs to be mandatory. States must be justified in taking actions against states that are non-compliant and mechanisms need to be put in place to facilitate such actions. However, in considering the problem of non-compliant states, it is important to distinguish between two ways it can manifest: as a conceptual challenge and as a practical challenge.[5] The conceptual challenge points to an apparent tension in my framework in that it seems simultaneously committed to strong and weak conceptions of state sovereignty. The practical challenge relates to the ability to produce and implement the type of global environmental regulation called for by my framework in the real world. I will not address the practical challenge, as that is a

[4] Marianne White, "Kyoto Withdrawal Challenged in Court," *Montreal Gazette*, 14 January 2012; available on-line at <http://www.montrealgazette.com/technology/Kyoto+withdrawal+challenged+ court/ 5995316/story.html> (Accessed 15 January 2012). The law in question is the Kyoto Protocol Implementation Act (S.C. 2007, c. 30), the text of which is available on-line at <http://laws.justice.gc. ca/eng/acts/K-9.5/FullText.html> (Accessed 21 January 2012).

[5] These two manifestations highlight a similar distinction made by Andrew Hurrell in his discussion of transboundary environmental problems and problems they raise for the state. Hurrell divides the issue as it relates to states into questions of moral adequacy and practical viability. See Andrew Hurrell, "The State," in *Political Theory and the Ecological Challenge*, eds. Andrew Dobson and Robyn Eckersley (Cambridge: Cambridge University Press, 2006), 167.

task better suited for political scientists and those working on international relations, and there is a wealth of literature relating to such discussions.[6] Rather, in closing the dissertation, I will offer a brief discussion of the conceptual challenge, looking at potential directions for future research. Ultimately, I do not find these challenges unique to my framework, nor do I take them to undermine the arguments I have offered to this point.

3. Strong, yet Weak Sovereignty: Questions for Future Research

The conceptual challenge posed by the problem of non-compliant states arises due to the fact that my framework appears committed to a strong conception of state sovereignty, while recognizing that the nature of climate change itself and the call for a mandatory regulatory regime point to a need for a weaker view of sovereignty. This tension can be made clearer if we break sovereignty into its internal and external components. Internal sovereignty is, in a simplified sense, the classical definition—absolute and supreme authority in domestic matters—while external sovereignty adds the notion that the sovereign is free from external hindrances and interference in domestic affairs. Thus, put in a more nuanced fashion, the framework I have offered seems to require strong internal sovereignty

[6] For examples of discussion related to structuring a global environmental regime and general environmental governance, see Oran R. Young, ed., *Global Governance: Drawing Insights from the Environmental Experience* (Cambridge, MA: The MIT Press, 1997); Urs Luterbacher and Detlef F. Sprinz, eds., *International Relations and Global Climate Change* (Cambridge, MA: The MIT Press, 2001); and Robert Durant, Daniel Fiorino, and Rosemary O'Leary, eds., *Environmental Governance Reconsidered: Challenges, Choices, and Opportunities* (Cambridge, MA: The MIT Press, 2004). For discussions of environmental politics and treaty negotiations, see, e.g., Denise DeGarmo, *International Environmental Treaties and State Behavior: Factors Influencing Cooperation* (New York: Routledge, 2004); and, Ronnie Lipschutz, *Global Environmental Politics: Power, Perspectives, and Practice* (Washington, D.C.: CQ Press, 2004).

and weak external sovereignty. Yet, the need for strong internal sovereignty makes it less likely that external sovereignty will be weak.

That my framework calls for a strong notion of internal (and even external) sovereignty comes from two components. First, its use of the Capabilities Approach as a grounding for human rights commits it to such a position. As Nussbaum remarks in her most recent book, "[t]he nation, then, has a moral role that is securely grounded in the Capabilities Approach, because the approach gives central importance to people's freedom and self-definition."[7] The need to consider individuals' particular contexts and the various ways in which cultures will manifest the capabilities on Nussbaum's list requires states.[8] For example, recall Chapter 3's discussion of how adequacy as it relates to shelter is contingent on geographic location. Determinations such as this require sensitivity to local contexts to a degree that could likely not be met by a global state. Moreover, this commitment to states and their moral role in this framework also yields an apparent right of non-intervention, as long as the state maintains some level of legitimacy.[9]

The need for a strong conception of sovereignty, at least internally, is also implied in my call for states to regulate the private activities of their citizens and any corporate entities within their borders. In order for climate change to be addressed

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[7] Martha Nussbaum, *Creating Capabilities: The Human Development Approach* (Cambridge, MA: Harvard University Press, 2011), 114; see also, Martha Nussbaum, *Frontiers of Justice: Disability, Nationality, Species Membership* (Cambridge, MA: Belknap Press, 2006), 255-262 & 316.

[8] However, there might be reason for thinking some currently existing states do not provide structures that allow appropriate exercises of their citizen's freedom and autonomy, and thus those states' governmental institutions ought to be altered. I will not take up this issue here, other than to say that in such cases it seems reasonable to conclude the state in question is illegitimate and thus intervention in its affairs is morally justifiable.

[9] See Nussbaum, *Creating Capabilities*, 111-112. Here, Nussbaum assumes that legitimacy does not require a country to provide the complete fulfillment of all its citizens' capability thresholds, but rather some lower standard.

effectively, many activities resulting in GHG emissions must be severely limited and alternative technologies need to be developed and implemented. However, since these are typically matters that result from private actors, the call to limit activities resulting in GHG emissions or force corporations to develop and use new technologies through regulations places a premium on a public good over private rights. To restrict private rights in this manner points to a strong conception of state sovereignty in the vein of Hobbes.

While states present themselves as morally relevant under my framework, there is also reason to think their sovereignty must be weakened in order to properly address climate change. Here, there are two issues pushing sovereignty in a weaker direction. First, the transboundary nature of climate change gives nations legitimate claims regarding the activities that take place within each other's borders. Steve Vanderheiden captures this nicely:

> Climate policy, it would seem, cannot justifiably be described as purely an internal matter, because GHGs emitted anywhere have the same effects regardless of their geographic origin and therefore have the potential to harm those residing outside of the nation-state's borders. This "spillover" effect turns what might otherwise be an exclusively domestic concern into one in which other states become justifiably interested parties.[10]

When states become justifiably interested in the domestic affairs of another due to the spillover effect of climate change, it is reasonable to think they might possess some right to intervene in the "domestic" affairs of a non-compliant state through sanctions or some other measure. However, without a global state, there is no body that can adjudicate any disputes that might arise related to climate change and

[10] Steve Vanderheiden, *Atmospheric Justice: A Political Theory of Climate Change* (Cambridge: Oxford, 2008), 86.

determine whether a state's intervention is justified by what we might call the spillover doctrine. Just as this problem is solved within a group of individuals by ceding authority to a state, so to can it be solved within a group of states. Consequently, it seems that to properly address transboundary issues, including climate change, states must cede some authority to a global body that can adjudicate disputes in particular domains (in our case, the environmental domain). Doing so, however, serves as a limitation or weakening of those states' sovereignty.

Moreover, as I noted above, the obligations possessed by all countries seem to justify the enforcement of a global climate regime upon even those countries that choose not to participate. This is the compulsory nature of the obligations to make reductions and act against climate change. On this view, states can then be legitimately sanctioned in an effort to gain their cooperation. Yet, this allowance of legitimate sanctions (or other means to achieve compliance) implies a weakening of states' external sovereignty. It justifies a form of intervention in the domestic activities and affairs of non-compliant states.

So, how might this tension be reconciled? On its face, the claim that a state must possess strong internal sovereignty, yet weak external sovereignty, seems odd. To fully address this issue would involve a careful examination of sovereignty as a concept, a project in its own right and one that has a large literature.[11] Moreover, the need to reconcile notions of sovereignty with global interdependence and global

[11] For detailed examinations of the concept of sovereignty, see F.H. Hinsley, *Sovereignty*, 2nd edition (Cambridge: Cambridge University Press, 1986); Jens Bartelson, *A Genealogy of Sovereignty* (Cambridge: Cambridge University Press, 1995); Stephen Krasner, *Sovereignty: Organized Hypocrisy* (Princeton, NJ: Princeton University Press, 1999); Robert Jackson, *Sovereignty: The Evolution of an Idea* (Malden, MA: Polity Press, 2007).

governance is not unique to my project. In fact, this tension between sovereignty and wider governance has recently come up in debates related to the application of Europe-wide human rights law to particular member states.[12] Given that the questions related to sovereignty do not impact only my framework and point to issues better suited for future research, I will not offer any detailed comments here. Rather, I will close by offering a few thoughts on ways future examination might aid in addressing the tension.

One potential avenue is to argue that states that fail to protect individuals' right to their environmental meta-capability are illegitimate. Here, legitimacy would be tied to a state's respect for human rights. We can find such an approach in the work of Andrew Altman and Christopher Wellman, who conceive state legitimacy as resting "on the ability and willingness of a state to adequately protect the human rights of its constituents and to respect the rights of all others."[13] If a state is illegitimate, then it has no justifiable claim to sovereignty (at least from a normative perspective). In such a case, there is no tension, since without a justifiable claim to sovereignty other legitimate states (i.e. those fulfilling their obligations) would be free to intervene in the affairs of the illegitimate state.

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[12] One of the more recent incidents of this has been the UK's recent criticisms of the European Court of Human Rights following its decision in the case of Abu Qatada and an ongoing dispute between the court and the UK regarding the voting rights of prisoners.

[13] Andrew Altman and Christopher Heath Wellman, *A Liberal Theory of International Justice* (Cambridge: Oxford University Press, 2009), 3. The idea of legitimacy as stemming from the minimal efficacy of the state in fulfilling the basic conditions of justice is also central to Christopher Morris's analysis of the state; see Chapters 4 & 6 of Christopher Morris, *An Essay on the Modern State* (Cambridge: Cambridge University Press, 1998). A similar claim is made by Michael Ignatieff, who while tying legitimacy to the assent of the people, remarks that this can only come from the protection of people's basic rights; see Michael Ignatieff, "Human Rights, Sovereignty, and Intervention," in *Human Rights, Human Wrongs: The Oxford Amnesty Lectures 2001*, ed. Nicholas Owens (Cambridge: Oxford University Press, 2003), 58.

Related to a focus on legitimacy as stemming from respect for human rights, a second approach calls for a reconceptualization of sovereignty as being bound by moral limits and consequently includes a responsibility to protect. This conception has recently come to the fore of international politics following the publication of a report by the International Commission on Intervention and State Sovereignty (ICISS) titled *The Responsibility to Protect*.[14] This document spells out principles for legitimate humanitarian intervention and seeks to move away from a characterization of "*sovereignty as control* to *sovereignty as responsibility* in both internal functions and external duties."[15] A similar characterization of the state's role, with respect to environmental matters, has been present since the United Nations Conference on the Human Environment (UNCHE) in 1972. Principle 21 of the Stockholm Declaration, which was the final document from UNCHE, declares that states have "the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or areas beyond the limits of national jurisdiction."[16] While treating sovereignty as a matter of responsibility, rather than a matter of control, could prove fruitful generally, more analysis would be necessary to endorse the applicability of the responsibility to protect paradigm in the case of climate change.

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[14] ICISS, *The Responsibility to Protect* (Ottawa, ON: International Development Research Centre, 2001). The general principles of responsibility to protect were affirmed by the United Nations in the 2005 World Summit Outcome Document, Paragraphs 138 and 139, and the United Nations Security Council in Resolution 1674.

[15] *Ibid.*, 13.

[16] *Declaration of the United Nations Conference on the Human Environment*, Principle 21 [U.N. Doc. A/Conf.48/14/Rev. 1(1973); 11 ILM 1416 (1972)]. Susan Bragdon applies this principle to restrict sovereignty in the environmental realm, while allowing the state to maintain a strong notion of sovereignty for other issues; see Susan H. Bragdon, "National Sovereignty and Global Environmental Responsibility: Can the Tension Be Reconciled for the Conservation of Biological Diversity?" *Harvard International Law Journal* 33, no. 2 (1992): 381-392.

Regardless of the direction one takes, there appear to be reasonable possibilities for reducing the apparent tension in my framework created by the problem of non-compliant states. In closing it is important to stress that if we have reason to accept the arguments offered to this point and our current conception of sovereignty is not consistent with this moral analysis, it would be reasonable to reconsider our attachment to current conception of the state and sovereignty, rather than reject the framework offered here. Since the human rights I have discussed here are universal moral rights, independent of any particular legal or political jurisdiction, we ought to make sure the notion of the state and its sovereignty we employ is consistent with such rights. It may simply be the case that climate change and the problem of non-compliant states serves to highlight the need to develop new conceptions of state sovereignty, a project that seems on the agenda of political theorists. Whether our answer is an existing conceptualization of sovereignty or a yet to be developed one, we can at least see how we might address questions for sovereignty raised by the need for global environmental regulation.

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