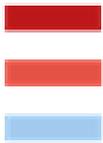


Copyright © Matthew Pye 2022

CLIMATE
ACADEMY

NEXT
LEVEL
CLIMATE
THINKING
AND
ACTION

The Teacher's Guide

CLIMAT 
ACADE  **MY**

#jingle#

Episode One

The Climate

Finding the right seat

2011 – The Lecture Room

I wasn't expecting to have my brain rewired.

It was a Tuesday. The sort of Tuesday that happens every week.

It was an evening talk on Sustainable Development.

When I signed up for a lecture on the environment, it seemed like one of the safest things I could have done on an empty Tuesday evening in February.



I was just sat there in a normal chair, in a normal kind of lecture room. It wasn't a big event. There was no sophisticated lighting, nor imposing music. I had not been softened up by a series of freaky or manipulative YouTube videos in the days before. It was just Michael and the mic.

The talk was given by **Michael Wadleigh**, Oscar Winner, 'Woodstock' (1970). Pictured here giving a talk at the European School Brussels II, captured by Climate Academy photographer **Frederik Klanberg** (graduated 2017) in a moment remarkably similar to Plato's pose in "The School of Athens" by Raphael.

But.

Sometimes the truth just hits you.

One-by-one, the wires in my brain were pulled out of their normal sockets, like feathers plucked and popped from the body of a turkey.

I was rather startled.

It is not every Tuesday that you get your world-view pulled apart.

Before that lecture, I had held a concern about green issues, like any reasonable and sensitive person would. However, this was the first time in my life that I had seen the scientific data on climate change up close. It was the first time I had seen the true proportions of the problem.

What was outlined in that lecture, with remarkable clarity, was the straightforward data and the key principles behind our crisis of Sustainability. The graphs from so many diverse fields of scientific research were so unambiguous in their central message. What was happening beyond my senses was something of truly epic dimensions. Human beings were pushing the equilibriums of the natural world out of deeply entrenched norms that have been in place for millions of years. This surge, better known as the 'Great Acceleration', had started to build momentum in the 1950s.

Yet, the really difficult truth to grasp about this incursion into the biosphere was that the rate of *acceleration* was still *increasing*. Things were getting worse, faster. Despite all the rise in green awareness and green initiatives, the lines of data were not even stabilising. Greenhouse gas concentrations were (and 10 years later they still are) increasing year on year, and biodiversity destruction was continuing to advance; all driven by booming resource extractions from the Earth's crust.

It was a shock to the system that did not require any stage fog, pyrotechnics or a power ballad to drive home the point.

There was no question that we were catapulting ourselves into an unrecognisable biosphere that would be extremely hostile to our economic and social projects. It was clear, human civilization was heading for a collapse if there was not rapid and radical transformation of the status quo.

jingle

"Finding the Right Seat". Episode One, The Climate Academy

I was sat there with the smoke slowly leaking out of my ears. Then a second shock hit me.

How had I missed knowing about this simple reality? I was humbled by every slide; and perhaps the embarrassment was especially acute because I was a teacher. I was supposed to be educated. I could not wrap my head around the fact that I had been almost entirely ignorant of it. Climate change and Sustainability were so familiar to me, but not like this.

My brain was toast.

It would be a shock to modern Europeans to jump back in time to the 18th century and observe the low levels of numeracy and literacy held by the general public. But no time machine was needed here. I was a complicit part of a civilization that considered itself advanced, educated, democratically informed and open – and yet, I had only stumbled upon this existential information by accident.

I had not put myself into a room to hear it before. I had not chosen the right books or not had the right conversations. Or maybe I had been too distracted to see it properly? Maybe I had been too casual or too confident in my own view of things? Up to that point, maybe it was easy to think that green issues were for a virtuous fringe to care about, and that would hopefully be enough.

For whatever reason, I had not found the right seat to sit in, to get a clear view of things.

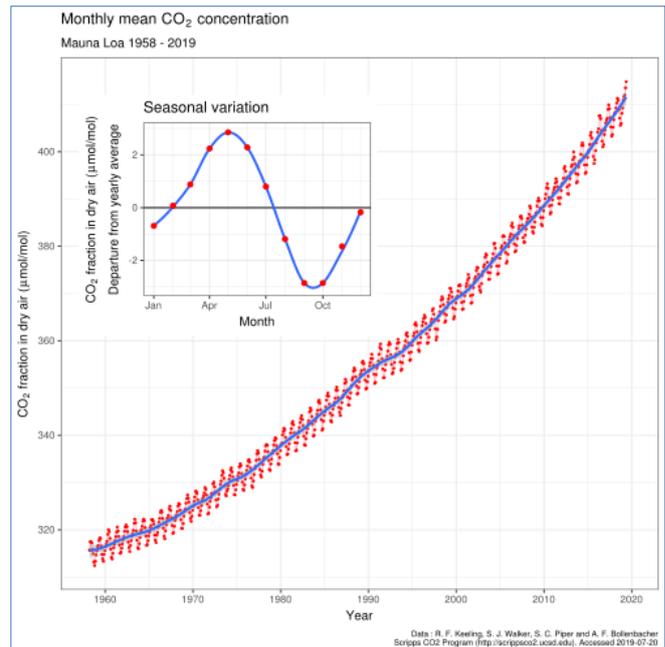
===== student reflections on when they found out =====



“The science is clear. Without rapid cuts in CO₂ and other greenhouse gases, climate change will have increasingly destructive and irreversible impacts on life on Earth. The window of opportunity for action is almost closed.”

“The last time the Earth experienced a comparable concentration of CO₂ was 3-5 million years ago, when the temperature was 2-3°C warmer and sea level was 10-20 meters higher than now.”

Former Secretary-General Petteri Taalas, WMO.
(2017) ([read by another voice](#))



How could modern Europeans be so well educated, and yet so uneducated at the same time?

In 2011 I had been in Brussels for a few years, as a school-teacher of Philosophy. It is a subject that involves a lot of abstraction, and so I was used to the exercise of trying to find metaphors or images to make things more tangible for my students.

However, this experience presented a major challenge because of a very peculiar feature of climate change awareness. Namely: so many details of the problem are known, yet the core truths are missed. The climate crisis can dominate news headlines, but the main reality somehow slips past. There are so many students in schools who are fatigued from hearing about the crisis, despite it being the most sensational thing that is happening.

Indeed, schools are a mirror of society.

We seem to occupy an odd parallel universe in which the truth is known but unknown, a world in which we are committed to everything 'green', yet don't seem to be able to get a grip on anything. In a darker moment of imagination, the search for a metaphor led my mind towards the zombies. The living dead. Aware but unaware; mobile but mindless. However, whilst this spooky image does some justice to the zombie walk we seem to be on as we motor towards various tipping points, it simply does not do any justice at all to the life, energy and commitment that has been poured into the crisis by so many teachers and students.

I spent the next weeks grappling with everything, from guilt to graphs, and from anger to awe. In the end I found a metaphor that captured the situation. It was an image that I often use when teaching – for lots of different reasons. The metaphor is actually a piece of art, that I stumbled across (again by chance) about 20 years earlier.

This short story will help explain the situation I found myself in after that Tuesday. And like all powerful art, it can return to you at many different moments in the future.

#jingle

1991 – The Upper Room

Birdsong?

In 1991 I was visiting my brother who was studying Maths at Durham University. To explore, I took a stroll along the side of the river Wear that curls around the city and its remarkable Castle and Cathedral.



To my left, a small clearing in the wood appeared. In the space, were several grand upright timbers, marked out in a roughly rectangular formation.

It looked like an unfinished children’s play area. It was just missing the ropes between the logs... for those with the right level of enthusiasm to straddle their way from post to post. There was a plaque in front of the clearing. However, the plaque was not a health and safety notice from Durham council about the most appropriate ages for such a play area, warnings about depositing dog dung, or various legal disclaimers.

It just stated, rather unexpectedly, “The Upper Room”.



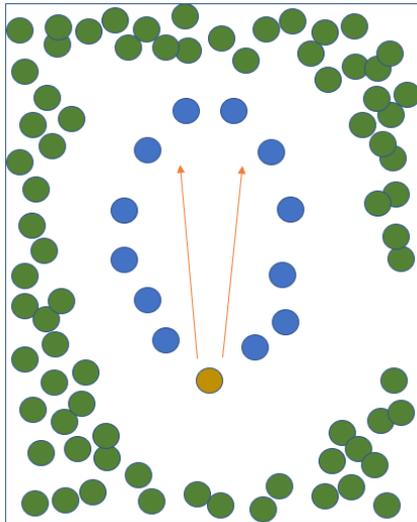
« The Upper Room », from the outside.

On closer inspection, walking around the bald trunks of those Dutch Elm trees, some surprising details became clear. On most of the trunks, far above eye level, someone had chiseled out segments of stone window arches. On a few, at knee height, someone had sculpted out a few pots. And on others, at waist height, there were shapes that looked like bits of plates and bowls. It was all a bit random.

There was one wider upright timber with fewer detailed markings on it. This large trunk stood at one slightly narrower end of the formation. It had an inviting seat cut into it. So I accepted the invitation.

Suddenly, I found myself in the middle of The Last Supper. Now, in front of me, the other 12 trees all lined up in my view and formed a startling wide-screen image. I was looking into a room where each tree and every detail had become part of a 3D, large scale jigsaw puzzle. The space had been transformed, and I was sat in “The Upper Room”.

I had found the right seat.



« The Upper Room »,
from the inside.

Brief #birdsong#

For those unfamiliar with the biblical narrative, it was here that Jesus shared his final meal with his 12 disciples - a last moment together, before his arrest, trial and ritual self-sacrifice. It was in this Upper Room that the world view of the 12 disciples started to unravel in dramatic style, as Jesus tried to explain his fate in different symbols. He understood himself to be the embodiment and fulfilment of Jewish history. No more slaughtered lambs or bulls, no more burnt pigeons. He was IT. His mutilation and death would be the ultimate sacrificial atonement. Everything in the universe was converging on him, and it was all approaching fast.

He predicted that everything would soon turn dark and get very weird before it got better. He addressed them on the eve of the Passover, knowing that the angel of death would soon pass over again. In fact, as he broke open the bread and poured the wine, the drama reached an incredulous peak. Jesus explained that in the new world order (that was just on the other side of the festival weekend) they would soon be regularly eating his flesh and drinking his blood; although he did reassure them that this would happen in a joyful reenactment of this moment.

This Passover really was going to be, “a night like no other”.¹ The different biblical accounts of this Last Supper describe the bemusement of those around the table. Little did they know that they were involved in a short narrative segment of history that would be replayed countless times into the future. The spikes that would soon pin this Jew to a cross would prove to be the pivot around which so much world history would revolve.

Just in case you are feeling a bit uncomfortable, that is good. In fact, to get inside this work of art by **Colin Wilbourn (“The Upper Room”, 1998)** it actually helps a lot if the language and plotlines of the gospel narratives sound very alien to the modern ear.

From a distance, the details of any religion look truly odd, haphazard, banal even. The beliefs and customs of a religious community make little sense from the outside. How curious it can be, maddening even, to observe obscure religious rituals and practices. What on earth is going on in the heart and mind of the believer involved? With a bit of effort, maybe on a holiday visit to a temple, a museum, or maybe out of general curiosity, we can wander around on the outside of a religion, examining the details. We can try and make rational sense of it by looking at the facts, the context, and the claims made. They can appear well crafted and considered. But as an observer, from the outside, the whole thing will always lack synergy.

By contrast, from the inside, it all makes powerful sense.

All the fragmentary, often contradictory aspects of life form part of a coherent, wider picture of reality. Religions provide a clear frame for understanding the world. Finding your place in a religion can be a profoundly moving experience. This is especially true if it is a sudden moment of enlightenment, where everything just unexpectedly clicks into place. Such moments do not have to be religious of course. The starry night, a deep sunset, a moment of laughter in a group where you suddenly notice that you belong, a book, or even sometimes just the wandering mind on a bus that finds a place of understanding.

For myself, a few years after this moment in Durham, I was on my way back to my own university room from the cinema, with a student from France. For reasons that cannot be easily identified, I had found myself enchanted and drawn to this Erasmus students’ company. I felt that there was a natural edge and energy between us; so much did not need to be said, and yet there was so much to talk about. The film had been particularly moving. On the walk home, all the hesitant doubts and anxieties that she shared the same story line as I did about what was going on were suddenly and wonderfully collapsed by the moment my future wife gripped my outheld hand.

Of course, in the shadow of the historic Durham Cathedral this sculpture has a clear religious symbolism. But good art triggers many different levels of revelation. Good art can provoke a whole range of thoughts. As I sat in the seat of that tree, it actually pushed me to reflect on how puzzling, and sometimes elusive, it is to find meaning in more worldly things like love and community. Why does this person move us and not another? Why this group? Why that belief?

These symbolic moments can also happen reverse. A loss of meaning can be abrupt, usually for tragic reasons. Whatever the cause, the bright stars that make up the main constellations of our life, can fade or suddenly disappear. The map of meaning that we used to guide our decisions had made

¹ Every Jewish Seder meal starts with the question from Haggadah, posed by the youngest child at the table, the *Ma Nishtana*, “Why is this night different from all other nights?”.

so much natural sense, but it can get confusing and fail us. Like in that clearing by the river, everything in the world can revert to looking like dead wood to us.

Just there. Arbitrary. Obsolete.

The search to find connections and shape in the events of our life can be deeply frustrating and desperate when everything appears so broken and disjointed. We are insatiable storytellers. It is one of the most wonderful and deepest marks of being a human being. At a gut level we want to be able to see or feel how everything fits together. It is a most basic human activity to search for a home, for somewhere to rest. Even if we do not admit it to ourselves, we all seek a seat from where everything can make settled sense.

By the end of 1991 the sculpture was withdrawn because the wood had rotted too much, but that was certainly not true for the ideas it provoked.

Twenty years later, after that talk on Sustainability in 2011, I was right back in that seat.

sound bites from former students # how life has suddenly been turned upside down.. flipped, opened up, collapsed, or a favourite optical illusion...

[Brief Birdsong? Transition to traffic noise?](#)

2011 - The Room in the Academy of Science

The common details of climate change had been familiar to me. Storms, coal mines, polar bears, rising temperature graphs, floods, deforestation, recycling, oil tankers and pipelines... but I now understood how it all fitted together, I got a proper perspective. I saw for the first time, the real depth of the problem. What happened in the short lecture was that I had jumped from just seeing lots of details about something, to an awareness of the *system*.

In the Belgian Royal Academy of Science, in that conference room, I had found the right seat to look at everything.

Take the global temperature rise as an example.

Looking at some particulars is informative: the increased intensity and frequency of hurricanes, the fate of the polar bears and the rise in the number and length of destructive heatwaves – they are all important details. But this is like noticing the details of the plates, jars and table-tops on the individual trunks of “The Upper Room”. They can catch the attention from a distance, but they are not what it is all about.

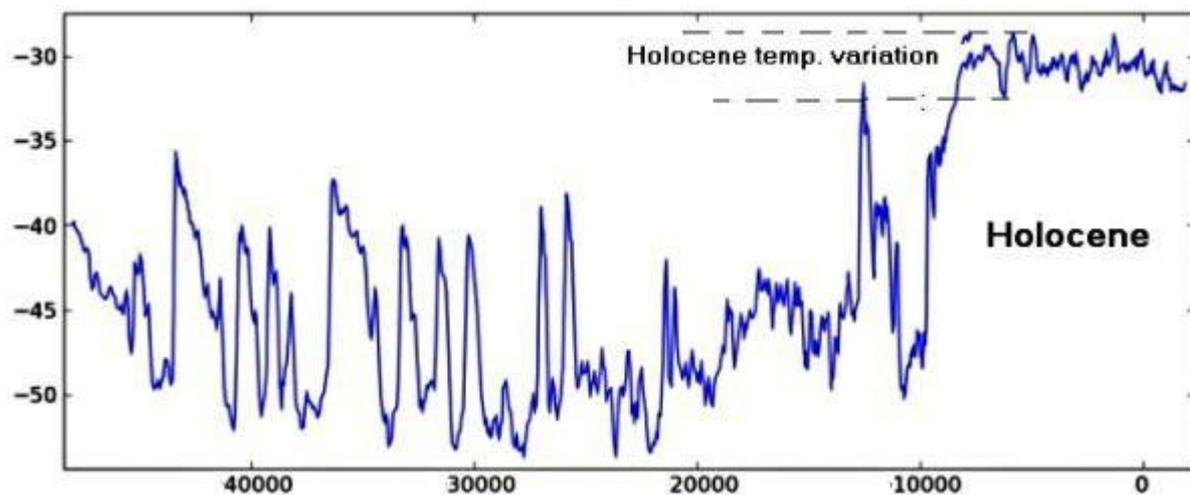
But climate change cannot be properly understood like this. These are only a few fragmentary pieces of the jigsaw. Global temperature rises must **first** be thought about as a **systemic** issue. It is only when we get the right vantage point with temperature that all the other details make any proper sense. Sitting in the right place to look at the data and the trends is fundamentally important.

Indeed, the details can be misleading. For example, taken from a British perspective, a temperature rise of 2°C does not sound like a big deal. In fact, on most days in Britain an extra 2°C would be very welcome indeed.

As Wilbourn's chiseled art illuminated, having the bigger picture is not just a helpful extra: *it really is what it is all about.*

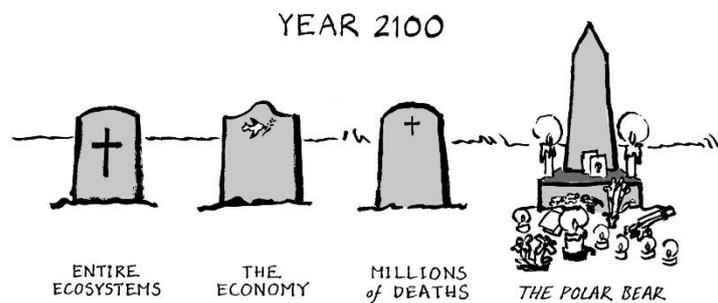
This is how we must first think about temperature rise. Anybody with a 2°C temperature rise in their own body (their own private biological system) will not feel good. It makes you fatigued and feverish, unable to function at a normal level. Sustained over a long period of time a 2°C rise even starts to break down the bodies' vital organs. A 4°C rise is a medical emergency, technically known as "hyperpyrexia". It requires immediate hospitalization to prevent a total collapse, and if untreated, death.

Everything we do, every ambition we have, is plugged in at the most basic level to the biological system of the planet. An ecosystem. This system has evolved over millions of years to function at a certain average temperature. Geologists inform us that the last 17,000 years (the 'Holocene') have been especially stable, favourable and benign. It is simply not possible to suddenly upend this equilibrium and throw this system into another gear and expect it to function as we would expect. Indeed, if we push it up towards 4°C we will cause a collapse.



At current speeds of emissions, we are only a dozen years or so away from locking in a 2°C rise, and we are on course to threaten 4°C by the end of the century.

The particular problems of temperature rise are of course serious. The plight of the polar bear, horrors of hurricane Katrina, all these kinds of details are indeed tragic. However, these symbols of climate change have to be pressed to their full symbolic conclusion. Otherwise we get trapped inside local, limited thinking and acting – and to be blunt, it is not good enough.



Cartoon by Carl Jonsson. Climate Academy graduate, 2016.

The humans alive in 2050 will not judge us by our small actions, they will judge our efforts by the overall result – that can be measured with the greatest accuracy as greenhouse gas concentrations in the atmosphere.

Just to press home the importance of this systemic understanding of temperature, a consideration of the wider systemic context of the plight of the polar bears is illuminating. The rapid heating of the arctic circle (that is far above the global average) will soon cause an ice-free summer at the North Pole. The subsequent loss of reflective white snow and ice will mean that the sun's thermal energy will be hungrily sucked into the dark arctic water at an exponentially faster rate. Ice with snow has an albedo ($\hat{I}\pm$) of 0.9 which is close to the maximum of 1 – so our polar regions are now bouncing monumental amounts of thermal energy back into space. Whereas an open ocean just loves to suck up the heat with an albedo of approximately 0.06.

Warmer seas, warmer, thicker atmosphere, and the ice rate loss accelerates... and a vicious feedback loop has kicked in. A powerful chain reaction that will have massive knock-on effects around the planet. Not least because the settled disc of cold arctic air that currently circles around the Arctic Circle (the Polar Vortex) will be become decentered and destabilized, and then it will eventually dissolve.

This is the climate equivalent of the front wheel of your bike falling off whilst going very fast.

Who knows where all your body parts are going to end up?

Polar bears, people, phytoplankton, pineapples, probiotics, pine trees, potatoes, peas, penguins, pumas and prawns, it is all part of the same biological system. Climate change is a *systemic emergency*. And if our thinking about climate is not systemic our responses to the threat will never be adequate. As educators we have a duty of care to bring our older students to this fuller understanding. Climate change requires systems thinking and systems change, as the proper context to any individual action.

No one who understands the depth of the cuts in emissions required would talk about recycling as if it were remotely significant. No one who understands that the root cause of our continually rising global emissions is excessive consumption, would think that Norway or Sweden is an environmentally friendly country. Whilst millions of individual people rightly try to reduce their carbon footprint, there are simply no laws in place at a system level to stop governments and

corporations from investing trillions of dollars in monumentally destructive infrastructure and business projects, as if there was no carbon limit at all.

We are wired to see details and particulars. We are primarily sensory animals. And far too many citizens have only ever been provided with a primary school level understanding of the problem.

We need the key science and we need powerful art to bring the details of our situation together. We urgently need to provide everyone with a proper view.

Conclusion

What is the Climate Academy?

The simplest answer is that it has three points:

1. Systemic understanding
2. Civic service
3. Social Entrepreneurship

==== student comments/personal reflections on these 4 things ====

Finally

I got my world view put into a blender for about 90 minutes on a Tuesday in 2011. I cannot say I enjoyed the experience, but without question it made me more fully human.

The systemic understanding developed by the Climate Academy might be a transformative starting point for students to suddenly see the crisis in its proper dimensions. However, this first point of the Academy is only a dot.

From dots lines are made. And from lines shapes are made.

This dot of systemic understanding needs to be extended into the civic space. It is no use understanding the crisis if nothing is done with that information.

And this line of civic service needs to gain its full shape through the skills of social entrepreneurship.

The 3 points of the Climate Academy

