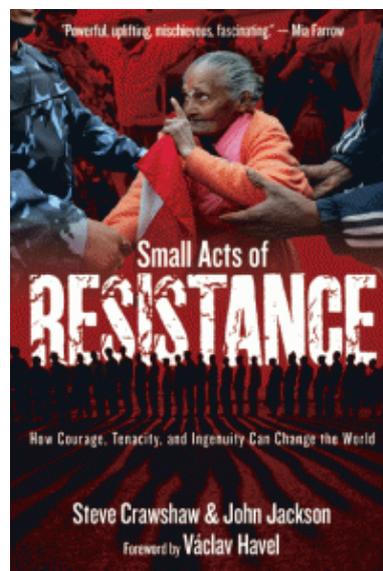




Small acts of resistance

I recently picked up [“Small Acts of Resistance”](#), a book by [Steve Crawshaw and John Jackson](#). This book is a collection of stories around the world about individuals, groups of people, and citizens fighting for change in their countries. As authors, Crawshaw and Jackson, admit “Small Acts of Resistance” is a bit of a misnomer. Some of these acts of resistance may be carried out by one or a few individuals, but their acts have resulted in large and cascading repercussions, some powerful enough to topple governments and dictators.



“Small acts of resistance,” by Steve Crawshaw and John Jackson, tells of the courage of normal people fighting for change in their countries

Consider some of the following “small” acts of resistance in some countries.

Resistance in Poland

In February 5, 1982, the Polish people in the town of Swidnik decided to boycott watching their TVs because they grew tired of the lies and government propaganda often propagated through their TV sets. But this wasn't your normal turn-off-your-TV boycott. Some the town folks went for a walkabout on the streets, bringing along their TVs in strollers and wheelbarrows. Some turned the TV so that the screens faced outward towards the window, sending a message that their TVs were broadcasting fictional messages to no one. Additionally, to show support for the banned [Solidarity movement](#), the people in Warsaw, capital city of Poland, flashed their house and apartment lights on and off at pre-determined times of the day. As some witnesses report, the whole city of Warsaw would lite up like Christmas trees, much to the fury of the government.

Resistance in Uruguay

The military junta that ruled Uruguay from 1973 to 1985 was very much hated (and feared) by the people. One of the consequences was the Uruguayans' lack of passion in singing their national anthem. It can be hard to show nationalistic passion when one's country is ruled by a corrupt and violent military junta. However, to indirectly show support and unity against the junta, Uruguayan football fans would first sing their national anthem with indifference before the start of any football match. However, when the anthem declares "*Tiranos temblad!*" (or "May tyrants tremble!"), the Uruguayan football fans would shout in unison, "*Tiranos temblad!*" and waved their flags. After that brief and emotive roar, the fans would resume back to their disinterest tone until the end of the long anthem.



Uruguay won the 2011 Copa America football cup. But in the 1970s and 1980s, Uruguay football fans showed their united hatred for their ruling military junta by singing the country's national anthem, prior to football games, in a "special" way. (photo by Getty Images)

Resistance in Peru

In May 2000, the people of Peru performed a curious flag washing activity. They would gather every Friday from noon to three in the afternoon in front of Plaza Mayor in Lima (Peru's capital city) and wash Peru's red-and-white flag. This weekly flag washing activity was a message that Peru's flag had become soiled due to the corrupt President Fujimori, who, in 2009, was eventually jailed for 25 years for numerous killings under his rule.



Peruvians performing their weekly flag washing as a sign of protest of the corrupt and brutal President

Fujimori (photo
from img.timeinc.net)

Resistance in Iran

Taxi drivers in Iran show their disdain for the current Islamic Iranian government by refusing to pick up mullahs (male religious leaders or teachers). So, if you a turbaned man of God in Iran, one thing is for sure: forget about getting a cab ride in Tehran - because they hate you.

Resistance in Myanmar

In Myanmar (Burma), the military junta directed that the citizens dress conservatively during the country's annual water festival in 2009. Some youths, however, thought differently as defiance against the hated junta. The result? See for yourself below.



“Dress conservatively,” the military junta of Myanmar directs the people. Some Myanmarrese youths, however, thought otherwise (photo from www.smallactsofresistance.com)

More resistance in Myanmar

In Myanmar, the one-kyat note remains banned even until today. The back of the note is a drawing of the much revered [General Aung San](#), the founder of the Burmese army. The note designer, however, deliberately soften the general's face

to look more like his daughter: [Aung San Suu Kyi](#), the well known and much feared opposition voice in Myanmar. By the time the military junta discovered the similarities of appearance to Aung San Suu Kyi, it was too late. The one-kyat notes had already been printed and widely circulated, much to the secret pleasure of the Myanmar people and to much of the embarrassment of the ruling junta. The note, however, was eventually banned. It is no surprise then to learn that the Myanmar's one-kyat note is also called the "democracy note" by some people.



The banned one-kyat note had been subversively modified so that General Aung San's face features appeared softer and made to look more like his famous daughter, Aung San Suu Kyi (photo from banknotes.com)

Resistance in the Philippines

In Philippines in 1986, thirty female computer technicians refused to comply when they were asked to omit election vote numbers favoring the opposition. They walked out of the counting hall for a "toilet and rest break" and never returned. After a hasty press conference, they went into hiding. This was the start of the very well known "[People Power Revolution](#)" against [President Ferdinand Marcos](#) who was subsequently ousted after 25 years in power and replaced by the people's choice, [Corazon Aquino](#).



People's choice, Corazon Aquino, overthrows the brutal and corrupt President Ferdinand Marcos through People Power in 1986 (photo from img.timeinc.net)

Resistance in Sudan

In 2002, the women of southern Sudan, tired after endless wars, decided to withhold sex from their partners. Comical it may first appear, this “sexual abandoning” was a powerful drive to force “their men” into working for peace and not for war – and the women’s’ efforts worked. In 2005, a peace agreement was signed between the warring north and south of Sudan. Recently, on July 9, 2011 (same date as Bersih’s rally), the south of Sudan achieved sovereignty and independence, and this country is now known as The Republic of South Sudan.

Resistance in the Soviet Union

In August 20, 1991, over a hundred thousand people gathered in central Moscow to oppose the ruling Politburo overthrow of [Mikhail Gorbachev](#), the reformist leader and General Secretary of the Politburo. Facing tanks and the army, these people must have feared for their lives. Although three people died, the coup lasted less than three days, defeated not by violence or by the might of another army but defeated by peaceful and normal protesters who were ready to risk their lives against bullets and tanks.

Resistance in East Germany

In the summer and autumn of 1989 in Leipzig town, East Germany, the number of

protesters participating in Monday weekly street marches grew larger by the week. In an attempt to quash these protest marches once and for all, the East German authorities gave a final warning that these marches would no longer be tolerated and be firmly dealt with, even with lethal violence. On October 9, 1989, seventy thousand people defied government warnings of lethal violence and took to the streets. Reports said that earlier that day live ammunitions had already been distributed among the security forces, but instead of a historic bloodbath, nothing happened. The authorities caved in because they were shocked by the people's lack of fear. No shots had been fired, and after a month, the East German regime collapsed and made way for Germany's unification.



On October 9, 1989, 70,000 people defied government's threats of lethal violence and marched in unison on the streets of Leipzig, East Germany. The East Germany regime later collapsed a month after this event. (photo from alannothenagle.files.wordpress.com)

There are many more such stories in the book "Small Acts of Resistance" - stories about individuals who would risk their lives to fight for change and to correct the many wrongs.

However, I noticed that stories in "Small Acts of Resistance" carry a common theme. They are stories about individuals and collective resistance against highly corrupt and oppressive authorities and governments, where voices of dissent by

the people are barely, if at all, tolerated. People with opposing views are often severely punished, even by imprisonment or death.

Note: this article is a modification of my own blog article I wrote way back in 2011. I am republishing it to give this book more of its due.

Updated (7 June 2019): Minor corrections to the article.



Engineering the climate: Ridiculous movie Geostorm has some important questions for us

Imagine a future where we are able to control the climate by using some very sophisticated technology involving an array of satellites orbiting Earth. With these satellites we can control the weather, overcoming detrimental climate change. Storms, hurricanes, and harsh winters are all but a distant memory of the “bad old days of not knowing any better”. Such is the premise of the recent 2017 Hollywood movie [Geostorm](#).



The 2017 Hollywood movie *Geostorm* is ridiculous but raises interesting questions especially relevant today: the role, risks, and effectiveness of geoengineering in climate change mitigation.

But sadly, instead of science, what we get from *Geostorm* is an apocalypse porn. The movie over-indulges style over substance, obsessing on the pandemonium special effects rather than on the science. This is a shame and missed opportunity because *Geostorm* addresses some very pertinent issues today: climate change and the role of *geoengineering*.

Geoengineering is the large scale and deliberate modification of Earth's climate, primarily to mitigate climate change. But geoengineering is controversial because it is dangerous. And it is dangerous because we cannot predict its outcome or fully control it. Climate science is complex. Climate is the net outcome of many factors that interact with one another in a nonlinear manner. Alter one or more climate factors, and the whole climate system goes out of sync in a manner that can be difficult to predict. Moreover, the effects of geoengineering may not be reversible and may even exacerbate the problem.

No wonder then that in 2010, 193 countries during the [UN Convention on Biodiversity in Japan](#) signed to [outlaw geoengineering projects](#), permitting only small scale scientific research studies.

The world is slow to respond to climate change mitigation. Our collective efforts are still far short of what is needed to correct the imbalance in Earth's energy budget. The world appears to be warming unrelentingly and could even surpass the 2 degrees Celsius in warming, the tipping point where a warmer world becomes a permanent, irreparable state.

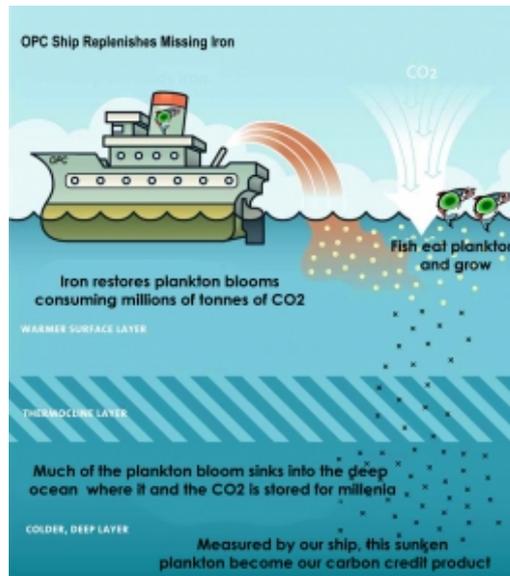
"Climate change is happening faster than our ability to respond," observed astrophysicist [Neil deGrasse Tyson](#). Global greenhouse gas (GHG) emissions, in particular for methane (CH₄) and nitrous oxide (N₂O), have increased steadily every year, with an overall increase of 91% from 1970 to 2012. Only carbon dioxide (CO₂) emissions have surprisingly [stalled for three years in the row in 2016](#). This could be due to efforts of Russia, China, Japan, the US and the EU in

reducing or stabilizing their CO₂ emissions.

The effectiveness of geoengineering strategies have so far not been promising. A [recent study in Nature Scientific Report](#) estimated that one popular geoengineering strategy, the ocean fertilization method, if deployed, could alter global rainfall patterns and affect water resources. The idea of ocean fertilization is simple: pump iron into the ocean and because iron stimulates the growth of plankton, the plankton would in turn absorb greater amounts of CO₂; thus; “sucking out” more CO₂ from the atmosphere.

But [twelve ocean fertilization studies by the European Iron Fertilization Experiment \(EIFEX\)](#) in 2004 have shown mixed results. Some trials showed that sequestration of CO₂ was indeed increased by ocean fertilization but others none. In some cases, adding iron into the ocean failed to stimulate plankton growth. Iron, as it turns out, is only one of the many factors that stimulates plankton growth in the oceans. But even if ocean fertilization was to work perfectly, [Prof. Victor Smetacek](#) of [The Alfred-Wegener-Institute](#), predicted that ocean fertilization would take up only one quarter of the extra CO₂ deposited by human activities.

Solar geoengineering strategies suffer the same fate. Releasing sulfur-based aerosols into the stratosphere would scatter and reflect incoming solar radiation; thus, reducing the amount of solar radiation reaching the ground, even by as much as 20%. Likewise is the use of a giant space mirror (or many small space mirrors) and parking these mirrors in the sky or in space to reflect a portion of the incoming solar radiation. Both these strategies work by reducing the amount of solar radiation reaching the ground; thus, resulting in cooler air temperatures.



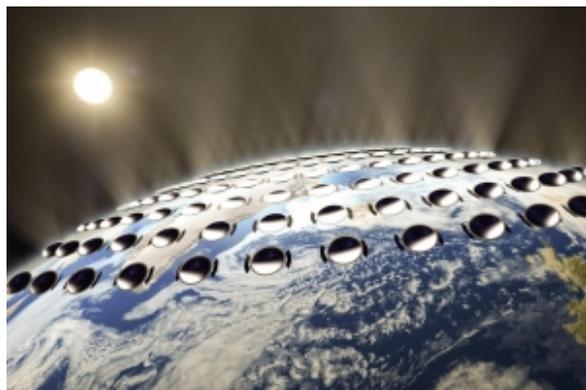
Ocean fertilization: Introducing iron into the ocean encourages plankton growth, and in turn, the plankton absorb CO₂; thus, removing CO₂ from the atmosphere and storing the carbon in the ocean (photo: www.oceanpastures.com).



Injection of aerosol into the stratosphere helps to reflect solar radiation (much like volcanic ash); thus, cooling Earth (photo: large.stanford.edu).

But the major problem with these aerosols in the stratosphere is they form sulfuric acid which eats ozone, and the use of space mirrors is prohibitively

expensive and requires very advanced technology that we do not have today. Moreover, these mirrors could cause uneven distribution of solar radiation and unintended cooling on Earth. A country could get lesser solar radiation, upsetting the energy balance, and altering rainfall patterns. The net outcome may be a negative to the country's agriculture crop yields. The consequences could be far reaching: causing economic crisis or political unrest in countries whose climate have been unpredictably affected by these space reflectors.



Installing space mirrors over Earth to reflect solar radiation (photo from www.scmp.com).

Another concern of geoengineering is it addresses only the symptoms but not the root causes of climate change. Solar geoengineering, for instance, reduces the amount of solar radiation reaching the ground but it does nothing to reduce the amount of CO₂ released by human activities. Geoengineering risks being used as a “band-aid” solution to climate change and an excuse to continue with our business-as-usual polluting practices.

At the end, we need to realize that there is no all-in-one solution, no magic bullet in mitigating climate change. Geoengineering is only one option. But even then, [Prof. Frank Keutsch of Harvard University, Cambridge, MA](#) realistically puts geoengineering in its place: “Geoengineering is like taking painkillers. When things are really bad, painkillers can help but they don’t address the cause of a disease and they may cause more harm than good. We really don’t know the effects of geoengineering, but that is why we’re doing this research.”

Research on geoengineering methods needs to continue and expand to determine if they can be safely and reliably deployed. [David Keith of Harvard University](#),

[Cambridge, MA](#) and his associates, for instance, have developed [aerosols that are made of calcite](#) that are effective to reflect solar radiation but without the side effect of sulfuric acid formation which would destroy the ozone. This is a step in the right direction, but ultimately, the most important strategy against climate change is not in geoengineering but in reducing GHG emissions from human activities.