"Climate Change is a Social Justice Issue"

First Religious Society
UNITARIAN UNIVERSALIST

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Thank you and good morning.

When I ask my college students, "Who will be most affected by climate change?" they inevitably list future generations first, followed by lower income people in other countries, people in other states, etc., and they always list themselves as the least affected.

I've been doing this exercise in class for about a decade and it's remarkable to me that this ordering of risk is unchanged. Despite the greater awareness of climate change among this generation, my students still have a hard time imagining themselves as victims or even just participants in this unfolding narrative of climate change.

In class, my students and I look at graphs of local temperature change over time, comparing how much warmer this year, or even this last decade is, and compared to the 20th century average. Of course, I must remind myself that most of my college students were not alive in the 20th century. Most of them were born in the 21st century at this point. I show them how anyone born after 1967 has never seen a year colder than about 1F below the 20th century average. This sounds kind of wonky, but my point is that people younger than 55 have grown up in a climate that was already significantly different from that of their parents or grandparents. In other words, your grandparents weren't lying when they said their winters were harsher and colder! And for my students, I point out, anyone born after 2003 has never seen a year more than half a degree cooler than the 20th century average. They have grown up in a different climate than their parents.

And their children will grow up in still more different climates. And the difference will increase over time, to the point that it might be hard to even imagine what a New England climate was like in the 20th century.

The point of this is to help them situate themselves within this unfolding climate change narrative.

But before we can even get to that, I need to start by dispelling some myths:

1) climate change is not a future risk, it's already happening/has happened - we live in a different climate than that of our parents and certainly our grandparents;
2) no place on Earth will avoid climate change and certainly not New England. Indeed, New England's climate has been changing much faster than the rest of the world. Our region is already 1.5 to 2C (2.7 to 3.6F) warmer than it was in the early 20th century. Maybe it doesn't seem that much hotter. That's because most of this change has come through a reduction in cold days and a warming of winter. My colleague at Salem State - Dr. Stephen Young - published research in December[1] which got a bit of press because it concluded that not only is it our winters that warming most rapidly, the contrast between New England seasons overall is also fading;
3) and what I want to emphasize most is that climate change is not an environmental issue. Climate change is a social and political and economic and moral issue.

The impacts of climate change are massive and growing.

The world now regularly experiences billion-dollar disasters that are climate related and these disasters are becoming more frequent. Up through the 1980s, billion disasters happened on average once every 3 months. Over the last five years, they now occur about every 2 weeks.[2] These disasters are not just happening in other parts of the world, they are happening here in the US.

Some parts of the country are already literally ceding ground to the inevitable. A buyout of damaged and at-risk homes has already occurred in New York City's Staten Island in the wake of Hurricane Sandy. New Jersey has a program to

1 https://www.mdpi.com/2225-1154/9/12/176
2 https://www.globalchange.gov/browse/indicators/billion-dollar-disasters

buy up lands[3] that have repeatedly flooded or are expected to be lost to sea level rise flooding.

We are all experiencing and exposed to climate change, but we are not all equally exposed or equally vulnerable to climate change. The impacts are falling first and hardest people and communities that are already vulnerable and often already struggling under pre-existing burdens of poverty and environmental racism and oppression.

For Americans, I think the first wake-up call for what climatic disaster could look like at home was Hurricane Katrina. As you might remember in 2005, a category 4 hurricane hit New Orleans dead on, submerging that city, killing over 1400 people, and displacing millions. Our images of that event are of mostly African American residents stranded on rooftops and highway overpasses just barely above the waterline, of people desperate and stranded at an Astrodome filling with fetid water and waiting for disaster assistance that arrived too slowly if it ever did. It wasn't just a natural disaster; it was spectacular social disaster - climate change intersecting with deep social inequality. One of the outcomes of that early climate disaster that doesn't get quite as much attention is the fact that the evacuation and displacement caused by Hurricane Katrina constituted one of the largest mass movements of people in American history – over 1.5 million. YOU CAN SEE ON SLIDE 1 OF YOUR HANDOUT a map showing where the refugees from Katrina fled to. That disaster reshaped the demography of New Orleans and the Gulf Coast, and I argue that it constitutes the first visible example of what climate refugees and migration looks like in America. The only thing comparable before is the Dust Bowl of the 1930s.

And we saw a similar disaster unfold once again in 2017 when Puerto Rico was hit by Hurricane Maria, another category 4 hurricane. That event killed over 3,000 people and knocked out electrical power for the island's entire population of 3.4 million. It took over a year for some parts the island to get power restored. It was the longest power outage in American history. If Hurricane Maria did anything positive for Puerto Rico, it reminded the rest of America that Puerto Rico is part of the US, albeit as a modern colony or "territory" as it's called. If Puerto Rico was a state, it would be a state more populous than any in New England save for Massachusetts and Connecticut, but it would also be the poorest state in the nation, with more than 40% of population below the poverty line. Puerto Rico was already suffering under a massive economic crisis before Hurricane Maria arrived. But the disaster finally pushed more than 10% of the population to migrate to the mainland, primarily to Florida and New Jersey and New York. It wasn't just the migrants who were feeling desperation. The arrival of so many climate refugees at once strained the resources of the receiving communities as well. And this pattern is likely to repeat more often in coming years.[4]

Some of these disasters are less spectacular, if no less disastrous.

Along the Alaska coastline, numerous small Native American communities are facing the loss of their land as they lose the protection of coastal ice shelves and as their buildings sink in thawing permafrost and as the wild game they rely on for food becomes more scarce. The federal government has already allocated money to relocating these communities, but it's not likely to be enough.

It would be enough that the burdens of climate change are falling hardest on those who are most vulnerable, those who are already unfairly burdened and marginalized in society. But injury is frequently accompanied by insult, and in this case, the moral insult is that these people who are being hit first and hardest, these people and communities are also least responsible for the climate change problem.

It is indisputable that humans are responsible for the accelerated climate change that we are experiencing, but we are not all equally responsible.

3 https://www.njspotlightnews.org/2021/10/nj-expands-blue-acres-property-buyouts-tropical-storm-ida-superstorm-sandy-climate-change-resilience-measures/

4 https://www.theguardian.com/environment/2018/sep/24/americas-era-of-climate-mass-migration-is-here

When I review the science behind climate change with my college students, we talk about the greenhouse gases that are at the heart of the whole problem - things like carbon dioxide and methane and other invisible substances that are having very visible impacts. We look at 18th century paintings of England's Severn River Valley, the symbolic origin of the early iron industry, to remind us how the Industrial Revolution began. That's where we start the story of how we moved from muscle power and wood and wind to coal and oil and other fossil fuels to power our industrial society, and how we began to change the chemistry of the sky, leading us to where we are today. And it's remarkable to think that a significant portion of the carbon dioxide gas emitted by that early industry more than two hundred years ago is still in the air, contributing to the warming of our world now and possibly for centuries to come. What matters most for understanding climate change is knowing the total amount of greenhouse gases that have accumulated in the atmosphere - the cumulative emissions. And the story of cumulative emissions is a very unequal one. The industrial revolution may have begun in England, but the early industrial era was really defined by the US. AS YOU CAN SEE ON SLIDE 2 OF YOUR HANDOUT - a bar graph comparing the cumulative carbon dioxide emissions of major countries, the US is by far the single largest source of the world's historic cumulative emissions of CO_2[5]; about one-quarter of the world's cumulative historic emissions to date (UCS 2022). Although Americans represent less than 5% of the world's population. We in this country have had an outsized role in changing the climate of the planet.

At this point, one of my students will usually ask, "Isn't China the largest emitter of GHGs in the world today?" Good point, I say. This is true. China currently accounts for about 29% of total annual emissions globally and growing. However, this is relatively recent. And keep in mind too that China is a much more populous country than the US - over 1.4 billion people compared to about 335 million in the US. On a per capita basis, US annual emissions today are still more than twice that of China. If we compare ourselves to a less wealthy country like India, the average American emits 8.5 times the CO_2 of the average South Asian Indian. In fact, despite massive improvements in energy efficiency in this country, US per capita emissions are still higher than 90% of all other countries in the world.

What are we doing to generate so many emissions? At the beginning of each semester, I have my students perform an audit of their own household's GHG emissions. Most of the data they gather has to do with their household's energy usage, which is where most of our GHG emissions come from. I ask them at the outset what they think the largest contributor will be. Most of my students think it will be their electricity usage because, apparently, they're always being harangued to turn off the lights. As we come to learn however, the largest source of household GHG emissions is not electricity usage, but rather heating and transportation. Most households still heat their homes and their water with natural gas or oil, and most households still rely on gasoline-powered private vehicles to go anywhere. But just like at the global level, these emissions are not equally distributed. Some households emit a lot more than others. As we come to learn from federal energy surveys and by a growing body of academic research, in the US, CO_2 emissions are strongly linked to socioeconomic status - wealth, education, and race. In general, the wealthier, the more educated, and the whiter a household is, the higher its CO_2 emissions. YOU CAN SEE ON SLIDE 3 OF YOUR HANDOUT - a stacked bar graph comparing household GHG emissions by income level. The average carbon footprint of the wealthiest households is over five times that of the poorest. Wealthier households generally emit more because they consume more (i.e., buy more stuff), travel more (especially by plane), and have bigger houses (requiring more energy to cool and heat). This is exacerbated by suburban living, which necessitates more car use. We can see this disparity in emissions geographically too. SLIDE 4 OF YOUR HANDOUT is a map of zip codes across Massachusetts and surrounding states, color coded by the level of household carbon dioxide emissions.[6] Blue areas are below-average

5 https://www.vox.com/energy-and-environment/2019/4/24/18512804/climate-change-united-states-china-emissions

6 https://coolclimate.org/maps

emissions, while red areas are above-average. If you're familiar with the geography of the state, you may notice how Boston and immediate surrounding communities are blue. Looking west you can also see that Worcester and Springfield are blue. This is largely due to the more compact housing, higher density, and higher use of public transit in central cities. By contrast, notice the deep red of suburban communities within the 495 belt - some of the wealthiest and Whitest communities in the state. In northeast Massachusetts, I've added an arrow to point out ZIP code 01950, which I believe is Newburyport. Household emissions here are also above average, although I suppose you might also point a finger at the deeper red and higher household emissions of your neighbor West Newbury.

If no one brings it up, I point out to my students that this disparity in GHG emissions reflects a very problematic disconnect between who bears responsibility and who bears consequences, and it's not just confined to CO2. Most of the main sources of climate-changing gases are also sources of conventional sources of pollution that directly affect people's health and quality of life - particulate matter, noxious and smog-forming gases. Although most households in the state rely on fossil fuels to heat their homes and power their cars, the burdens of these substances are not equally distributed. Most of the region's home heating fuel and a significant portion of the region's transportation fuel is stored along the Chelsea Creek along Highway 1A running through East Boston and Chelsea and Revere, largely immigrant and lower income communities. The region's roads and highways crisscross the state, but it is largely lower income and non-white households - those who drive the least - who live nearest the highest traffic corridors and who are exposed daily to high concentrations of diesel particulate matter. These same communities and households have the highest rates of asthma, the leading cause of of school absenteeism for children. They also have the least access to regular health care. The COVID pandemic revealed like few other crises the profound difference in vulnerability of these same communities to a catastrophe. How thin the social safety net, how unequal the impacts along the familiar fault lines of race and wealth and privilege.

On top of these pre-existing inequalities and vulnerabilities we add climate change. As the climate catastrophe unfolds, we are already seeing a familiar inequality in impacts. Residents of urban communities, particularly lower income elderly who live in poor quality housing and cannot afford A/C, are at risk from increased heat - the leading weather-related cause of death in this country. Flooding is an increasing concern for coastal communities, but also for inland communities facing more heavy rain events that overwhelm drainage systems, and it is especially catastrophic for those who do not purchase or cannot afford property insurance, which is most people who rent.

But let us return to the larger message: WHERE ARE YOU IN THIS UNFOLDING NARRATIVE? How are you and your community contributing to the problem or its solution? What is YOUR responsibility? And what are YOU going to do about it?

I have some suggestions on how you can get involved:

We should certainly donate or contribute to the communities hardest hit or most at risk and to volunteer organizations that support them, but today I want to emphasize action where responsibility lies:

For those of us in more privileged positions, who own cars and houses and do not have to worry about basic necessities, we have an obligation to act first and aggressively in adopting technology and lifestyle changes that rapidly bring down our individual and cumulative emissions.

We need you to engage with the governance of your local community. Beyond adoption of renewable sources of energy and the rapid phasing out fossil fuels, communities need to revisit the question of things like housing density. The latest estimates show that more efficient building design and electric cars are not going to be enough to avoid catastrophic climate change. We need to reduce the footprint of housing, and we also need to make housing more affordable. All of those red areas on the map need to higher housing density and they need more affordable housing. And I realize this a very touchy subject

for communities that want to preserve a certain character, but there's no getting around this elephant in the room. You're going to have to sort out your priorities.

At the state level, I would like to draw your attention to two important decision-making processes that have a significant bearing on the state's climate future and which you can participate.

1. Two years ago, the DPU directed the state's gas utilities to engage a consultant to investigate policies that will enable the Commonwealth to reach its goal of net-zero greenhouse gas emissions by 2050 and the role of gas utilities in achieving that goal. The report has now been released and the DPU will be holding virtual public hearings on May 3 and 5 to receive public comments. This report may very well decide whether we are still using methane or other CO2-producing gases for decades to come. The reality is that there can be no future with natural gas or any other fossil fuel. Unless the DPU hears that message loud and clear from the public, I fear that the gas utilities will be allowed to write their own check for the foreseeable future. https://www.mass.gov/info-details/investigation-assessing-the-future-of-natural-gas-in-massachusetts
2. Just this week state senators unveiled proposed new legislation - Senate Bill 2819, "An Act Driving Climate Policy Forward" which is aimed at pushing the state further toward reaching carbon neutrality by 2050, primarily by subsidizing the electrification of cars and buses in the state. This is not bad, but I submit to you that it is not a very equitable use of public funding, because it essentially subsidizes car-owning households and does nothing for transit or other forms of transportation. I encourage you to inform yourself about this important legislation and to contact your state rep.
3. And finally, at the federal level, all I can say is that elections matter. We certainly aren't able to vote on specific policies that come before Congress, but our elected representatives need to hear from us regularly and we need to monitor how they're voting on the policies that matter to us.

A class, or a lesson, on climate change has to cover a lot of bad news, as well as a lot of grim projections of the future. It could be very depressing.

But at the end of each semester, my students don't seem dispirited. Maybe it's because they're young and optimistic. But I don't think they're that naïve. They see what's coming, what's already happened, and they find it abhorrent and unacceptable. The question they ask me at the end the semester is, "Why are we still sitting around talking about this? Where do we begin to fix this?"

And I think this is a very useful stance for the rest of us. This is wrong and unacceptable. We have a lot of work to do. Let's get to it.

Thank you.