Institute for FUTURES STUDIES

Climate ethics and future generations

Introduction and research objective

One of the most important insights to emerge over the past hundred years is that the actions of the current generation could have profound and far-reaching effects for future generations. Perhaps it was during the 1970s, with the debate on nuclear power, that this insight took firm root in public consciousness. The problem of nuclear waste brought with it a longer time perspective than any previous generation had to consider. More recently, climate change has emerged as the cardinal example. Nowhere else is the sense that even distant future generations are at our mercy more visible and pressing.

To be sure, climate change is already underway and affecting people. As noted by the latest report from the Intergovernmental Panel on Climate Change (IPCC), the Earth's surface is now on average 0.85°C warmer than it was 100 years ago, the sea level has risen by 0.19 meters, and many glaciers and ice sheets are losing mass at an alarming rate (IPCC 2013, 37-46). Still, climate change is primarily a problem for future people. The effects of climate change intensify over time as the concentrations of greenhouse gases (GHGs) – in particular carbon dioxide – build up in the atmosphere. Current climate models suggest that, even with unchecked growth in emissions, warming of 3°C or more will not occur until the final decades of the 21st century (IPCC 2013, 85-90). This means that how to deal with climate change necessarily involves questions of our obligations to future generations and how to value future lives in our decisions. How much we ought to reduce emissions, for example, depends on the weight we should accord future people's wellbeing.

The potential significance of climate change for future generations is difficult to overstate. The IPCC (2014b) notes that a global warming of 2°C risks producing substantial and long-lasting damage to many ecosystems, threatening human and nonhuman animals alike. It is estimated that a 2°C warming would lead to, among other things, more extreme precipitation events, more heat waves, compromised agriculture in tropical and temperate regions, and widespread species extinction. Warming of 4°C or more – which is where current climate models suggest we are heading unless global emissions are drastically reduced – would lead to more dramatic changes still. For example, in such a world the sea level is estimated to rise by up to 1 meter by the turn of the next century, threatening coastal areas. Moreover, higher temperatures constitute an elevated risk for abrupt and irreversible changes to the Earth System, such the collapse of the Greenland Ice Sheet. If the latter occurs, the IPCC suggests that we can expect sea level rise of up to 7 meters.

Given these scenarios, it is hardly controversial that the current generation is consuming resources at the expense of future generations. This intergenerational aspect of the problem not only generates familiar and difficult problems related to political motivation (Gardiner 2011), it also raises urgent questions about our obligations to future generations and about how we should evaluate alternatives that will have consequences far into the future. This program's main goal is to deliver

comprehensive and cutting-edge research into these ethical questions in the context of climate change policy. It brings together the world-leading philosophers, political scientists, and economists working on the ethical analysis of climate change to make progress on these difficult theoretical questions and their pressing practical applications. Moreover, this ethical analysis will be informed by new data and models provided by sociologists and demographers.

The focus on ethical issues of climate change is highly pertinent. The international political response to climate change has a checkered past. Following the United Nations Framework Convention on Climate Change in 1992, many were hoping for a binding global agreement regulating the emissions of all or most nations in a cap-and-allocate manner. This ambition came to partial fruition with the Kyoto Protocol, but it has in more recent years been replaced by a pledge-and-review system whereby countries set voluntary emissions targets. The Paris Agreement of 2015 meant the adoption of this pledge-and-review approach to international climate governance. Whether the Paris Agreement will succeed in halting or avoiding dangerous climate change remains to be seen, but there is little doubt that climate change will be one of humanity's most pressing concerns in the decades to come, and will continue to raise difficult normative questions for policymakers and the general public alike.

There is by now a very rich scientific literature on different emission pathways and the climatic changes associated with them (see IPCC 2013, ch. 9). There are also a substantial number of analyses of the long-term macroeconomic effects of climate policy (see e.g. Stern 2007; Nordhaus 2008; IPCC 2014b, 223-252). While this provides an excellent basis for thinking about what should be done with regard to climate change, a considered response to climate change must also draw on normative principles and values. Science cannot say which level of warming we ought to be aiming for or how much consumption we ought to be prepared to sacrifice without an appeal to values and normative principles. The latest Synthesis Report from the IPCC recognizes this need for normative thinking, informed by several normative disciplines:

"Decision-making about climate change involves valuation and mediation among diverse values, and may be aided by the analytic methods of several normative disciplines. Ethics analyses the different values involved and the relations between them. Recent political philosophy has investigated the question of responsibility for the effects of emissions. Economics and decision analysis provide quantitative methods of valuation which can be used to estimate the social cost of carbon" (IPCC 2014a, 76-77).

This program will offer this kind of guidance by bringing together the normative analyses from philosophy, political science, and economics.

However, while the need for ethical theorizing is plain to see, such theorizing currently lags behind the empirical work of climate scientists and descriptive macroeconomists. It is becoming increasingly clear that the theories of ethics and justice that have been developed to regulate relations among contemporaries face fundamental problems when applied to future generations. Indeed, it has proven very difficult to formulate a satisfactory theory regarding our duties to future generations

that satisfies even the most minimal adequacy conditions (Parfit 1984, Arrhenius 2011, forthcoming). This is mainly because future people differ from those of the present in two important respects: their number and their identity are affected by the actions of the current generation.

That the number and identity of future people are not fixed poses a severe challenge to our ordinary theories of ethics and justice. When philosophers, economists, political scientists and others have discussed fair distribution of resources, for example, they have usually taken the number and identities of individuals for granted. The focus has been on the distribution of benefits and burdens among an already given group of people. But when we consider future generations we cannot take the affected group as a given. This is obvious with respect to policies such as China's one-child rule, but climate change, and the way we deal with it, will also have a substantial effect on the size and composition of the future population.

This has enormous implications for climate policy. Consider first population size, and suppose – as seems certain – that different mitigation policies lead to different numbers of future people. How, if at all, should the fact that one policy produces a bigger (smaller) population than the other be judged? Should it count in favour or against that policy? Or is it irrelevant? Population ethicists have grappled with these and other questions, without reaching a consensus. IPCC notes that how changes to the world's population are evaluated makes a big difference to which climate policies are appropriate (IPCC 2014b, 258). But, as they also note:

"So far, no consensus has emerged about the value of population. Yet climate change policies are expected to affect the size of the world's population, and different theories of value imply very different conclusions about the value of these policies. This is a serious difficulty for evaluating policies aimed at mitigating climate change, which has largely been ignored in the literature (IPCC 2014b, 223)"

Consider next population composition. Different climate policies will affect which individuals are born in the future. For example, low taxes on fuels will predictably lead to more travelling, which in turn will lead to people having children they would otherwise not have had (because they will meet, and start families with, people they would otherwise not have met). This seemingly innocuous observation wreaks havoc with the ordinary idea that we must pursue aggressive mitigation policies in order not to harm future people. For, as shown by the famous non-identity problem, it seems incorrect to say that we could harm future people by bringing them into existence (when their lives are worth living) (Parfit 1984). If we pursue less aggressive policies, different people will be born than if we pursued more aggressive policies. As long as these people have lives worth living it seems rather nonsensical to say that we harm them by pursuing the policy that was a necessary condition for their existence. This would be tantamount to claiming that it would have been better for these people to not have existed at all than to exist with lives worth living (Broome 2004, Arrhenius & Rabinowicz 2015).

The current scientific consensus is that the classical theories of ethics and justice do not provide any clear guidance for decision-making in an intergenerational context, and in those instances where

they do provide any direction, it is often counterintuitive or even paradoxical. There is thus an urgent need for more thoroughgoing analyses of climate change from an ethical standpoint, integrating approaches from moral and political philosophy, political science, and economics. This program aims is to fill this need. Our overall aim is to integrate and develop the most significant insights on climate change ethics from a variety of approaches and fields, by bringing together normative research in philosophy, economics and political science and empirical research in sociology and demography. The program will provide a unique setting for world-leading researchers on climate ethics to collaborate across disciplines. A core team of researchers will be joined by a larger group of associated researchers, with over 50 researchers from Sweden, UK, US, Austria, Norway, Canada, Belgium, Germany, Spain, France, Denmark, and Australia, many of whom are world-leaders in their fields. The formidable group of researchers that will collaborate in this program is one of its main strengths.

The program is thematically organized in three parts:

I. **Foundational value questions in population ethics**. The overarching question here is how to evaluate future scenarios in which the number of people, their welfare, and their identities may vary. More specifically, we shall explore whether it is bad if fewer people exist in the future, and whether an increase in population size can compensate for a loss in quality of life.
II. **Climate justice.** Here we focus on three main questions: Do emissions wrong future people even if they do not harm them? How should burdens and benefits associated with combatting climate change be shared in a just way within and across generations? How, if at all, should future people be represented in democratic decision-making?
III. **From theory to practice.** This part aims to facilitate getting from theory to practice by focusing on three questions: How should we ac when we are not certain about which theories to apply? What are the demographic consequences of climate change? How can we change people's environmental values and attitudes?

Our approach to the problems of climate ethics differs significantly from the conventional approach, where political scientists, economists, and philosophers have worked separately on the issues of climate ethics. Our approach is to combine the best methods and results of these disciplines by putting together an inter-disciplinary working group. In addition, our approach will involve results and models from sociology and demography. Moreover, instead of searching for just one ethical solution, we shall explore different solutions by allowing different groups within the project to develop the best version of their favoured solution. This approach allows us to take into account the different degrees of confidence we have in different theories, and then explore ways to act rationally on this basis. Normative uncertainty has been completely ignored in the conventional approach, but we take it seriously and discuss how one should act rationally under such uncertainty.