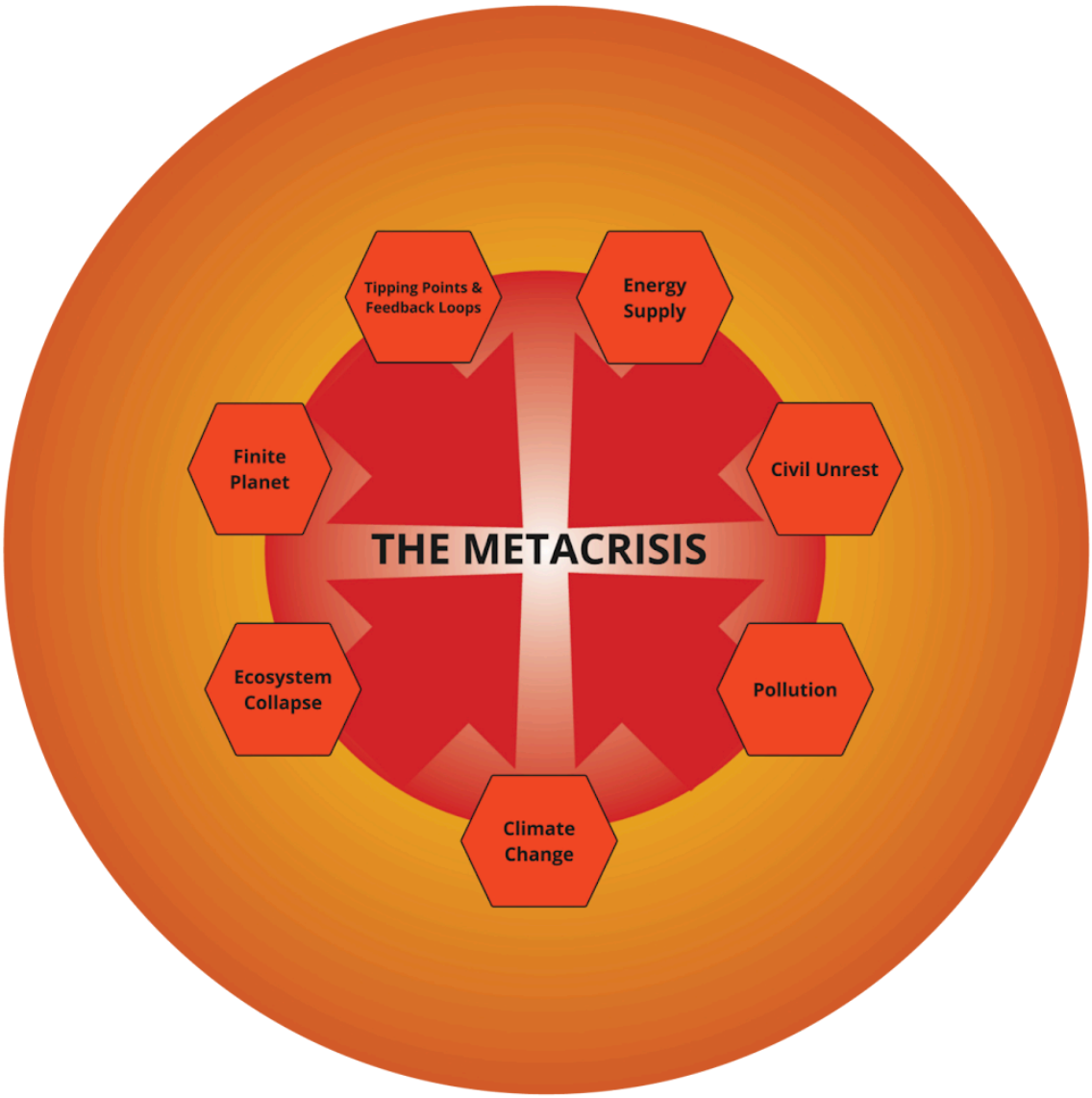

Tipping Points & Feedback Loops
Energy Supply
Finite Planet
Civil Unrest
THE METACRISIS
Ecosystem Collapse
Pollution
Climate Change

STAGE ONE: OUTLINING THE SITUATION AND THE FACTORS

State of the Planet

The average temperature of the past twelve months has been 1.6°C warmer than the pre-industrial levels (defined as being the average during 1850–1900). According to the IPCC, we are projected to hit 1.5°C by 2040, so we're already looking at being around fifteen years ahead of schedule.

There's a delay between the emissions and the effects that they cause, as much as 20 years, so potentially the warming that we are seeing today could be from emissions we produced as far back as 2005. At that point the CO_2 in the atmosphere was at 378ppm. Now we're about to hit 428ppm. Even if we slashed all emissions right now to zero, we will continue to warm, and it could still be several decades before we experience the full effect of 428ppm CO_2.

Enter global dimming. The pollution we emit both warms and simultaneously reflects energy from the sun, thanks to the reflective nature of particulates such as sulphur dioxide. In effect it is cooling us as well. This means that reducing forms of emissions and pollution can trigger an increase in warming, which is most likely why we are already seeing 1.6°C, as a result of the regulations which came into effect for shipping emissions in 2020.

Warming accelerates and crosses tipping points, which in turn accelerates warming, and we have a feedback loop. There are two major tipping points which we are likely to cross much sooner than expected, which will trigger other tipping points and feedback loops.

1) Blue Ocean Event: The arctic ice is reducing year upon year thanks to the warming atmosphere. Normally the ice absorbs energy from the sun, and reflects it back into space, buffering us from warming. At the point we no longer have ice in the arctic, we suddenly start getting a lot more heat and energy being absorbed into the oceans, land, and atmosphere. The same amount of energy it takes to melt ice, can raise the temperature of water to 85°C.
2) Atlantic Meridional Overturning Circulation: Increased water from a Blue Ocean Event, dilutes and disrupts the ocean currents that keep major weather patterns in circulation. This will result in stagnant weather, heat-domes sitting over land and sea, severe floods, drastic changes to the temperatures around the planet, and disruption to food supply.

Oceans have absorbed 90% of the CO_2 and heat between 1971 and 2018, which is the equivalent of 25 billion atomic bombs that were dropped on Hiroshima. When you think of warming by 1.5°C, that might not sound so bad, but remember that this is an *average* of the global temperature. The Arctic is warming at a rate four times faster than the rest of the planet, and in 2022, Antarctica measured a temperature 38.5°C warmer than the seasonal average.

Despite growth in renewable energy sources, our fossil fuel consumption continues to rise, as do our demands for energy. Jevons Paradox states that as technological progress increases the efficiency with which a resource is used, the falling cost results in increases in demand, rather than reduction. Basically renewable energy sources are not replacing fossil fuel sources, and the additional power supplied, is fuelling growth of our system.

With all of this in mind, let's examine the broader issues we face. Climate change is a huge part of the problem we face, but it is not the singular nor most important thing we face.

Not long after putting this document together, Earth experienced the four hottest days ever recorded, all in the space of a single week.

The Metacrisis

So what is the Metacrisis? It's a complex topic that encompasses climate change, geopolitical turmoil, declining infrastructure, energy supply, food and water sources, even psychology, and that's really only scratching the surface. The term is relatively interchangeable with a number of other names such as: Collapse, the Polycrisis, the Great Simplification, but ultimately it's all a matter of semantics, and the process/final destination itself, remains the same. Jonathan Rowson argues that the term Metacrisis is better suited than Polycrisis, as the latter doesn't capture elements such as consciousness, emotion or "meaning", whereas the term Metacrisis allows us to look both within and beyond.

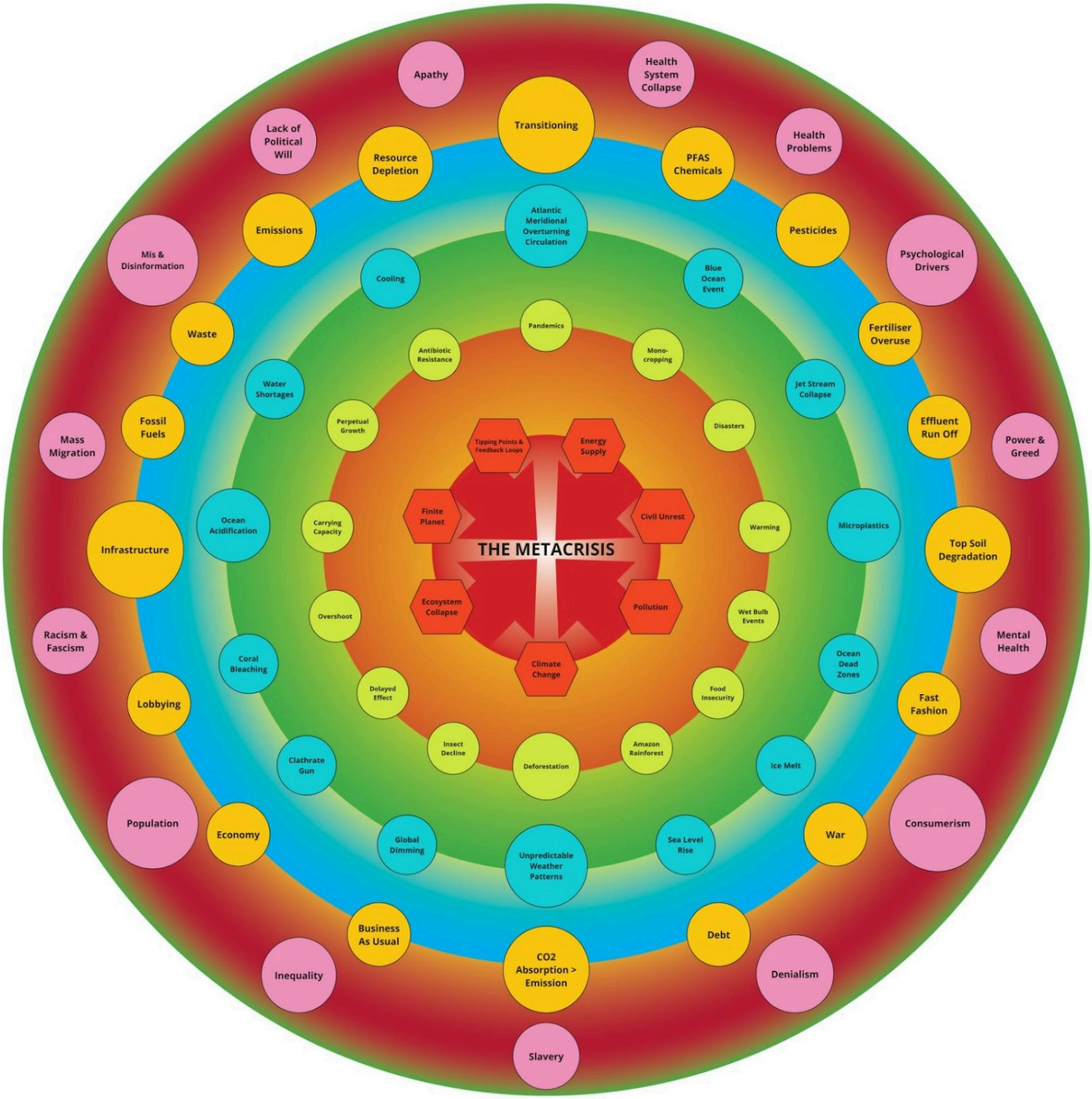
This is an attempt to find a way of visually representing some of the many and various factors that contribute to the Metacrisis. As a tool, this could be a good way to get people to start thinking about the interconnectedness of topics that they previously hadn't considered, and hopefully think more critically about the ramifications of everyday choices that we make, and what we could be doing better.

Working with a little over 60 headings, I have grouped them roughly into topical areas, although some factors were hard to pin to a central topic. After the first image which has the factors that jumped out at me as the *"core underlying problems"*, the expanding rings of content aren't in any particular sequence, as everything else is of relatively equal importance. These expanding rings are: *"environment"*, *"water/atmosphere"*, *"industry"*, and *"people"*. It's not an exhaustive list, but it does the job of collating information together. Some of the headings are in larger circles, simply so I could fit the text in.

In the last image I wanted to explore drawing the obvious connecting links between the factors. It looks a bit like spaghetti junction, but I think it does help convey the complexity of collapse. As hard as it is to capture the concept in conversation, it's equally hard in graphical form. You need some proper scale and perspective. Looking at all this, you should feel a degree of anxiety, which is perfectly healthy. Daniel Schmachtenberger puts it like this:

"If you aren't outraged, you aren't paying attention. If you aren't overwhelmed by the beauty of life, you aren't paying attention. It's only because life is beautiful that you should be outraged that it's not being respected, but if you're only outraged, then you are not connected with what is deeper than the outrage, which is the love of life. If you're outraged all the time, then you're not honouring life itself."

The two go hand in hand, you can't feel one without acknowledging the other. If you are feeling the pain of the world, your survival instincts are kicking in, which means you are honouring the inherent connection you share with the whole of life. This is a good indication that you are alive and feeling the extent of what it means to be alive right now. Please take the time to look and think about these myriad problems, and remember, it is ok to take a break.


THE METACRISIS
Tipping Points & Feedback Loops
Energy Supply
Finite Planet
Civil Unrest
Ecosystem Collapse
Pollution
Climate Change
Pandemics
Antibiotic Resistance
Mono-cropping
Perpetual Growth
Disasters
Carrying Capacity
Warming
Overshoot
Wet Bulb Events
Delayed Effect
Food Insecurity
Insect Decline
Amazon Rainforest
Deforestation
Atlantic Meridional Overturning Circulation
Cooling
Blue Ocean Event
Water Shortages
Jet Stream Collapse
Ocean Acidification
Microplastics
Coral Bleaching
Ocean Dead Zones
Clathrate Gun
Ice Melt
Global Dimming
Sea Level Rise
Unpredictable Weather Patterns
Transitioning
Apathy
Health System Collapse
Lack of Political Will
Resource Depletion
PFAS Chemicals
Health Problems
Emissions
Pesticides
Mis & Disinformation
Psychological Drivers
Waste
Fertiliser Overuse
Fossil Fuels
Effluent Run Off
Mass Migration
Power & Greed
Infrastructure
Top Soil Degradation
Racism & Fascism
Mental Health
Lobbying
Fast Fashion
Population
Economy
War
Consumerism
Business As Usual
Debt
Inequality
CO2 Absorption > Emission
Denialism
Slavery

ORANGE: CORE UNDERLYING PROBLEMS

Civil Unrest: Food, water, power, and medicinal supplies will suffer shortages, and supply chain disruptions will occur more frequently. Increased migration, fascism and finger pointing can lead to disruption and protests. As the severity of the cascading issues we face begins to sink in for people, there will be increasing unrest and frustration at the situation and future we face. Just think back to how people behaved when they perceived toilet paper shortages during the pandemic.
(https://www.visionofhumanity.org/civil-unrest-on-the-rise/)

Climate Change: Climate change is an umbrella term which encompasses the long-term change in the average weather patterns that have come to define Earth's local, regional and global climates. CO2 levels are increasing at a rate that is ten times faster than at any point in the last 50,000 years, suffice to say, this is not a normal state of climate we are now in.
(https://science.nasa.gov/climate-change/what-is-climate-change/)

Ecosystem Collapse: We depend on (and take for granted) our natural environments such as forests, oceans, fresh water, stable climates, and biodiversity. Unfortunately they are being destroyed and damaged faster than they can repair themselves. Ecosystems have a certain level of resilience, but beyond a certain threshold or tipping point, sudden and radical disruption can occur, leading to ecosystem collapse. When soil quality, freshwater supply, and biodiversity diminish drastically, agricultural capacity plummets, and daily human living conditions deteriorate.
(https://globalchallenges.org/global-risks/ecological-collapse/)

Energy Supply: The world lacks safe, low-carbon, and cheap large-scale energy alternatives to fossil fuels. Our energy consumption only continues to rise, so even though renewable sources are increasing, our consumption outpaces this uptick. As extreme temperatures increase, the power grids come under increasing strain to meet energy demands. Until we scale up our alternatives, the world will continue to face energy shortages.
(https://www.worldenergy.org/publications/entry/world-energy-issues-monitor-2024)

Finite Planet: While some ores, minerals, and raw resources do regenerate over time (multiple thousands of years), we cannot endlessly grow and expand without respecting nature's limit on our finite planet. Growth for the sake of growth can only continue for a time until it reaches natural limitations. David Attenborough says "someone who believes in infinite growth is either a madman or an economist".
(https://news.mongabay.com/2013/10/david-attenborough-someone-who-believes-in-infinite-growth-is-either-a-madman-or-an-economist/)

Pollution: The more we over-consume, the more pollution we release into the environment, including microplastics, forever chemicals (or PFAS), groundwater contamination, and air pollution. Poisoning our environment means we're not only poisoning other animals, but we're also poisoning ourselves, with a myriad of health problems linked to harmful pollutants.
(https://www.oecd.org/en/topics/pollution.html)
(https://www.theguardian.com/world/2023/mar/25/like-youre-in-a-horror-movie-pollution-leaves-new-zealand-wetlands-irreversibly-damaged)

Tipping Points & Feedback Loops: These are thresholds beyond which the damage we cause to the environment sets off chain reactions of reinforcing damage. These can trigger feedback loops, further intensifying the damage and moving outside of our capacity as humans to control them. There are at least 14 major tipping points identified, of which 9 are now theorised to have tipped over their thresholds.
(https://theweek.com/environment/climate-tipping-points-un-report)

GREEN: ENVIRONMENT

Amazon Rainforest: The Amazon's sheer volume of trees makes it one of the world's largest carbon sinks, with an estimated 150-billion-tonnes of carbon stored, this is the equivalent of more than 10 years' worth of global fossil fuel emissions. Industries that deforest, clear areas by setting fires, which rapidly release stored carbon into the atmosphere, and any trees cut but left unburned, decompose, also releasing their carbon. The fires help to explain why parts of the Amazon forest now emit more CO2 than they absorb.
(https://www.scientificamerican.com/article/why-is-the-amazon-so-important-for-climate-change1/)

Antibiotic Resistance: It is estimated that two-thirds of all antibiotics are used on farm animals. Rising antimicrobial resistance has been documented over the past two decades, and to varying degrees, bacteria causing common infections have developed resistance to each new antibiotic. If our antibiotics no longer work, we face some serious problems in food and the health sectors.
(https://health.clevelandclinic.org/when-antibiotics-stop-working-whats-next)

Carrying Capacity: This is the ability of a given environment, or ecosystem, to support a species over the long term by providing stocks and flows of resources such as food and water, and by safely absorbing accumulations of wastes. We've surpassed our carrying capacity and sustained this extra capacity through the exploitation of fossil fuels.
(https://biologydictionary.net/carrying-capacity/)

Deforestation: Humans continue to sacrifice the long-term benefits of standing trees for short-term gain of fuel, and materials for manufacturing and construction. We need trees for a variety of reasons, not least of which is that they absorb the carbon dioxide we exhale and the heat-trapping greenhouse gases that human activities emit. Through continued deforestation we also condense wildlife into smaller pockets of habitat, which increases the risk of zoonotic diseases mutating and causing pandemics.
(https://www.rainforest-alliance.org/insights/what-is-the-relationship-between-deforestation-and-climate-change/)

Delayed Effect: There is a lag between the emission of CO2, and the warming effect it causes (depending on size). So the global warming effects we are experiencing today, can be from emissions released up to several decades ago. If we immediately stop our CO2 emissions today, we will continue to warm for several more decades.
(https://earth.org/data_visualization/the-time-lag-of-climate-change/)

Disasters: Natural disasters are occurring nearly five times as often as they were in the 1970s, with both developed and developing countries bearing the burden of repeated floods, droughts and temperature extremes. Just how many times can a society come back to rebuild or help others with its surpluses and redundancies? If the frequency of disasters increases in succession then it will be harder and harder to render aid, especially if we are already dealing with active disasters or the aftermath thereof.
(https://unfccc.int/news/wmo-report-the-escalating-impacts-of-climate-related-natural-disasters)

Food Insecurity: We've relied on the weather patterns being predictable, i.e. stable seasons, so that we can grow our crops, but they are already beginning to be unpredictable. Unstable weather causes crop failures, and food chain disruption. In addition to changing weather patterns, modern agriculture requires massive amounts of artificial fertiliser to produce its yields which has damaging effects on the land, soil, and waterways.
(https://www.weforum.org/agenda/2023/07/climate-change-is-accelerating-the-global-food-crisis-we-must-act-now-to-protect-the-most-vulnerable/)

Insect Decline: Insects are the structural and functional base of many of the world's ecosystems, and play key roles, from aerating the soil to pollination and recycling of nutrients. Unfortunately habitat loss through urbanisation and deforestation, pesticides and climate change are killing them off worldwide, which, in turn, threatens humans. Research has shown that insect populations fell by as much as 45% in the last 40 years.
(https://www.bbc.com/news/science-environment-52399373)

Monocropping: This is the practice of growing a single crop year after year on the same land. In a biodiverse ecosystem, a threat to one crop may not be a threat to others. But when fields contain just one crop, from genetically identical stock, every single plant is equally vulnerable to threat. Approximately 2 billion people globally are affected by micronutrient deficiencies, much of which is attributed to consuming a monotonous diet of nutrient deficient staple crops, grown through monocropping.
(https://foodrevolution.org/blog/monocropping-monoculture/)

Overshoot: We can calculate the theoretical date at which humanity's demand on nature exceeds what can be regenerated and renewed in a year. In 2024, our global earth day, at which point we have theoretically used our renewable resources, falls on August 1st, which means that for five months of the year we are using resources faster than they can be renewed. We are essentially borrowing from our future selves.
(https://overshoot.footprintnetwork.org/about-earth-overshoot-day/)

Pandemics: Large pandemics like COVID-19 and the Spanish flu are increasingly likely due to habitat destruction, factory farming, and increasing antibiotic resistance. Management of future outbreaks will be crucial, yet the growing distrust that took root during COVID-19 will no doubt complicate efforts to minimise global impacts, when we once again deal with a pandemic.
(https://www.controlrisks.com/our-thinking/insights/global-drivers-sustain-high-likelihood-of-another-pandemic)
(https://www.weforum.org/agenda/2020/11/covid-19-pandemics-nature-scientists/)

Perpetual Growth: Economic growth is required to be exponential, that is to say, the size of the economy must double within a fixed period, and yet this drives a corresponding increase in the material footprint required to do so. Perpetual growth of the economy, and moreover society, is at odds with a finite planet.
(https://www.scientificamerican.com/article/the-delusion-of-infinite-economic-growth/)

Warming: CO2 (along with other gases such as methane) allows sunlight to pass through our atmosphere to earth as visible light. It then gets converted to infrared light which unfortunately cannot pass through the CO2 in the same way. This solar energy is then trapped on earth, causing warming.
(https://oizom.com/how-air-pollution-causes-global-warming/)
(https://news.climate.columbia.edu/2021/02/25/carbon-dioxide-cause-global-warming/)

Wet Bulb Events: Wet bulb temperatures are theoretical measurements that combine temperature and humidity into one value. This is essentially the temperature at which water stops evaporating from a wet thermometer bulb, and if it can no longer evaporate, it can no longer cool. Increasing moisture in the atmosphere, and increasing temperatures means increasing likelihood of wet bulb events affecting broader areas and populations. Even healthy people cannot regulate their temperature under these circumstances, resulting in serious health problems.
(https://www.nbcnews.com/science/science-news/wet-bulb-temperature-weather-average-climate-human-heat-wave-rcna27478)

BLUE: WATER/ATMOSPHERE

Atlantic Meridional Overturning Circulation (AMOC): This is the vital ocean current that circulates the planet. It carries warm ocean water northwards towards the pole where it cools and sinks, driving the Atlantic's currents. An influx of fresh water from the accelerating melting of Greenland's ice cap and other sources is making the ocean current increasingly unstable. A collapse of the AMOC would have disastrous consequences around the world, severely disrupting the weather patterns that billions of people depend on.
(https://www.sciencealert.com/its-confirmed-a-major-atlantic-ocean-current-is-verging-on-collapse)

Blue Ocean Event: Arctic sea ice is a key way that the planet cools itself. As long as there is shiny ice, sunlight gets reflected back into space (the albedo effect). Unfortunately it seems highly likely that we will encounter years where there is no ice reforming, which means the Arctic Ocean will absorb massive amounts of heat and energy. The heat needed to melt one gram of 0°C ice into 0°C water is the same amount of heat needed to heat one gram of 0°C water to 81°C. So suddenly that's a lot of heat and energy going into our environment.
(https://soapboxie.com/social-issues/What-Is-a-Blue-Ocean-Event-and-How-Will-It-Impact-Global-Climate)

Clathrate Gun: The clathrate gun is the popular name given to the hypothesis that increases in sea temperatures (and/or falls in sea level) can trigger the sudden release of methane from methane clathrate compounds buried in seabeds and contained within permafrost which, because the methane itself is a powerful greenhouse gas, leads to further temperature rise and further methane clathrate destabilisation. In effect initiating a runaway process as irreversible, once started, as the firing of a gun. Permafrost covers a quarter of the Northern Hemisphere's land and stores around 1.5 trillion metric tons of organic carbon, twice as much as Earth's atmosphere currently holds.
(https://www.scientificamerican.com/article/how-much-worse-will-thawing-arctic-permafrost-make-climate-change/)

Cooling: Climate change doesn't simply mean everywhere gets warmer, in fact, if something like the AMOC does eventually collapse, models suggest the Northern Hemisphere will rapidly cool, driving up power consumption, and affecting food crops. In addition to this, most of the atmosphere above the blanket of air close to the Earth's surface is becoming dramatically colder, which could potentially affect the safety of orbiting satellites, destabilise the ozone layer, and even result in sudden and unanticipated turmoil on our weather systems below.
(https://e360.yale.edu/features/climate-change-upper-atmosphere-cooling)

Coral Bleaching: High sea temperatures result in coral bleaching events, which is when the coral expels the microscopic algae that live within them, and they both perish. Coral bleaching matters because once these corals die, reefs rarely come back, and with fewer and fewer corals surviving, entire reef ecosystems, on which people and wildlife depend, can disappear. Bleached coral also compounds the overfishing crisis by removing links in the food web and depriving numerous species of a habitat to spawn and develop.
(https://www.npr.org/2024/04/17/1245085914/coral-reefs-bleaching-climate-change-algae)

Global Dimming: Some forms of air pollution e.g. aerosols, can significantly reduce the amount of sunlight reaching Earth's surface, thereby lowering temperatures. So ironically this pollution both warms and buffers us from warming. This masking effect is estimated to be suppressing our warming by more than a degree (C), and if we reduce the aerosols, like we did with regulating the international shipping industries emissions of sulphur dioxide in 2020, we inadvertently stop masking our warming.
(https://insideclimatenews.org/news/15092021/global-warming-james-hansen-aerosols/)

Ice Melt: The ice sheets in the North and South hemispheres are now following the worst-case climate warming scenarios set out by the Intergovernmental Panel on Climate Change. Sea-level rise on this scale will have very serious impacts on coastal communities, the additional fresh water in our global system will affect and slow ocean currents, there will be less fresh water available for communities, and there will be an increase of moisture content in the atmosphere which will have severe consequences. Not to mention that a reduction in reflective ice means more heat and energy being absorbed by the planet.
(https://www.britannica.com/science/global-warming/Ice-melt-and-sea-level-rise)
(https://www.weforum.org/agenda/2021/01/global-ice-loss-climate-change-environment-melting-global-warming/)

Jet Stream Collapse: The powerful wind patterns in the atmosphere that steer the weather systems in the Northern hemisphere. As this becomes unstable, it causes weather stagnation such as heat domes and more frequent droughts, floods, and wildfires.
(https://www.livescience.com/planet-earth/gulf-stream-weakening-now-99-certain-and-ramifications-will-be-global)

Microplastics: Microplastics are now found in the food we eat, the water we drink, in the deepest parts of the oceans, and on top of the highest mountains. They have also been found in every single human placenta tested, as well as sexual tissue. Plastics can take hundreds or thousands of years to decompose, and in the meantime cause problems in the environment and living creatures. The degree and impacts of health problems are still being studied.
(https://www.sciencenews.org/article/microplastics-human-bodies-health-risks)

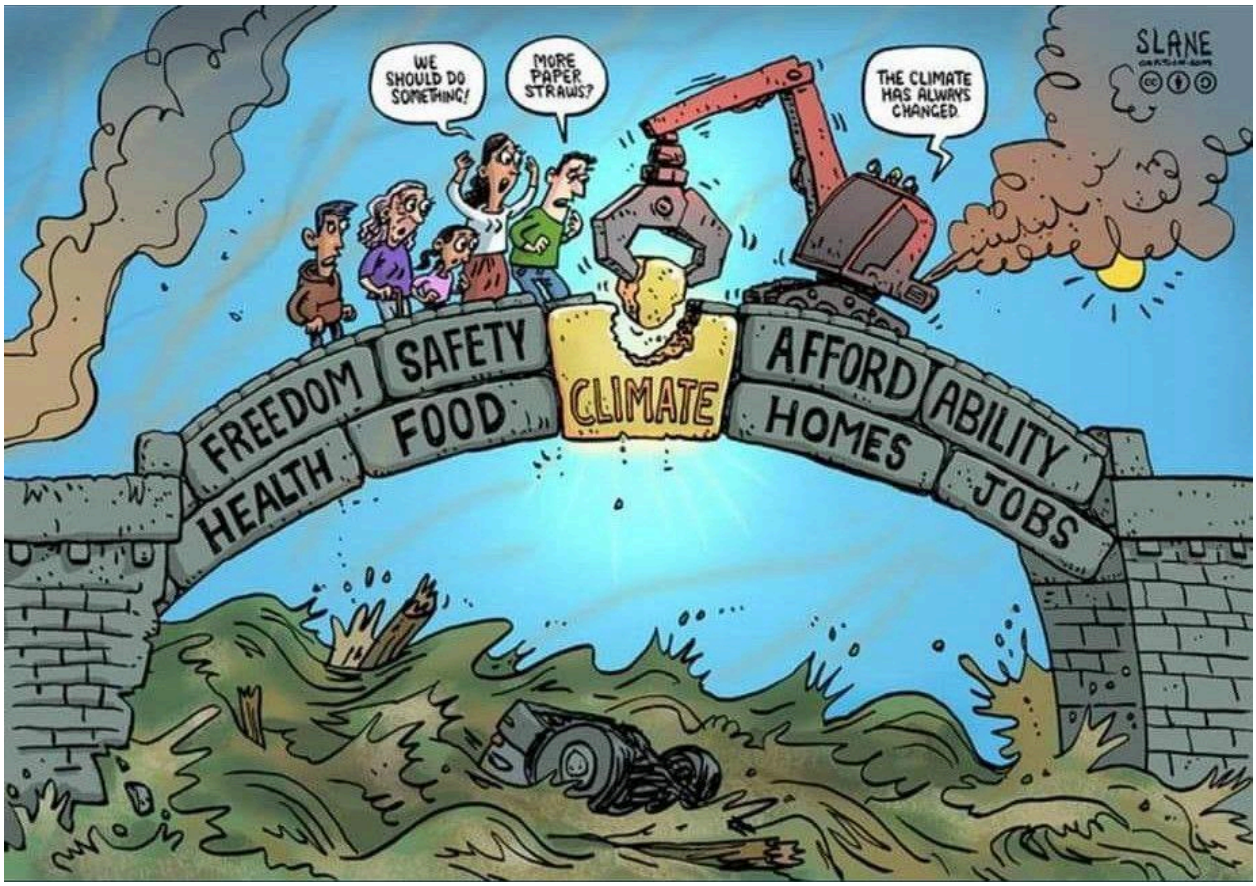
Ocean Acidification: Oceans are the largest single carbon sink in the world, and absorb massive amounts of heat. However, the more CO2 they absorb, the more acidic they become, and in turn the less CO2 they can then absorb. The acidity also has devastating effects on marine life causing disruption to food chains. The oceans have absorbed around 93% of the increased global temperature.
(https://www.noaa.gov/ocean-acidification-high-co2-world-dangerous-waters-ahead)

Ocean Dead Zones: Ocean dead zones are caused by increasing temperatures of ocean water, in tandem with our agricultural practices. Eutrophication is what happens when a body of water gets too many nutrients, such as phosphorus and nitrogen (in runoff from excess fertilising or excretion from livestock), and the algae and microorganisms have massive population blooms. These cause hypoxic zones where there is no oxygen, and so no marine life can survive.
(https://www.treehugger.com/what-are-ocean-dead-zones-5202668)

Sea Level Rise: Warming climate causes ice to melt, causing a rise in sea level, affecting coastal communities, and turning what used to be “a one in a hundred year flood” into disasters that occur every couple of decades. Warmer ocean water also has thermal expansion, so it takes up more space, raising sea levels, and killing sea life. The rate of ocean surface warming around New Zealand has outstripped the global average, twofold over the past decade, with the Chatham Rise, three times warmer than the global average.
(https://www.australiangeographic.com.au/topics/science-environment/2024/01/how-rising-sea-levels-will-affect-our-coastal-cities-and-towns/)

Unpredictable Weather Patterns: Widespread changes in weather patterns, along with increased frequency and severity of extreme weather events are direct consequences of global climate change. These departures from old norms can bring storms, droughts, heatwaves and wildfire conditions beyond what our infrastructure has been designed to withstand, what people have come to expect, and what our food systems can tolerate.
(https://sustainability.stanford.edu/news/climate-chaos-why-warming-makes-weather-less-predictable)

Water Shortages: There is a finite amount of freshwater on earth, and extreme weather events are making this water more scarce, more unreliable, more polluted, or all three. Impacts throughout the water cycle threaten sustainable development, biodiversity, and people's access to water and sanitation. On top of this, agriculture relies on vast quantities of water, impinging on local communities' supply, and even technological developments such as AI are beginning to draw from our limited water supplies.
(https://education.nationalgeographic.org/resource/how-climate-change-impacts-water-access/)



YELLOW: INDUSTRY

Business As Usual: This is the scenario where we don't really make any meaningful changes to the way society operates or adjust our lifestyles to accommodate for climate change. We've been largely paying lip service, talking about reducing emissions, setting targets for reductions or phasing in/out new plans, but ultimately doing very little. Despite increasing renewable energy sources, our consumption of fossil fuels is higher than ever, and our energy demands are tipped to rise at a faster rate over the next few years, as are our emissions. With business as usual, we're looking at a temperature increase of at least 5°C.
(https://www.unep.org/news-and-stories/story/business-usual-could-lead-catastrophic-global-sea-level-rise-says-new-study)

CO2 Absorption > Emission: Rising heat and deforestation will cause parts of the Amazon rainforest to become carbon sources, not sinks. Forests that have been planted to capture and offset emissions are unfortunately at increasing risk of wildfires. The ocean's capacity to be a carbon sink is finite and decreases as it warms.
(https://www.bbc.com/news/science-environment-57839364)

Debt: At the time of writing, governments around the world owe a whopping $91 trillion, an amount almost equal to the size of the global economy and one that will ultimately exact a heavy toll on their populations. Pursuing perpetual growth in combination with borrowing more and more money, in tandem with interest rates, means that the global economy essentially grows by borrowing. It is a house of cards where the foundation is on very shaky ground, and we are definitely at risk of another financial crisis, one that could make the Great Depression look like a bounce-castle of fun by comparison.
(https://edition.cnn.com/2024/07/02/economy/global-debt-crisis/index.html)

Economy: Based on endless growth, every year Gross Domestic Product (GDP) must be better than last year. Every quarter's profits must be better than the last one. Everyone is laser-focused on growth, everything is monetised, and money is the power that sets all the rules. We seem to think that our economy operates independently from the environment, not realising that without a planet that supports human life, the economy disappears. The economy has decoupled from reality.
(https://theconversation.com/gdp-ignores-the-environment-why-its-time-for-a-more-sustainable-growth-metric-170820)

Effluent Run Off: Many of our rivers, lakes, and groundwaters have unnaturally high levels of nutrients, chemicals, disease-causing pathogens, and sediment. This ultimately culminates in water that is unsafe for drinking, recreation, food gathering, or cultural activities. In New Zealand we have concerning levels of nitrates in 60% of surface level and groundwater samples, at a quantity that is almost twice what is considered a healthy level, and is linked with a notable increase in cancer.
(https://www.fishandgame.org.nz/environment/news/canterbury-water-testing-raises-health-concerns/)

Emissions: We generate most of our energy through the combustion of fossil fuels. When burned, CO2 is released. All industrial machinery runs on diesel (ships, tractors, trucks, mining), natural gas can be burned to generate electricity, and coal is used in refineries to produce metals. Of course there are other sources of, and types of emissions, such as methane, sulphur oxide, and nitrous dioxide.
(https://ourworldindata.org/greenhouse-gas-emissions)

Fast Fashion: The fashion industry is the second biggest consumer of water, and is responsible for about 10% of global carbon emissions, which is more than all international flights and maritime shipping combined. It dries up water sources, pollutes rivers and streams, and as much as 85% of all textiles go to dumps each year. Even washing clothes releases 500,000 tons of microfibres into the ocean each year, the equivalent of 50 billion plastic bottles. And yet, this industry is driven by consumer demand.
(https://earth.org/fast-fashions-detrimental-effect-on-the-environment/)

Fertiliser Overuse: Nutrient pollution, predominantly in the form of nitrogen and phosphorus, is one of the most significant by-products of agricultural activity. Current agricultural models pour more fertiliser onto the land than can be absorbed by the plants, which then runs off into waterways, disrupting natural processes of growth and decay. This is a leading contributor to the growing number and size of dead zones in the oceans.
(https://www.environmentguide.org.nz/activities/agriculture/environmental-impacts-of-agriculture/)

Fossil Fuels: We're heavily dependent on fossil fuels such as crude oil, natural gas, and coal in order to enable everything in our modern civilization. From plastics to electricity to food production, whether directly or indirectly, fossil fuels provide the foundation for our modern lifestyle, but there are finite amounts of them. Even if we transition something like energy supply or transportation, away from using fossil fuels, about 50% of a barrel of oil will continue to be used for other purposes such as industrial equipment, heating, paints, plastics, rubbers, lipsticks, waxes etc.
(https://www.breakthroughfuel.com/blog/crude-oil-barrel/)

Infrastructure: Population growth and migration, urbanisation, and climate change put further strains on the assets required to deliver clean water, dispose of wastewater, provide needed electricity, and maintain functional road networks. Increasingly ageing infrastructure brings with it the risk of potential failure and poor environmental compliance, and corner cutting and short term fixes, do nothing to actually address problems in the long run.
(https://www.rnz.co.nz/programmes/the-detail/story/2018944359/new-zealand-s-failing-government-infrastructure)

Lobbying: Lobbyists are professionals who are hired by a special interest group to represent their interests to governments, usually the lobbying is backed by money and corporations. The means by which government officials leave office to become lobbyists, and by which lobbyists become government officials, presents clear conflict of interest problems for modern democracies, which unfortunately go largely unrecognised, unaccounted for and unpoliced.
(https://www.rnz.co.nz/news/in-depth/501982/revolving-door-for-lobbyists-can-result-in-unfair-access-justice-ministry)

Pesticides: Pesticide use continues to go up, highly toxic pesticides remain in use, and crops are being treated more frequently with a greater variety of pesticides than ever before. Scientists increasingly believe there is no safe lower dose for human exposure. Many pesticides are endocrine disruptors, which can affect everything from the thyroid gland to fertility, even at trace amounts. Long term pesticide exposure has been linked to cancers, such as leukaemia, and certain lymphoma, as well as asthma, depression, attention deficit and hyperactivity disorder (ADHD) and the development of neurodegenerative diseases' such as Parkinson's disease.
(https://www.who.int/news-room/fact-sheets/detail/pesticide-residues-in-food)

PFAS Chemicals: Per- and poly-fluoroalkyl substances (PFAS) are widely used, long lasting chemicals, the components of which break down very slowly over time. Due to their widespread use and persistence in the environment, many PFAS chemicals are found in the blood of people and animals. They are also present at low levels in a broad variety of food products, as well as freshwater, air, fish, and soil. They have been found deep in the ocean, on top of mountains, even in the antarctic. Research suggests they are likely to be carcinogenic, with “no safe level of exposure”. (https://archive.is/OHK1H#selection-3553.203-3553.262)

Resource Depletion: This is the consumption of resources faster than they can be replenished, assuming that they can even be replenished. Naturally this ties in overconsumption, perpetual growth, and living on a finite planet. As resources become scarcer, their cost increases, which can lead to economic instability. Consider that the world's proven oil reserves are enough to last only another 47 years at the current rate of consumption, and they require more and more energy to extract, and can have dire impacts on the natural environment.
(https://fastercapital.com/content/Resource-Depletion--On-Borrowed-Time--Resource-Depletion-and-Doubling-Dilemmas.html)

Top Soil Degradation: The layer of soil that provides the growing medium and nutrients for our crops is being depleted faster than it can regenerate, in some places up to ten times faster. Our modern agricultural practices damage the microsystems and microorganisms, and tilling leads to increased erosion, as does the increased frequency of heavy rains and floods.
(https://www.scientificamerican.com/article/only-60-years-of-farming-left-if-soil-degradation-continues/)

Transitioning: Knowing that we can’t rely on fossil fuels indefinitely, we need to be switching to alternative power options. Unfortunately we need to use more fossil fuels to generate the power to enable us to shift to alternatives, and mining for raw materials such as Lithium can cause devastating damage to the natural environment. Renewable power sources such as wind or solar, or even sometimes hydro, are by nature, unable to run 24/7.
(https://www.reuters.com/business/environment/fossil-fuel-use-emissions-hit-records-2023-report-says-2024-06-19/)

War: The environmental impact of war is staggering, fueling greenhouse gas emissions, pollution, severe biodiversity loss, not to mention the fact that it props up the global fossil fuel industry by locking in oil, gas, and coal demand. At a time when we need to be working together to mitigate the worst impacts of climate change, instead wars fuel division, civil unrest, hatred, and severe geopolitical instability. As natural resources continue to be depleted or become more vulnerable due to climate, desperation will drive more conflicts.
(https://www.globalcitizen.org/en/content/how-war-impacts-the-environment-and-climate-change/)

Waste: Every year we dump over 2 billion tonnes of waste on the planet. If all this waste was put on trucks, they would go around the world 24 times. This staggering amount of waste is partly because 99% of the stuff we buy is trashed within 6 months. Waste leads to pollution of soil, air, oceans, and groundwater. Unfortunately global annual waste generation is projected to increase by 70% by 2050, unless major changes take place.
(https://www.theworldcounts.com/challenges/planet-earth/waste/global-waste-problem)

RED: PEOPLE

Apathy: Apathy can take the form of a lack of interest, enthusiasm, or concern, and is a complex emotion which can be influenced by many things in relation to the climate crisis. It's an understandable response to have if one feels like there isn't much hope for the future, but ultimately it disempowers people, and as a result, enables other people and corporations to get away with power grabs, and further destruction of the planet. Apathy does not lead to change, and we really need to change things.
(https://breakthedivide.net/blog/understanding-apathy-as-a-response-to-climate-change/)

Consumerism: The modern society of consumerism and rampant 'development' is destroying our world, and the biggest problem with it is the fact that people do not realise that there is a problem. We are consuming resources at an alarming rate, and quicker than our planet is able to replenish. On top of that, what we spend our money on, really could be money better spent. It is estimated that every year, Europeans spend $11 billion on ice cream, which is nearly enough to bring education to every child on the planet. Twice.
(https://greentumble.com/the-negative-effects-of-consumerism)

Denialism: Denial is a coping mechanism that gives you time to adjust to distressing situations, but staying in denial can interfere with your ability to tackle challenges. It is easier to accept that all the troubles the world faces are the result of a "shadow government" pulling strings behind the scenes, than it is to accept that nobody is in control. It is preferable to deny the fact that we need to change our lifestyles, make ethical choices, or eat consciously, than it is to acknowledge that our daily choices do have ramifications for the environment, and that maybe we do need to make changes to the way we live.
(https://www.climaterealityproject.org/blog/climate-science-denial-why-and-what-to-do-about-it)

Health Problems: Due to many factors in our lifestyles, our homes, and our environment, there are increasingly more and more causes of health problems. Often we prioritise short term monetary gains over safety, like we did when we put lead in fuel, smothered crops with pesticides, flooded the world with PFAS chemicals, developed ultra processed foods, increased sugar quantities in just about everything, or promoted smoking and alcohol, all the while ignoring or outright burying the evidence of health problems associated with these actions or products. And this doesn't even touch on climate change related problems.
(https://custommapposter.com/article/the-13-biggest-threats-to-global-health-according-to-who/2824
)

Health System Collapse: The health systems around the world are under increasing strain due to the growing numbers of health problems, ageing populations, inequality, financial constraints, and even burnout of staff within the sector. During COVID-19, the health system all but crashed for a number of countries when faced with the strain of dealing with so many patients at one time. With climate change adding more pressure to an already strained system, it is foreseeable that there will likely be more and more breakdowns in the health system.
(https://www.chathamhouse.org/2024/06/driving-universal-health-reforms-through-crises-and-shocks/01-introduction)

Inequality: Over the past decades, the world has seen increasing levels of economic inequality, where income and wealth is increasingly unequally distributed. For instance the richest 1% grabbed nearly two-thirds of all new wealth created since 2020. This is worth $42 trillion, and is almost twice as much money as the bottom 99% of the world's population has. This same 1% produce double the combined carbon emissions of the poorest 50%. Unfortunately it is the poorest and third world countries who bear the brunt of climate change first.
(https://www.bbc.com/news/science-environment-56723560)

Lack of Political Will: Many climate change policies, from the local level to the global level, fall apart at the lack of "political will", i.e. the unwillingness or inability of government officials to enact policies that will reduce carbon pollution at the scale and speed required. Unfortunately governments around the world are still prioritising economic growth and GDP over making meaningful policy change. They are captured by lobbying, have conflicts of interest, and because collectively, the public still isn't pushing enough, for the reform or policy that we need to address climate change.
(https://time.com/6165094/ipcc-climate-action-political-will/)

Mass Migration: Migration is expected to inevitably rise thanks to wars, violence and fascism, and as climate change affects more countries and populations, reshaping our world as entire zones become uninhabitable. Mass migration not only touches the people who have fled, but it also puts pressure on the countries receiving refugees and their existing infrastructure, and a huge amount of additional resources are required to support and deal with humanitarian crises. Add to this, frustration and friction between those being forced to migrate, and those taking on refugees, and it's a flammable situation. Over 95 million people are now either refugees or have been internally displaced because of violent conflict.
(https://www.npr.org/2024/06/17/nx-s1-5006129/global-migration-spikes-due-to-violence-climate-change-and-economic-mismanagement)

Mental Health: There are numerous ways that mental health is being affected in these times, and climate anxiety is certainly one of them. We also have a prevalence of lowered attention spans, diminished ability to think critically, less mental resilience, growing addictions and escapisms in the form of drugs or technologies, and then the effects of PFAS chemicals and pesticides. The increasing division and polarisation also adds complications to this list, as unease and suspicion grows between individuals and communities. CO2 is also linked with cognitive decline, which means that as we continue to generate higher levels of CO2, we become more mentally impaired by it.
(https://climate-adapt.eea.europa.eu/en/observatory/evidence/health-effects/mental-health-effects)
(https://www.weforum.org/agenda/2019/01/this-is-the-worlds-biggest-mental-health-problem/)

Mis & Disinformation: Misinformation is the sharing of information that is false or incorrect (not with ill intent), while disinformation is the deliberate spread of misinformation with the intent to mislead. The rampant spread of misinformation on social media, rather alarmingly undermines the dialogue we should be having about adapting or improving our society, and unfortunately this divisive narrative increasingly dismisses the science, downplays the legitimacy of, or outright denies that humans play a role in climate change.
(https://www.weforum.org/press/2024/01/global-risks-report-2024-press-release/)

Population: We reached 8 billion people recently. Western lifestyle heavily influences how everyone should live, as many third world countries aspire to have the luxuries that Western countries have. Population growth equals consumption growth, thus an ever expanding population leads to overshooting our carrying capacity. If everybody on the planet consumed and lived the way we do in New Zealand, we would reach our theoretical limit of renewable resources by early April.
(https://www.overshootday.org/newsroom/country-overshoot-days/)

Power & Greed: Sadly it is often the people least suited to be in power, who are most motivated to want or gain it. Political systems have become more akin to a popularity contest instead of who has the most informed and best policies. Corporations prioritise market share and competitive advantage at the cost of consumer wellbeing, safe products, and environmental impact. The economic system of capitalism rewards and incentivises the wrong actions, leading sociopaths and narcissists into management or power roles, and essentially perpetuating and exacerbating inequality.
(https://opinion.inquirer.net/135339/power-and-greed)

Psychological Drivers: Sociopathy and narcissism are personality traits which favour personal gain of an individual, over betterment of others or positive outcome for the collective. We are losing touch with our relationships with each other, and with the natural world. Technology can connect or divide us, and it is eroding our attention spans. Given that there is a decline in the ability to think critically about topics, ones which need a period of engagement longer than merely a few minutes, we are gradually degrading and splintering our ability to think rationally and objectively about the real problems we face.
(https://www.apa.org/news/podcasts/speaking-of-psychology/attention-spans)

Racism & Fascism: Fascism is an ultranationalist, anti-democratic, far right movement. It is a set of political practices fundamentally based on upholding rigid, identity-based hierarchies, where the majority sees itself as a victimised community, fighting against marginalised communities for its survival. The strengthening of the far-right can be seen clearly in the European Parliament elections and in numerous countries around the world. Fascism fuels racism, and both do nothing but divide us.
(https://truthout.org/articles/fascism-is-rising-but-it-does-not-have-to-be-our-future/)

Slavery: Modern slavery refers to people who are exploited for other people's commercial or private gains. The victims are coerced into modern slavery through a variety of means, including physical violence and psychological threats. It is estimated there are now 50 million people globally trapped in slavery. Unfortunately mass migrations, rising fascism, geopolitical issues, and power grabs, all increase the risk of slavery. Many industries use slave labour, and as such, much of our consumer culture of cheap plastic products or clothing is built on slavery.
(https://www.walkfree.org/news/2024/modern-slavery-risks-rise-as-greatest-number-of-global-conflicts-since-wwii/)

STAGE TWO: PROCESSING AND TAKING ACTION

Feeling Anxious?

Climate anxiety is a term that captures a very unique manifestation of anxiety that befits the times in which we live, and is specifically related to climate collapse and Earth devastation. It manifests as six stages.

1. Denial: This can take on many forms, but it's important to understand that denial is among the most common defence mechanisms. It occurs when you refuse to accept reality or facts. You block external events or circumstances from your mind so that you don't have to deal with the emotional impact. In other words, you deliberately avoid painful feelings or events.

2. Semi-Consciousness: This is the stage when we begin to sense a shift in our perception. Where we once felt secure and comfortable now feels uncertain and unfamiliar. The terrain of our life is changing which can bring up feelings of insecurity. This is a very uncomfortable stage because denial has served to protect you from seeing and feeling the pain of the world.

3. Awakening: This is like a thunderbolt, and can often feel like a slap in the face or a punch in the gut. For many, awakening to the inevitability and severity of our collective and planetary troubles doesn't happen by choice, rather it happens as a result of circumstances, especially in times of crises. At such moments, we realise that these global issues are affecting our daily lives, bringing challenges to life as we know it, and causing pain and suffering for many, including ourselves and those we love. Our scope of understanding the current devastation begins to sink in on a visceral level. At this stage it is very important to seek out support. Once awake, the ecological crisis becomes glaringly real. It's not something we can just turn off, un-see what we now see, or un-feel what we now feel.

4. Shock: The experience of shock is one of disorientation. Life has been flipped upside down and turned inside out. One of the most difficult aspects of this stage is the profound but unavoidable feeling of isolation and disconnection. We now inhabit a reality we can no longer ignore, but it’s one that few others seem to notice. The result is a bizarre sense of the surreal. We now realise that the excesses of consumer culture are actually the underlying cause of much of the devastation, so we find ourselves living in an upside-down world compared to most of our neighbours. Interaction and communication can become a challenge. How do we relate to a world that’s no longer real to us, but is still business as usual to most? Do we try to reach out to others about the difficult new realities? Or is it better to act as if nothing has changed, just to get along?

5. Despair: Despair arrives as the dust begins to settle after the shock wave. We are awake and can no longer go back to sleep. The comfort of denial is no longer available to us, and now we must embrace our humanity, come home to our bodies, come back to earth and the suffering of being interconnected, along with all that comes with it. The pain of the world is experienced as despair, and a natural response to the grave injustices of these times is rage. Rage is a very natural part of the grief process, so it's important to honour this mobilising energy as it moves you into passionate and creative action.

6. Empowerment: This is the final stage of the grief process. As we come back into our bodies and open ourselves to feeling the pain of the world, digesting this traumatic experience, we expand our sense of self to include the more-than-human world, and a great amount of energy and power that was previously stuck in denial, now becomes unleashed. Facing our feelings about the state of the world is actually a very essential step toward embodying active hope that is necessary for doing all that you can to care for the earth. We become honed to our brilliance, as we begin to understand the nature of this energy, and learn how to channel our righteous rage into meaningful and creative action.

For more in-depth discussion of these stages visit:
https://www.wayofbelonging.com/post/holding-the-weight-of-the-world-working-with-eco-grief-eco-anxiety

Fostering Mental Resilience

Building mental resilience to the Metacrisis involves cultivating a mindset and lifestyle that can withstand uncertainty, stress, and the profound challenges that may arise. By integrating whichever of these strategies you can into your life, you can build the mental resilience needed to face the challenges of climate change and potential societal disruptions with strength, adaptability, and hope.

Educate Yourself: Knowledge reduces fear. Understanding the causes, effects, and possible solutions to climate change helps you feel more in control and less overwhelmed. It's important to keep up with credible sources of information and be aware of the latest developments, *but* be careful not to be consumed by them. While staying informed is important, constant exposure to negative news can be overwhelming. Set boundaries on how much media you consume, and seek out stories of hope and positive change.

Focus on Action: Taking tangible steps, such as reducing your carbon footprint, supporting sustainable initiatives, or advocating for policy changes, can create a sense of agency and purpose. Working with others in your community to address climate challenges fosters a sense of belonging and shared purpose, which can counter feelings of isolation or helplessness.

Cultivate Emotional and Psychological Resilience: Techniques like meditation, mindfulness, and regular physical activity can help manage stress and maintain mental well-being. Try to embrace challenges as opportunities for personal growth. Adapting to change and learning from adversity builds resilience over time.

Foster a Support Network: Strong social connections are a key component of resilience. Try to surround yourself with supportive friends, family, or groups that share your concerns and values. Talking about your fears and concerns with others can be a powerful way to process emotions and gain different perspectives.

Embrace Adaptability: Accept that change is inevitable and focus on building adaptability. This might involve learning new skills, simplifying your lifestyle, or making contingency plans. Viewing challenges as opportunities for innovation and creativity can help you approach them with a problem-solving attitude rather than feeling overwhelmed.

Nurture a Connection to Nature: Regularly connecting with the natural world can provide a sense of peace and perspective, helping you to stay grounded. Exposure to nature has been linked to a host of benefits, including improved attention, lower stress, better mood, reduced risk of psychiatric disorders and even upticks in empathy and cooperation. Practices like gardening, hiking, or conservation work can foster a deep sense of connection and responsibility for the environment.

Live in the Now: Although this may seem counterintuitive, try to make peace with recognising that climate change will be impacting the near future. Accepting it and then being present, makes you have so much more gratitude for the here and now. It's vital not to end up paralysed by a sense of fear when considering the future. Cultivate the ability to live with uncertainty by focusing on what you can control and accepting what you cannot.

Balance Realism with Hope: It's important to face the potential severity of climate change without denial or minimization, accepting the reality allows for better preparation and response. Try to focus on positive stories of resilience, innovation, and recovery. Hope is not about ignoring reality but about believing in the possibility of positive outcomes and working towards them.

FAD
Frequently Asserted Denials:

“That’s just called weather, not climate change. Carbon Dioxide isn’t actually increasing, and even if it is, the increase has no impact on the climate since there is no convincing evidence of warming. Ok, even if there is warming, it’s just due to natural causes, and on the off chance the warming cannot be explained by natural causes, human impact is only small, and the impact of continued greenhouse gas emissions will be minor. Ok, ok, even if the current and future projected human effects on Earth's climate are legitimate, the changes are generally going to be good for us. Well, whether or not the changes are going to be good for us, I can’t make a difference, and why should I even try, when other people aren’t doing anything? At the end of the day, humans are good at adapting to changes. Besides, it's too late to do anything about it, and a technological fix is bound to come along and sort it out.”

The following are some of the counter-narratives that are bandied around in regards to climate change and its legitimacy. It’s not an exhaustive list, and there always seems to be some new way to dispute the science, but at least this addresses the most common points.

"The earth is always changing; this is just a natural part of the cycles."
While the Earth has experienced natural climate variations throughout its history, the current rate of change is unprecedented. Natural cycles, such as Milankovitch cycles, occur over tens of thousands of years, but the rapid warming we've observed over the last century aligns closely with the increase in greenhouse gases from human activities. This accelerated change is not explainable by natural cycles alone, and is a clear indicator of human-induced climate change.

"The impact of climate change is being over-exaggerated."
The impacts of climate change are well-documented and observed in real time. Rising sea levels, more frequent and intense storms, heat waves, droughts, and wildfires are already affecting ecosystems and human communities. The scientific community emphasises that these impacts will only worsen if we do not reduce greenhouse gas emissions. Climate scientists have been walking a tightrope of spreading awareness, and if anything, they have been downplaying the effects of climate change, not over-exaggerating it. The risks of underestimating these impacts are far greater than the consequences of taking action.

"There is no consensus among scientists."
There is absolutely overwhelming consensus among climate scientists that climate change is real and primarily driven by human activities. Multiple studies show that over 97% of climate scientists agree on this point. The consensus is based on extensive research, peer-reviewed studies, and decades of data collection. Claims of disagreement are often based on misinformation or a misunderstanding of the scientific process.

"Climate models are unreliable."
Climate models have proven to be reliable tools for predicting future climate scenarios. They are based on fundamental principles of physics and have been refined over decades. While no model is perfect, they have accurately predicted many trends we see today, such as global temperature increases and sea level rise. The uncertainties that exist tend to concern the magnitude of changes, not the direction. Ultimately models consistently show that continued emissions will lead to significant warming.

"Actually, it's getting colder."
Global average temperatures have been rising, not falling. While there can be short-term regional variations and colder-than-average periods, the overall trend is one of significant warming. The last decade was the warmest on record, and heat records have been falling steadily over the past year. Localised cold weather events do not negate the broader trend of global warming.

"Carbon dioxide is a scapegoat, plants will be better off with more of it."
While CO2 is necessary for photosynthesis, excessive levels lead to detrimental effects. Higher CO2 levels contribute to climate change, which disrupts ecosystems, reduces biodiversity, and leads to more extreme weather events. While some plants may benefit from higher CO2, the overall impact on agriculture and natural ecosystems is negative due to the associated warming, changes in precipitation patterns, and the increased frequency of extreme weather.

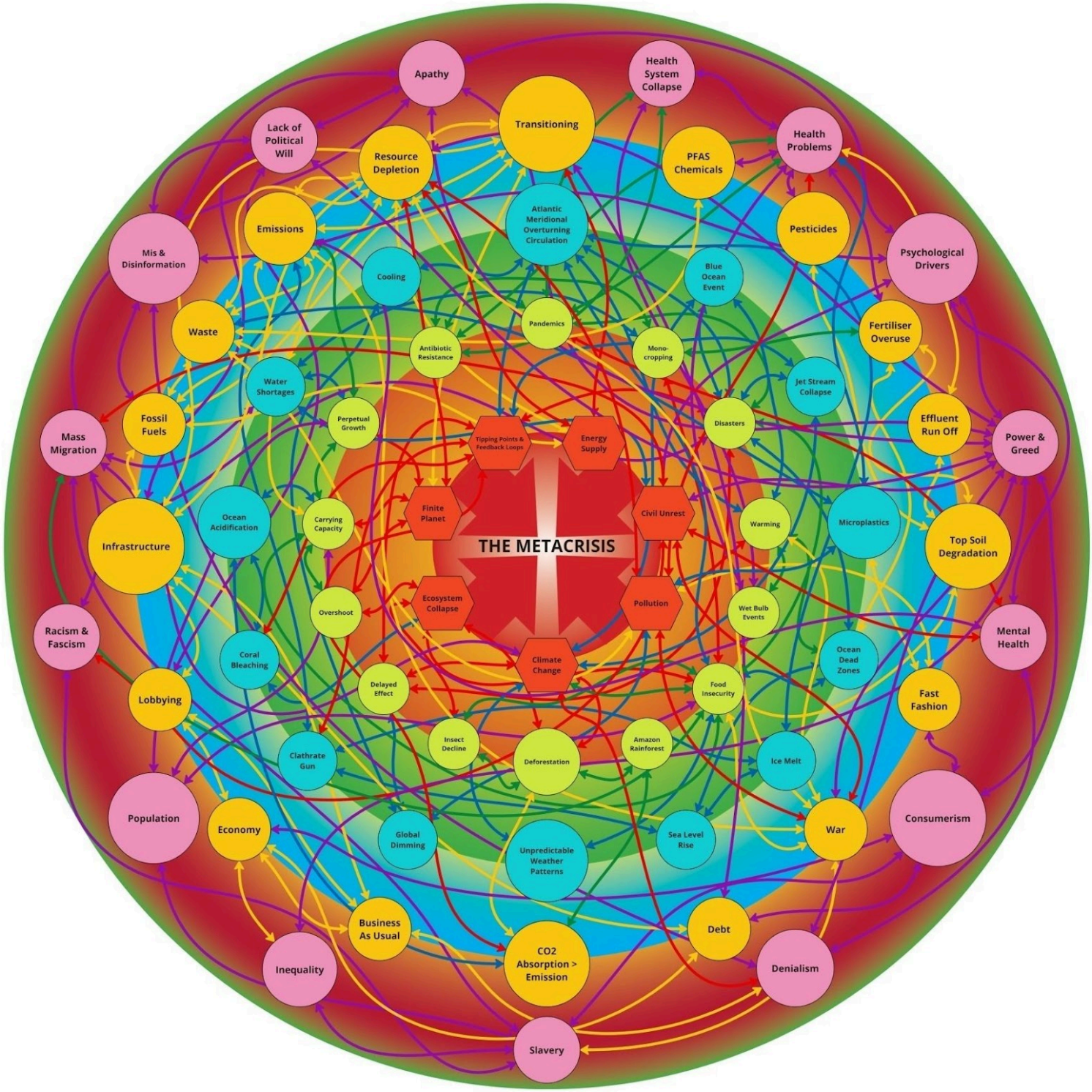
"The global elite have an agenda."
The claim that climate change is a hoax, perpetrated by the global elite, is a conspiracy theory with no basis in fact. Climate science is based on rigorous research conducted by scientists worldwide, largely independent of political agendas. The idea of a coordinated global conspiracy among scientists, governments, and international organisations is giving the global elite too much credit. Do not attribute to malice what can so easily be explained by stupidity. Even if the global elite hunker down in their bunkers for a century, the earth won't be habitable if we do nothing to mitigate the worst of climate change now.

"Technology will save the day."
While technological advancements are crucial in mitigating climate change, relying solely on future technology is risky and can delay necessary action. The technologies we need to reduce emissions—such as renewable energy, energy efficiency, and electric vehicles—already exist and are being deployed, though not at enough scale to tackle the problem. Waiting for new, unproven technologies to save the day overlooks the urgency of the problem and the need to act now.

"Our impact is negligible, so why even bother doing anything?"
Every action counts when it comes to combating climate change. While individual actions may seem small, collective efforts can lead to significant reductions in greenhouse gas emissions. Additionally, reducing emissions is not just about preventing future damage; it's about improving public health, creating jobs in renewable energy sectors, and preserving the planet for future generations.

"We fixed the ozone hole collectively, we can fix this."
The success in addressing the ozone hole is indeed a positive example of global cooperation, but the challenges posed by climate change are more complex. The ozone hole was caused by a specific group of chemicals (CFCs), and their reduction led to recovery. Climate change involves multiple sources of greenhouse gases across various sectors, making it a more systemic issue. The success of the ozone treaty shows that international cooperation can work, and it provides a hopeful precedent for tackling climate change.

"Humans have always lived under the shadow of some looming catastrophe, we'll be fine."
Comparing climate change to past threats oversimplifies and underestimates the unique, complex, and unprecedented challenges it presents. Unlike past threats, we face a global, long-term crisis driven by human activities, with potentially irreversible and catastrophic consequences. Its scale, urgency, and ability to exacerbate other global challenges make it uniquely dangerous. Dismissing it all as "just another threat" fails to recognize the sheer scale and interconnected nature of its impacts, which demand immediate and sustained action.


THE METACRISIS
Apathy
Health System Collapse
Transitioning
Lack of Political Will
Resource Depletion
PFAS Chemicals
Health Problems
Emissions
Atlantic Meridional Overturning Circulation
Pesticides
Mis & Disinformation
Psychological Drivers
Cooling
Blue Ocean Event
Waste
Pandemics
Fertiliser Overuse
Antibiotic Resistance
Mono-cropping
Water Shortages
Jet Stream Collapse
Fossil Fuels
Perpetual Growth
Disasters
Effluent Run Off
Mass Migration
Tipping Points & Feedback Loops
Energy Supply
Power & Greed
Finite Planet
Civil Unrest
Ocean Acidification
Carrying Capacity
Warming
Microplastics
Infrastructure
Top Soil Degradation
Ecosystem Collapse
Pollution
Overshoot
Wet Bulb Events
Racism & Fascism
Mental Health
Coral Bleaching
Climate Change
Ocean Dead Zones
Delayed Effect
Food Insecurity
Lobbying
Fast Fashion
Insect Decline
Amazon Rainforest
Clathrate Gun
Deforestation
Ice Melt
Population
Economy
Global Dimming
Unpredictable Weather Patterns
Sea Level Rise
War
Consumerism
Business As Usual
Debt
Inequality
CO2 Absorption > Emission
Denialism
Slavery

STAGE THREE: CONNECTING THE DOTS

By now you have a framework of what the Metacrisis looks like, how to develop resilience both in the home and mentally, as well as some tangible actions you can take to make a difference. This stage isn't for everyone, but if you want to continue to examine the Metacrisis and increase your understanding of how the different topics inter-relate, read on.

To start with it can help to sort the topics into three overarching categories:
Drivers: Including concepts like "Perpetual Growth" and "Consumerism" that push environmental and social pressures. **Consequences:** The results of these pressures, such as "Climate Change" and "Food Insecurity". **Interventions:** Think of concepts like "Transitioning" and "Education and Awareness" that offer pathways to change.

Next we can look at the way different terms and concepts connect:
Causal Relationships: How one concept, like "Emissions," leads to another, like "Warming." **Feedback Loops:** How changes in one area can accelerate or decelerate related changes, such as "Tipping Points and Feedback Loops" in climate systems. **Socio-Economic Impact:** How environmental changes affect social systems, including "Inequality" and "Mass Migration".

Now you can start to create links between topics:
Identify Patterns: Look for clusters of connected concepts that illustrate systemic issues, like the links between "Pollution," "Microplastics," and "Health Problems." **Target Interventions:** Identify where we can prioritize actions, like focusing on "Consumerism" to reduce "Pollution" and alleviate "Resource Depletion." **Understand Complexities:** Recognize that many issues are interconnected, requiring holistic solutions that address multiple areas simultaneously.

The following is a surface level perspective that really just gives you an overview of how some of these terms are interconnected. It is a starting point for you to build your understanding on.

ORANGE: CORE UNDERLYING PROBLEMS

Civil Unrest

- *Resource Depletion:* Scarcity of essential resources can trigger civil unrest.
- *Racism & Fascism:* Discontent with the state of the world, people look for scapegoats and other people to blame.
- *Economy:* Economic downturns can lead to protests and civil unrest.
- *Food Insecurity:* Lack of access to food due to various factors can lead to social instability.
- *Mass Migration:* Displacement caused by disasters or resource shortages can lead to civil unrest in receiving areas.

Climate Change

- *Ecosystem Collapse:* Rising temperatures and extreme weather disrupt ecosystems.
- *Sea Level Rise:* Melting ice and thermal expansion contribute to rising sea levels.
- *Pollution:* Increased emissions from human activities drive climate change.
- *Food Insecurity:* Climate change impacts agricultural productivity, leading to food shortages.
- *Unpredictable Weather Patterns:* Climate change increases the frequency and severity of extreme weather events.

Ecosystem Collapse

- *Pollution:* Pollution degrades habitats and disrupts ecological balance.
- *Deforestation:* Loss of forests leads to habitat destruction and reduced biodiversity.
- *Insect Decline:* Declining insect populations affect pollination and ecosystem health.
- *Coral Bleaching:* Warmer ocean temperatures cause coral bleaching, impacting marine ecosystems.
- *Climate Change:* Accelerates ecosystem collapse through loss of habitats and species distributions.

Energy Supply

- *Fossil Fuels:* The burning of fossil fuels contributes to climate change and pollution.
- *Resource Depletion:* Energy extraction depletes natural resources, impacting availability.
- *Infrastructure:* Shifting to renewable energy sources requires infrastructure changes and investment.
- *Economy:* Energy supply issues can impact economies and lead to instability.
- *Pollution:* Energy production, especially from fossil fuels, results in air and water pollution.

Finite Planet

- *Carrying Capacity:* Highlights limits to Earth's capacity to support human activities.
- *Resource Depletion:* Unsustainable use of resources leads to depletion and scarcity.
- *Ecosystem Collapse:* Exceeding planetary limits causes widespread environmental damage.
- *Climate Change:* Overuse of resources contributes to climate change, stressing planetary limits.
- *Perpetual Growth:* The concept underscores the unsustainability of perpetual economic growth.

Pollution

- *Health Problems:* Pollution causes health issues, including respiratory and cardiovascular diseases.
- *Ocean Acidification:* Increased CO2 levels from pollution lead to ocean acidification.
- *Microplastics:* Plastic pollution results in microplastics contaminating ecosystems and food chains.
- *Effluent Run Off:* Agricultural and industrial pollution creates dead zones in oceans.
- Insect Population Decline: Pesticides and pollution contribute to declining insect populations.

Tipping Points and Feedback Loops

- *Ice Melt:* Melting ice lowers albedo, accelerating global warming through feedback loops.
- *AMOC Collapse:* Disruption of ocean currents can lead to abrupt climate changes.
- *Amazon Rainforest:* Transition from lush tropical forest into a dry, degraded savanna.
- *Coral Bleaching:* Coral bleaching affects marine ecosystems, leading to feedback loops in ocean health.
- *Blue Ocean Event:* Loss of Arctic ice reduces heat reflection, speeding up global warming.

GREEN: ENVIRONMENT

Amazon Rainforest
- *Deforestation*: Reduces CO2 absorption, exacerbating climate change.
- *CO2 Absorption > Emission:* Switch from carbon sink to a carbon source.
- *Unpredictable Weather Patterns:* Affects regional and global weather systems.
- *Pandemics:* Compression of wildlife leads to increased risk of zoonotic diseases.
- *Monocropping:* Clearing the forest and planting feed crops for cattle.

Antibiotic Resistance
- *Health Problems:* Resistance leads to untreatable infections and health crises.
- *Pandemics:* In the event of another pandemic, the virus might be resistant to our current antibiotic medicines.
- *Pollution:* Pharmaceutical waste contributes to the spread of resistant bacteria.
- *Food Insecurity:* Resistance affects livestock health and food safety.
- *Economy:* Increases in treatment costs strain healthcare systems.

Carrying Capacity
- *Population:* Exceeding carrying capacity leads to resource shortages and environmental strain.
- *Resource Depletion:* Overuse reduces the planet's ability to support human life.
- *Food Insecurity:* Strain on agricultural systems due to exceeding carrying capacity.
- *Ecosystem Collapse:* Overpopulation leads to ecosystem degradation and species loss.
- *Economy:* Increased population and consumption create economic and environmental challenges.

Deforestation
- *CO2 Absorption > Emission:* Switch from carbon sink to a carbon source.
- *Insect Decline:* Loss of habitat for insect species.
- *Top Soil Degradation:* Leads to erosion and soil quality loss.
- *Water Shortages:* Affects local and global precipitation patterns.
- *Emissions*: Clear felling and burning trees emits carbon dioxide.

Delayed Effect
- *Climate Change:* Effects of climate change become more severe over time.
- *Ecosystem Collapse:* Long-term impacts of ecosystem degradation are often not immediate.
- *Health Problems:* Environmental issues may cause long-term health effects.
- *Economy:* Financial consequences of environmental damage may not be immediate.
- *Lack of Political Will:* Slow recognition of problems can delay effective policy measures.

Disasters
- *Climate Change:* Increases the frequency and intensity of natural disasters.
- *Infrastructure:* Disasters can destroy infrastructure and disrupt services.
- *Food Insecurity:* Disrupts food supply chains and agricultural productivity.
- *Mass Migration:* Forced migration due to disasters can create humanitarian crises.
- *Economy:* Disasters cause significant economic damage and financial strain.

Food Insecurity

- *Climate Change:* Affects agricultural yields and food availability.
- *Resource Depletion:* Overuse of resources impacts food production.
- *Pollution*: Contamination of food sources affects safety and availability.
- *Economy*: Economic issues can make food unaffordable.
- *Mass Migration*: Migration due to food shortages can strain resources in new areas.

Insect Decline

- *Pollution:* Pesticides and pollutants contribute to declining insect populations.
- *Ecosystem Collapse:* Loss of keystone insect species can collapse whole ecosystems.
- *Health Problems:* With the loss of some species, other, more aggressive species move in.
- *Food Insecurity:* Insect decline affects crop pollination and agricultural productivity.
- *Unpredictable Weather Patterns:* Disruption of weather cycles can lead to the inability of insect species to adapt to changes in temperature.

Monocropping

- *Top Soil Degradation:* Leads to soil nutrient depletion and erosion.
- *Pesticides:* High pesticide dependence can cause environmental harm and resistance.
- *Fertiliser Overuse:* Excessive fertiliser use leads to run off and pollution.
- *Food Insecurity:* Vulnerable to diseases and pests, affecting food supply.
- *Climate Change:* Monocropping systems may be less resilient to climate impacts.

Overshoot

- *Resource Depletion:* Exceeds Earth's capacity to regenerate resources.
- *Ecosystem Collapse:* Leads to loss of ecosystems and biodiversity.
- *Economy:* Overuse of resources can cause economic imbalances.
- *Population:* Strains systems beyond sustainable limits, causing shortages.
- *Climate Change:* Exceeding limits contributes to accelerated climate change.

Pandemics

- *Civil Unrest:* Strained from COVID-19, people will rebel against preventative measures.
- *Climate Change:* Alters habitats of disease vectors, increasing pandemic risk.
- *Healthcare System Collapse:* Strains health systems and exposes vulnerabilities.
- *Economy:* Disrupts economies and livelihoods.
- *Denialism:* Distrust of Governments leads to denial of pandemic risks.

Perpetual Growth

- *Resource Depletion:* Continuous growth leads to unsustainable resource use.
- *Ecosystem Collapse:* Growth increases pollution and habitat destruction.
- *Climate Change:* Accelerates through higher emissions and resource use.
- *Economy:* Growth-driven systems can exacerbate inequality.
- *Emissions:* Constant expansion continues to generate emissions.

Warming

- *Ice Melt:* Global warming accelerates ice melt, contributing to sea level rise.
- *Sea Level Rise:* Thermal expansion of water and melting ice, increasing sea levels.
- *Unpredictable Weather Patterns:* Warmer oceans means more frequent and severe storms..
- *Coral Bleaching:* Increased temperatures cause coral bleaching, disrupting marine ecosystems.
- *Tipping Points & Feedback Loops:* Warming triggers feedback loops, such as reduced ice cover, which further amplifies warming.

Wet Bulb Events

- *Warming:* Higher temperatures increase the likelihood of wet bulb events, where heat and humidity become life-threatening.
- *Health Problems:* Severe wet bulb events can cause heat stress, leading to death.
- *Food Insecurity:* Extreme heat can damage crops and reduce agricultural yields.
- *Energy Supply:* Increased temperatures from wet bulb events raise energy demand for cooling, straining energy supplies.
- *Economy:* Severe heat events can disrupt economies by affecting labor productivity and infrastructure.

BLUE: WATER/ATMOSPHERE

Atlantic Meridional Overturning Circulation Collapse

- *Climate Change:* Warming can disrupt the AMOC, leading to significant climate shifts.
- *Cooling:* Collapse of the AMOC can cause cooling in Europe, despite global warming.
- *Sea Level Rise:* AMOC disruption can lead to uneven sea level rise, affecting coastal areas.
- *Unpredictable Weather Patterns:* Changes in ocean circulation impact weather patterns and storm intensities.
- *Ecosystem Collapse:* Disruption of the AMOC affects marine ecosystems and nutrient cycling.

Blue Ocean Event

- *Warming:* The Blue Ocean Event occurs when Arctic sea ice melts, reducing heat reflection and amplifying warming.
- *Tipping Points & Feedback Loops:* Loss of sea ice accelerates warming through feedback loops, further reducing ice cover.
- *Climate Change:* Contributes to global temperature rise by decreasing Earth's albedo.
- *Sea Level Rise:* Accelerates ice melt from Greenland and other ice sheets, increasing sea levels.
- *Unpredictable Weather Patterns:* Affects global weather patterns, potentially altering jet streams and storm tracks.

Clathrate Gun Hypothesis

- *Warming:* Increased global temperatures can trigger the release of methane from clathrates, exacerbating warming.
- *Emissions:* Methane release from permafrost and clathrates accelerates climate change due to its high greenhouse gas potential.
- *Tipping Points & Feedback Loops:* Methane emissions from clathrates contribute to positive feedback loops in global warming.
- *Ice Melt:* Methane release can lead to further ice melt, enhancing warming and sea level rise.
- *Ecosystem Collapse:* Accelerated warming affects ecosystems and biodiversity through rapid climate changes.

Cooling

- *Global Dimming:* Pollution can cause cooling by reflecting sunlight away from the Earth.
- *Climate Change:* Periods of cooling can occur despite long-term warming trends due to various factors.
- *Ice Melt:* Cold water from ice melt disrupts ocean currents.
- *Unpredictable Weather Patterns:* Can impact weather systems and lead to colder winters.
- *Ecosystem Collapse:* Cooling can disrupt ecosystems adapted to warmer conditions, affecting species survival.

Coral Bleaching

- *Warming:* Increased sea temperatures cause coral bleaching by stressing corals and expelling symbiotic algae.
- *Ocean Acidification:* Acidic waters from increased CO2 can exacerbate coral bleaching and weaken coral structures.
- *Ecosystem Collapse:* Coral bleaching disrupts marine ecosystems and food chains dependent on coral reefs.
- *Food Insecurity:* Loss of coral reefs impacts species that rely on them for habitat and food.
- *Economy:* Coral bleaching affects tourism and fisheries dependent on healthy reefs.

Global Dimming

- *Pollution***:** Aerosols and particulates from pollution can cause global dimming by reflecting sunlight.
- *Climate Change:* Global dimming can temporarily offset some warming effects, masking the full impact of greenhouse gases.
- *Unpredictable Weather Patterns:* Changes in sunlight reach due to global dimming can affect regional weather patterns.
- *Food Insecurity:* Reduced sunlight can impact crop yields and agricultural productivity.
- *Health Problems:* Pollution causing global dimming can also lead to health issues from airborne particulates.

Ice Melt

- *Sea Level Rise:* Melting ice contributes to rising sea levels, affecting coastal regions.
- *Warming:* Accelerates global warming by reducing the Earth's albedo effect.
- *Ecosystem Collapse:* Ice melt impacts ecosystems dependent on ice-covered habitats.
- *AMOC:* Changes in ice melt affect ocean salinity and circulation patterns.
- *Tipping Points & Feedback Loops:* Can trigger feedback loops, accelerating warming.

Jet Stream Collapse

- *Warming:* Changes in temperature gradients can disrupt the jet stream, leading to erratic weather patterns.
- *Unpredictable Weather Patterns:* Jet stream collapse can cause prolonged periods of extreme weather, such as heat waves or cold spells.
- *Ocean Circulation:* Disruption of the jet stream can impact ocean currents and regional climates.
- *Ecosystem Collapse:* Altered weather patterns affect ecosystems and species adapted to stable conditions.
- *Food Insecurity:* Unpredictable weather from jet stream changes can impact crop yields and agricultural practices.

Microplastics

- *Pollution:* Microplastics result from the breakdown of larger plastic waste, contaminating ecosystems.
- *Health Problems:* Microplastics can enter the food chain and pose health risks to humans and wildlife.
- *Ocean Acidification:* Microplastics contribute to ocean pollution, exacerbating acidification effects.
- *Ecosystem Collapse:* Impact marine and terrestrial ecosystems by disrupting the health of various organisms.
- *Resource Depletion:* The production and disposal of plastics contribute to resource use and waste accumulation.

Ocean Acidification

- *Climate Change:* Increased CO2 levels from warming lead to higher acidity in ocean waters.
- *Coral Bleaching:* Acidic conditions weaken corals, contributing to coral bleaching.
- *Ecosystem Collapse:* Ocean acidification disrupts marine life, particularly organisms with calcium carbonate shells or skeletons.
- *Food Insecurity:* Affects fisheries and seafood industries due to impacts on marine species.
- *Warming:* Acidification is both a consequence and exacerbator of global warming effects.

Ocean Dead Zones

- *Pollution:* Nutrient run-off from agriculture and industry causes dead zones in oceans due to hypoxia.
- *Ecosystem Collapse:* Dead zones result in the loss of marine life and disruption of aquatic ecosystems.
- *Economy:* Affects commercial fishing by reducing fish populations and biodiversity.
- *Health Problems:* Pollution leading to dead zones can also impact human health through contaminated seafood.
- *Climate Change:* Changes in ocean temperature and circulation patterns can contribute to the formation of dead zones.

Sea Level Rise

- *Ice Melt:* Melting glaciers and ice sheets contribute to rising sea levels.
- *Warming:* Thermal expansion of seawater due to global warming raises sea levels.
- *Disasters:* Rising sea levels accelerate coastal erosion and flooding.
- *Mass Migration:* Sea level rise can displace communities and disrupt coastal ecosystems.
- *Economy:* Affects infrastructure and property in vulnerable coastal areas.

Unpredictable Weather Patterns

- *Climate Change:* Alters weather patterns, leading to more frequent and severe weather events.
- *Jet Stream Collapse:* Disrupts stable weather patterns, causing erratic and extreme weather.
- *Food Insecurity:* Affects crop yields and farming practices due to unpredictable conditions.
- *Economy:* Increases costs related to disaster response and infrastructure repair.
- *Health Problems:* Extreme weather events can pose risks to public health and safety.

Water Shortages

- *Climate Change:* Changes in precipitation patterns and increased evaporation can lead to water scarcity.
- *Pollution:* Contamination of water sources affects availability and quality of water.
- *Resource Depletion:* Overuse of freshwater resources can lead to shortages.
- *Population:* Increasing demand for water due to growing populations exacerbates shortages.
- *Food Insecurity:* Water scarcity affects irrigation and food production.

YELLOW: INDUSTRY

Business As Usual

- *Resource Depletion:* Continuation of current practices leads to accelerated resource depletion.
- *Climate Change:* Fails to address climate change impacts, leading to worsening environmental conditions.
- *Pollution:* Maintains high levels of pollution due to lack of significant change in practices.
- *Inequality:* Can exacerbate inequalities by prioritizing profit over equitable resource distribution.
- *Overshoot:* Continuation of unsustainable practices accelerates environmental degradation.

CO2 Absorption Turns to Emissions

- *Deforestation*: Reduces the planet's ability to absorb CO2, leading to increased atmospheric concentrations.
- *Warming*: Higher CO2 levels contribute to global warming and climate change.
- *Ocean Acidification*: Increased CO2 levels affect ocean chemistry, causing acidification.
- *Tipping Points & Feedback Loops*: Reduced CO2 absorption accelerates warming through positive feedback mechanisms.
- *Climate Impact:* Impacts climate patterns and exacerbates extreme weather events.

Debt

- *Economy:* High levels of debt can lead to economic crises and affect environmental policies.
- *Resource Depletion*: Debt-driven economic pressures can lead to unsustainable resource use.
- *Inequality*: Debt burdens can exacerbate economic inequality and limit access to resources.
- *Transitioning:* Economic challenges can limit investments in sustainable practices.
- *War*: Economic instability from high debt levels can lead to social and civil unrest.

Economy

- *Resource Depletion*: Economic activities contribute to the overuse of natural resources.
- *Pollution*: Industrial and economic activities generate pollution, affecting environmental health.
- *Inequality:* Economic systems can exacerbate social and economic inequalities.
- *Climate Change:* Economic growth often leads to increased emissions and climate impacts.
- *Transitioning:* Shifts towards sustainable economies require significant changes in economic practices.

Effluent Run-Off

- *Pollution:* Agricultural and industrial run-off contaminates water sources and ecosystems.
- *Ocean Dead Zones:* Nutrient run-off leads to hypoxia and dead zones in oceans.
- *Health Problems*: Contaminated run-off can impact human health through polluted water supplies.
- *Top Soil Degradation:* Run-off can erode soils and reduce agricultural productivity.
- *Ecosystem Collapse*: Disrupts aquatic and terrestrial ecosystems through contamination.

Emissions

- *Climate Change*: Greenhouse gas emissions contribute to global warming and climate change.
- *Health Problems*: Emissions degrade air quality, impacting human health and the environment.
- *Pollution:* Emissions from industrial activities lead to environmental pollution.
- *Ocean Acidification*: CO2 emissions increase ocean acidity, affecting marine life.
- *Economy*: Managing and reducing emissions can involve significant economic costs and investments.

Fast Fashion

- *Pollution:* Textile production contributes to water and air pollution through chemicals and waste.
- *Resource Depletion*: Fast fashion requires extensive use of natural resources, including water and raw materials.
- *Waste*: High turnover of fashion items leads to increased textile waste and landfill use.
- *Slavery*: Often involves poor labor conditions and exploitation in production processes.
- *Microplastics*: Contributes to broader environmental issues like water and soil contamination.

Fertiliser Overuse

- *Pollution*: Excess fertiliser use leads to nutrient run-off and pollution of water bodies.
- *Ecosystem Collapse*: Causes algal blooms and dead zones in aquatic systems.
- *Top Soil Degradation*: Overuse can lead to soil nutrient imbalances and degradation.
- *Food Insecurity:* Impacts long-term agricultural productivity and food security.
- *Health Problems:* Contaminated water sources can pose health risks to humans.

Fossil Fuels

- *Climate Change:* Burning fossil fuels releases CO2 and other greenhouse gases, driving climate change.
- *Pollution:* Fossil fuel extraction and use cause air and water pollution.
- *Resource Depletion*: Fossil fuel reserves are finite and depleting over time.
- *Energy Supply:* Reliance on fossil fuels affects energy security and sustainability.
- *Economy*: Fossil fuel industries influence global economies and can affect environmental policies.

Infrastructure

- *Climate Change:* Infrastructure needs to adapt to changing climate conditions and extreme weather.
- *Pollution:* Infrastructure development can contribute to environmental pollution.
- *Resource Use*: Building and maintaining infrastructure requires significant resource use.
- *Economy*: Infrastructure investments are critical for economic stability and growth.
- *Disasters*: Infrastructure resilience is crucial for mitigating the impacts of natural and human-made disasters.

Lobbying

- *Lack of Political Will*: Lobbying can impact environmental policies and regulations, sometimes hindering progress.
- *Economy:* Influences economic policies and resource management decisions.
- *Climate Change*: Can affect the implementation of climate change mitigation strategies.
- *Health Problems:* Lobbying can influence regulations related to pollution and health standards.
- *Inequality:* Lobbying can exacerbate economic and social inequalities through policy influence.

Pesticides

- *Insect Population:* Pesticides contribute to declining insect populations and biodiversity loss.
- *Pollution:* Run-off from pesticide use contaminates water sources and soil.
- *Health Problems*: Exposure to pesticides can have health impacts on humans and wildlife.
- *Top Soil Degradation*: Pesticides can degrade soil health and affect agricultural productivity.
- *Ecosystem Collapse*: Alters ecosystems by affecting non-target species and food webs.

PFAS Chemicals

- *Pollution*: PFAS chemicals contribute to environmental contamination and pollution.
- *Health Problems*: PFAS exposure is linked to various health issues, including cancer and liver damage.
- *Water Shortages*: PFAS can contaminate drinking water sources, posing risks to human health.
- *Ecosystem Collapse*: Affects wildlife and ecosystems through bioaccumulation in food chains.
- *Waste*: PFAS are persistent in the environment, complicating waste management and remediation efforts.

Resource Depletion

- *Carrying Capacity*: Overuse of resources strains the planet's carrying capacity and sustainability.
- *Economy:* Resource depletion affects economies dependent on natural resources.
- *Ecosystem Collapse*: Depletion of resources can lead to habitat loss and ecosystem degradation.
- *Food Insecurity*: Strains agricultural productivity and food supply.
- *War*: Resource scarcity can lead to conflicts over access and control of resources.

Top Soil Degradation

- *Monocropping*: Intensive monocropping practices lead to soil nutrient depletion and erosion.
- *Pollution:* Run-off and contamination contribute to soil degradation and loss of fertility.
- *Food Insecurity*: Affects agricultural productivity and long-term food security.
- *Ecosystem Collapse*: Degrades ecosystems reliant on healthy soil for plant growth and biodiversity.
- *Climate Change:* Soil degradation reduces carbon sequestration, exacerbating climate change.

Transitioning

- *Energy Supply:* Shifting from fossil fuels to renewable energy sources requires significant changes in infrastructure and investment.
- *Infrastructure*: Requires an overhaul of current infrastructure, shifting to sustainability.
- *Climate Change:* Aims to mitigate climate change by reducing greenhouse gas emissions and environmental impact.
- *Psychological Drivers:* Requires shifts in societal behaviours and policies to support sustainable practices.
- *Economy:* Transitioning impacts economic structures, necessitates adaptation in various sectors.

War

- *Resource Depletion*: Conflicts often lead to overuse and destruction of natural resources.
- *Economy*: War can disrupt economies and lead to resource shortages.
- *Mass Migration*: Conflicts drive large-scale displacement and migration.
- *Disaster*: Warfare can cause significant environmental destruction and pollution.
- *Civil Unrest*: War often leads to social instability and civil unrest.

Waste

- *Pollution*: Improper waste management contributes to environmental pollution and contamination.
- *Resource Depletion*: Waste accumulation reflects inefficient resource use and depletion.
- *Health Problems*: Poor waste management can lead to health issues from exposure to hazardous materials.
- *Climate Change*: Waste decomposition produces greenhouse gases, contributing emissions.
- *Economy*: Managing and disposing of waste involves significant costs and resources.

RED: PEOPLE

Apathy

- *Environmental Collapse*: Apathy towards environmental issues can lead to inaction and worsening conditions.
- *Climate Change:* Lack of concern hinders efforts to address and mitigate climate change.
- *Lack of Political Will*: Apathy can lead to insufficient political will and ineffective policies.
- *Consumerism*: Apathy affects consumer choices and demand for sustainable products.
- *Inequality*: Apathy towards social issues can exacerbate inequality and limit support for vulnerable communities.

Consumerism

- *Resource Depletion*: Consumption leads to accelerated depletion of natural resources.
- *Pollution*: Increased consumer goods result in higher waste and pollution levels.
- *Climate Change*: Consumerism drives higher emissions and environmental impact through production and transportation.
- *Economy*: Consumerism fuels economic growth but can also lead to unsustainable practices.
- *Waste*: High consumption rates contribute to increased waste generation and management challenges.

Denialism

- *Climate Change*: Denialism can impede efforts to address and combat climate change.
- *Pollution*: Denial of environmental impacts can delay necessary actions to reduce pollution.
- *Health Problems*: Denialism about health issues can affect public health responses and policies.
- *Apathy*: Impedes the implementation of effective policies and solutions for environmental and social problems.
- *Mis & Disinformation*: Limits the spread of accurate information and undermines efforts to educate the public.

Health Problems

- *Pollution*: Exposure to pollutants can lead to a range of health issues, including respiratory and cardiovascular diseases.
- *Climate Change*: Climate impacts, such as heatwaves and vector-borne diseases, affect public health.
- *Resource Depletion*: Depleted resources can impact access to clean water and food, leading to health problems.
- *Economy*: Health problems can strain healthcare systems and affect economic productivity.
- *Inequality*: Health issues are often exacerbated by social and economic inequalities.

Health System Collapse

- *Pandemics*: Strain on health systems during pandemics can lead to collapse or severe disruptions.
- *Economy*: Economic challenges can undermine the effectiveness and sustainability of health systems.
- *Resource Depletion:* Scarcity of resources affects healthcare access and quality.
- *Climate Change*: Impacts on health systems through increased disease burden and infrastructure damage.
- *Inequality*: Systemic inequalities can exacerbate health system failures and limit access to care.

Inequality

- *Economy*: Economic inequalities affect access to resources and opportunities.
- *Health Problems*: Inequality contributes to disparities in health outcomes and access to healthcare.
- *Climate Change*: Vulnerable populations face greater impacts from climate change and environmental degradation.
- *Population*: Inequitable distribution of resources exacerbates social and economic disparities.
- *Civil Unrest*: Inequality can lead to social tensions and unrest, impacting societal stability.

Lack of Political Will

- *Climate Change*: Insufficient political action impedes progress on climate change mitigation.
- *Business As Usual*: Lack of political will can hinder effective management of natural resources.
- *Environmental Collapse*: Inadequate political support for environmental policies affects conservation efforts.
- *Economy*: Political reluctance to address economic issues can lead to unsustainable practices.
- *Mis & Disinformation:* Lack of political will can delay necessary actions to address social and environmental challenges.

Mass Migration

- *Disasters*: Natural and human-made disasters can drive large-scale migration.
- *Climate Change*: Climate impacts, such as sea level rise and extreme weather, force people to migrate.
- *Economy*: Economic crises and conflicts lead to displacement and migration.
- *Resource Depletion*: Resource shortages can drive people to seek better conditions elsewhere.
- *Civil Unrest*: Large migration flows can lead to social and political tensions in receiving areas.

Mental Health

- *Climate Change*: Climate impacts and disasters can affect mental health and well-being.
- *Pollution:* Exposure to pollutants can have adverse effects on mental health.
- *Inequality*: Social and economic inequalities contribute to mental health disparities.
- *Economy*: Economic instability and debt can impact mental health and access to care.
- *Apathy*: Lack of concern for mental health issues can hinder effective support and treatment.

Mis and Disinformation

- *Climate Change:* Misinformation can undermine efforts to address climate change and spread confusion.
- *Health Problems*: Disinformation about health issues can impact public health responses and policies.
- *Pollution:* Misinformation about pollution sources and impacts can delay necessary actions.
- *Apathy*: Disinformation can affect public perception and hinder effective policy implementation.
- *Civil Unrest*: Misleading information contributes to social and political instability.

Population

- *Resource Depletion*: Growing populations increase demand for resources and contribute to depletion.
- *Food Insecurity*: Population growth strains food production and distribution systems.
- *Climate Change*: Higher populations contribute to greenhouse gas emissions and environmental impact.
- *Economy*: Population growth affects economic development and resource management.
- *Infrastructure*: Growing populations require expanded infrastructure and services, impacting sustainability.

Power and Greed

- *Resource Depletion*: Pursuit of power and wealth often leads to overexploitation of resources.
- *Climate Change*: Greed-driven practices contribute to increased emissions and environmental damage.
- *Inequality*: Power imbalances and greed exacerbate economic and social inequalities.
- *Pollution*: Desire for profit can lead to increased pollution and environmental degradation.
- *Economy*: Greed can affect political decisions and policies, hindering progress on environmental issues.

Psychological Drivers

- *Denialism:* Traits like narcissism and psychopathy can contribute to denialism and resistance to addressing issues like climate change.
- *Consumerism*: Lack of purpose can drive excessive consumerism and environmental exploitation.
- *Power and Greed*: Traits such as Machiavellianism drive behaviours focused on power and resource accumulation.
- *Inequality:* Psychological traits can influence policies and behaviours that exacerbate social inequalities.
- *Apathy*: Can impact the effectiveness and fairness of environmental policies.

Racism and Fascism

- *Inequality*: Racism and fascism exacerbate social and economic inequalities, affecting marginalized communities.
- *Civil Unrest*: These ideologies can lead to social unrest and conflict, impacting stability.
- *Resource Depletion*: Discriminatory practices affect equitable distribution of resources and opportunities.
- *Lack of Political Will*: Racism and fascism can undermine political will to address environmental and social issues.
- *Slavery*: Violations of human rights and discrimination affect the well-being and access to resources for affected populations.

Slavery

- *Inequality*: Slavery perpetuates social and economic inequalities and exploitation.
- *Economy*: Historically and currently, slavery affects economic systems and resource distribution.
- *Population*: Slavery is a severe violation of human rights, impacting individuals' well-being and freedom.
- *Civil Unrest*: Slavery and its legacies contribute to social and political instability.
- *Apathy*: Slavery often involves the exploitation of natural and human resources.

"Here's your problem—it looks like you're paying attention to what's going on."

STAGE FOUR: THE RIGHT HEMISPHERE
The Metacrisis through the lens of the Right Hemisphere

The left and right hemispheres of the brain perceive the world in quite different ways. Viewing through the left hemisphere gives a narrow focus where the world is made up of little pieces of information. It is analytical and logical, seeing events as isolated, lacking connections, and categorising items so they essentially become abstracted and lifeless. Humans are separate from nature, and nature is merely a resource to be utilised. The right hemisphere on the other hand, sees that everything is ultimately connected, a whole rather than the individual components. It recognises the implicit nature of complex connections and how all those interactions weave into something greater than the separate parts. Humans are part of nature, and nature is something to be revered.

"So you've got a kind of mechanistic, reductionist world subtended by the left hemisphere, which is just a representation or a useful diagram, and you've got a living, complex world on the other hand, which has characteristics which are very much harder to pin down, that involve all the richness and meaning in life." Iain McGilchrist.

The left hemisphere's interpretation of the world is not in and of itself inherently wrong. It becomes problematic when in combination with the dark triad personality traits. These are **Narcissism** (self absorption), **Psychopathy/Sociopathy** (lack of empathy for others and nature), and **Machiavellianism** (strategic exploitation, marked by a willingness to manipulate others). In combination with the left hemisphere, these traits culminate in prioritising the gains of individuals and companies over other people and the natural environment. Unfortunately it is estimated that about 12% of corporate senior leadership displays a range of psychopathic traits, and the people who are often drawn to politics tend toward this sphere of personality. Lured by the temptation of power.

Ok, so let's frame the Metacrisis through the lens of the right hemisphere to give us some alternative perspective. If we approach the interconnected global challenges in this manner, it involves engaging with them holistically, intuitively, and creatively. We want to look at integrating complex patterns and connecting emotionally and empathically with the world. Easy right? Here's what that might look like:

Holistic Perception
Don't let the term holistic put you off! Rather than breaking down each term individually, the right hemisphere would perceive these issues as an interconnected web, where every thread is woven into the fabric of life on Earth. It would sense the intricate dance between nature and humanity, recognizing that the disruption of one element, such as the Amazon Rainforest, ripples across the entire system, affecting climate, biodiversity, and human survival.

Intuitive Understanding
Instead of relying solely on data and linear cause-and-effect logic, the right hemisphere might grasp these challenges through intuition; sensing that when we pollute the oceans or clear the forests, we're not just harming isolated environments but we're also disrupting the delicate balance of life itself. The collapse of ecosystems or the decline of insect populations would be felt as a deep, visceral loss, a disconnection from the natural world that sustains us.

Emotional and Empathic Connection
The right hemisphere is attuned to emotions and empathy. It would likely feel the suffering caused by food insecurity, water shortages, or mass migration on a deeply human level. The idea of "Health Problems" or "Mental Health" wouldn't just be statistics but real human experiences of pain, stress, and despair. This perspective would evoke a compassionate response, urging us to care for the Earth and each other, not just out of necessity but out of love and empathy.

Creative and Symbolic Thinking
The right hemisphere might approach the solutions to these challenges in a more creative and symbolic way. It would see "Renewable Energy" not just as a technological shift but as a symbol of humanity's potential to harmonise with nature. "Transitioning" could be imagined as a journey, a collective quest to move from a place of disconnection and destruction to one of renewal and rebirth.

Pattern Recognition
Rather than isolating each issue, the right hemisphere would recognize patterns and themes. It might see the recurring theme of imbalance, whether it's in our climate, economy, or social systems, and intuitively understand that healing requires restoring balance at every level. It would perceive "Feedback Loops" as natural rhythms that can either spiral into chaos or harmony, depending on our actions.

Spiritual and Existential Reflection
Finally, the right hemisphere might frame these challenges in a broader, existential context, sensing that our current trajectory, driven by "Perpetual Growth," "Consumerism," and "Denialism", is unsustainable, not just physically but spiritually. The concept of a "Finite Planet" would resonate deeply, reminding us that we are part of something larger, something sacred. The right hemisphere might inspire a sense of stewardship, urging us to protect and nurture the Earth as we would a beloved home or a sacred space.

Synthesis and Integration
In the end, the right hemisphere would seek to integrate all these elements into a cohesive whole. It would see the solution not as a series of isolated actions but as a profound shift in consciousness, a movement towards a more holistic, compassionate, and sustainable way of living. This perspective would emphasise the need for unity, cooperation, and a deep, intuitive connection with the world around us.

Ok, so now what?

If you want to take some concrete actions in your home, see *The Three Week Challenge* for a whole list of proactive steps you can take. If you want to keep thinking through the right hemisphere's lens, the challenges we face are not just problems to solve, but calls to reawaken our connection with the Earth, and each other. We want to rediscover the balance and harmony that sustains life, and to act from a place of deep empathy and creativity. Averting a catastrophe of Metacrisis proportions involves transforming how individuals, communities, and societies perceive and interact with the world. This shift would require a deep, collective awakening that integrates personal awareness, cultural values, and systemic change.

Here are some suggestions for how we could individually try and foster such a transformation:

Cultivating Awareness and Connection: Encourage mindfulness and meditation practices that help people become more aware of their connection to the Earth and the natural world. This could include spending time in nature, practising gratitude for the environment, and engaging in rituals that honour the planet. Education and Storytelling: Use education not just to inform, but to inspire. Storytelling, art, and narratives that emphasise our interconnectedness with nature can evoke a deep emotional connection. Highlight stories of resilience, regeneration, and the beauty of sustainable living.

Transforming Economic and Political Systems: Advocate for economic models that prioritise sustainability over perpetual growth. This could involve promoting circular economies, de-growth movements, and policies that support renewable energy and sustainable agriculture. Encourage active participation in political processes to push for systemic change. This includes voting for leaders who prioritise climate action, supporting policies that reduce carbon emissions, and holding corporations accountable for their environmental impact.

Shifting Values and Priorities: Challenge the current definitions of success, which often prioritise material wealth and consumption. Promote values like well-being, community, balance, and harmony with nature as markers of a fulfilling life. Foster cultural shifts that prioritise ecological and social justice. This could involve celebrating indigenous wisdom, which often emphasises living in harmony with the Earth, and incorporating these principles into mainstream cultural practices.

Empowering Personal and Collective Action: Support grassroots initiatives that empower local communities to take action. This includes community gardens, local renewable energy projects, and cooperative economies that prioritise sustainability. Promote a sense of global solidarity by connecting people across borders through shared goals and challenges. Global movements like Fridays for Future or Extinction Rebellion help create a collective identity focused on climate action.

Integrating Technology and Innovation: Invest in and promote the development of technologies that reduce environmental impact, such as renewable energy, carbon capture, and sustainable agriculture. Emphasise the role of technology in supporting a shift towards a more sustainable way of life. Utilise digital platforms to spread awareness, mobilise action, and create virtual communities focused on climate justice. Social media can be a powerful tool for sharing information, inspiring change, and connecting like-minded individuals.

Building Resilience and Adaptability: Teach resilience and adaptability as core life skills. This includes preparing communities for climate impacts, encouraging flexible thinking, and promoting adaptive practices in agriculture, infrastructure, and energy use. Integrate practices that promote emotional and psychological healing, acknowledging the grief and anxiety that often accompany awareness of climate change. Community support, counselling, and creative expression can help people process these emotions and turn them into motivation for action.

Embracing Ethics: Encouraging the perspective that the Earth is sacred and all life is interconnected. This could involve integrating spiritual practices that honour the Earth into daily life, fostering a sense of reverence and responsibility for the planet. Promote ethical consumption and lifestyle choices that reflect a commitment to sustainability. This includes reducing waste, choosing eco-friendly products, supporting ethical businesses, and living more simply.

Creating Visionary Leadership: Cultivate leaders who embody the values of sustainability, compassion, and foresight. These leaders, whether in politics, business, or community organisations, should inspire others to take action and lead by example. Empower the younger generation to be leaders in the climate movement. Encourage education and mentorship programs that give young people the skills and confidence to advocate for change and implement sustainable practices in their communities.

Engaging the Arts and Culture: Use art as a medium to convey the urgency of the climate crisis and the beauty of the natural world. Music, visual arts, theatre, and literature can inspire emotional responses and foster a deeper connection to the Earth. Develop and popularise cultural symbols and rituals that represent the shift towards sustainability. These symbols can serve as reminders of our collective responsibility to care for the planet.

Envisioning a Regenerative Future: Encourage people to envision a future where humanity lives in harmony with nature, sharing positive narratives about what a sustainable, regenerative world could look like, emphasising abundance, creativity, and cooperation. Engaging communities in collective imagining exercises, where people come together to dream about and plan for a sustainable future, can foster a sense of hope and agency, motivating people to take concrete steps towards making that future a reality.

In Summary:

Ultimately after all this, the ideal place to get to is a place of empowerment. To feel passionate about wanting to make a difference. It is my hope that you will go away and think about this, and when you read the news, you'll be able to put it in context. Maybe you're someone who can make a difference, who can talk to others, or rethink a way of doing something, considering its environmental cost, and changing it. Maybe you can invent a new technology, or perhaps you just know someone who would be receptive to having this conversation.

We are on the brink of catastrophic change, and we aren't doing anywhere near enough to address it, let alone even really talking about it. The Metacrisis isn't our future, it's unfolding now, we just haven't noticed it yet, and unfortunately, we're too busy to notice. Here in New Zealand, Cyclone Gabrielle was a taste of what will be the norm, but we can be better prepared for next time. Any difference we can make now, is worth it. If we can build resilience together, and grow stronger as friends, families, and communities, then that's worth it. And if we can leave the world just a little better off, then it's infinitely better to try, than to do nothing.

Navigation