

Under a white sky: the nature of the future

Elizabeth Kolbert, 2021

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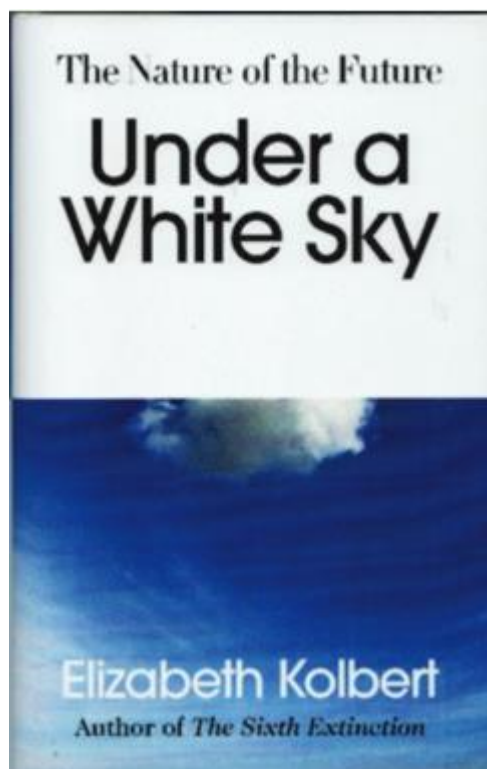
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In her concluding chapter, Elizabeth Kolbert explains that this book is about people trying to solve problems created by people trying to solve problems. This is a succinct summary of her detailed accounts of the error-strewn efforts humankind has made to dominate nature. (Spoiler alert: it is an impossible task).

First, there is the barely credible story of interventions in the Mississippi catchment. In the early 20th century, Chicago's Sanitary and Ship Canal was built to reverse the flow of the Chicago River to stop sewage and offal discharge into Lake Michigan and instead take it down the Mississippi to the Gulf of Mexico. Problems arose when Asian carp, imported to control aquatic weeds and sewage algae, were now given an open door to destroy ecosystems in the Great Lakes catchment. Contract killing of the fish has not stopped the threat and so the canal has been electrified to deter migration. As this will not be enough, new plans involve bubble- and anti-fish noise- barriers. You quickly get a sense of a never-ending series of human interventions designed to avert the disastrous consequences of earlier human interventions at the cost of many billions of dollars, and almost certainly doomed to failure.

The story continues on the Mississippi delta where land is fast disappearing as a result of the civil engineering designed to control the river and keep Louisiana dry. Building levees and pumping water lead to more subsidence with New Orleans now in a bowl below sea level, and so requiring higher levees and more pumping. The devastation wreaked by hurricane Katrina in 2005 should have alerted us to the evident truth that we are doing something wrong.

The book takes the reader on a dramatic journey through other thought-provoking examples of our follies producing greater follies. The Devils Hole pupfish in Nevada only exists in one place which was threatened by over- extraction of water and radioactive incursion (as a result of nuclear bomb testing). Such was the danger that a whole new replica Devils Hole had to be constructed and given round-the -clock care to sustain it. Corals will only survive ocean acidification and warming if they are 'helped' by assisted evolution programmes to provide heat-tolerant algal symbiont strains. The cane toad story will be familiar to many. A South American



species, 102 cane toads were introduced into Australia in 1935 to control beetle larvae which were plaguing the sugar-cane crop. They are poisonous, eat anything and are devastating native fauna; also, they are spreading at 30 miles a year and have evolved longer legs to move even faster. The solution? Genetic modification to induce gene drive inheritance and so produce non-toxic toads. The physical slaughter will also continue. Humans now presume to be able to drive evolution to the extent that Stewart Brand (editor of the Whole Earth Catalog) claims that: “We are as gods and have to get good at it”. Ed (EO) Wilson responded by observing that: “We are not as gods. We are not yet sentient or intelligent enough to be much of anything”. Another view is that: “We are as gods, but have failed to get good at it”.

When James Watt started the Industrial Revolution with his revolutionary steam engine in 1776, humans were emitting 15 million tonnes of CO₂ annually, today that figure is over 40 billion and we are 1.1°C warmer. As we continue to increase our output, we are locked into the need for negative emissions to pull CO₂ out of the air. All the 1.5°C increase scenarios produced after the 2015 Paris accord rely on negative emissions. Kolbert summarises some of the, sometimes outlandish, ideas being considered to capture carbon while continuing to consume energy and increase our population numbers.

In 1815, the Mount Tambora volcano in Indonesia threw enough particulate matter into the atmosphere to cool it sufficiently to induce frost in August in the USA. If a volcano can cool us, then humans can do it better and geoengineering is our next step. Seeding aerosols to reflect solar radiation seems to be something that could easily be achieved. However, this would require constant replenishment as particles return to earth. We would become addicted to the process and, if the process stopped for whatever reason, then the effect would be like opening a globe-sized oven door. While it continued, the particle injection would mean our skies would be changed from blue to white.

There is no question that we are heating up too rapidly and that we will probably need to employ all means to combat the impending instability: cut emissions, remove carbon and geoengineering. The problem is: “It’s the unintended consequences. You think you’re doing the right thing. From what you know of the natural world, it should work. But then you do it and it completely backfires and something else happens”.

Brian Sims

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