

“Are we Listening Yet?”

The news these days is full of crises, covid, the mess in Afghanistan and the most dire of all, the multiple changes brought about by environmental change, which is causing extremely high temperatures, fires, storms, water evaporation, air pollution, agricultural failures, species extinction and many other issues. The recent U.N. Climate Report (2021) states that this is a red light for us. We need to make changes and make them immediately or it will be too late to stop climate changes which, in the view of many, may literally cause the extinction of humanity.

Many human actions have contributed to the ecological crisis, and we need to note and deal with some of these besides carbon emissions which is usually cited as the cause. For a few instances, livestock farming is crucial because animals being raised for slaughter, especially cows, emit large amounts of methane which is more destructive of the atmosphere than carbon and pesticides kill species such as bees which are crucial to human actions such as farming and pesticide can also pollute our food. The loss of bees has become so great that there are now companies that take beehives to farms so that they can pollinate crops, for instance fruit trees which need this to produce fruit, and they pollute all the way from one farm to the next whereas bees do not. This just begins to indicate that we need a wide range of changes in order to get the ecological crisis under control.

But because of its widespread influence on the environment and now finally at least somewhat in the public awareness as well, I will focus on carbon emission in the following discussion. However, carbon has always been produced by humans but for a long time that was primarily by burning wood and had a minimal effect. But as human knowledge and economies grew a number of men began experimenting with the production and use of steam. An early steam powered machine was patented in Spain in 1698 and the first steam engine produced by Thomas Newcomen in 1712. But it was the work of James Watt and Matthew Boulton that led to the steam engine's widespread use and fostered the industrial revolution. Their creation was perfected by James Watt and is known as the Watt steam engine. Watt patented it in 1769.

Scientific information about carbon emissions, one major cause of climate change, has been developing for quite some time and has become increasingly available. I'm going to draw on Bill McKibben's *The Global Warming Reader A Century of Writing About Climate Change* (2012) for an overview of some of the

science. The information he provides is important and extensive, but I will only be using a small segment of it.

The Swedish scientist Svante Arrhenius (19 – 29) was the first to propose, in 1896, the theory that burning fossil fuels would raise the planet's temperature. McKibben quotes him that, “evaporating our coal mines into the air” would eventually raise the earth's temperature by five or six degrees Celsius” (18). But he did not realize how rapidly the use of coal by industry would grow and so concluded that it would take three thousand years to do so.

It was not until 1938 when G.S. Callendar (33 – 37) collected world-wide temperature records and concluded that the earth's temperature was rising and that this was due to the increasing carbon emission. This came to be known as the greenhouse effect. He, like Arrhenius, was optimistic about this saying that it was “likely to prove beneficial to mankind in several ways” (37) specifically in supporting agriculture and, a particular concern of his, “the return of deadly glaciers should be delayed indefinitely” (37).

McKibben calls the 1957 paper by Roger Revelle and Hans E Suess (39 – 42) “the opening volley of the climate wars” (38). Their research refuted the view that the oceans would absorb any excess carbon produced as they were already saturated. They report that “The increase of atmospheric CO₂ from this cause is at present small but it may become significant during the future decades if industrial fuel combustion continues to rise exponentially” (39). They noted that from the middle of the nineteenth century “considerable amounts of carbon dioxide” were added to the atmosphere and continued that as of their writing carbon combustion in the atmosphere is increasing by “nearly 0.4 percent” annually and predict that also “[b]y 1960 the total amount added during the past century will be more than fifteen percent” (40). They also note that the UN predicts that during the first decade of the twenty-first century fossil-fuel combustion could produce up to 20% of the amount in the air when they were writing. “Thus, human beings are now carrying out a large scale geophysical experiment of a kind that could have not happened in the past nor be reproduced in the future” (41). They conclude that this research “if adequately documented, may yield a far-reaching insight into the processes determining weather and climate” (42). We should also note the importance of the saturation of the oceans in addition to the facts that they are now being over fished, used as a garbage dump and suffering the loss of species that we don't even know of or understand. The significance of this is that science holds that oceans emit 70 – 90% of our oxygen and we're killing them..

Thus, published research was being carried out from 1896 to 1957. The research carried out over these 61 years documented the consequences of our increasing carbon production through the use particularly of coal. But it was very slow to come to the attention of the public although it did so in some surprising ways.

For instance, Marvin Gaye released his soul album “What’s Going On” 50 years ago, on May 21, 1971. In this amazing, deeply felt and well-informed work, that *Rolling Stone* named the number 1 album of all time in 2020, Marvin Gaye sings of the crises of his time, and which are still with us. They range from racial discrimination, to being sent to war to die, to drug abuse, to who will save the children, to poverty, to religious faith and much else including the environment. He sang in Mercy Mercy Me (The Ecology), “Ah, things ain’t what they used to be. . .Where did all the blue skies go, Poison is the wind that blows from the north and south and east . . .Oil wasted on the ocean and upon our seas, fish full of mercury. . . Radiation under ground and in the , animals and birds who live near by are dying . . .What about this overcrowded land, How much more abuse from man can she stand. . . My sweet Lord[.]” This truncated version shows a degree of understanding and care that was rare for that time and, I would propose, not very much more widely shared today.

Not long after, in 1977, Jimmy Carter was elected the 39th President of the United States. He was a farmer and so was well aware of the environment and that, no doubt, informed his decision to put solar panels on the White House. When the next President, Ronald Reagan, was elected he had them taken off and they have not been put back since. Attempts to deal with the environmental crisis were dismissed in favor of big business by Donald Trump, most notably his decision to pull out of the Paris Agreement on climate although President Biden re-entered the Accord on his first day in office. Throughout this time the world has largely continued on its path to ruined with everything from fracking to razing forests to grow big macs. This morning (Sept. 23, 2021) I heard Boris Johnson say we are acting like a lot of children, and we need to grow up. I wonder if anyone was listening.

Citations:

Gaye, Marvin.1971. *What’s Going On*. Detroit: Tamla, Motown Records.

McKibben, Bill. (Edit. And Intro.) 2012. *The Global Warming Reader : A Century of Writing About Climate Change*. New York: Penguin Books.

United Nations Climate Reports. <https://www.un.org/en/climatechange/reports>
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