# Climate Change and Society

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The issue of climate change has become increasingly prominent since the mid-20th century and thanks to improved knowledge and awareness of its threats, many people are beginning to engage in climate change mitigation. However, there are still people who subscribe to a view similar to that of American economist William Nordhaus who believe that it is not worth mitigating their greenhouse gas (GHG) footprint in order to accommodate their modern 'non-caveman' standard of living. In this essay, I will argue that people who subscribe to this view, on the whole, are not behaving rationally because the continued use of fossil fuels will not only endanger the lives of future generations but also those of the present generation as our planet becomes increasingly inhospitable and that switching to renewable energies and making minor changes to our lifestyles can have a massive impact in reducing GHG emissions without having to revert to a 'caveman standard of living'.

To begin, I want to highlight that rationality is a broad concept but in its simplest form is "the ability to make decisions based on clear thought and reason" (Cambridge Dictionary, 2019). However, there are several strands to its meaning within the schools of economics, sociology and other social sciences. In this essay, I will focus primarily on theories of rationality from the angles of instrumentality which encompasses the idea that people adopt the best actions to achieve their individual goals as well as the utilitarian system in which individuals and groups act in a way that brings the highest level of utility (i.e. benefit) to society as a whole (Zafirovski, 2003).

Our increased reliance on fossil fuels since the industrial revolution has led to increased quantities of GHGs such as $CO_2$ in our atmosphere, leading to more heat retention and an increase in surface temperatures (USGS, No Date). This is a dangerous phenomenon, with global warming predicted to cause long-term effects such as rising sea levels, heat waves and desert expansion which will threaten the well-being of future generations. Furthermore, scientists believe that if we don't reduce our current levels of GHG emissions we could feel the negative impacts from climate change in the "very near future" be it through the increased risk of inland flash floods, reductions in crop productivity or intense heatwaves in cities to name a few (USGS, No Date).

Household consumption, the main component in maintaining the 'non-caveman' lifestyle, is an enormous polluter being accountable for 72% of global GHG emissions (Dubois et al., 2019) with the average EU-27 consumer generating a GHG footprint of 9.73 tons of $CO_2$ equivalent in 2008 of which food demand, mobility and housing demand contributed 69% of this footprint (van de Ven et al., 2017). Subsequently, it's clear that household behavioural change should be of major focus when thinking of ways to mitigate climate change. A 2017 study (van de Ven et al., 2017) researching the potential of behavioural change for climate change mitigation argues that if everyone in the EU-27 made relatively small changes to their lifestyles, they would significantly reduce GHG emissions. These changes include: switching to diets that consist of less meat-based products in order to reduce methane emissions and deforestation caused by the livestock industry; adopting more sustainable mobility options such as public transport, carpooling and avoiding long-haul flights; reducing heating and cooling in our homes; as well as engaging more heavily in waste recycling to reduce landfilling of waste which leads to significant GHG emissions.

This study described three profiles for the adoption of green behaviour including the 'enthusiastic profile' who does everything in their means to reduce their GHG footprint and the 'conscious profile' who is aware of all the environmental impacts of their actions but doesn't want to give up certain basic needs for this. Finally, there is the 'convenient profile' who is more or less informed about their environmental impact but does not want to significantly change their lifestyle to reduce this impact. It is estimated that if EU citizens adopted a 'convenient profile' then there would be a reduction in total EU-27 GHG emissions of 5.6% (van de Ven et al., 2017) exemplifying how minor behavioural changes can make such profound environmental benefits in mitigating climate change.

On this basis, you would have to argue that people who continue to subscribe to Nordhaus' view are behaving irrationally because if they simply made minor changes to their lifestyles in line of the 'convenient profile', they would greatly reduce GHG emissions which would help mitigate climate change. By playing a part in mitigating climate change, the likelihood of suffering from the negative impacts of global warming in their lifetimes will be reduced which will therefore improve their future well-being. Furthermore, these behavioural changes would yield monetary, health and societal co-benefits as, for example, non-meat food products are generally cheaper and better for one's health plus any change that reduces the amount of toxic GHGs in our atmosphere will improve societal health overall especially in heavily populated areas (van de Ven et al., 2017). As a result, individual and societal short and long-run utility would be increased by taking this course of action, so it would be irrational in both an instrumental and utilitarian sense not to make these minor changes in one's lifestyle given the benefits it would create.

However, if everyone knew the impact such minor behavioural changes would have on the environment then why would people still subscribe to Nordhaus' school of thought? It is possible that people who behave like this are demonstrating a degree of instrumental rationality due to having an individualist or short-sighted mind-set. Despite the efficiency and feasibility of low-carbon lifestyles, many still engage in behaviours that are detrimental to the environment as they perceive climate change as a psychologically distant risk that will occur far in the future, impacting people and places far from themselves so remain unwilling to make minor changes to their lifestyle (Xiang et al., 2019). This ties in heavily with Gidden's Paradox which states that "since the dangers posed by global warming are not tangible…. many will sit on their hands and do nothing. Yet waiting until they become visible and acute will be too late" (Giddens, 2009). A viable solution to encourage people with this mindset to change their behavior towards climate change would be to improve education around the subject and highlight the stark reality of the situation in order to promote public engagement by showcasing that mitigating climate change requires the efforts of every individual as a collectivist whole and that if everyone plays their part it is a solvable issue (Xiang et al., 2019).

Nordhaus also claims that we can't stop our reliance on fossil fuels instantly due to economic reasons as alternative energy sources are, according to him, too expensive and require a completely new capital stock. There is an element of rationality in this line of thinking as it is true that there will be major economic repercussions in switching completely to renewable energies. Petroleum, coal and natural gas amount an 85% share of the world's primary energy sources (BP, 2018) with the 1500 oil and gas firms listed on global stock exchanges being worth over $4.65 trillion (Cassella, 2018). If these industries suddenly died, millions would lose their jobs and global output would fall heavily creating negative multiplier effects in the world economy and would likely cause a recession (Cassella, 2018).

However, recent findings show that renewable energy sources are actually becoming more cost effective with hydroelectric power costing on average $0.05 per kilowatt hour (kWh) whilst the average cost of developing new power plants based on onshore wind, solar, biomass or geothermal energy is now usually below $0.10/kWh. This means that these alternative energy sources are able to compete with the cost of developing new power plants based on fossil fuels such as oil and gas, which typically range from $0.05/kWh to over $0.15/kWh (Dudley, 2019). A recent study by the Risky Business Project provides a framework for a transition to renewable energy in the USA that is both technically and economically feasible based on three principle transitions: shift from fossil fuels to electricity, generate electricity from low and zero-carbon sources and use all energy more efficiently (Risky Business Project, 2016). Their findings show that although the cost of the transition would be around $320bn per year between 2020 and 2050, the return on investment would be massive in a monetary sense with savings starting at $65bn a year in the 2020s increasing to over $700bn a year in the 2040s. Furthermore, although jobs would

be lost in the fossil fuel sector, the expansion of the renewable energy sector would likely create significantly more jobs than the ones that would be lost as the green economy already employs around 10 times as many people as the fossil fuel industry despite the past decade's oil and gas boom (Vaughan, 2019). Therefore, given this information it seems extremely irrational to still adhere to Nordhaus' way of thinking as switching to renewable energy will bring major economic benefits to the world and these returns do not even include the damages saved from mitigating the worst impacts of climate change.

In conclusion, I believe it is clear that people who subscribe to Nordhaus' view are behaving very irrationally. The studies that we have explored in this essay show that the continued use of fossil fuels is extremely unsustainable in an economic and environmental sense and if we continue using them on a such large scale, GHG emissions will continue to rise making our planet increasingly inhospitable and dangerous to live in. Finally, we have shown that if everyone made minor behavioral changes we can greatly reduce our GHG footprint and mitigate the negative effects of climate change whilst enjoying the co-benefits that come from living in a greener society without having to return to a 'caveman standard of living'.


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