

Question by Lord Robert Winston:

Why are so many citizens reluctant to accept that the Earth's climate appears to be changing? Should scientists be worried by this?

The countdown to climate catastrophe is considered near in Earth years, but when compared to the lifespan of a human, there is no sense of urgency to act. No importance is placed on climate change's possible threats. The concept of concern for the future becomes psychologically distorted; people still believe in the years to come someone will solve the world's climate problem, and thus it is not their responsibility to be part of the solution. Therefore, yes. Scientists should be worried - as all hope is pinned on them to be the saviour.

The bystander effect could also be a possible explanation. A classic case of the bystander effect is the murder of Kitty Genovese, 1964. 38 individuals witnessed Genovese being stabbed constantly, yet no one intervened or called the police. No one attempted to help as they assumed someone else would come to the rescue. The bystander effect may be reflected in the lack of global efforts to tackle the climate crisis. Psychology explains it is affected by the social influence of group size and expertise. When more individuals are present, the responsibility to help diffuses. Therefore, with 7.9 billion people in the world, the obligation felt to tackle the issue is stretched paper-thin. The diffusion of responsibility rate rises further when there are certain experts in the field, in this case scientists, who are perceived as better prepared to tackle climate change due to their knowledge. As a result, this may explain why people are reluctant to accept the state of Earth; they believe someone else will eventually solve the problem.

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People may be hesitant about climate change because of how evidence is presented. The main headlines are that the threat is approaching. This futuristic scale reduces the sense of urgency to act. A study on functional magnetic resonance imaging (fMRI) brain scans demonstrates that when asked to think about one's self at the present moment, the medial prefrontal cortex (MPFC) receives an increase in blood flow. Whereas, when the person is asked to think of themselves in the future, the MPFC receives less blood. The same results are shown when the person is asked to think of someone they have no connection to. The correlation suggests when thinking of one's future self, they become detached, as if the thought was of a stranger. Furthermore, further research from more than 100 brain scans shows the further you think forward, the less blood flow there is to the MPFC. Empathy for one's future self is diminished as time progresses. The consequences of climate change seem so far away; people are less willing to sacrifice (in this case time and effort) to actions they are unsure will even produce results. It also does not help that the main contributors to climate change live in cities - far, far away from all the environmental damage. Therefore, it is harder to process the worsening conditions of the Earth.

The effects of climate change are increasing at an exponential rate - faster than humans can process. Emotional capacity has not reached a point where most humans have the capability to empathise with future events. When bombarded with constant grim statistics - this can cause compassion collapse. People feel they are useless to the cause - 'can't help', or think the cost of helping outweighs results - 'won't help'. When too much bad news is piled up, the impact perceived is reduced. Some may feel their actions to help will only have a minuscule effect on the global need of help, and thus give up. Whilst others may deduce that attempting to make a difference by empathising with the suffering victims will cause unwanted emotional damage.

Scientists have granted the population with tools for a convenient life, however, these inventions may also lead to the downfall of humanity. Earth is no longer able to support the

energy required and pollutants produced from technological advancements. Hence, the solution lies with the future. There has to be a shift in objectives concerning research ethics. Before, the aim of the universal ethical code was to prevent scandals occurring in biomedical research. Today, the aim should shift to sustaining the Earth for future generations. The ethics code is divided into 3 parts: do no harm, integrity and responsibility. Instead of 'do no harm' relating to only harm against animals and humans in the experiment, it should relate to no harmful long-term consequences in the future. Instead of 'integrity' of unbiased work and following protocols it should include upholding morals to protect the fragility of nature. Instead of 'responsibility' of simply informing the public, it should be explaining the findings without political influence. The ultimate goal should be to prevent any more inventions that will distress the planet.

Since scientists can not revoke the inventions used everyday - they must find a way to develop it sustainably. The new objective is to create long-term alternatives. For instance, from the 19th century, concrete was used in a vast number of industrial buildings. In 2018, concrete production was responsible for 7% of carbon dioxide emission in the world. One of concrete's main components is cement; scientists have been converting carbon dioxide gas in the atmosphere to minerals to be used in cement. Not only does this reduce the carbon dioxide levels in the atmosphere, less cement is needed as the solid carbonate strengthens the cement. Companies such as Silindia and CarbonCure have such concrete alternatives for sale. This demonstrates how sustainable choices are available - it is a matter of whether people will select it.

Ultimately, scientists should be worried about the denial towards climate change. They are the pioneers who draw up the master plans, but society must implement them. It is not their responsibility alone. People are unaware that the solution for a sustainable future has already been drawn, yet only a minority group is making a start. The road to a habitable planet, centuries from now, requires the helping hands of all.

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