

OUR RESPONSE TO THE NEED TO MITIGATE THE IMPACT OF CLIMATE CHANGE

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In November 2020, Peter Carter, an expert IPCC reviewer, was interviewed by Roger Hallam of Extinction Rebellion in a 41-minute video on YouTube titled ['We're looking at Billions of People not being able to Survive'](#). The message of the above video is that we need to immediately reduce our current consumption levels of goods and services in order to avoid an irreversible runaway of climate change which would result in ecological disaster. We are facing an existential threat if we do not take immediate action to mitigate the impact of climate change.

The above message that we need to reduce our levels of consumption is unpopular and is likely to be strongly resisted. Given the level of inaction by governments over the past 30 years despite warnings about climate change, more talk, more submissions, followed by limited necessary action at government level are likely to continue. Tinkering with climate change policies without the goal of ceasing economic growth is a futile diversion of focus away from the fundamental underlying causes of climate change – excessive consumption combined with continuing population growth. The policies of government and business simply can no longer be based on the goal and expectations of economic growth. Continuing to do so diminishes the chances of survival for both current and future generations.

At the individual level, we have more control over our own actions. The message to local communities should be that we, as individuals, are the cause of climate change due to our current levels of consumption of goods and services. By limiting our consumption, we can all play a part in helping to mitigate the impact of climate change. The general public needs to be educated and be aware that the impact of climate change applies to everyone and not just to those unfortunates who live out of sight in another country.

One reason why some people dismiss or ignore the urgency of the unfolding impact of climate change is because they do not fully appreciate the dynamics of exponential growth. Al Bartlett, a physicist, spend decades of his life educating the general public as to the true significance of exponential growth. The global population over the last century has undergone rapid exponential growth. A rule of thumb for estimating the time it takes for a population to double in size is to divide 70 by the rate of exponential growth. For example, a population which grows at the exponential rate of 2% doubles in size about every 35 years. Growth in economic activity is currently measured by GDP. In order for GDP per capita to remain constant, GDP must also grow at the same rate. The rate of growth in GDP per capita has actually been greater than that of population growth in many countries.

All economic activity requires the use of energy and materials and we are currently highly dependent on using fossil fuels. Some claim that economic activity can be decoupled from the use of energy. Greater efficiencies can and have resulted in less energy required to generate each dollar of GDP, but there are thermodynamic limitations as to maximum efficiency of any process. So long as we continue to be reliant on fossil fuels, there will be greenhouse gas emissions. There is good cause for alarm that continued growth in economic activity will accelerate the rise in accumulated greenhouse gases in the atmosphere with the subsequent risk that tipping points will be triggered resulting in an irreversible runaway of climate change. Even small constant levels of greenhouse emissions would eventually lead to an irreversible runaway of climate change.

There are a number of other reasons why some people dismiss, ignore, or deny the impact of climate change. People have different perceptions of when they should take necessary action, even when they know the ultimate conclusion. It is logical that economic growth cannot continue forever on a finite planet and surely even the most die-hard proponents of economic growth would agree to that logic. However, these proponents are reluctant to consider when economic growth should cease. Most retired people know that they will face an inevitable decline and that at some stage they might need to shift from the family home to a smaller home unit or even a rest home in their later years. Nonetheless, a number of retirees stay put until the inevitable is imposed upon them.

People have different perceptions of time and time preference and this changes as they grow older. With young people, now is all important. With maturity, adults can see the need to take actions now to ensure they are able to take better care of their future. Some people are prepared to make greater sacrifices now to take care of the future. The future is more real to them.

There is also the denial that bad things can and do happen - "I am OK now and I expect to be OK tomorrow and for the rest of my life. I don't see anything bad happening to me". With regards to climate change, I am constantly drawn to the quotation by William Gibson - "The future is already here — it's just not very evenly distributed". The evidence for what can happen to us is there for us to see and comprehend if we only just took the effort to look around to see what is happening to populations in other countries. In the early days of Hitler's rise to power, a minority of commentators foresaw where Germany was heading. In 1939, Chamberlain chose appeasement with Germany. Churchill saw clearly long before WWII the risks of Hitler's rise to power. Even when bad things happen in front of us in the here and now, some people are unable to take action and instead react inappropriately. They freeze instead of taking action due to being in shock or denial.

We make forecasts of the future based on personal experience or the experience of others. We get a feeling for the degree of likelihood of some things happening in the future and the risk of undesirable things happening in the future should we not undertake prevention now where possible. There are some future outcomes that are 100% certain. For example, we know with 100% certainty that we cannot survive for more than a few days without water or a few weeks without food. We know with 100% certainty that if globally we allow all our soil to erode, then millions of people will starve. Although some potential outcomes in the future are 100% certain, no one can foretell the unfolding of events leading to a future outcome with 100% certainty.

We already know the impact of climate change in Dunedin, New Zealand. We have had flooding in South Dunedin due to an already high water table compounded by an increase in sea levels and heavy rainfall. This flooding was exacerbated by insufficient clear stormwater drainage and pumping. The risk of future flooding has been researched and documented.

I once again come back to the quotation – "The future is already here — it's just not very evenly distributed". As climate change worsens, it is inevitable that the impact of climate change on those less fortunate overseas will spread to other countries. In New Zealand there are some food growing regions which are already prone to drought and flooding. Crops have been wiped out due to heavy hail. More regions in New Zealand will be impacted by climate change as the severity of weather increases.

Whether or not we take personal action now to mitigate the impact of climate change depends on whether we perceive climate change to be a real risk or not despite whether the impact of climate change has not impinged on our own life styles so far. The evidence that climate change already has a severe impact on populations in other countries and ecosystems beyond New Zealand is well beyond dispute. Personal action now also depends on the empathy we have for other people, future generations, and other animals and ecosystems. Globally, we are all in the same boat, and mitigating the severity of climate change depends on the collective actions of all citizens in all countries. There is no wiggle room for freeloading by either countries or individuals.

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