Youth Ecological Revolution

A handbook for leaders

2nd Edition

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by Frank Rotering

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For my grandchildren
Ruby, Sam, Owen, and Duncan,
and young people everywhere.

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Acknowledgments

I would like to express my deep gratitude to the following people:

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2. Sarah Garden, for her unwavering faith in my long-term survival project;
3. Ye Tao, for his ethical vision, scientific innovations, and critical comments on chapters two and three;
4. Peter Dynes, for his helpful Twitter responses to my theoretical assertions.

Preface to the 2nd edition

Although the first edition of this book was published only nine months ago, the extreme weather events of 2021 and my deeper understanding of the ecological crisis have made this second edition an urgent necessity.

Regarding my understanding, the scientific work of Harvard's Dr. Ye Tao has convinced me that the industrial removal of greenhouse gases (GHGs) from the atmosphere is infeasible. In the first edition I assumed that this would be the primary method for cooling the Earth, and that solar radiation management (SRM) was only a stopgap measure while concentrations and heat declined. It is now clear to me that SRM must be the main measure in the short to medium term, and that reducing GHG concentrations must be largely deferred until a survivable global temperature has been achieved.

My second scientific revelation was the *aerosol effect*. This refers to the fact that industrial emissions contain both long-lived GHGs, which warm the planet, and short-lived aerosols, which cool it. Because emissions reductions apply to both components, these effects roughly cancel out. The rate of global warming will therefore remain largely unchanged, and could in some cases increase. The aerosol effect acts like a ratchet: emissions increase the global temperature, but reducing emissions typically fails to decrease it. This further undercuts the mainstream's fixation on emissions reductions and its commitment to the net-zero goal.

The extraordinary weather events during the summer and fall of 2021 have fundamental implications for the ecological survival of the young.

In my view the most significant of these is humankind's perception of the crisis. This is particularly true for the Global North, where affluent lifestyles and relatively minor climate damage had previously blunted the sense of existential urgency. For many in the rich world the weather-related destruction of homes, roads, bridges, and farms was a brutal awakening to the stark truth about the crisis - and the horrors that the Global South has long endured. As a resident of hard-hit British Columbia, Canada, I deeply experienced this gut-wrenching shift.

The second edition acknowledges this frightening reality by incorporating the following into its analysis and strategy:

- **The extreme urgency of SRM.** It is now evident that, at only 1.2°C above pre-industrial, the planet is already far too warm and must be cooled by about 1°C as rapidly as possible. As noted above, SRM is humankind's primary tool for achieving this end. Without its rapid and effective deployment, human suffering and mortality will soon spike to unbearable levels.
- **The inaction at CoP26 even AFTER the extreme weather events occurred.** This served as definitive proof that the capitalist world will continue with business as usual until catastrophic collapse occurs. It is now beyond dispute that avoiding revolutionary change is both irrational and deeply unethical.

- **The continuing lies and deceptions of climate science.** The falsehoods have not ceased despite overwhelming evidence that the field's SRM denialism and emissions fixation are triggering youth genocide and the extirpation of life on Earth. Based on its public positions, as distinct from its empirical research, mainstream climate science now stands condemned for its existential crimes against humankind and nature.
- **The erosion of trust in climate scientists.** Michael Mann and his mainstream colleagues, who faithfully disseminate the climate falsehoods, are coming under increasing attack for their ecocidal statements. This could help the young reject their deceptions, and it raises the possibility that ethical climate scientists will break with the mainstream and its representative organization, the IPCC. An appendix that in the first edition was a plea for mainstream integrity has therefore been replaced by the announcement of a professional split.
- **The transformed interests of the older.** Prior to the weather events it was possible for older people to believe that ecological and civilizational collapse would be postponed until after their deaths. Many are now keenly aware that collapse has begun within their lifetimes. It is therefore likely that they will be far more willing than previously to help the young in their survival struggle. In response I have added an appendix that urges the formation of militant youth-support organizations by concerned parents.

Briefly stated, I have updated *Youth Ecological Revolution* to reflect both my improved technical understanding and the social shifts that were triggered by the terrifying weather events of 2021.

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March, 2022
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Preface to the 1st edition

The world's young people have been brutally betrayed by social leaders and now face an ecological crisis of existential proportions. International conferences, global agreements, government policies, corporate initiatives, scientific warnings, emergency declarations, and activist pressures have done nothing to avert this unspeakable tragedy. If the young are to survive, only one chance remains: rapidly form revolutionary movements, remove the ecocidal leaders from power, and implement the rational crisis response.

This book primarily addresses the prospective youth leaders of these movements. I assume that they are deeply concerned about ecological collapse and outraged by the inaction of their elders. It is therefore likely that are seeking fundamentally new approaches to salvage their future. In the following chapters I submit my proposal for their critical examination and potential guidance.

Given this orientation, the book is structured as a handbook: a succinct analytical and strategic guide. It thus provides clear explanations while avoiding unnecessary details. For deeper understanding, most chapters end with suggestions for further reading. Also included are seven appendixes that might be useful to youth leaders. The most important of these is a proposed manifesto that outlines a militant program for youth ecological survival.

Who am I? A Dutch-born Canadian male in his early 70s who has been both cursed and gifted with a highly autonomous, Aspie-like mind. This means that, to an uncommon degree, I ignore conventional thought and reach independent conclusions. I have also avoided institutional and organizational affiliations that might distort or constrain my work. Because I have a profound ethical commitment to humankind and nature, I have studied the ecological crisis intensely for over thirty years.

My fervent hope is that this book, which presents my mature conclusions, will help the young survive the horrific crisis to which they have been viciously condemned.

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Chapter 1:
Ecological betrayal and its implications

A. THE BETRAYAL

Betrayal is the violation of a trust or confidence. Young people - those under about thirty years of age - have until recently trusted social leaders to protect the environment from serious damage and thus preserve their future. This confidence was justified for two reasons.

The first is **ethical**: just as our ancestors were responsible for passing a safe environment to us, we are responsible for passing a safe environment to our descendants. By any standard of intergenerational equity, social leaders have a moral duty to preserve the natural world for the civilized survival of the young and future humankind.

The second reason is **political**: an international climate agreement that was ratified by 197 countries in 1994 committed world leaders to maintaining safe greenhouse gas (GHG) concentrations in order to protect "future generations of humankind". Specifically, the UNFCCC agreement stipulated that concentrations must be restricted to levels that would, "… *prevent dangerous anthropogenic interference with the climate system*."

Given today's catastrophic land, ocean, and climate degradation, it is beyond dispute that this commitment has been grossly violated. Because the resulting environmental threats are existential, this violation is potentially ***genocidal*** for the global young. This group comprises roughly four billion people, 90% of whom live precariously in the poor countries of the Global South.

Briefly stated, today's young people have been cruelly betrayed, both ethically and politically. If they want to survive, their strategic thinking must begin with this sobering realization.

> **NOTE:** The term "social leaders", as used above, refers broadly to the holders of political power. In chapter five this group is accurately identified and a new term is introduced.

The violation of the UNFCCC agreement was of immense significance because it established the core falsehoods that underpin today's GHG-based disasters. The falsehoods are discussed in the next two chapters. Here I provide a brief account of the violation itself.

In its second assessment report (1995) the Intergovernmental Panel on Climate Change (IPCC) took the position that determining "dangerous anthropogenic interference with the climate system" is a task for government policymakers, not scientists. The organization defended this stance in its third report (2001) with the following argument:

1. Danger is not objective because it varies with global location and social coping capacity;
2. Dangerous interference is therefore a "value judgment" that can't be scientifically defined;
3. Because dangerous interference determines unsafe GHG concentrations, these can't be scientifically specified.

The IPCC thus concluded that the world's governments must independently establish unsafe concentration levels based on local conditions, and that the IPCC's limited role was to propose emissions scenarios to remain below them.

This argument and its conclusion are fraught with illogic and rich-world bias:

- Unsafe GHG concentrations are clearly a global problem that must be addressed at the global level. The IPCC's regional approach makes little sense.
- If the policymakers of a poor country conclude that GHG concentrations are already unsafe and must therefore decline, the IPCC offers them no guidance. The organization provides only emissions scenarios, but the GHGs in emissions increase concentrations, so all such scenarios lead to higher and even more dangerous levels.
- Although most GHGs are emitted in the Global North, they become uniformly distributed in the atmosphere. The rich countries will therefore impose their relatively high-concentration decisions on the poor countries, which need far lower levels to survive.
- Most fundamentally, objectivity in this context is irrelevant. ***GHG concentrations are unsafe when they cause harm to the world's most vulnerable populations.*** This is the only position that is consistent with the IPCC's repeated claims to social justice and global equity. The organization was therefore profoundly hypocritical when it knowingly permitted concentrations to soar above these levels.

Today's widely accepted target of net-zero emissions by 2050, which will result in decades of additional warming and virtually guarantees youth genocide, is a direct result of the IPCC's 1995 decision. In effect, the organization reversed the international community's commitment to safe concentrations. The IPCC and its supporters were therefore core contributors to the betrayal of "future generations of humankind".

B. STRATEGIC IMPLICATIONS

The first responsibility of youth leaders is to produce a workable strategy, or plan of action, for ecological survival. This will determine how their movements will be organized and directed. The betrayal of the young is a critical event with major strategic implications. The most significant of these are outlined below.

1. **The young have been ecologically abandoned.** The <u>intentional</u> reversal of the commitment to safe concentrations means that business as usual will be pursued until catastrophic collapse occurs. *The young must therefore accept full responsibility for their ecological survival.* Others will likely support them once this responsibility is embraced, but the initial impetus must come from the young themselves.

2. **Because the young have been deceived, they must independently rethink the crisis and its solutions.** Until mid-2016 I made a serious mistake by uncritically accepting the assertions of the IPCC and climate scientists. I then discovered that basic facts about emissions, concentrations, geoengineering, etc. had been either ignored or flagrantly distorted. One of this book's main aims is to use this unsettling experience to help the young gain an accurate understanding of the crisis they face.
3. **The environmental falsehoods are easily refuted, so powerful forces must be at work to maintain the genocidal pretense**. To cite the most prominent example, intelligent and informed people could readily grasp that the IPCC's 1995 reversal was based on a false argument. They nevertheless chose to support it, and have now defended this grotesque act for more than twenty-five years. Without powerful forces acting to degrade their judgment, such shameful behavior would be impossible. The most significant of these forces are humankind's material interests, which have biological roots, and the thought control imposed by social leaders to preserve their power and privileges.
4. **Because climate science has been intellectually corrupted, "trust the science" is a dangerously misleading slogan.** Although some trust in science is necessary, this must be restricted to empirical research that has been honestly conducted and accurately reported. Anything beyond this - framing, interpretations, conclusions, strategies, solutions, etc. - must by default be rejected.
5. **Older generations have largely acquiesced in the betrayal, indicating their broad support**. This means that, as with climate scientists, the older must by default be distrusted with respect to the crisis. However, many possess indispensable knowledge and experience, and some - particularly after the extreme weather events - will be eager to assist the young in their quest for a sustainable world. Distinguishing friend from foe among the older will therefore be a critical leadership task.
6. **Reformist youth movements must be replaced by militant youth movements**. Current movements are pressuring today's social leaders, under growth-dependent capitalism, to effectively address the crisis. Recent history has conclusively demonstrated the futility of this approach. Youth survival entails revolutionary change through militant movements, not incremental change through reformist movements.

To recap the betrayal's primary strategic implications, the young must:

- Accept full responsibility for their ecological survival;
- Independently rethink the crisis and the rational response;
- Acknowledge that material interests and political power support business as usual;
- Strictly limit their trust in climate science;
- By default distrust older generations;
- Shift from reformist to militant movements.

C. LEADERSHIP CONSIDERATIONS

NOTE: My task as a theorist is to develop the concepts required for a solution to the crisis and the transition to a sustainable world. The tasks of youth leaders are to modify these concepts as they deem necessary and then apply them to their concrete situations. Although the roles are distinct, a theorist inevitably has insights about the leadership function. In most chapters I therefore offer general advice to those who will assume this role. In these sections I address youth leaders directly.

1. The main error you must avoid is *fighting the last war:* applying the ideas, strategies, and tactics used in previous struggles on the false assumption that conditions are essentially unchanged. ***There has NEVER been a struggle like the one for youth ecological survival.*** This is not a fight for civil rights, economic equity, or gender equality. It is not the Depression, World War II, or the 2008 financial crisis. Today's leadership must be grounded in today's utterly unique conditions.
2. Based on these conditions, your first priority is to instigate SRM and other measures for short-term human survival. Your second priority is revolutionary change to implement the rest of the rational crisis response (see chapter three). As noted in chapter six, there is a promising relationship between the two: emergency SRM implementation could trigger revolutionary shifts.
3. The young are entitled to feel intense anger at social leaders for their failure to effectively address the crisis, and at the older for their contemptible silence. This rage can and should be used to motivate movement members. As leaders, however, you must not allow emotions to distort your analytical and strategic thought. Given the situation's complexity and the strength of opposing forces, your leadership challenge is among the most imposing in history. Let the anger spur you, but then push it aside and think as dispassionately as you can. In a similar vein, blaming and shaming the guilty generations can be useful as motivators, but don't let vitriol displace effective action.
4. Be aware that there are two reasons for focusing on the young. The first, as noted above, is that prior generations ethically and politically owe them civilized survival. The second is strategic: the young have the most to lose from ecological collapse, therefore have the most compelling reasons to overcome the crisis, and are thus the logical instigators of fundamental change. In recent years they have underscored this potential by loudly protesting the environmental destruction.
5. One of your biggest challenges will be to maintain a disciplined ambivalence towards climate scientists, other academics, and intellectuals generally. Collectively they are causing your demise, but many will likely assist you in your survival struggle. My suggestion is to think of the supporters as your employees: competent workers who can carry out assigned tasks such as climate research and developing a sustainable economic theory, but who by default have no place in the boardrooms where you frame the issues and make your strategic decisions.
6. Distinguishing friend from foe among the older is crucial because very few young people have the knowledge and experience required to produce a workable strategy. I suggest

you apply at least the following criteria for allowing older thinkers to engage in your strategy development. They must:

a. Firmly reject the standard environmental falsehoods. For example, if someone accepts net-zero emissions as the GHG goal, dismiss them immediately. They are not on your side.

b. Adopt a militant posture. Because today's ecocidal social order is ultimately maintained by violence, the commitment to nonviolence is a white flag that negates any chance of avoiding ecological collapse. Whether they realize it or not, those who wave this flag represent the forces of expansion and youth genocide.

c. Demonstrate deep and genuine concern for the ecological well-being of the young. This is a character judgment that you must reliably make.

7. Progressivism will likely be an impediment to your movement because its primary goal is social justice within the existing social order rather than sustainability within a new order. Its thinking and activism are therefore reformist rather than revolutionary. Keep in mind, however, that progressives are committed to social justice, which will be a major issue in the painful and protracted transition to a sustainable society.

D. KEY POINTS

- The young have been ecologically betrayed and abandoned. They must therefore assume full responsibility for their ecological survival.
- The environmental deceptions are numerous, and derive from two strong and deeply entrenched forces: the material interests of all and the social control of the powerful.
- Climate science has been intellectually corrupted and should be trusted only to the extent that it honestly conducts climate and Earth-system research.
- Older people have largely acquiesced in the environment's destruction. They should therefore be strategically trusted only to the extent that they unambiguously demonstrate their support for the young's ecological survival.
- Because progressivism arose to fight for social justice within the prevailing order, it is reformist rather than revolutionary. However, the struggle for equity will loom large in an ecologically constrained world, so progressives will continue to play a significant role.

E. FURTHER READING

DOCUMENTS

UNFCCC agreement (1992, ratified in 1994) - A highlighted copy to identify key statements. The original document is here.

The IPCC's Interpretation of UNFCCC Article 2 - Extracts from the IPCC's second, third, fourth, and fifth assessment reports (ARs) that address the organization's interpretation of "dangerous anthropogenic interference with the climate system." The full reports are here. (Note that "SAR" means "Second Assessment Report", and "TAR" means "Third Assessment Report". The report abbreviations then switch to AR4 and AR5.)

WEBSITE POSTS

The Young Desperately Need an Ecological Advocate - Criticism of an Australian climate conference in early 2020 that clearly demonstrated the youth betrayal.

The IPCC's Disastrous Refusal to Specify Unsafe GHG Concentrations - Some details on the organization's betrayal of the young.

The Scientific Misconduct of Climate Scientists - An argument that climate science, through its intellectual corruption, is violating its own codes of ethics and conduct.

Chapter 2:
The environmental calamity you face

A. THE ECOLOGICAL CRISIS

In chapter one I focused on the climate system as the primary example of youth betrayal. This accusation, however, applies to the ecological crisis as a whole. As shown in figure 2-1, this far broader crisis is rooted in the over-expansion of the global economy.

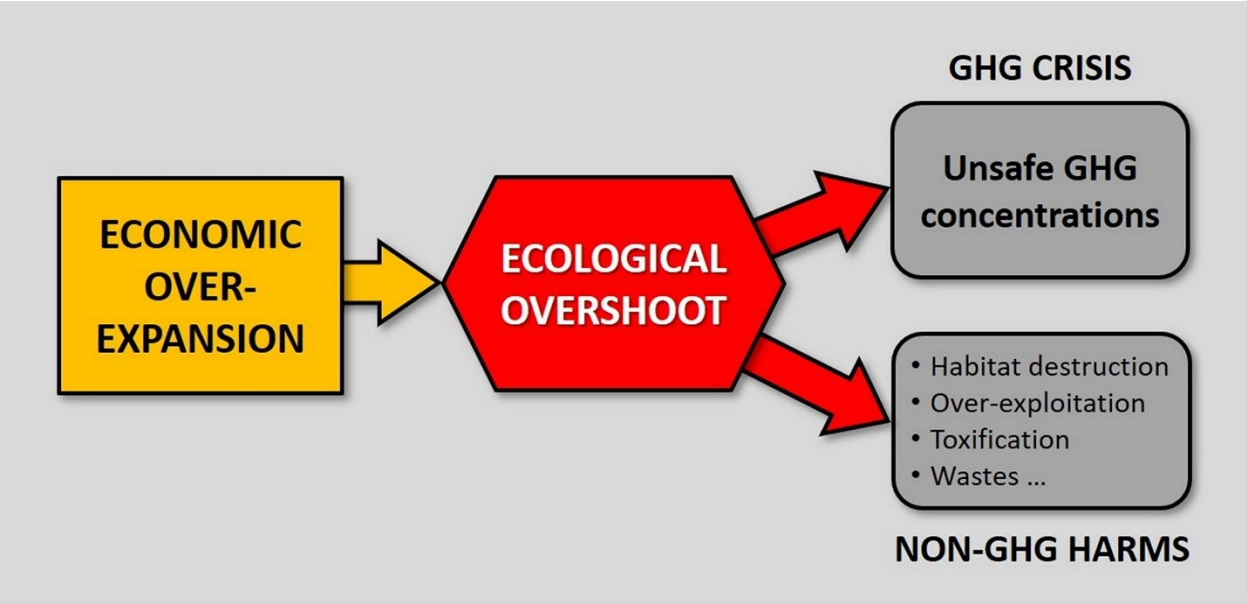

Figure 2-1. The ecological crisis

Centuries of rapid economic growth under capitalism placed increasing pressures on the environment, and around the 1950s critical limits were violated. Most significantly, the atmosphere's CO2 concentration shot past its long-term maximum of 300 parts per million (ppm). Collectively these violations are called *ecological overshoot* or simply *overshoot*.

The environmental damage associated with overshoot can be divided into the *GHG crisis* and *non-GHG harms*. The GHG crisis is the full set of damaging environmental effects from unsafe GHG concentrations. It poses an immediate existential threat and is therefore discussed further below. Non-GHG harms include habitat destruction, the over-exploitation of renewable resources, chemical and radiological toxification, and various forms of pollution and waste. These contribute to human health degradation, biodiversity loss, and species population declines, and could soon become existential threats themselves.

Given the extreme and destructive weather events of 2021, it is now clear that ecological collapse has already begun and that civilizational collapse could soon follow. This chapter and the next thus address an acute planetary emergency.

B. THE GHG CRISIS

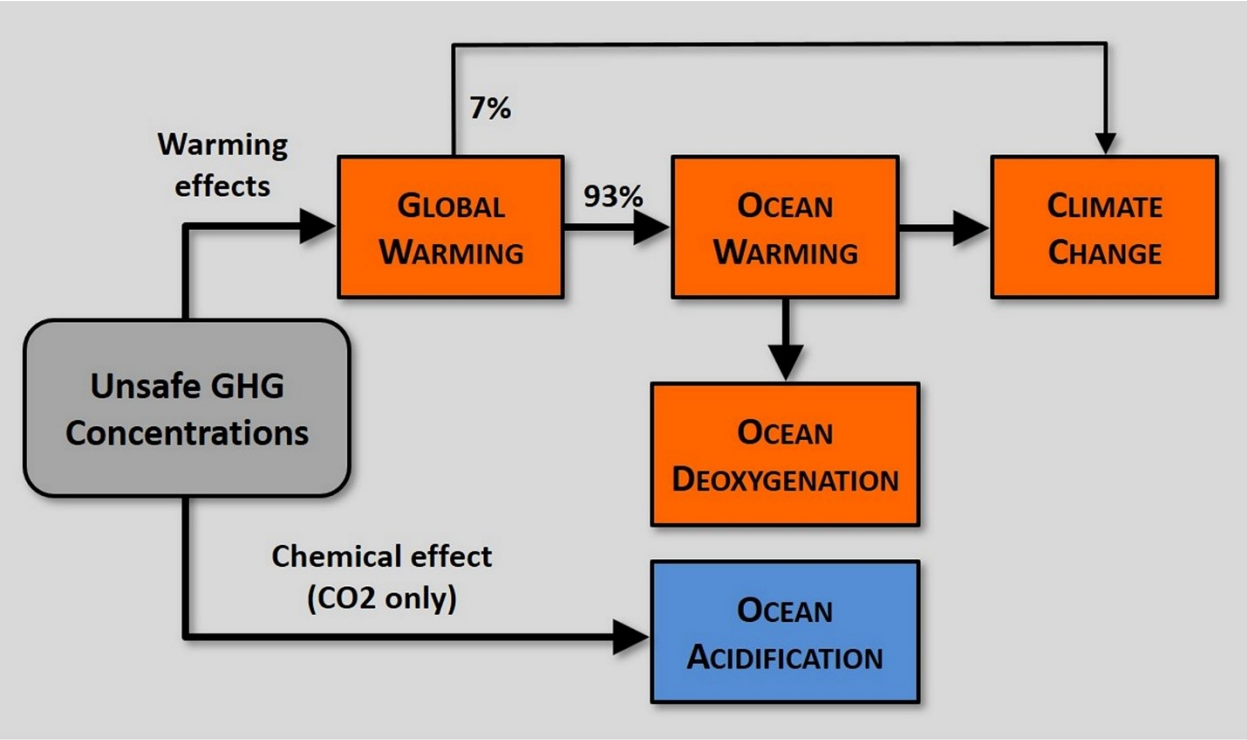

Figure 2-2. The GHG crisis

Unsafe GHG concentrations have several warming effects and one chemical effect. The warming effects are caused by all GHGs: CO2, methane, nitrous oxide, water vapor, and several minor gases. The chemical effect is ocean acidification, which is caused by CO2 alone.

The initial warming effect is an increase in the Earth's average surface temperature: global warming. As shown in figure 2-2, about 93% of the excess heat is absorbed by the ocean. This causes ocean warming, which in turn causes ocean deoxygenation. All three ocean effects - warming, deoxygenation, and acidification - can severely harm marine life. After a delay due to the ocean's immense mass (thermal inertia), this heat enters the atmosphere and drives the bulk of climate change. This term refers to a prolonged change in the mean and variability of key weather components.

The remaining 7% of the incremental heat immediately warms the land and atmosphere. This contributes to climate change and also damages lands through desertification, flooding, avalanches, etc. For simplicity, land damage is omitted from figure 2-2.

An accurate understanding of the GHG crisis is important for two reasons. First, the rising global temperature can cause Earth systems to reach tipping points and points of no return. These are extremely dangerous and are therefore discussed in section D. Second, because this crisis is at the heart of the betrayal discussed in chapter one, most mainstream discussions on the topic are either false or misleading - including the terminology employed. These deceptions are summarized in section E.

I must make three important points about "emissions" before I proceed:

1. This word is meaningless for most analytical purposes because emissions contain both GHGs, which warm the atmosphere, and aerosols, which have a cooling effect. Reducing emissions thus reduces both the warming and the cooling, with results that depend on concrete conditions. I therefore use "emissions" only when referring to industrial and other effluents. The terms "GHG releases" and "aerosol releases" are used when discussing temperature effects.
2. The mainstream frequently uses "GHG emissions", "CO2 emissions", "carbon emissions", etc. to establish the falsehood that emissions contain GHGs or CO2 alone. These terms are carefully avoided here.
3. Because the word "concentrations" refers to GHGs specifically, emissions and concentrations are qualitatively distinct. They are therefore incommensurable: they cannot be quantitatively compared.

These clarifications will be particularly significant in the next chapter, where solutions are formulated and both terminological and conceptual accuracy will be critical.

C. THE ECOLOGICAL DAMAGE FUNCTION

A remarkable fact about climate science is that it has never formalized the relationship between global warming and the resulting ecological damage. This formalization, here called the *ecological damage function*, relates the various warming factors to the environmental damage they cause. In its absence an analyst cannot know, for example, if stabilizing the global temperature anomaly at 1.5°C or 2°C suffices to solve the GHG crisis.

In its 2018 report, Global Warming of 1.5°C, the IPCC accurately states that, “Future climate-related risks depend on the rate, peak *and duration* of warming.” (Summary for Policymakers, p. 8, emphasis added) Unfortunately this is an isolated assertion that is ignored in the rest of the report and that remains virtually unacknowledged by climate scientists.

My proposed ecological damage function is a minor restatement of the above: the environmental damage from global warming is a function of the speed, magnitude, and duration of the unsafe temperature. See figure 2-3.

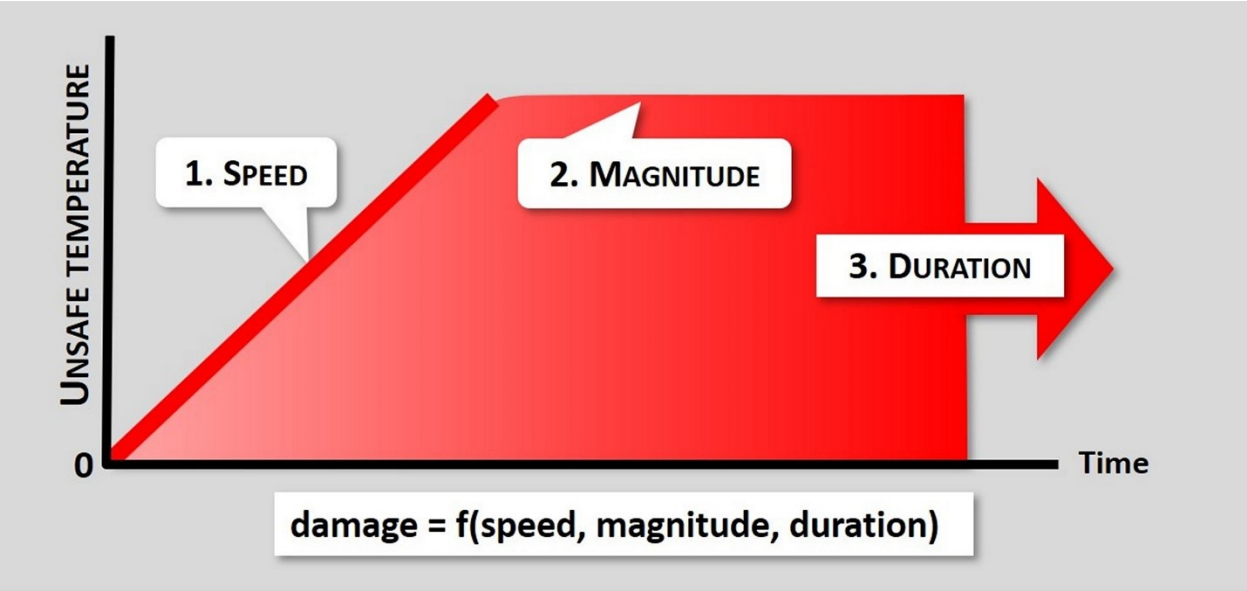

Figure 2-3. The ecological damage function

Warming speed is a damage factor because many species and ecosystems cannot adjust quickly enough to rising temperatures, and will therefore be adversely affected. Magnitude is important because people and non-human organisms can be severely damaged when they are thermally stressed. The duration of warming is critical because this determines the total heat absorbed by polar ice, the global ocean, and other Earth systems.

The first two damage factors - speed and magnitude - are recognized by climate science (although speed is typically downplayed), but duration is rarely mentioned. This is why the field can credibly propose a temperature target such as 1.5°C or 2°C as the crisis solution. If duration were considered, climate scientists would be forced to acknowledge that heat will continue to accumulate in Earth systems for as long as the temperature anomaly exists. This would invalidate the current focus on emissions reductions, which cannot eliminate the anomaly and its associated damage.

Note what the above implies: the primary GHG-based problem is not just global **warming** - the increase in global temperature. It is also global **warmth** - the unsafe temperature that currently threatens our world.

D. TIPPING POINTS AND POINTS OF NO RETURN

The ecological damage function implies that environmental harm from global warming increases over time, even if the temperature anomaly remains constant. This means that, until the anomaly is eliminated, the risk of ecosystem collapse will continue to escalate. Two concepts that pertain to this risk are *tipping point* and *point of no return* (PONR). See figure 2-4.

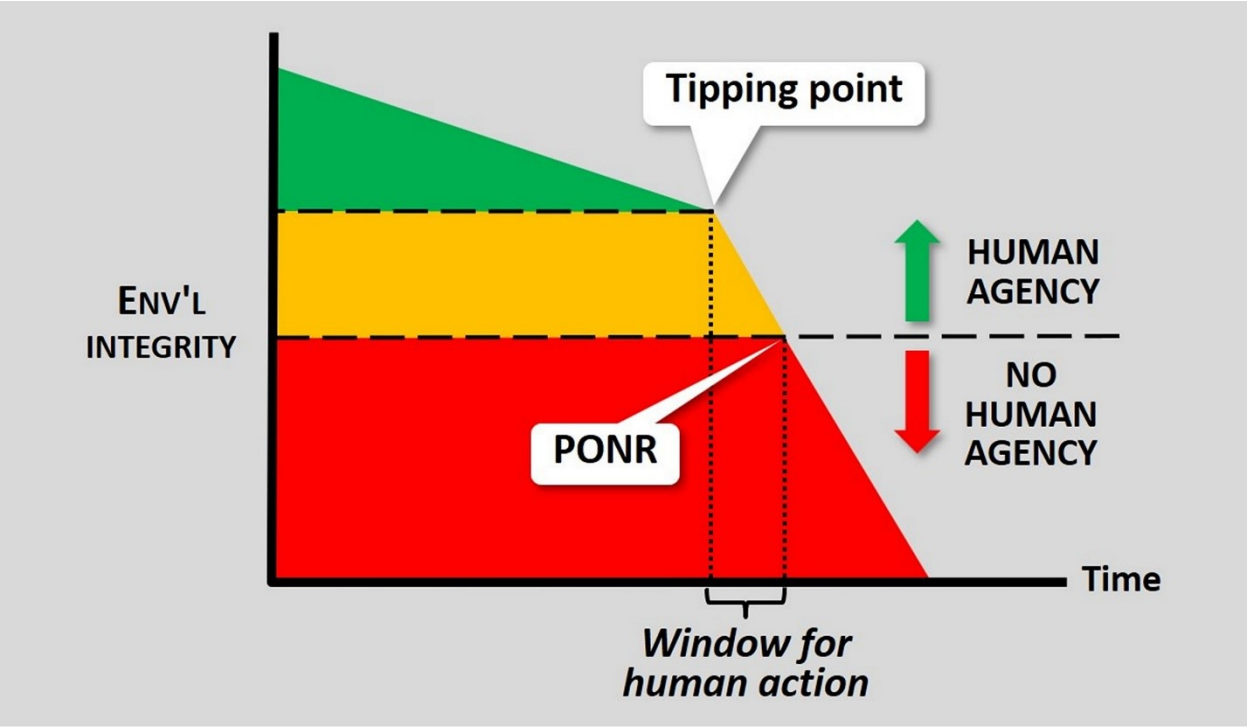

Figure 2-4. Tipping point and Point Of No Return (PONR)

The above graph traces the environmental integrity of an ecosystem over time. Integrity initially declines at a moderate rate due to economic expansion. At a critical point, positive feedbacks are activated and the ecosystem's internal dynamics strongly accentuate the human influence. This is a *tipping point*. Although such an event is dangerous, it does not necessarily result in ecosystem collapse. If humankind acts quickly and effectively, it is possible to arrest the damage and prevent collapse. In many cases, however, there is only a small window for action once a tipping point has been reached. If this window is missed, natural forces will overwhelm even our best efforts and collapse will ensue. This is a *point of no return*, or *PONR*.

As with emissions and concentrations, climate scientists address tipping points and PONRs in a confused and misleading manner. In most cases the distinction between the two is ignored: a tipping point is treated as a sudden <u>and</u> irreversible ecosystem shift. Another approach, frequently used by the IPCC, is to acknowledge tipping points (never PONRs) when describing GHG problems, but to disregard them when proposing solutions. In other cases, the concepts are ignored altogether. This is the *linear fallacy*: the unscientific assumption that an increased impact always results in a proportional increase in environmental harms.

E. DECEPTIONS: THE GHG CRISIS

The GHG crisis has been wildly distorted with respect to both terminology and concepts. Below I summarize the main deceptions relating to the problem side - the crisis itself. In chapter three I address the falsehoods relating to its solutions.

- **MISLEADING TERMINOLOGY**
  a. The GHG crisis is officially called "climate change" even though this is only one of several disasters caused by unsafe GHG concentrations. Ocean acidification makes it particularly obvious that the standard term is a misnomer. Acidification is a purely chemical effect that is distinct from global warming and changing climates, but that is nevertheless included in the standard term.
  b. "Climate change" and "global warming" are frequently used interchangeably, even though climate change is a prolonged change in weather patterns while global warming is a rise in the average global temperature. Conflating the two erases both this clear distinction and their cause-effect relationship.
  c. As noted in section B, terms such as "GHG emissions", "CO2 emissions", and "carbon emissions" are used interchangeably with "emissions", thereby negating the cooling aerosols and misrepresenting the temperature effects when emissions are reduced.
- **NO ECOLOGICAL DAMAGE FUNCTION**

  The absence of this function allows climate scientists to ignore the duration factor, which would invalidate temperature targets and the goal of net-zero emissions. It would also expose the fact that GHG concentrations should have been stabilized *at safe levels*, as stipulated in the 1992 UNFCCC agreement. Stabilizing them at today's unsafe levels is completely irrational.
- **THE LINEAR FALLACY**

  If tipping points and PONRs are ignored, the possibility of sudden and rapid increases in environmental damage is swept under the rug. The actual risks facing the young are thereby massively understated.
- **CLAIMS OF A POSITIVE CARBON BUDGET**

  A carbon budget refers to GHGs that can still be safely released into the atmosphere. However, as climate scientists themselves acknowledge, the GHG crisis is now a planetary emergency. Any releases must therefore be unsafe.

F. LEADERSHIP CONSIDERATIONS

1. On the environmental front you face three critical problems: the ecological crisis itself, the genocidal inaction of social leaders, and the deceptions implanted by these leaders to prevent rational action by others. When forming a militant youth movement, you must begin by renouncing the deceptions. As in my proposed manifesto (appendix A), I suggest you immediately replace the mainstream's deceptive terminology and refute its most blatant lies. Unless these steps are taken, rational thought and meaningful dialogue with your supporters will be impossible, and your movement will founder before it begins.

2. Be aware that speaking the scientific truth about the ecological crisis is a revolutionary act. Due to its ecocidal economic logic (see chapter seven), capitalism would founder if the crisis were seriously addressed. Expect extreme reactions when you speak the truth, and be prepared for decisive action to back it up.
3. It is impossible to overstate the urgency of revolutionary change if the young are to survive the crisis. There is absolutely no doubt that, in its absence, PONRs will be reached and your civilized existence will brutally end. When people talk about "bold climate action", insist that this refers to the fundamental transformation of the prevailing social order, not to government policies that offer cosmetic reforms.
4. ALWAYS frame the ecological crisis as the result of economic over-expansion driven by global capitalism. NEVER accept the framing that the crisis results from unspecified "human activities". Aside from historical accuracy, this is strategically necessary to identify the economic system and social leadership that must be replaced with their sustainable counterparts.

G. KEY POINTS

- The ecological crisis was caused by the over-expansion of the global capitalist economy, resulting in ecological overshoot around 1950. Its two components are the GHG crisis and a wide range of non-GHG harms.
- The GHG crisis comprises global warming and its harmful effects, which are caused by all GHGs, and ocean acidification, which is a chemical effect of CO2 alone. This crisis is existentially dangerous and must be immediately and effectively addressed.
- Non-GHG harms include habitat destruction, the over-exploitation of renewable resources, chemical and radiological toxification, pollution, and wastes. Their combined adverse effect is rapidly increasing and could soon rival the GHG crisis for existential significance.
- The mainstream uses "emissions" and terms like "GHG emissions" interchangeably. This is grossly misleading because typical emissions contain both warming GHGs and cooling aerosols, whereas "GHG emissions", etc. refer to GHGs alone. To accurately reflect physical reality, this book uses "GHG releases" and "aerosol releases" when analyzing temperature effects.
- The ecological damage function formalizes the environmental damage from global warming. It states that damage is a function of the speed, magnitude, and duration of the unsafe temperature. The omission of the duration factor by climate science underpins several of its devastating deceptions.
- Tipping points and PONRs sharply increase the likelihood of ecosystem and ecological collapse. The IPCC and mainstream climate scientists typically obfuscate these concepts and ignore their horrific consequences.

H. FURTHER READING

BOOKS

The Discovery of Global Warming - Spencer R. Weart (2003)
Weart's book provides three important insights. First, scientists have long known that the climate system is acutely sensitive to small perturbations that can trigger massive changes - particularly in the polar regions. Second, anything to do with the GHG crisis was suppressed and distorted when conservative forces began their ascent in the 1970s. Third, the IPCC was established in 1988 not to solve the GHG crisis, but to seize control of the issue from the independent scientists who were frantically raising the alarm.

A History of the Science and Politics of Climate Change: The Role of the Intergovernmental Panel on Climate Change - Bert Bolin (2007)
Bolin was the IPCC's first chair and held this post for almost a decade. In this book he recounts the organization's history and the opposition it encountered. Despite his vaunted reputation in scientific circles, Bolin was a central figure in establishing the IPCC's core falsehood: the GHG crisis can be effectively addressed through emissions reductions alone.

Storms of my Grandchildren: The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity - James Hansen (2009)
Hansen provides a solid scientific explanation of the GHG crisis, but his naivety on social issues is extreme. He reduces political power to special interests and money, seeks "healthy economic growth", and claims that the solutions are enlightened government policies and political will. None of this is tenable. The lesson is this: even the best climate scientists are economically and politically mystified, and cannot be trusted beyond their scientific competencies.

A Farewell to Ice: A report from the Arctic - Peter Wadhams (2017)
The author's main technical assertion is that a tipping point occurred in the Arctic around 2005 when ice disappeared from shallow Siberian seas. As a result, the area's air temperature rose rapidly and its reflectivity (albedo) declined sharply, thereby threatening a devastating methane pulse from melting permafrost and seabed hydrates. Wadhams is virtually alone among climate scientists in condemning the IPCC for its multiple failures on the Arctic's disintegration, and for the "collective failure of nerve" (p. 128) by his fellow scientists to recognize the post-2005 reality. Because Wadhams often speaks the painful truth, he has been ostracized by mainstream climate science and is largely ignored by the capitalist media.

Trajectories of the Earth System in the Anthropocene ("Hothouse Earth" report) - Will Steffen, Johan Rockstöm, et al. (2018)
This is a highlighted copy of an important paper that appeared in a journal sponsored by the U.S. National Academy of Sciences (NAS). The original document is here. The authors state that 2°C of global warming could irreversibly send the Earth on a pathway to catastrophic temperature increases. Their conclusion: "The challenge that humanity faces is to create a 'Stabilized Earth' pathway that steers the Earth System away from its current trajectory. ... Incremental linear changes [reforms] to the present socioeconomic system [capitalism] are not enough to stabilize the Earth System. Widespread, rapid, and fundamental transformations

[revolutionary change] will likely be required ..." (Italics in original; underlining added; my "translations" in square brackets.)

Chapter 3:
The measures you desperately need

A. THE RATIONAL GOAL

Given the advanced stage of the ecological crisis, the rational goal for the young is tragically modest: *ecological survival*. This refers to the non-extinction of our species and, if possible, the preservation of organized human life. To achieve this goal humankind must aggressively pursue three objectives:

1. Maximize our short-term survival chances;
2. Minimize our current environmental impact;
3. Repair our past environmental damage to the maximum feasible extent.

The measures required to achieve these objectives constitute the rational response to the ecological crisis.

The environmental goal that is typically promoted by conventional sources, especially with respect to the GHG crisis, is to "avoid the worst consequences". However, "worst" is never defined, so this formulation is meaningless. If we assume that it refers to the consequences of complete inaction, then any mitigating action will qualify, even if it postpones disaster for only a brief period. The conventional goal, like conventional thought and action, is therefore consistent with youth genocide.

B. OBJECTIVE #1: SHORT-TERM SURVIVAL

The extreme weather events of 2021 definitively proved that a temperature anomaly of 1.2°C is far too high. For humankind's short-term survival, the Earth must be cooled by about 1°C as quickly as possible. There are two broad approaches for achieving this global cooling. The first is to address the heat indirectly by reducing GHG concentrations to increase the energy outflow. The second is to address the heat directly through SRM and aerosols to decrease the energy inflow.

Unfortunately, the indirect approach cannot be effective for survival purposes. The work of Dr. Ye Tao, of the Rowland Institute at Harvard, has shown that industrial GHG removal (GGR) through direct air capture - which would be required to remove GHGs at the scale required - is infeasible. This is primarily because the energy required for this massive operation far exceeds the energy that humankind is capable of producing. As well, the fossil fuels required for alternative solutions would be wasted, and there are also material constraints. (See section I below for relevant videos.) The various natural GGR methods - expanded forests, enhanced weathering, ocean fertilization, etc. - are far too slow to achieve rapid global cooling.

Reducing emissions is also futile for this purpose, for two reasons. First, the GHG component of emissions will increase concentrations that are already causing dangerous global

warming today. By the time net-zero is reached and concentrations have stabilized, our fate will be sealed. The second reason is the *aerosol effect*. This refers to the cooling that is lost when short-lived aerosols are removed from the atmosphere as emissions decline. Due to these two factors, emissions reductions can, at best, slightly decrease the rate of global warming. They definitely cannot achieve the required global cooling.

It should also be noted that, if aerosols are reduced quickly through aggressive clean-air policies, human health will improve, but global warming will rapidly increase. Both health and temperature effects must be considered, but given its immense global impact the warming will likely be far more dangerous to humankind and nature.

Given these brutal facts, it appears that rapid global cooling can be achieved only through the combination depicted in figure 3-1.

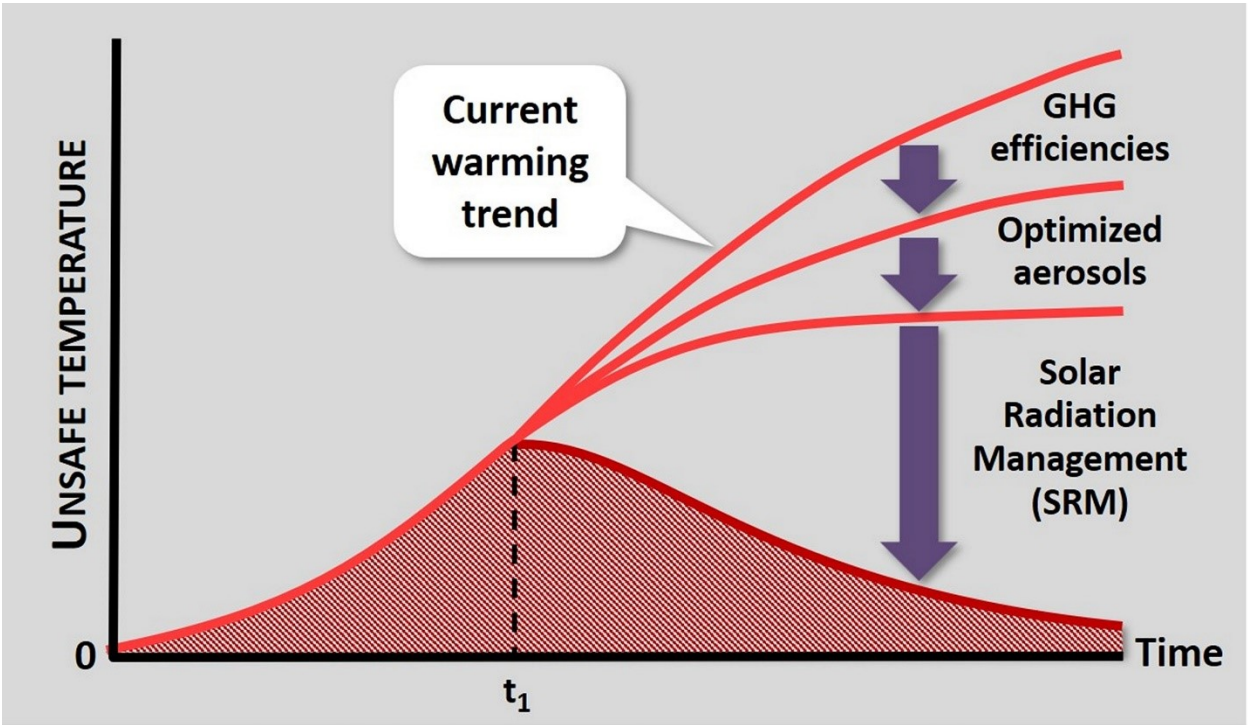

Figure 3-1. Maximizing our short-term survival chances

The top curve represents the current warming trend from ongoing GHG releases. The shaded area under this curve represents the ecological damage from the magnitude and duration of the temperature anomaly. Time t1 is when the cooling measures are initiated. The catastrophic warming depicted can be reduced and eventually reversed by implementing the three measures shown:

1. Aggressively improve the GHG efficiencies of economic processes. That is, sharply reduce the GHG quantities released per unit of economic output. As noted below, one promising measure is carbon capture and storage (CCS), which removes CO2 from

industrial emissions before they enter the atmosphere. This measure will increase the rate of energy flowing from the Earth to space.

2. Optimize the releases of cooling aerosols. Low-level aerosols harm human health and contribute to several million deaths per year. They also provide a strong cooling effect by masking as much as 1°C of GHG-based warming, thereby saving numerous lives - particularly if tipping points and PONRs are considered. Their releases must therefore be ethically and scientifically optimized by balancing cooling gains against health losses. Unlike improved GHG efficiencies, this measure will decrease the rate of energy flowing from the Sun to the Earth.
3. Implement massive SRM projects to significantly increase the Earth's reflectivity. This measure will also decrease the rate of energy flowing from the Sun to the Earth. Of the three measures, SRM will likely have the greatest cooling effect.

The question of how SRM should be implemented to maximize our survival chances must be answered by trustworthy scientists. Promising possibilities include the ground-based mirrors developed by Ye Tao and his research group MEER (Mirrors for Earth's Energy Rebalancing), space-based mirrors, the stratospheric aerosol injection (SAI) favored by David Keith, marine cloud brightening (MCB), and polar ice brightening.

Recall that ecological damage from global warming depends on the warming speed, magnitude, and duration. The above measures will decrease both the warming speed and magnitude, and if fully successful will also limit its duration. Although further ecological damage is unavoidable, this could be survivable if the three measures are initiated quickly and aggressively, and if adequate adaptation measures are rapidly implemented.

To summarize, humankind's short-term survival chances can be maximized by reducing GHG releases through greatly improved efficiencies, optimizing aerosol releases by considering both cooling gains and health losses, and massively implementing rational SRM measures.

C. OBJECTIVE #2: MINIMIZE CURRENT IMPACT

While the above survival measures are being urgently implemented, humankind must minimize its ongoing environmental impact. The IPAT formula addresses this issue. The formula is a mathematical identity (two equivalent expressions) that disaggregates impact into three components: population (P), affluence (A) and technology (T). Affluence here refers to average per-capita consumption, and technology to ecological efficiencies.

The IPAT formula is important because two of the three factors, consumption and population, are sensitive topics that are generally avoided in environmental discussions. One reason is that economic growth requires increases in both factors, so decreasing them would violate the logic of capitalism and other expansionary economies. A second reason applies specifically to population. Some people fear that population reductions will be ruthlessly aimed at the global poor, and are thus a form of *ecofascism*. (See chapter five.) The IPAT formula helps us look beyond these issues and to objectively consider population as an impact factor.

Figure 3-2 provides a visual image of the roles played by the three IPAT factors in driving humankind's current environmental impact.

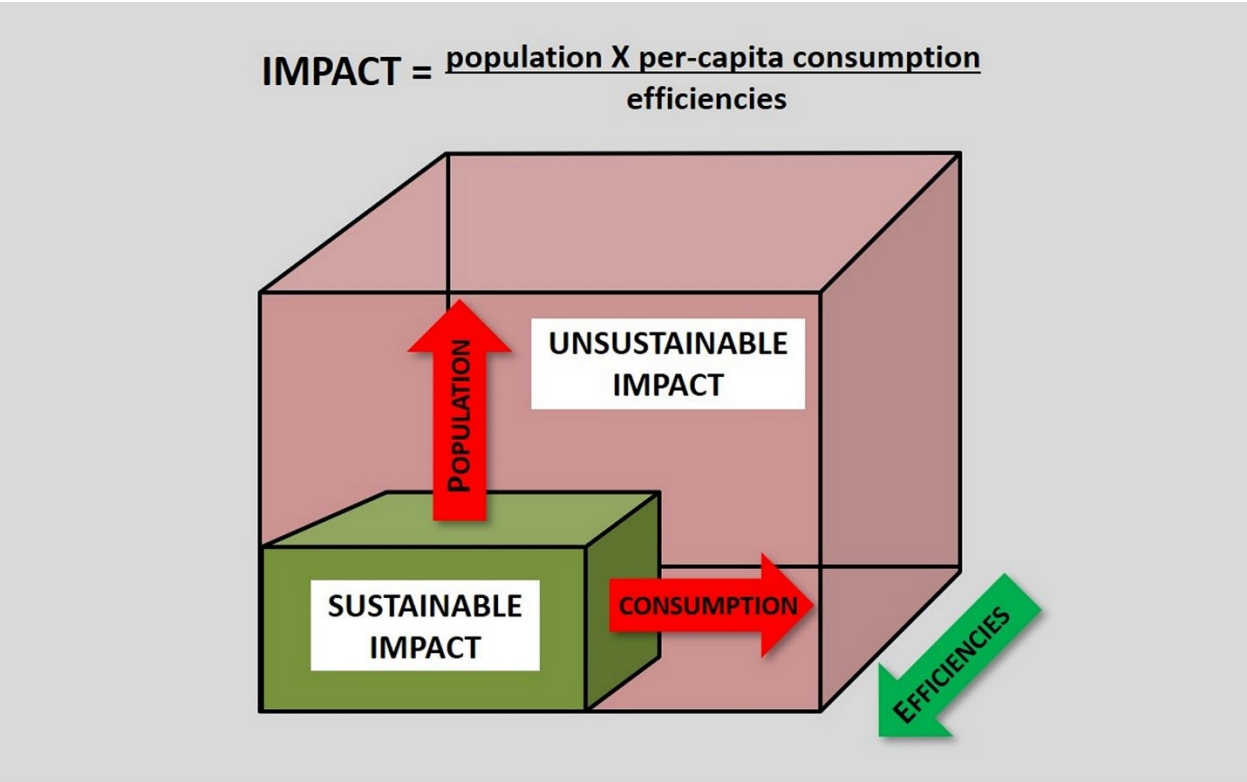

Figure 3-2. The IPAT formula

In this diagram the two boxes represent sustainable and unsustainable impact levels. The three IPAT factors are represented by the three dimensions of each box. Their overall environmental impacts are represented by their volumes.

Starting with the box representing sustainable impact, an increase in per-capita consumption will increase its width, hence its volume and total impact. Increasing population will increase the box's height, thus again volume and impact. Increasing ecological efficiencies, however, will reduce the box's depth, which means that both volume and impact will decrease. Briefly stated, humankind's environmental impact increases when either per-capita consumption or population increases, and decreases when ecological efficiencies increase.

With the IPAT formula in hand, let me address the measures for reducing our current impact - first for the GHG crisis and then for non-GHG harms.

A. MINIMIZE CURRENT IMPACT: GHG CRISIS

Two of the three IPAT factors - population and consumption - are largely irrelevant for reducing humankind's GHG impact. Although lowering them will reduce economic activities and thus emissions, global warming will continue due to the aerosol effect discussed above.

The remaining IPAT factor is ecological efficiencies, which does apply. Remember, however, that the efficiency improvements must be directed at GHG releases specifically, not at the emissions that contain both GHGs and aerosols.

One approach to achieving these efficiencies is carbon capture and storage (CCS), which has tragically been disparaged by many environmentalists. CCS does precisely what is suggested above: it removes the warming CO2 from emissions while allowing the cooling aerosols to escape. This combination is therefore ideal for moderating global warming and assisting in the shift to global cooling. However, the ethical issue regarding human health must also be considered.

I should add that GGR is not an efficiency measure because it removes GHGs *after* they have escaped the production process and entered the atmosphere. It is therefore part of damage repair.

B. MINIMIZE CURRENT IMPACT: NON-GHG HARMS

All three IPAT measures apply to impact reduction for non-GHG harms. Reduced consumption and population in the rich world will cause bloated economies to sharply contract. This will quickly reduce pressures on ecosystems and hopefully allow threatened species to recover. Increasing ecological efficiencies will lower resource use and waste expulsion. Examples include reduced land and water inputs for the same food outputs, and less environmental degradation for the same forest, fishing, or mining outputs.

A complication is that economic contraction will reduce emissions. If these contain large quantities of aerosols, and especially if aerosol masking is greater than is generally understood, global warming could increase. Reducing consumption and population levels thus requires careful consideration of these two opposing factors: the clear gains for non-GHG harms versus the possible losses for the GHG crisis.

To summarize this section, humankind's current GHG impacts can be minimized by increasing efficiencies for GHG releases. For non-GHG harms the impacts can be minimized by exploiting all three IPAT factors: reduced consumption and population in the rich world, plus greatly improved non-GHG efficiencies.

D. OBJECTIVE #3: REPAIR PAST DAMAGE

A. REPAIR PAST DAMAGE: GHG CRISIS

The third objective for the rational goal is to repair humankind's past environmental damage. I begin with the GHGs that have accumulated in the atmosphere since the Industrial Revolution.

The two relevant measures are SRM and GGR, which for many years were collectively called *geoengineering*. Because this topic has been massively distorted, I must first present the basic science. See figure 3-3.

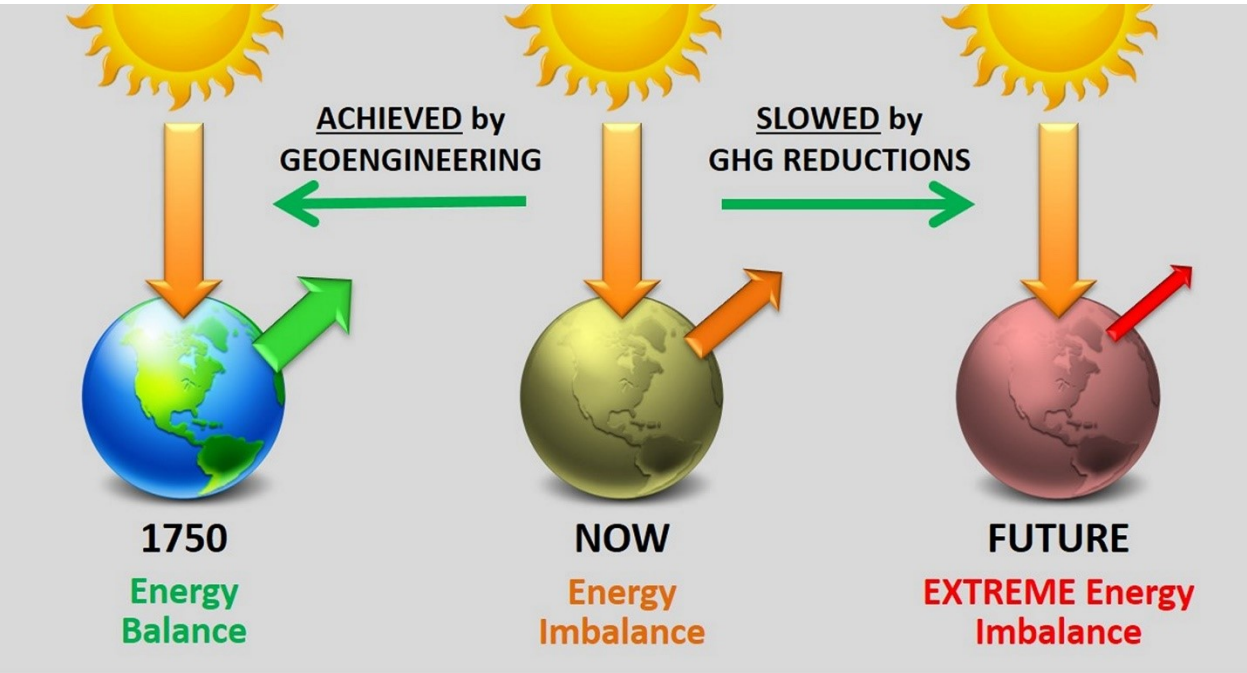

Figure 3-3. Energy balance and geoengineering

The key concept is *energy balance*. In the pre-Industrial period, as shown at left, the rate of energy flowing from the Sun to the Earth was equal to the rate flowing from the Earth to space. The planet was therefore in energy balance, which means there was no global warming. As emissions piled up and concentrations rose, the heat escaping the Earth was increasingly blocked. As shown at center, this resulted in today's disastrous energy imbalance and its associated global warming. Further increases to this imbalance, as shown at right, would be calamitous.

The two green arrows at top are critical for developing rational measures. The arrow at left shows what geoengineering accomplishes: *it restores the energy balance that was lost as concentrations rose*. The arrow at right shows what GHG reductions achieve: *they slow the increase in the energy imbalance*. To restate these critical facts:

1. Geoengineering restores the Earth's energy balance and thus *reverses* global warming;
2. GHG reductions *slow the rate* of global warming, but can't reverse it.

Given these physical realities, geoengineering is the only available solution for the accumulated GHGs. SRM will be required to reflect the incoming solar heat. Non-industrial methods of GGR, many of which are described in the document *Climate Restoration* (see section I), will be needed to remove as much of the unsafe GHGs as is rationally justified.

Numerous objections to geoengineering have been raised. Some of these are discussed in my post, "Geoengineering: the Arguments" (see section I). Be aware, however, that this approach is seldom addressed in an honest and objective manner. This is particularly true for SRM, which is typically demonized as a crazy "techno-fix" by mainstream climate science. The plight of the young as they move unprotected into a perilous future is never seriously considered. The fact that most of them live in the vulnerable Global South, which would greatly benefit from prudent SRM implementation, is widely ignored.

B. REPAIR PAST DAMAGE: NON-GHG HARMS

Non-GHG harms include habitat destruction, ocean degradation, chemical toxification, and atmospheric pollution, all of which are now undermining the fabric of life. Repairing such damage, to the degree this is feasible, is called *ecological restoration*.

One of the urgently required measures is to abandon capitalism's heedless modes of resource extraction, thereby permitting battered ecosystems to recover. Another is the Earth's extensive *rewilding*: the return to nature of the land and ocean spaces that have been so destructively colonized by humankind. It will also be necessary to remove wastes such as plastics from the ocean, pollutants from lakes and rivers, and industrial chemicals from landfills and dumps.

In brief, humankind can to some degree repair its past environmental damage by using non-industrial GGR methods to remove unsafe GHGs from the atmosphere, and by implementing ecological restoration for non-GHG harms. Throughout this period, SRM must be continuously employed to return the Earth to a livable temperature.

E. SUMMARY: THE RATIONAL CRISIS RESPONSE

The above measures, which together constitute the rational response to the ecological crisis, are summarized in figure 3-4 below. Recall that they are intended to achieve the modest goal of ecological survival by meeting three objectives: short-term survival, current impact minimization, and the repair of past environmental damage.

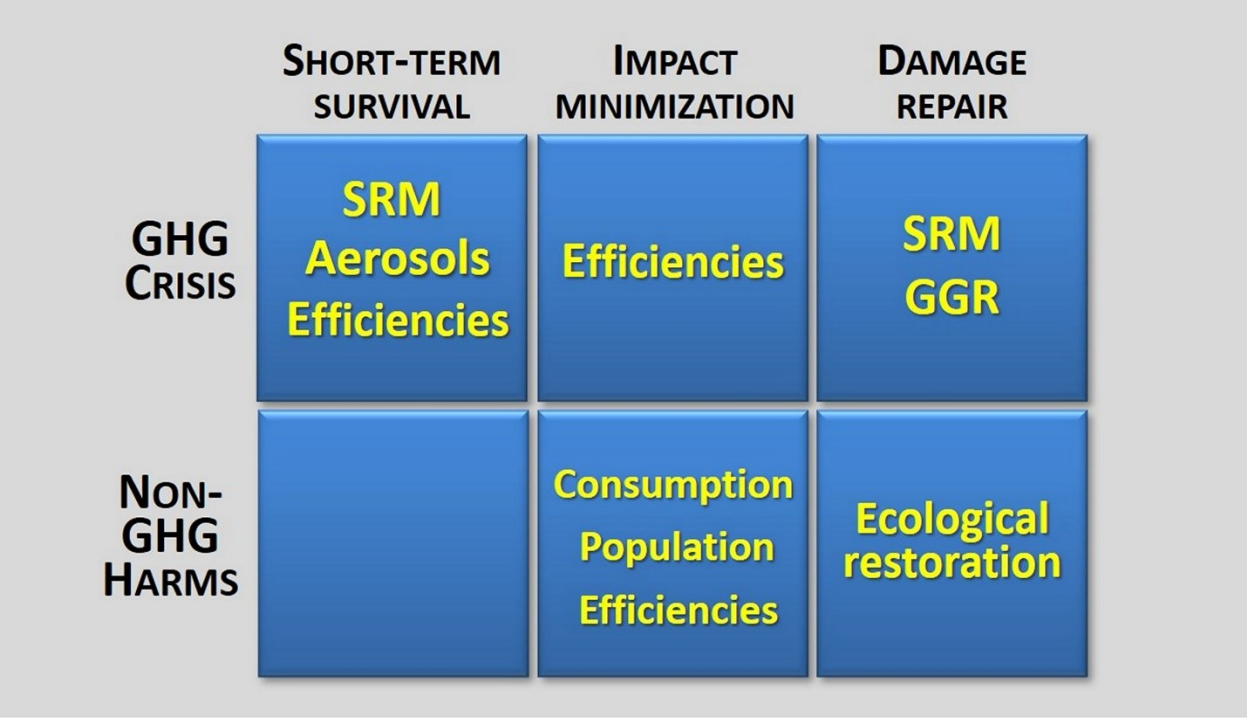

Figure 3-4. Summary of the rational crisis response

At the present time (March, 2022) it appears that only the GHG crisis threatens our short-term survival. The diagram thus shows the relevant GHG measures, but omits measures for non-GHG harms. However, with plastics and toxins now permeating the planet, and with habitat destruction still rampant, these harms may soon pose an immediate existential threat as well.

To minimize humankind's current environmental impact, measures are required in both categories. For the GHG crisis, higher GHG efficiencies will help slow the rise in concentrations. For non-GHG harms the full range of IPAT measures apply: reduced consumption and population in the rich countries, plus higher ecological efficiencies for various economic processes.

To repair humankind's past environmental damage, measures will again be needed in both categories. SRM and GGR will be required to restore the Earth's energy balance. For non-GHG harms the solution is ecological restoration to return the planet as much as possible to pre-industrial conditions.

I must emphasize that the rational response to the ecological crisis is based on two assumptions: its components are treated as a coherent solutions set and not as isolated measures, and capitalism has been replaced by a sustainable economic system.

These assumptions imply that measures such as SRM and CCS cannot be treated as standalone solutions, and they cannot be evaluated within the capitalist context. As an example of the latter, the standard activist objection to CCS is that fossil-fuel companies will use increased efficiencies as an excuse to continue fossil-fuel extraction. Under capitalism this is likely true, but it is irrelevant to the rational response. Like SRM, CCS makes sense only in the context of the response as a whole, and only under post-capitalist economic conditions.

F. DECEPTIONS: SOLUTIONS TO THE GHG CRISIS

In chapter two I summarized the deceptions relating to the problem side of the GHG crisis. Here I outline those relating to its solutions. As before, I begin with terminology because this establishes how we communicate and understand.

- **MISLEADING TERMINOLOGY**
  a. The IPCC defines "mitigation" as a human intervention to reduce emissions or enhance their sinks by natural or technical means. Despite this, many scientists and journalists use the word in reference to reduced emissions alone. The bizarre result is that, when scientists tell society to "mitigate and adapt", it has no way of knowing what they actually mean, or even if they have a consistent understanding among themselves.

b. "Geoengineering" originally referred to the combination of GGR and SRM. These measures were demonized because they clashed with the mainstream's emissions-reduction story, so "geoengineering" became a dirty word. However, the IPCC in its 1.5°C report found that GGR was necessary to meet this target, so the measure was reluctantly accepted. GGR was therefore removed from the "geoengineering" term, and today this still-dirty word is increasingly applied to SRM alone.

c. Aside from the recent use of "geoengineering" to mean SRM exclusively (above), there are several other terms for this approach. The acronym originally meant "solar radiation management", but the IPCC altered this to "solar radiation modification". Other common terms are "climate engineering" and "solar geoengineering". The most significant short-term measure for youth survival therefore has at least five different names. The resulting confusion is likely intended to keep the young from rationally considering this approach.

- **EMISSIONS FALLACY**

  A core deception about the GHG crisis is the *emissions fallacy*: the false idea, implanted decades ago, that the GHG crisis could be solved by reducing emissions rather than maintaining concentrations at safe levels. Today this fallacy is expressed through the goal of net-zero emissions. When discussing this goal mainstream climate scientists quibble about the technologies and policies used to achieve it, but never address the absurdities of the goal itself.

- **AEROSOL DECEPTION**

  This is the mainstream's intentional concealment of the aerosol effect by equating "emissions" with "GHG emissions", etc. As with the concealment of the duration factor in ecological damage (see chapter two), this effect is ignored or minimized because it would undermine the claim that net-zero emissions is the rational goal for the GHG crisis.

- **SRM DENIALISM**

  Conventional sources correctly point to denial of the GHG crisis as a scourge, but they exclusively criticize problem denialism. Today the far more dangerous form is the refusal to seriously consider workable solutions. The most significant example is SRM. The absence of any objective and ethical discussions on this topic is an unmistakable sign that social leaders are committed to their ecocidal path and must be replaced through revolutionary action.

- **THE GOAL OF STABLE CONCENTRATIONS**

  The 1992 UNFCCC agreement committed the world to stabilizing GHG concentrations "***at a level*** *that would prevent dangerous ... interference with the climate system.*" (emphasis added) Today many climate scientists omit "at a level" and treat stabilization itself as the goal. This is highly deceptive because, as noted next, it falsely assumes that an elevated but stabilized temperature is safe.

- **TEMPERATURE TARGETS**

  Unless they are in the pre-industrial range, temperature targets are invalid because they ignore the duration factor in ecological damage. Remember that there are three damage factors: speed, magnitude, and duration. Dismissing the last of these is like a physicist dismissing the third dimension of space.

G. LEADERSHIP CONSIDERATIONS

1. Recall from chapter one that climate science can be trusted only for its honestly conducted empirical research. Because the rational response also entails detailed economic and political analysis, its formulation is well beyond scientific purview. Science will clearly be necessary to develop and implement the technical solutions, but you and your carefully vetted supporters must decide what those solutions will be.
2. SRM is now critical for youth survival. Sadly, many progressives, environmentalists, and climate-justice activists remain adamantly opposed. You should understand that, based on their expressed values, this makes no sense. The global poor, who live on the environmental edge, will be the primary beneficiaries of any temperature reductions that SRM will achieve.
3. The diagrams in this chapter are simple but useful conceptual tools. As with the ecological damage function in chapter two, diagrams such as these would be widely employed if sustainability were the true goal. Because this is not the true goal they are typically ignored, which means you must introduce them yourself. If you fail to do so, you and your movement will be conceptually handicapped.
4. Don't be fooled by scientists who tout solutions that may be technically feasible under ideal conditions, but that cannot be implemented either in the time available or in the capitalist context. Such claims are common because they maintain public confidence in the prevailing social order. A related ploy is to insist that more research is needed to predict precisely how environmental degradation will proceed. Although this has some value for adaptation purposes, it can lead to passive observation as the disasters unfold.

H. KEY POINTS

- The rational goal for the ecological crisis is survival: non-extinction and hopefully organized human life. This will require the aggressive pursuit of three objectives: short-term survival, minimizing current environmental impact, and repairing past damage.
- Short-term survival will require sharply improved GHG efficiencies, optimized aerosol releases, and a rational set of SRM measures. Reducing emissions to net-zero is ineffective because the rate of global warming will remain roughly unchanged, and could increase.

- Humankind's current GHG impact can be reduced through GHG efficiencies and optimized aerosol releases. For non-GHG harms all three IPAT factors apply: reduced consumption and population in the rich world, plus increased ecological efficiencies.
- We can to some degree repair past GHG damage through non-industrial GGR methods and the large-scale use of SRM. Non-GHG damage must be addressed through ecological restoration.
- As with the GHG crisis itself (see chapter two), the rational crisis response has been the subject of numerous deceptions. Key among these are misleading terms, setting false goals, the emissions fallacy, the aerosol deception, and SRM denialism.
- Briefly stated, the rational response to the ecological crisis (besides adaptation) is to ***survive, minimize, and repair***. Humankind must first survive the rapidly escalating global heat, then minimize our overall impact, and finally repair the massive damage we have already inflicted on our fragile planet.

I. FURTHER READING

BOOKS AND DOCUMENTS

Green Illusions: The Dirty Secrets of Clean Energy and the Future of Environmentalism - Ozzie Zehner (2012)
The first half of this book is an excellent critique of "green" energy. The second half, which discusses the future of environmentalism, is far weaker. For a synopsis of Zehner's views on "green" energy, see the documentary film, Planet of the Humans.

A Case for Climate Engineering - David Keith (2013)
Keith is a leading voice on climate engineering (SRM). Here he discusses the most prominent method, stratospheric aerosol injection (SAI). This blocks a small fraction of the sun's radiation by spreading sulfate aerosols high in the atmosphere. See this New York Times article for Keith's evaluation of SAI.

Climate Restoration: Solutions to the greatest threat facing humanity and nature today - The Foundation for Climate Restoration (2019)
This document states that the CO2 concentration must decline from its current level to around 300 ppm, which will require the removal and sequestration of a trillion tons of CO2 from the atmosphere. It then presents various methods that could be used for this purpose.

Climate Reality Check 2021 - Breakthrough: National Centre for Climate Restoration.
This is a succinct and candid synopsis of the GHG crisis. A key statement: "Declining coal use and clean-air policies reduce the aerosol impact. This is our 'Faustian bargain': as fossil-fuel use declines, so does the aerosol cooling, so that *for the next two decades lower emissions will have little impact on the warming trend*." (emphasis added)

Global Warming Acceleration - James Hansen and Makiko Sato (2020)
The authors state that global warming has recently accelerated, and that only aerosols can

explain this sudden change. Their estimate of the masking effect of aerosols is roughly double that of the IPCC.

VIDEOS

Dr. Ye Tao ~ COP26 Glasgow ~ MEER:ReflEction
This video reveals that large-scale industrial GGR is physically impossible for energy reasons. Tao explains that the current focus on GHGs guarantees a temperature rise that will exceed the thermal tolerance of life on Earth. We must instead turn the "direct knob" by managing the heat from solar radiation. According to Dr. Tao, ground-based mirrors are the cheapest, simplest, and most effective form of SRM.

Shocking Facts About Climate Change & A Possible Solution – Dr. Ye Tao
This brief video (7 minutes) encapsulates the above presentation.

WEBSITE POSTS

Geoengineering: The Facts - Uses several official documents to explain the basic facts about geoengineering.

Geoengineering: The Arguments - Examines the valid and invalid arguments surrounding this controversial measure.

Black is White: Climate Deception becomes Orwellian - Exposes the outright lie told by mainstream sources about the critical UNFCCC agreement: that the objective (Article 2) refers to emissions rather the concentrations.

Chapter 4:
Aspects of human nature you must consider

Human nature refers to our deeply embedded attributes, both mental and physical, that have resulted from millions of years of evolutionary pressures. This topic is addressed here for three reasons:

1. These attributes are highly relevant to the quest for sustainability. They must therefore be carefully considered by youth leaders in developing and implementing a survival strategy. This topic is addressed in the present chapter.
2. Humankind's innate tendencies have been systematically exploited by social leaders to shape the populace's thinking and behavior so as to prevent revolutionary change and the rational crisis response. These methods are examined in chapter five in the context of political power and social control.
3. Assuming their survival, the young will have to transform today's societies into ecologically and socially viable societies. This fundamental restructuring can succeed only if the core realities of our species are fully acknowledged. I briefly consider this aspect of human nature in chapter eight when discussing the post-capitalist world.

As with the ecological crisis, human nature can be divided into its core components to facilitate analysis. In my view these are the biological, ecological, and moral dimensions of our species.

A. HUMANKIND AS A BIOLOGICAL SPECIES

Modern humankind has a biological heritage that goes back roughly five million years. For over 99% of this time we lived as hunter-gatherers, starting in East Africa. Only in the last 10,000 years, as a globally dispersed species, have we adopted an agricultural and civilized (city-based) mode of life. Karl Marx made an egregious error when, in Theses on Feuerbach, he ignored these realities and defined human nature purely in terms of social relations.

This blunder was adopted by progressive thinkers and now infects many of the young as well. Peter Singer is therefore correct in saying that, "It is time for the left to take seriously the fact that we are evolved animals, and that we bear the evidence of our inheritance, not only in our anatomy and DNA, but in our behavior too." (*A Darwinian Left*, p. 6 - see section I.)

Joel Kovel, a prominent ecosocialist, echoes this view in *The Enemy of Nature*: "... the notion of human nature is necessary for any in-depth appreciation of the ecological crisis, and its lack is a sign of the crisis itself. In the absence of such a view, humanity is severed from the remainder of nature, and a genuinely ecological view is replaced by mere environmentalism." (p. 107)

Briefly stated, all organisms are biological creatures with inborn tendencies, including strong self-interest with respect to survival, shelter, consumption, etc. Human beings are no exception,

so our material interests are both necessary and inherent. They can be shaped and moderated, but they can't be extinguished.

Also significant is that human nature has a wide range of expression, and that some people are more self-interested than others. To quote Singer again, "... many people will act competitively in order to enhance their own status, gain a position of power, and/or advance their interests and those of their kin." (p. 61) Under an expansionary system like capitalism such tendencies are often dangerously intensified.

B. BIOLOGICAL HUMANKIND: STRATEGIC IMPLICATIONS

1. Given their material interests, the global poor seek economic growth to achieve adequate consumption, and the global rich seek growth to maintain or increase their overconsumption. Economic expansion is thus universally desired, which means that the contraction required for sustainability will meet widespread opposition. A survival strategy must therefore exploit humankind's *non-material* motivations. Among these are the anger and defiance of the young, the ethical commitments of the older, and the military's professional duty to protect the populace from existential threats.
2. Because economic expansion is driven by human nature, ecological overshoot was virtually impossible to avoid. This implies that today's social leaders must be removed from power not because they caused overshoot, but because they failed to respond rationally once it had occurred.
3. In the rich world, authoritarian measures will initially be required to reduce consumption to sustainable levels. Eventually, population can be reduced and various social and personal activities can replace overconsumption as sources of human satisfaction. In the short-to-medium term, however, strict regulation of consumption will be unavoidable. This will likely trigger strong and perhaps violent opposition that must be anticipated and humanely but firmly subdued.

C. HUMANKIND AS AN ECOLOGICAL SPECIES

The longstanding story about modern humankind's gestation in East Africa is called the savannah hypothesis. This claims that, as the regional climate became cooler and dryer millions of years ago, several ape species left the dwindling forests, shifted from knuckle-walking to bipedalism, and started new lives on the sparsely-treed plains. Their struggle to survive among the dangerous creatures that shared this habitat sharpened their wits and produced the language, culture, and tool-making that characterize our species, Homo sapiens.

This hypothesis has been strongly challenged in recent decades, most notably by paleoanthropologist Rick Potts - director of the Human Origins Program at the Smithsonian Institution. His conclusion, based on decades of field research in East Africa, is that the decisive factor in our development was not adaptation to a specific environment like the African savannah, but rather adaptation to the region's rapid environmental changes.

According to this *variability hypothesis* of human evolution, we developed a highly flexible, general-purpose brain that could extensively modify our surroundings to maintain survivable conditions in the face of extreme environmental instability. See figure 4-1, which is taken from Potts' book (see section I).

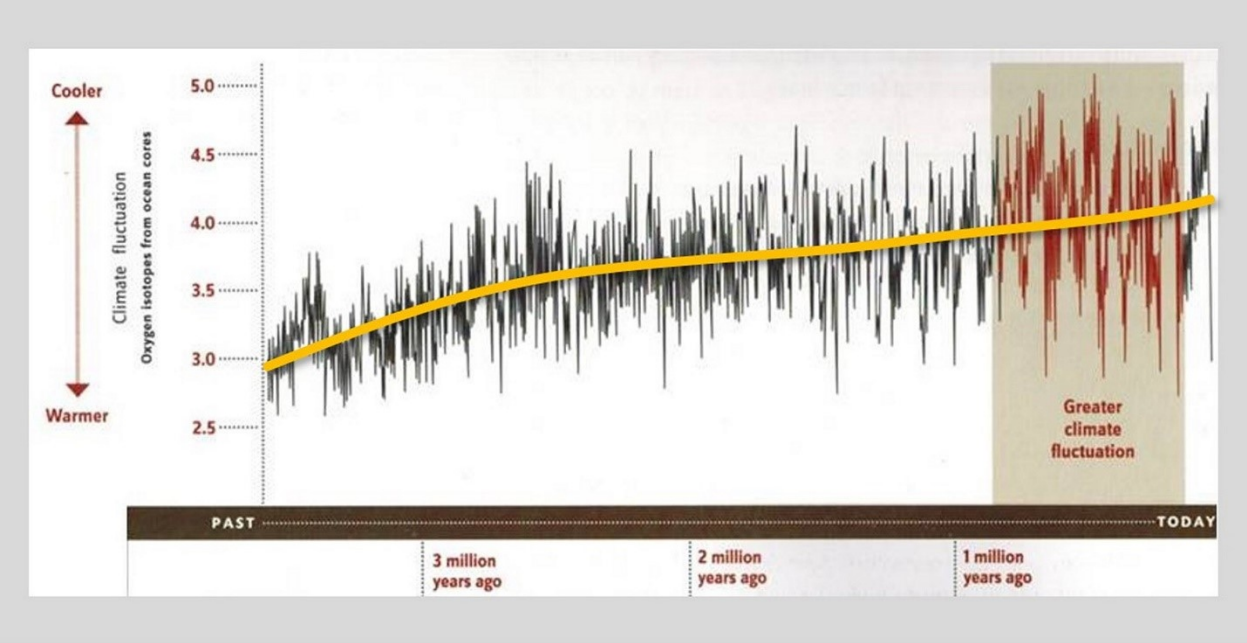

Figure 4-1. Humankind's ecological nature

This graph depicts the major environmental changes in East Africa over the last 3.5 million years. Two distinct patterns are visible: a long-term trend towards cooler and wetter conditions (yellow curve), and sharp variations around this trend. The savannah hypothesis assumes that the long-term trend is the only evolutionary force, and that the variations are inconsequential noise. The variability hypothesis instead considers both signals, with the sharp variations playing the dominant role in humankind's early development.

This fairly recent proposal helps us identify the evolutionary roots of ecological overshoot. Humankind's flexible and powerful brain permitted our adaptation to a wide range of conditions, and our biological drives impelled us to colonize the entire planet. Because there are no evolutionary pressures to restrict our impact to the Earth's environmental limits, our expansion was unimpeded and overshoot was largely inevitable.

D. ECOLOGICAL HUMANKIND: STRATEGIC IMPLICATIONS

1. The variability hypothesis contradicts the frequent claim that humankind evolved to deal effectively with immediate threats - the proverbial tiger in the bush - but that we are incapable of dealing with slow-moving, long-term perils such as environmental degradation. The new hypothesis by contrast indicates that our brains evolved not just to evade dangerous animals, but also to carefully consider the future, produce detailed

plans, and act judiciously. This implies that, at least with respect to our mental abilities, we have the capacity to both cause *and solve* the crisis we face.

2. The new hypothesis accurately locates humankind in the natural realm. We are deeply embedded within nature, but in a manner that differs decisively from all other species. Ours is the only general-purpose, highly intelligent brain with the capacity to rapidly transform the global environment. We are therefore a unique, and uniquely dangerous, species within the animal kingdom.
3. The variability hypothesis is also significant because it suggests that our adaptive flexibility is not boundless. Humankind evolved to deal with natural environmental variations, not with those that have been strongly amplified by our own actions. It is thus likely that the speed and scale of these changes will soon overwhelm our evolved capabilities. The clear implication is that we must do everything possible to prevent or moderate these changes by quickly implementing the rational crisis response.

E. HUMANKIND AS A MORAL SPECIES

In *The Descent of Man* (i.e., "the origin of humankind") Charles Darwin states that a key difference between our species and "the lower animals" is that we have a "moral sense or conscience". He approvingly quotes an authority who claims that this attribute, "… has a rightful supremacy over every other principle of human action." (p. 100)

Darwin goes on to say that, "… after the power of language had been acquired, and the wishes of the community could be expressed, the common opinion [regarding] how each member ought to act for the common good would naturally become in a paramount degree the guide to action." (p. 101) Earlier in the book he had emphasized that there is no fundamental difference between the mental powers of humankind and non-human species (p. 66f), so it is significant that he underscored their moral divergence.

Humankind's "moral sense" adds a third dimension to our nature. We are not only a biological species with material interests and an ecological species with a powerful brain, but also an ethical species that is capable of cooperation, compassion, and even heroism to protect the well-being of our human companions and to serve the communities we inhabit.

I should add that these three components of human nature correspond closely to Sigmund Freud's division of human personality into id, ego, and superego. The id is the unconscious driving force: humankind as a biological species. The ego is the conscious regulator of our deepest impulses: humankind as an ecological species. The superego is our conscience: humankind as a moral species. Depending on one's view of Freud, this could be seen as support for the idea that our evolved nature has three basic dimensions.

F. MORAL HUMANKIND: STRATEGIC IMPLICATIONS

1. The broad strategic implication is that human nature extends beyond the material interests and high intelligence that capitalism has long exploited. Humankind's natural tendencies

also include a wellspring of moral action: a deep proclivity to consider the well-being of others.

2. More specifically, our innate moral sense provides a basis for splitting mainstream groups. As the crisis deepens and human suffering escalates, conscientious scientists, journalists, educators, and politicians could abandon their mainstream colleagues and throw their support behind the militant young. Even if active support is withheld, moral scruples could neutralize some supporters of business as usual. A similar division could appear among concerned parents, and perhaps even within the ruling class and state. This inborn sense of ethics - our strong but suppressed compulsion to "do the right thing" - underpins my Youth Survival Manifesto (appendix A).
3. Perhaps most significantly, humankind's moral sense could help the young shift the military's support from the ruling class to the populace. As will be seen in chapter six, this is a core requirement for my proposed revolutionary strategy. Many people join the military to "serve their country". This ethical commitment provides significant leverage for persuading its members to serve both citizens and the environment.

G. LEADERSHIP CONSIDERATIONS

1. Don't be swayed by progressive arguments that human nature doesn't exist or is irrelevant, and that only social and cultural factors matter. Progressives typically ignore human nature because it restricts the social improvements they seek. You, on the other hand, must carefully consider our inborn tendencies because they will severely constrain the fundamental social shifts required for ecological survival and a sustainable future.
2. Avoid the error I made in my 2013 book, *Contractionary Revolution*. At that point I still had a progressive mindset and thus envisaged a bottom-up revolution similar to the working-class revolutions of the past. Soon after completing the book I realized that workers were spurred primarily by the poverty and squalor of early capitalism. They revolted to take control of the capitalist growth machine in order to channel the material benefits to themselves. Because such pro-growth motivations are disastrous in the environmental realm, a different mode of revolutionary change is now required.
3. Reject the conclusions of conservative academics if these are inconsistent with the scientific evidence, as they frequently are. For example, both E.O. Wilson and Steven Pinker (see section I) make a logical error about human nature that reflects their political bias. They correctly state that social choices are biologically constrained, but then claim that, given these constraints, contemporary societies cannot be radically altered. This is a non sequitur. The human lineage spent almost its entire history as hunter-gatherers, so this is the past that is most indelibly imprinted on our genes and brains. If Wilson and Pinker were consistent, they would acknowledge that capitalist civilization is an extreme departure from our ancient heritage, and that revolutionary change might allow us to reconnect with our deepest biological traits.
4. As just indicated, human nature is a vexed topic that is strongly tied to personal views. Be aware of this debate, but don't become ensnared by its subtleties. Whatever the complex truth about our evolved tendencies, your practical task is clear: achieve rational

control of our economies and societies so that overshoot can be reversed for youth survival.

H. KEY POINTS

- Humankind is a biological species with a long history as hunter-gatherers: "carnivorous primates of the African plains". (Wilson, p. 97) This past is imprinted on our genes and brains, and interacts in numerous ways with the social and cultural influences we daily experience.
- Given their material interests, both the global poor and global rich seek to increase their consumption. This strong tendency runs directly counter to the economic contraction required for sustainability. A youth survival strategy must therefore exploit our non-material motivations. Based on Darwin's observations about our moral sense, such motivations are an intrinsic part of human nature.
- Humankind's material interests strongly imply that the initial phase of the transition to sustainability will be authoritarian. Before our species can adjust socially and culturally, reduced consumption must be strictly but humanely enforced by social leaders.
- The human brain evolved in part to deal with rapid climatic changes in East Africa during our hunter-gatherer stage. This resulted in a powerful, general-purpose organ that is capable of both destroying the environment and formulating a rational survival plan. It also means that, although humankind is part of the natural world, it is a dominant and ecologically dangerous part.
- Just as natural limits constrain our ecological freedom, human nature constrains our social freedom. To be workable, a survival strategy must carefully consider both sets of restrictions.

I. FURTHER READING

BOOKS

On Human Nature - Edward O. Wilson (1978)
Wilson rejects the dominant assumption of the social sciences: that our social behavior is purely cultural rather than resting on a genetic foundation. Like Pinker (below), he uses his valid biological conclusions to defend the ecocidal status quo.

Humanity's Descent: The Consequences of Ecological Instability - Rick Potts (1996)
As described above, Potts outlines his research in East Africa, which led him to conclude that humankind's unique brain is a consequence of the region's rapid environmental changes.

A Darwinian Left: Politics, Evolution, and Cooperation - Peter Singer (1999)
This slim but significant book offers a clear explanation of human nature by a progressive thinker. A key statement: "Belief in the malleability of human nature has been important to the

left because it provided grounds for hoping that a very different kind of human society is possible. Here, I suspect, is the ultimate reason why the left rejected Darwinian thought. It dashed the left's Great Dream: The Perfectibility of Man". (p. 24)

The Blank Slate: The modern denial of human nature - Steven Pinker (2002)
Although Pinker is highly conservative and strongly opposes environmentalism, his book is a lucid companion to Wilson's *On Human Nature* (above).

A Short History of Progress - Ronald Wright (2004)
Wright fully accepts humankind's biological nature, but emphasizes that culture has become a powerful force leading our species to ecological destruction. Citing the Mayan collapse as a precedent, he warns that social leaders will respond to the ecological crisis by digging in their heels and doing what they have always done, only more so.

WEBSITE POST

The Material Interests Driving IPCC Support - Explains that the global rich continue to support the IPCC despite its objective failure because the organization safeguards their current overconsumption.

Chapter 5:
The political realities you must confront

The present chapter marks a turning point in this book. We are leaving the socially acceptable topics of environmental decline and human nature, and entering the impermissible realms of political power and social control. Although this shift will make many readers uncomfortable, it is unavoidable given the unprecedented depth and gravity of the ecological crisis.

My aim in this chapter is to establish the core political principles required to formulate a workable strategy for revolutionary change. This strategy will be presented in chapter six.

A. THE STRUCTURE OF CAPITALIST POWER

To this point I have referred to the holders of political power as "social leaders". This term was adequate for previous discussions, but it is unsuitable for strategic purposes. Figure 5-1, which depicts the structure of power in a capitalist society, identifies these leaders with greater precision.

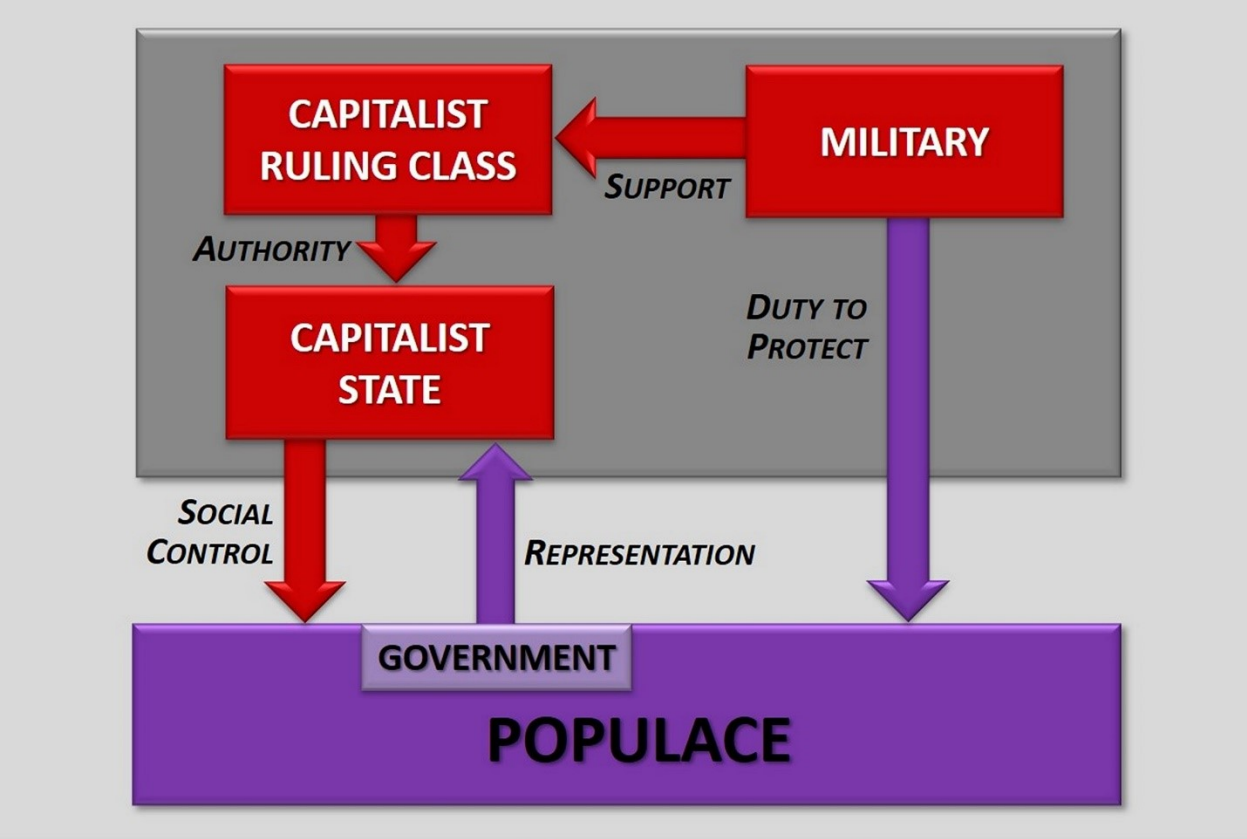

Figure 5-1. Political power under capitalism

At the bottom of this diagram is the familiar world of electoral politics. The standard story is that government holds political power, the populace elects government, so the populace indirectly rules society. If people are dissatisfied, they can elect a new government with better policies. The ecological crisis can therefore be solved through electoral politics and "political will".

This story is categorically false, and probably the most significant impediment to the young's ecological survival. History makes it abundantly clear that, although governments have influence, they lack power. Whenever a government has seriously thwarted dominant social groups it has been replaced by a more compliant version. If the young fail to see where political power actually lies, they will be unable to identify both the social elements driving their genocide and those that might help prevent it.

The top part of figure 5-1 depicts the reality of political power in a capitalist society. I will first present the overall structure by identifying its components and then add some clarifying comments. For details see my document, A Political Primer.

CAPITALIST RULING CLASS

The core element is the capitalist ruling class: society's major capitalists and their allies organized as a political force to protect and advance their shared interests. This group rules in the sense that it imposes its worldview, economic logic, social structure, and chosen path

of historical development on the rest of society. Its members are those previously referred to as "social leaders".

MILITARY
The *military* has both a critical role and a core responsibility. Its critical role is to provide the physical force that underpins the political power of the ruling class. Its core responsibility is to safeguard the populace from existential threats. As will be explained in chapter six, the relationship between the military's role and responsibility is now of immense strategic significance.

CAPITALIST STATE
The ruling class does not assert its social dominance directly, but instead delegates the required authority to the *state*. This term refers to the economic and political institutions, administrative structures, and instruments of coercion that implement social control, and that regulate social functioning in accordance with capitalist interests. Although the military is part of the state, it is separated here to underscore its unique political and strategic roles.

SOCIAL CONTROL
Social control refers to the state's management of the populace's thoughts and behavior for capitalist ends. Because revolutionary change is possible only if this control is shattered, the topic is discussed in more detail in section C.

GOVERNMENT
This institution serves both the populace and the ruling class. It serves the populace by allowing people to express their views, concerns, and demands, thereby pressuring the state to make desired changes. Government serves ruling-class interests primarily by facilitating the *democratic illusion*: the deeply entrenched but mistaken belief that the populace holds political power.

The following are important points of clarification:

- The young are not threatened by the above political *structure.* A ruling class or group is unavoidable in a complex society, a state is necessary for social regulation and stability, a military must support the rulers and protect society, and a government must represent the populace. ***The political problem for the young is the social force that currently dominates this structure: an ecocidal ruling class instead of a sustainable ruling group.***
- Various terms are applied to society's dominant figures, including the 1%, the elite or elites, the oligarchy, the establishment, and the ruling class. In my view the latter is the most accurate and useful of these, and thus replaces the previous term, "social leaders".
- The capitalist ruling class gained political power not by popular choice, but through a protracted and often violent struggle against the former rulers: Europe's feudal landowners. Because capitalists were not elected, they cannot be replaced through electoral means.
- Although the two are distinct, "government" and "state" are typically conflated. This massively mystifies political reality by merging the instrument of popular representation with the delegated authority of the ruling class. To support this conflation, the state is

frequently misrepresented as government agencies, the civil service, the federal bureaucracy, or - as in the U.S. - the executive branch of government.

- Government is a two-edged sword for the ruling class. It is essential for maintaining the democratic illusion and placating the populace, but it becomes dangerous if politicians assert their independence from the rulers. To minimize this threat, the ruling class heavily influences government through voter suppression, lobbying, financial payoffs, and by infiltrating government itself through the election of ruling-class members or subservient stand-ins.
- Three key terms can now be accurately defined. A ***coup*** is the replacement of a government, typically by military force, when it threatens the power or privileges of the ruling class. A ***revolution*** is the replacement of the ruling class itself when it threatens the people. A coup thus replaces a government to benefit the ruling class, whereas a revolution replaces the ruling class to benefit the populace. The term ***revolutionary change***, as used in this book, refers to the proposed social transformation as a whole: revolution, implementation of the rational crisis response, and the establishment of a sustainable economy and society.

B. CAPITALIST POWER: STRATEGIC IMPLICATIONS

Given the above power structure, the young must carefully consider the following implications when developing a survival strategy.

1. The military is the decisive social element in supporting the ruling class. ***The primary strategic requirement is thus to shift the military's allegiance from this class to the populace.*** As discussed below, this shift is also required to prevent or postpone fascism.
2. *A government cannot implement the rational response to the ecological crisis.* The capitalist state will initially ignore or resist the fundamental changes it proposes. If the government persists, it will be quickly neutralized. Past methods include discrediting it through economic sabotage to ensure its electoral defeat, fomenting a popular or plutocratic rebellion against it, and replacing it through a coup.
3. Corporations are not the holders of political power. They are *economic* entities that compete with each other on this basis. A revolutionary strategy must instead focus on the *political representation* of these economic interests.
4. The state, especially its senior members, strongly supports the ruling class. Replacing the latter through revolution is therefore insufficient for revolutionary change - the state must be transformed as well.
5. Legal challenges (suing governments, adding ecocide to international law, enshrining rights for nature, etc.) can be useful for raising awareness, but cannot achieve fundamental change. The capitalist state, which controls a society's legal system, will never oppose or undermine its ruling class. The international order, which is based on the global capitalist economy, will never favor sustainability over economic growth. (For an overview of the legal strategy by two proponents, see the Guardian articles cited in section H.)

6. The rational response to the ecological crisis will require the replacement of the capitalist ruling class with a sustainable alternative. My proposed strategy for achieving this aim is presented in the next chapter.

C. METHODS OF SOCIAL CONTROL

Recall from section A that the ruling class authorizes its state to control the populace for capitalist ends. Because this control underpins ruling-class power, its methods have been perfected by the best minds that capitalist money can buy. It is therefore ingenious, virtually invisible to the populace, and devastatingly effective. Unless some light is shed on this dark realm, the young will stumble ineffectually instead of striding with some confidence to their survival goal.

A key point about social control is that its methods, especially in the rich world, are largely psychological rather than coercive. The populace is typically controlled not through physical or mental compulsion, but through the careful exploitation of human nature. Our inherent drives and tendencies provide the psychic energy that is cleverly redirected for social-control purposes. For some fascinating and disturbing details, see the books by Rushkoff and Macknik/Martinez-Conde (section H).

Figure 5-2 depicts the major social-control methods employed in the capitalist world. It is intended to explicate the arrow marked "social control" in figure 5-1 above.

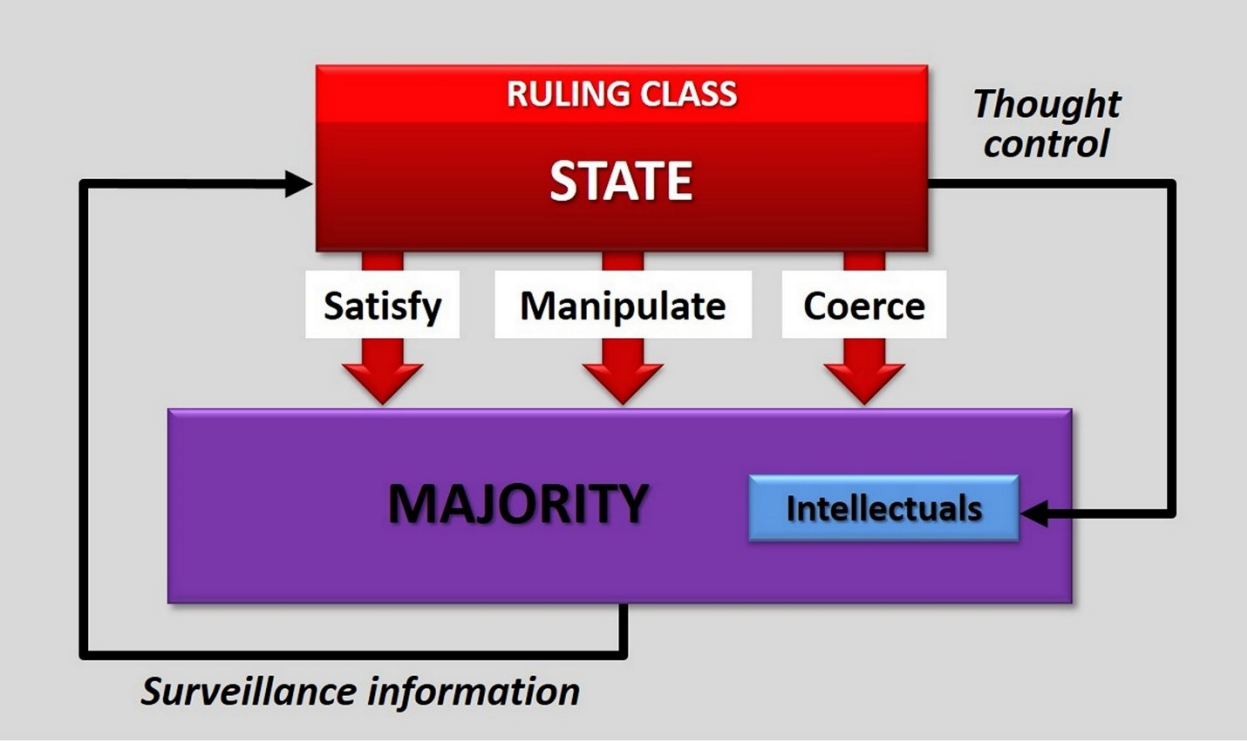

Figure 5-2. Methods of social control

As before, capitalist power is represented by the rectangle at top, and the populace - here divided into intellectuals and the majority - by the rectangle at bottom. The populace as a whole is controlled through four methods: satisfaction, manipulation, coercion, and surveillance. Intellectuals are additionally managed through thought control. The following are brief explanations of these five components. Because coercion is a special case, it is addressed last.

SATISFACTION

The populace's most basic desires are to satisfy its core material interests: consumption and life enjoyment. This is sometimes expressed as giving the people "bread and circuses": sustenance and entertainment. Satisfying these desires is therefore the most fundamental method of social control. People with full bellies and diverted minds rarely revolt, and they will be strongly predisposed to following ruling-class guidance.

MANIPULATION

The satisfaction of basic desires provides a solid foundation for social control, but much more is required to make the populace fully useful to the capitalist class. People are therefore extensively manipulated, first to stifle any remaining revolutionary threats, and second to shape their minds for effective participation in a capitalist economy. The following are the main forms of manipulation:

- **The pyramid of privileges:** Broadly stated, if you serve the capitalist class you will be rewarded, if you serve it well you will be amply rewarded, and if you serve it extremely well you will be munificently rewarded. This logic leads to a pyramid of privileges that keeps people chasing the next carrot dangled before them, and that deepens their loyalty as they approach the peak.
- **Social division:** A longstanding method of social control is divide and rule: pitting segments of the populace against each other on the basis of race, gender, mode of life, political orientation, etc. so they don't unite against the rulers. Racism is an instructive example because it derives from the fear of strangers that is rooted in human nature. This fear can be largely negated by a secure and beneficent ruling class, or it can be sharply intensified by one that perceives threats to its power or wealth.
- **Propaganda:** As used in this book, "propaganda" is a neutral term that refers to an organized effort to disseminate a belief or doctrine. The capitalist state uses propaganda profusely in education, the media, popular culture, etc. to disseminate the ideas, views, and perspectives that are favorable to capitalism and its ruling class. As explained in chapter eight, a post-capitalist state will also use propaganda, but with a radically different set of aims.
- **Deception:** This refers to propaganda falsehoods that are intended to disorient and misdirect the populace. For the young the most significant of these are the democratic illusion and the environmental lies previously discussed. Other deceptions include false-flag operations and various medical falsehoods that serve power and profits instead of health and well-being.
- **Fear:** Fear impairs rational thought and makes people psychologically dependent on the rulers for protection. It can be manufactured through inflated threats from foreign enemies, internal saboteurs, etc., and it can be deeply implanted through dramatic events.

Machiavelli (see section H) provides a piquant example of the latter. After describing how the powerful Borgia family disposed of a rival by cutting his body in two and placing it in a public square, he commented, "The brutality of this spectacle kept the people of Romagna for a long time appeased and stupefied."

THOUGHT CONTROL
In addition to the control methods that shape the populace as a whole, intellectuals are managed through selection, reward, and punishment. They are carefully selected for their cleverness and compliance, which together determine their potential for serving capitalist ends. They are then rewarded with professional applause and advancement for their ongoing contributions, and punished in various ways if they stray from the approved path. This combination establishes a distinct boundary between *permissible thought*, which has ruling-class approval and can be safely expressed, and *impermissible thought*, which lacks such approval and is socially and professionally perilous.

SURVEILLANCE
The state scrupulously monitors the thoughts and behavior of the populace for two reasons: to respond quickly to incipient revolutionary threats, and to strengthen its control methods. Given today's computer and communication technologies, surveillance is highly intrusive and shockingly comprehensive.

The four social-control methods described above are intended to produce *legitimacy*: the populace's willing support for the ruling class and its social guidance. When this relatively benign approach fails and support is withheld, coercion is used instead.

COERCION
This can be psychological, material, or physical. Examples of psychological coercion are professional shunning and the loss of social status in response to impermissible statements. Material coercion refers to the loss of income, wealth, security, etc. Physical coercion, which is generally a last resort, involves physical compulsion or violence. Examples include prison, torture, and death.

If coercion becomes extreme and democratic rights are routinely violated, capitalist democracy has transmuted into *fascism*. Fascism is therefore not a standalone ideology, as it is usually portrayed, but rather an alternative mode of capitalist rule. *The capitalist class employs the velvet gloves of legitimacy and democracy when possible, but resorts to the iron fists of coercion and fascism when necessary.*

In addition to the above, social control is exercised by corporations through their employment practices and their ownership of media and technologies. Social control is also facilitated by family influences (Orwell made this point in *1984*), and by peer pressures based on the widespread desire to "go along to get along".

D. SOCIAL CONTROL: STRATEGIC IMPLICATIONS

- The populace has been profoundly influenced by the capitalist class and state. This influence will cease only when a new ruling entity is in power and a new mode of social control is applied. This implies that any strategy that relies on a major pre-revolutionary shift in the populace's attitudes, values, or worldview is unworkable.
- Because social division exploits deep-seated aspects of human nature, it is highly effective in keeping the populace fixated on superficial conflicts. The young must learn to look beyond electoral rivalries, race-based conflicts, differences in social attitudes and lifestyles, etc. to focus on the underlying class realities and power relations.
- Because thought control has an iron grip on the minds of intellectuals, few can contribute significantly to the young's strategic development. This underscores my suggested attitude towards them: by default distrust intellectuals for strategic purposes, but treat supporters as educated employees who can competently perform well-defined tasks. See chapter six for a preliminary task list.
- The young must urgently shift the military's allegiance from the ruling class to the populace in order to reduce the risk of fascism. Democratic norms must be preserved as long as possible to permit the formation of revolutionary movements and to minimize the brutality that defines a fascist regime.
- In order to maintain its power the ruling class regularly employs violence even under democracy, and it will use extreme violence under fascism. It is therefore in no position to condemn the violence that will likely be required for its overthrow. Any such denunciations should thus be dismissed as rank hypocrisy.
- The young should assume that surveillance is pervasive and that their deliberations are carefully monitored by state actors. This means that revolutionary change must be based on an open declaration of principles (see my proposed manifesto in appendix A) and a massive uprising by the young and their older supporters.

E. CASE STUDY IN SOCIAL CONTROL: THE IPCC

As noted above, two widely-used social control techniques are propaganda and deception. For young people facing ecological collapse the most significant purveyor of both is the IPCC. Recall from chapter one that this mainstream organization effectively reversed an international commitment to avoid unsafe GHG concentrations. Today it provides pseudo-scientific justification for the genocidal target of net-zero emissions by 2050. The young should therefore understand the specific control methods it regularly employs.

1. **Claiming the mantle of scientific authority (PROPAGANDA)**
   The IPCC in 1990 asserted that its first Assessment Report was, "... the most authoritative and strongly supported statement on climate change that has ever been made by the international scientific community." Such self-aggrandizing claims escalated over the years as more scientists became involved. Newspapers like The Guardian have uncritically gone along, repeatedly stating that the IPCC is, "the world’s leading authority

on the climate". The message to the young is clear: don't even think about questioning this bastion of scientific knowledge and expertise.

2. **Using spurious arguments (DECEPTION)**
   The IPCC's 1995 reversal was achieved by telling the world that unsafe concentrations can't be scientifically determined, hence only emissions reductions can be scientifically addressed. This is a ludicrous argument, and it takes only a moment of honest thought to expose it as an ecocidal lie.
3. **Sowing confusion #1: good cop/bad cop (DECEPTION)**
   This offers the young a false choice with respect to the GHG crisis. A valid choice would include a safe global temperature. The choice they are presented with, however, is between the IPCC's emissions reductions (good cop) and the inaction of climate denialism (bad cop). Both options serve capitalism and growth, which is the point.
4. **Sowing confusion #2: relative improvement vs. absolute solution (DECEPTION)**
   Closely related to good cop/bad cop, this urges the young to choose the better of two disastrous measures while the rational response is ignored. For example, sea-level rise of one meter is better than two meters, but both will devastate coastal communities. The ignored response is aggressive measures for a safe global temperature to slow and hopefully stop the rise.
5. **Endlessly repeating "emissions" (PROPAGANDA)**
   This is embarrassingly simple, but it works. In the key documents arising from the UNFCCC-based negotiations (CoP meetings) the word “emissions” appears numerous times, but “concentrations” is seldom mentioned. Specifically, the combined ratio for the original UNFCCC Agreement (1992), the Kyoto Protocol (1997), and the Paris Agreement (2015) is an overwhelming 104-2 in favor of "emissions". The same pattern holds for most books, media articles, and scientific papers that discuss the GHG crisis.
6. **Avoiding basic realities (DECEPTION)**
   This is again simple but highly effective. The IPCC doesn't want you to think about the collapsing Arctic, so its last full Assessment Report (AR5 in 2014) completely ignored the issue. The organization doesn't want you to rationally examine geoengineering, so the indispensable energy-balance concept is never discussed. The IPCC desperately wants you to ignore GHG concentrations, so these are rarely mentioned.

In chapter one I used the term "social leaders" when discussing the IPCC. That term is now obsolete, so let me briefly restate the organization's role with reference to the above power structure. Although many ruling classes and states were involved, I simplify by treating them as a single entity.

By the 1970s the capitalist class was fully aware that the atmospheric build-up of GHGs would devastate the biosphere. However, because its power and privileges were tied to the economic system that caused the accumulation, it chose to continue with business as usual. To conceal this horrific act it needed a credible organization to distort the science and mystify the

populace. It therefore directed its state to form the IPCC: the Intergovernmental Panel on Climate Change.

The word "government" was used in the name to make it appear that the organization serves the populace rather than the ruling class. The term "climate change" was used because this reduces the problem's scope, creates terminological confusion, and responds to the populace's concerns about changing weather patterns. Despite these deceptions and the business-as-usual decision, both of which existentially threaten the populace, the military's support for the rulers remains strong.

F. LEADERSHIP CONSIDERATIONS

1. The most serious obstacle to youth ecological survival is the democratic illusion: the false belief that government holds political power and therefore has both the responsibility and the capacity to rationally address the crisis. This illusion is deeply ingrained and extremely tenacious, so you must constantly enlighten your members about the true nature of power and control. When referring to politicians, emphasize that they hold office, represent the populace, and can influence the state, but they are not society's dominant force and do not wield power.
2. Other political errors you must avoid are the following:
   - **Ascribing political power to the populace.** It is a humbling but undeniable fact that the vast majority of people are members of a subordinate class. We are the ruled, not the rulers. The well-connected among us may well have social *influence*, but unless we hold high-ranking positions within the state we have no meaningful political *authority*, and if we are not part of the ruling class we completely lack political *power*.
   - **Treating the state as an impartial body.** The state is currently a capitalist state that serves capitalist ends. In performing this function it must ensure social stability and smooth social functioning, so it is easily perceived as supporting the populace. This is the basis for progressivism's commitment to "government" action over market-based results. Although the state can be more humane than chaotic and competitive markets, the underlying power relations must always be kept firmly in mind.
   - **Perceiving the military exclusively as a supporter of ruling-class power.** The military's professional responsibility is to safeguard the populace. When the ruling class threatens the populace's survival, as it clearly does today, the military is duty-bound to replace it with a more rational group. This is one of the few points of strategic leverage you have, so you must earnestly appeal to the military's honor by loudly insisting that it fulfill this core commitment.
   - **Referring to the *corporate* media instead of the *capitalist* media.** It is true that media companies are commercial entities that are driven by profits and influenced by advertisers. However, they perform a major function in social control by buttressing the democratic illusion and deeply instilling capitalism's worldview and economic

logic. Under today's revolutionary conditions they should therefore be seen primarily as political rather than economic forces.

- **Confusing a society's elites with its ruling class.** This confusion stems in part from an influential book: *The Power Elite* (1956) by American sociologist C. Wright Mills. The author locates political power in the groups that control government, corporations, and the military. He flippantly dismisses the idea of a ruling class as a "conspiracy" (p. 18) and mocks it as "an omnipotent elite" that can "shape all historical events" (p. 20). Such intellectual cheap shots are typical in academia when impermissible topics like power and control are addressed. Mills' book was gratefully received by progressives and intellectuals who understood that the populace lacks power, but who were unwilling to accept the reality of a ruling class.

3. The following points may help you persuade your followers that governments do not hold political power:

   - **History:** As previously noted, numerous governments have been forcibly removed from office when a society's ruling class felt threatened.
   - **Ideological constancy:** Governments swing from left to right and back again, but the capitalist system, its economic logic, and its worldview are permanent social features.
   - **Lack of continuity:** Governments come and go, and its members are often amateurs in public management. The capitalist state by contrast is a permanent presence, and its senior members are career-oriented professionals with strong ties to the ruling class. In disputes over policy and direction, the state can almost always assert its will.
   - **Anthropology:** This academic discipline routinely uses "ruling class" to refer to the true leaders of non-capitalist societies. For an example see Joseph Tainter's *The Collapse of Complex Societies*, which refers to the leaders of Mayan society as its ruling class. (p. 162). It is only when academics address their own societies that the idea of a ruling class disappears.
   - **Environmental inaction:** If governments held political power one could reasonably assume that many would by now have responded effectively to the ecological crisis. The fact that this has not occurred is strong evidence that they lack the required political capacity.

4. Unless the military's allegiance is quickly shifted from the ruling class to the people, fascism is inevitable. A rapidly degrading environment will trigger unprecedented social turmoil and resistance, which the rulers will ruthlessly suppress using the state's coercive forces. Emphasize to your followers that their grim choice is between youth genocide under the jackboot of fascism and possible survival through revolutionary change.

5. Strictly avoid the term "ecofascism". This is used in at least four ways and is thus wildly ambiguous. In the right-wing context it can refer to an early German movement, to politicians who use environmental pretexts to implement racist policies, and to environmentalism as a movement - for example this book by climate denier James Delingpole. In addition, progressives sometimes use the term to rebuke those who cite population as a factor in environmental impact or who support authoritarian measures to reach sustainability.

6. Also avoid using the term "deep state". This originally referred to senior state members who remain staunchly loyal to the capitalist class and thus resist fundamental change. The term was modestly useful for this purpose, but Donald Trump then applied it to state actors who resisted his proto-fascist proposals. Because "ruling class" and "state" suffice for the young's strategic purposes, "deep state" should be left to Trump and his supporters.
7. The concept of legitimacy helps explain why the capitalist ruling class has long identified geoengineering as a taboo subject, and why it continues to do so with SRM today. Permitting such massive interventions would be an open admission that the system has fundamentally failed, and would decisively repudiate the emissions-reductions story. The resulting cracks in capitalism's legitimacy could pose unacceptable revolutionary threats.

G. KEY POINTS

- In much of the world a capitalist class holds political power and is therefore society's ruling entity.
- Under normal circumstances the military supports this class, but its ultimate responsibility is to safeguard the populace.
- The state controls the populace and regulates social functioning on behalf of the capitalist class.
- The populace expresses its will through government, which enacts laws and formulates policies for implementation by the state. The latter will cooperate with government to the extent that the proposed initiatives are consistent with capitalist power, privileges, worldview, and economic logic.
- The young are threatened by the current holders of political power rather than the structure of power. Given human and social realities, this structure will remain largely unchanged in the post-capitalist world.
- The democratic illusion is the main impediment to youth survival. Pressuring government and politicians to implement the rational crisis response is both futile and a fatal diversion from militant organization and revolutionary action.
- Social control is achieved by satisfying, manipulating, and coercing the populace, and by tightly restricting intellectual thought. Pervasive surveillance is used to quash incipient revolutionary challenges and to strengthen social-control methods.
- When the capitalist class determines that standard social control no longer suffices, it will seek to replace democracy with fascism. This refers to highly coercive state measures that violate democratic norms. To prevent or stall this development the young must shift the military's allegiance from the ruling class to the populace. As discussed in chapter six, this is also essential for revolutionary change.

H. FURTHER READING

BOOKS

The Prince - Niccolo Machiavelli (1532)
This small book unflinchingly examines political power: "I have thought it proper to represent things as they are in real truth, rather than as they are imagined." The author thus openly discusses *deep politics* while avoiding the superficial electoral politics that dominates today's discussions. (The word "prince" in the title refers to a political ruler, and by extension a ruling class.)

Propaganda - Edward Bernays (1928)
If you are short of time and need a quick introduction to political power under capitalism, this book is your best bet. Bernays understood that the populace is easily led, and that an "invisible government" of powerful figures is society's actual ruling force.

1984 - George Orwell (1949)
This is not primarily a dystopia, but rather a treatise on political power and social control. Orwell's main message is that the populace is easily managed through heavy work, entertainment, lotteries, sports, etc., but that intellectuals require intense thought control to keep them in line. They are therefore taught to avoid thoughtcrimes by applying several self-deception techniques: doublethink, blackwhite, and crimestop. The latter is the most significant, and refers to, "the faculty of stopping short, as though by instinct, at the threshold of any dangerous thought ... Crimestop ... means protective stupidity."

The Conservative Mind: From Burke to Eliot - Russell Kirk (1953)
This is a classic work on the traditional conservatism that is rooted in pre-capitalist feudalism. Its adherents fully understand that capitalist democracy is fraudulent and that "public opinion" is not formed autonomously, but is instead implanted through media control by powerful forces. The overlaps between traditional conservatism and the views of Edward Bernays (above) are striking.

Coercion: Why we listen to what "they" say - Douglas Rushkoff (1999)
Rushkoff is politically weak, but his insights about the manipulation of people for commercial gain are outstanding. He details the various methods used by capitalists to make shoppers buy more stuff: disorientation, redirection, capture, regression, etc. He notes that many of these methods exploit healthy psychological features or social behaviors, thereby producing distrust and eroding community spirit.

Sleights of Mind: What the neuroscience of magic reveals about our everyday deceptions - Stephen L. Macknik & Susana Martinez-Conde (2010)
The authors are academics who study the psychological aspects of magic. This is important work because magic is the source of several highly effective social-control techniques. The most prominent of these is the *diversion of attention*: fixate on emissions so you don't notice the concentrations and heat that are killing you. The authors found that, because most scientists are trusting souls, they are even more susceptible to magic-based deceptions than the general public.

For an entertaining example, see this video of James Randi performing a simple trick that fooled several physicists at Lawrence Livermore National Laboratory in the U.S.

GUARDIAN ARTICLES

To stop climate disaster, make ecocide an international crime. It's the only way.
- Jojo Mehta and Julia Jackson
For an update see Legal experts worldwide draw up 'historic' definition of ecocide.

WEBSITE POST

Confession of an Environmental Thought Criminal - My mock confession that, as an independent environmental thinker, I have committed serious thoughtcrimes.

Chapter 6:
A strategy for revolutionary change

A. PRELIMINARIES

The previous five chapters have set the stage for the burning topic presented here: a strategy for revolutionary change. Below is a quick recap before I proceed.

Chapter one introduced the ecological betrayal of the young by social leaders, who have now been identified as the capitalist ruling class. Chapter two described the ecological crisis and the deceptions used to mystify it, and chapter three presented the rational crisis response and the lies used to avert it. In both cases the falsehoods were used to prolong capitalist power and economic expansion. I then addressed the key factors bearing on revolutionary change. Chapter four outlined the three aspects of human nature that youth leaders must carefully consider. In the last chapter I examined the structure of capitalist power and social control.

The task now is to draw strategic conclusions. How can the required revolutionary shift be accomplished? Given the betrayal, the crisis, ongoing expansion, human nature, and capitalist dominance, what is a logical plan of action? A few preliminary remarks will help me sharpen this crucial question.

- *Now is the moment of conscience and truth:* the time to acknowledge that the ecological crisis is unprecedented, existential, and exceedingly urgent; that conventional thought is largely obsolete, corrupt, and compliant; and that the rational strategy lies outside the well-lit social tent in the dark realm of impermissible thought. *Summon all your moral courage now*.
- It is highly likely that tipping points have already been passed, particularly in the Arctic but also in the Amazon and possibly Antarctica. PONRs, if not passed already, are only a few years away. In these calamitous circumstances the appropriate strategic goal is to find the *best* chance for youth survival that is still available at this late date.
- Some defeatists insist that human extinction is inevitable, and that a strategy for revolutionary action is therefore pointless. In my view this stance is morally obscene. An all-out attempt to rescue the young, future generations, and non-human species is a profound moral obligation, especially for the overconsuming rich. *Our personal assessment of the survival chance is relevant to the optimism or pessimism we feel, but not to the ethical responsibility we bear.*
- Others among the concerned seek a "just collapse": an equitable contraction of the human project. Although this commitment is admirable, it ignores the fact that a revolutionary shift will be required to maintain social justice under contractionary conditions. Unless this shift occurs, collapse will likely proceed under fascist rule.

Given these considerations, the fundamental strategic question is this:

In the brief time that may still be available, how can the capitalist ruling class be replaced with a sustainable ruling group that will immediately implement the rational crisis response?

The first step in answering this question is to determine which aspects of humankind and society resist this replacement, and which potentially support it. Once these factors have been identified and their relative strengths assessed, reasonable conclusions can be drawn.

B. NEGATIVE AND POSITIVE FACTORS

The following are clearly *negative* factors with respect to revolutionary change:

1. **The biological side of human nature.** This refers to the material interests that are necessary for human survival and conducive to life enjoyment, but that in many cases have been inflamed by capitalist pressures. These interests drive the global rich to maintain their unsustainable lifestyles, and the global poor to seek adequate consumption.
2. **The power and control of the capitalist class.** This class has reached a historical dead end: it cannot exist economically without growth, and it will collapse ecologically with growth. Facing its demise and desperately maximizing its wealth and remaining pleasures, it will ruthlessly cling to power. To keep an increasingly angry and disillusioned populace at bay, it will brutally intensify its social control.
3. **Military support for this class.** Because of its capacity for physical force, the military is the ultimate arbiter of political power. Tragically it remains under the deep influence of the capitalist class, which has carefully cultivated its unquestioning allegiance. Military support for this class therefore remains strong.

Below are some potentially *positive* factors:

1. **The ecological and moral sides of human nature.** Humankind has long possessed a uniquely intelligent and flexible brain that can readily formulate the rational crisis response. The real question is the strength of our "moral sense" (Darwin): do we have the <u>will</u> to do this thinking and then urgently apply our conclusions? Thus, ultimately: *does our species have sufficient ethical courage to summon this will?*
2. **Non-material motivations.** Among these are concern, anger, panic, fear, defiance, love of nature, religious commitments, parental concerns, and professional ethics. The strongest motivations are likely the outrage of the young in response to the existential betrayal of their elders, and the dread felt by concerned parents about the gruesome future their children now face.
3. **The military's professional responsibilities.** The military has two honor-bound duties: to support the ruling class so long as it serves the populace's interests, and to safeguard the populace from existential threats. The populace is now mortally threatened by ecological collapse, so an honorable military should be motivated to replace the capitalist class with a sustainable alternative. It is thus encouraging that, after the assault on the

U.S. Capitol on January 6, 2021, the country's military publicly stated that it was loyal to the people and the Constitution, not corporations and the ruling class.

To summarize, the negative factors with respect to revolutionary change are material interests, capitalist power, and continuing military support for this power. The positive factors are humankind's advanced brain and deep moral sense, our non-material motivations, and the military's professional responsibilities.

Four conclusions can reasonably be drawn:

1. The negative factors currently overwhelm the positive factors. Intelligence, morality, emotions, and duties are no match for interests, power, and loyalty. ***Thus, if the young are to survive, a fundamental social reorientation must occur to decisively alter this unfavorable balance***.
2. Because the extreme weather events of 2021 did little to speed this reorientation, one or more exceptional events in the human realm will be required. Among the possibilities are emergency SRM by a desperate country or group, an unexpected military takeover for ecological reasons, the appearance of militant youth movements, a split within climate science that exposes the mainstream's lies, a split within the ruling class that exposes its ecocidal role, and massive demonstrations by concerned parents. Other possibilities will likely appear as collapse rapidly transforms the human soul.
3. The most promising social group to instigate such an event is the young themselves. Because many now grasp the depth and extent of their ecological peril, they may soon seek to militantly defend their future. Sympathetic members of older generations will likely offer their support, but the young are unique in their visceral motivations to revolutionize a disintegrating world.
4. The military's professional responsibilities, its humanitarian missions, and its public statements all imply that it can be persuaded to intervene on the populace's behalf. However, massive pressure by the young and their supporters will be required to trigger this long-delayed response.

These conclusions underpin my proposed strategy for youth ecological survival.

C. THE YOUTH-MILITARY STRATEGY

The following strategy is based on global conditions in early 2022. Given the accelerating ecological crisis, the toxic politics of recent years, and the unanticipated events that will surely come, youth leaders must be prepared to adjust or alter this strategy as required. See figure 6-1.

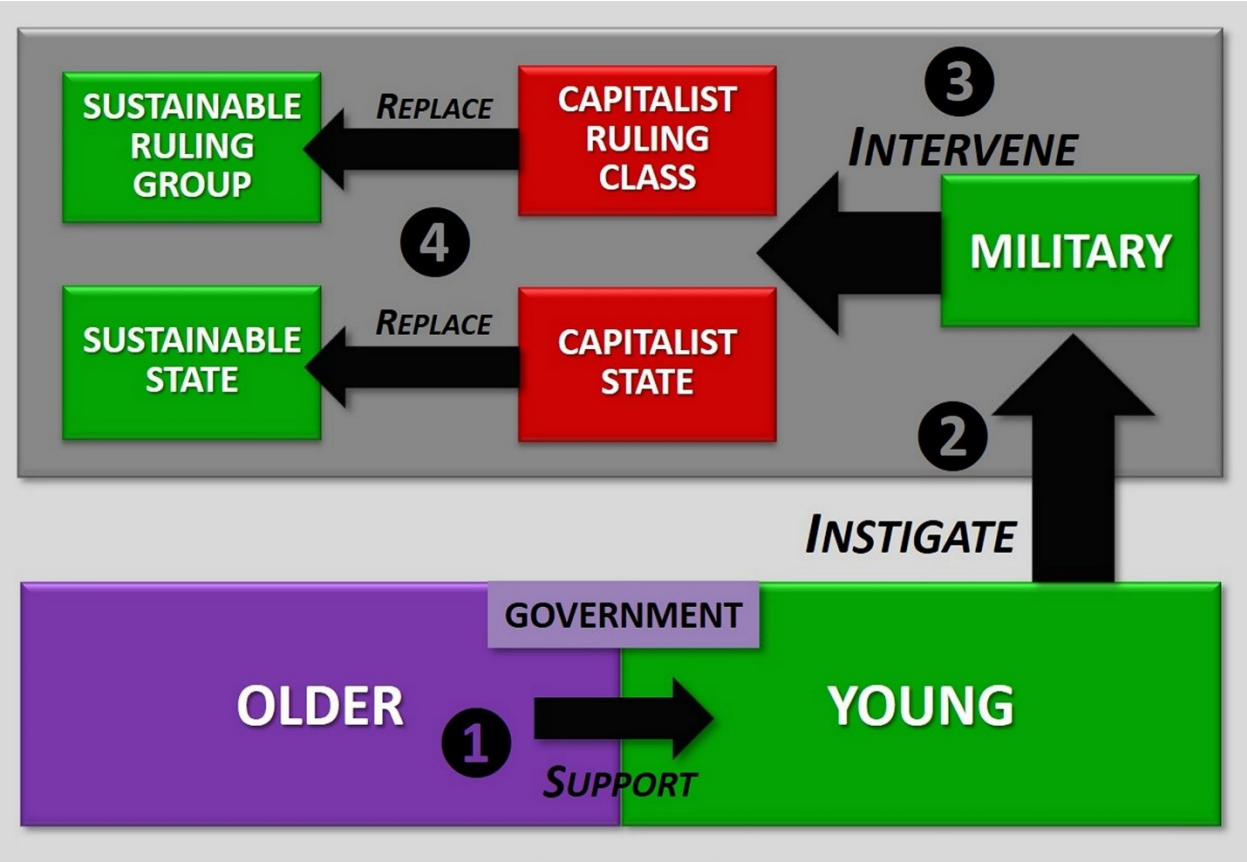

Figure 6-1. The youth-military strategy

This diagram is a modification of the capitalist power structure presented in chapter five. The strategy comprises four steps:

1. Spurred by a fundamental social reorientation (above), ethical and committed members of older generations throw their political and practical support behind the militant young;
2. The young and their supporters instigate military intervention by persuading the military to honor its professional commitments;
3. The military responds by shifting its loyalty from the capitalist class to the populace and then intervening politically;
4. This intervention replaces the capitalist class with a sustainable ruling group and initiates the transformation of the capitalist state into a sustainable state.

Once their power and authority have been consolidated, the new ruling group and state will implement the rational crisis response outlined in chapter three. It will then initiate the economic shift to a sustainable economy as discussed in chapter seven. For my proposed public statement by the military shortly after such an intervention occurs, see appendix B.

The following are important points of clarification:

- Military intervention could be direct or indirect. Direct intervention means that the military initially serves as the ruling group because no qualified civilian group has yet

appeared. Indirect intervention means that this role is played by a civilian group that has earned the military's confidence as sustainable social leaders.

- Given the corrupt state of civilian thought and the populace's political immaturity, direct military intervention appears more likely at this stage. If this occurs, the military should relinquish political power as soon as a qualified civilian group appears.
- Government plays little or no role in the revolutionary process itself. Once a sustainable state is established, however, government will again play its crucial role of representing the views, concerns, and interests of the populace. Briefly stated, electoral politics subsides during the revolutionary process, but revives when this is substantially complete.
- Recall from chapter five that a coup replaces the government to benefit the ruling class, whereas a revolution replaces the ruling class to benefit the populace. The military intervention proposed here is therefore the initial stage of a revolution. It is not a coup.

D. TASKS FOR INTELLECTUALS

Although academics and other intellectuals are indispensable for youth survival, they are tightly constrained by capitalist thought control. I have therefore suggested that youth leaders think of intellectual supporters as their employees: people who can competently carry out assigned tasks, but who by default should be excluded from strategic decisions. Among their useful tasks are the following:

- Objectively re-analyze the ecological crisis by ignoring the mainstream's deceptions and addressing the problem with independent minds. The main aim is to produce a reliable body of environmental understanding to guide a sustainable ruling group and state. Chapters two and three in this book are intended as starting points for this analysis.
- Write a constitution and formulate the basic laws for a sustainable society. Whether military intervention is direct or indirect, these will be needed soon after it occurs.
- Develop a post-capitalist economic theory to guide a sustainable economy. This critical requirement has been consistently overlooked by economic thinkers. My proposed starting point is briefly discussed in chapter seven.
- Conceptualize the economic and political institutions that will be needed to coordinate a sustainable society. For example, what new institutions will be required to implement the sustainable economic theory? Which institutions should be modified, and how? Which should be scrapped?
- Propose methods to acclimate the populace to the new constraints. The only way to achieve sustainability is to sharply reduce rich-world consumption. How can this be achieved while minimizing mental distress and social conflict?
- Propose a soft landing for the capitalist class and its allies. What will happen to these formerly powerful and wealthy people? How can their likely efforts to restore capitalism be thwarted with minimal violence? What constructive roles might they play in a business-friendly but post-capitalist economy?

E. LEADERSHIP CONSIDERATIONS

1. The three basic requirements for revolutionary change are ideas, leaders and events. *Ideas* are the theoretical foundation - the analysis and broad strategy. *Leaders* transform the ideas into specific strategies and tactics based on concrete conditions, and organize movements to implement them. *Events* are social or environmental changes that alter the political landscape and create obstacles to, or opportunities for, revolutionary change. This book is intended to provide the core ideas. The disruptive events are occurring on a daily basis. ***The crucial missing element is effective youth leadership***. If you have anything to contribute in this area, please step forward now.
2. To repeat my advice from chapter one: *don't be a bad general by fighting the last war*. The youth struggle for ecological survival is historically unique. Avoid the temptation to simply transplant the strategies and tactics developed in the fight for social justice. Mahatma Gandhi and Martin Luther King were activist heroes, but they faced social injustice, not ecological collapse. If you have a progressive background you will likely have to struggle psychologically to transcend your reformist past.
3. Two approaches for instigating military intervention should be considered. The first is to praise any environmental awareness it demonstrates while correcting its misconceptions and directing it to the rational response. The second is to emphasize its responsibility not only to the people, but also to the national territory. You could point out that the homeland is now being "invaded" by rising seas and degraded by unsafe temperatures, and that the military is duty-bound to help prevent such destruction.
4. As much as humanly possible, avoid self-pity about concrete conditions, no matter how distressing these may become. An effective movement leader accepts environmental and social conditions as givens: the gritty real world in which a carefully formulated strategy and effective tactics must be courageously applied.
5. Revolutionary change for ecological survival shares an important feature with the working-class revolutions of the past: it replaces the capitalist class with another social entity. Leaders should exploit this overlap by carefully studying these revolutions and absorbing the restricted but valid lessons they offer. A good example is John Reed's book about the Russian Revolution - see section G.
6. Adopt the *principle of distrust*: This is the idea that the capitalist class and its supporters - particularly the media and educational institutions - cannot be relied on for the truth on any matter of social or environmental significance. All assertions from such sources should be treated as pro-capitalist deceptions until their objective validity has been independently established.
7. Learn from the mistakes made by pioneering activist groups such as Extinction Rebellion (XR). Such groups cannot be effective because they embrace the democratic illusion. As previously discussed, this is the false belief that government (which in this view includes the state) holds political power. XR co-founder Roger Hallam thus claims in *Common Sense for the 21st Century* that, "Government is the institution that makes the rules of society and has the monopoly of coercion to enforce them." (p. 4) As shown in figure 5-1, this is a profound mystification of political reality. It ignores both the capitalist ruling

class and its supporting military, and it incorrectly implies that the state serves the people rather than their rulers.

Based on its faulty political analysis, XR has adopted an unworkable strategy: to compel government to become more participatory through citizens' assemblies that will, "... take over the sovereign role from a corrupted parliamentary system." (p. 6). This is a fantasy scenario because pro-capitalist forces will immediately crush any attempt by such assemblies to assert meaningful control over society and the economy. In doing so they will liberally employ the violence that XR dogmatically and irrationally rejects.

8. Don't be seduced by the moral claims of the environmental justice and climate justice movements. There is a clear distinction between (a) responding rationally to the ecological crisis and (b) equitable treatment of the global populace while the crisis unfolds. The progressive fixation on justice erases this distinction. This was one of the main effects of Naomi Klein's 2014 book, *This Changes Everything*, which urged progressives to *use the GHG crisis* as leverage to advance equity issues. (p. 7)

   Given the goal of youth ecological survival, I believe the following establishes the correct relationship between sustainability and justice:

   a. Until youth survival is ensured, sustainability takes strategic precedence because sustainability is required for survival, and survival is required for justice;

   b. During this period justice can be a valid objective, but only insofar as it advances the survival cause;

   c. Once youth survival has been ensured, justice is subject to social neutrality (see chapter seven) and progressive pressures.

   The claim that sustainability is impossible until justice has been achieved must be categorically rejected. This is false given the youth-military strategy, and the approach is far too slow to prevent catastrophic collapse.

9. A key reason for strategic confusion among the environmentally concerned is that social justice and sustainability have been theoretically and organizationally merged. (As just noted, this was greatly facilitated by Klein's pernicious book.) The difference is clear: justice is about the structure and behavior of society, whereas sustainability is about the limits of nature. Social justice, if one's ambitions are restricted to capitalist relations, can be achieved while the current system still reigns. Sustainability, whatever one's ambitions, cannot. I therefore suggest that youth leaders quickly return to the pre-Klein situation, where environmental and social justice movements sometimes cooperated, but remained analytically, strategically, and organizationally distinct.

10. Your leadership will be strengthened if you have a firm grasp of the historical events that led to today's disaster. The basic sequence is this:

    over-expansion ➔ overshoot ➔ BAU decision ➔ crisis ➔ no revolution ➔ collapse

    First, capitalism's economic over-expansion caused ecological overshoot. Second, the capitalist ruling class decided to continue with business as usual, thereby triggering the ecological crisis. Third, the populace and military failed to mount a revolutionary response, thereby allowing the crisis to escalate into the current collapse. This tragic

chain of events makes it clear that, if humankind and nature are to survive, the populace and military must quickly overcome their political passivity.

11. To simplify the complexities associated with revolutionary change, you should initially focus on survival measures alone. If society can be sufficiently altered to permit the global cooling discussed in chapter three, the political conditions will likely exist for implementing the rest of the rational crisis response.
12. To minimize the duration of military rule, you and your supporters should actively spur the formation of a sustainable ruling group. You could appeal to humankind's innate moral sense (see chapter four) to direct qualified individuals and groups towards this critical strategic aim. You could also expose today's absurd misallocation of intellectual resources in an effort to divert competent minds to the tasks listed above.

F. KEY POINTS

- The core strategic question is how the capitalist ruling class can be quickly replaced with a sustainable ruling group that will implement the rational crisis response.
- The negative factors for revolutionary change are the biological side of human nature, the power and control of the capitalist class, and the military's continued support for this class.
- The positive factors are the ecological and moral sides of human nature, our non-material motivations, and the military's professional responsibilities.
- Four conclusions follow: the negative factors currently overwhelm the positive factors, exceptional human events must trigger the required social reorientation, the young are its logical instigators, and the decisive social force is the military.
- The resulting revolutionary strategy is this: ethical members of older generations will support the young in instigating the military; the military will then replace the capitalist ruling class with a sustainable ruling group and transform the capitalist state into a sustainable state.
- Academics and other thinkers are tightly constrained by capitalist social control, but can provide valuable assistance to the young by undertaking specific intellectual tasks. Among these are the formulation of a sustainable legal infrastructure and the development of a post-capitalist economic theory.
- To simplify the complexities associated with revolutionary change, leaders should initially focus on the social changes required for short-term survival through global cooling.

G. FURTHER READING

BOOKS

Ten Days that Shook the World - John Reed (1920)
Youth leaders should learn as much as possible from working-class revolutions. Reed's book is an excellent first-hand account of the 1917 Russian Revolution and thus a useful source for this guidance. Among the lessons: unreservedly represent the populace, use simple and pithy slogans ("Peace! Bread! Land!"), and initially expect vicious resistance from intellectuals, journalists, and senior members of the capitalist state.

How Nonviolence Protects the State - Peter Gelderloos (2007)
Gelderloos tackles a key topic: the irrationality and immorality of *nonviolence* when fundamental social change is required. The author notes that arguments for nonviolence are often based on "falsified histories of struggle" (p. 2), and that nonviolent movements frequently benefit from the threats of violence by related movements - for example the Black Panthers and the civil rights movement in the U.S. My stance is this: youth actions must be nonviolent or violent as required for their ecological survival; if violence is used, it must be strategically justified and as humane as the survival objective permits.

WEBSITE POST

Book review: *Anthropocene or Capitalocene?* - Criticism of a group of Marxian academics who acknowledge the role of capitalism in the ecological crisis but avoid the revolutionary implications due to their employment by a capitalist institution. The post also suggests the positive roles academics can play in preparing humankind for the transition to a post-capitalist society.

Chapter 7:
From capitalism to a sustainable economy

A. FACILITATING THE TRANSITION

In the youth-military strategy (see chapter six) the new ruling group quickly initiates the transition from capitalism to a sustainable economy. But even under ideal political conditions - the group's firm grasp on power and the state's full cooperation - this shift will be extremely difficult to achieve. Capitalism caters to our material interests and is deeply entrenched in our minds and societies. This implies that, for the transition to succeed, it must be aggressively facilitated. I propose two principles for this purpose:

1. ***Minimum effective change***. This retains as much of capitalism as is consistent with sustainable well-being. As explained further below, a distinction must be made between capitalism's destructive *economic logic* and its *institutions*: the markets, corporations, legal infrastructure, regulatory regime, etc. that help implement this logic. To the extent that the institutions are useful in a sustainable economy, they should be retained in suitable forms. The resulting familiarity will psychologically ease the transition.
2. ***Social neutrality***. For the global economic transition to succeed, many conservative countries, groups, and individuals must willingly participate. The conservative view of society, which values individual freedom over social solidarity, must therefore receive the same respect as the progressive view, which values solidarity over freedom. The principle of *social neutrality* is the commitment, particularly in a sustainable economic theory, to remain impartial in this regard.

Briefly stated, social resistance to the post-capitalist transition can be significantly reduced by restricting economic changes to the minimum required for sustainable well-being, and by adopting the principle of social neutrality to maximize participation across the political spectrum.

B. CAPITALISM AND ITS ECONOMIC LOGIC

To successfully implement the above principles and shift to a sustainable economy we must understand capitalism's underlying nature. This will help answer a key question: *which features of the system are compatible with a sustainable economy and should thus be retained, and which are ecocidal and must therefore be discarded?*

Note first that capitalism is not defined by the private ownership of the means of production. During the 20th century this criterion distinguished the system from state-oriented socialism, but a distinction is not a definition. As well, private economic ownership was far more common during the preceding feudal period. Capitalism's historical appearance was marked by the widespread dispossession of independent farmers and artisans, resulting in the concentration of economic ownership in a few capitalist hands. For much of the populace the system was therefore the death knell of private ownership.

What then is capitalism? Like any economic system it is defined by its *economic logic*. This refers to the economy's goal, its core assumptions about humankind and nature, and the resulting forces that drive its activities. Capitalism's economic logic is depicted in figure 7-1.

Figure 7-1. Capitalism's economic logic

As shown at center, the system's goal is maximum profits, which is facilitated by maximizing economic growth. To permit rapid expansion, capitalism treats both natural sources (timber, oil, fish, etc.) and natural sinks (safe waste absorption capacity) as unlimited. As well, it treats workers not as human beings who provide labor, but as labor inputs only. Similarly, it treats the populace not as human beings who consume, but as output consumers only.

In brief, capitalism's economic logic uses narrow conceptions of humankind and nature to achieve the system's goal of maximum profits and growth. This logic is faithfully reflected in the assumptions and concepts of standard economics.

Capitalist logic is not necessarily irrational. If natural sources are abundant, natural sinks are largely intact, and people are suffering in poverty, it is probably the most effective way to quickly improve their lives. The problem is not capitalist logic per se, but rather its continued application when these conditions no longer apply. This is unquestionably the situation today.

Let me now return to the key question above: in the transition to a sustainable economy, which capitalist features should be retained and which should be discarded? I have already stated that its institutions should be selectively retained, but what happens to its economic logic?

Three aspects of capitalist logic relate directly to the environment: its goal and the two assumptions about nature. The goal is clearly ecocidal because continuous growth on a finite

planet is physically impossible. The assumption of unlimited natural sinks is also fatal. The obvious example is the GHG crisis, which existentially threatens the young because Earth systems cannot safely absorb capitalism's massive GHG releases. The assumption of unlimited natural sources is also disastrous because it drives capitalists to destroy ecosystems through their extraction of increasingly scarce resources and their substitutes.

The verdict on the environmental aspects of capitalism's economic logic is thus clear: under current environmental conditions all three are perilous for the young and the natural world, and must therefore be categorically rejected.

The logic's assumptions about workers and consumers are less clear-cut. Given the principle of social neutrality, there is no basis for dictating how these groups should be treated. However, reduced consumption in a sustainable society means that a minimum level of equity will be required for social stability. Unless workers and consumers are treated fairly, this stability will be severely threatened. It is thus likely that, whatever a society's political orientation, capitalism's narrow assumptions about workers and consumers will have to be substantially modified.

To summarize my conclusions about capitalism and the post-capitalist transition:

1. The institutions used to implement the system's logic should be selectively retained and modified as required. New institutions will be necessary to implement a sustainable economic logic.
2. The three environmental aspects of capitalist logic must be rejected. These are the goal of maximum profits and growth, and the assumptions of unlimited natural sources and sinks.
3. The logic's assumptions about workers and consumers must be rejected insofar as they result in social instability. Beyond this, the economy's treatment of these groups is socially determined.

C. THE ECONOMICS OF NEEDS AND LIMITS (ENL)

ENL is my conceptual framework for economic analysis. It is intended as a starting point for the development of a robust economic theory to rationally guide a sustainable economy. I will briefly describe two major components to show how the framework's logic differs from that of capitalism. For a more extensive introduction, see this overview, which includes links to a book and a free PDF on the subject.

An important clarification is that ENL is a *guiding* framework only. That is, it permits analysts to establish rational objectives to direct the economy, but it does not address the economy's detailed operations. A second theory, which I call a *functional framework*, will be needed for this purpose.

Instead of maximum profits and growth, the goal of ENL logic is *sustainable well-being*. "Sustainable" is the standard term, indicating that environmental limits are not violated. "Well-being", however, has a specific meaning within ENL. This is based on the critical distinction between *needs* and *wants*. See figure 7-2.

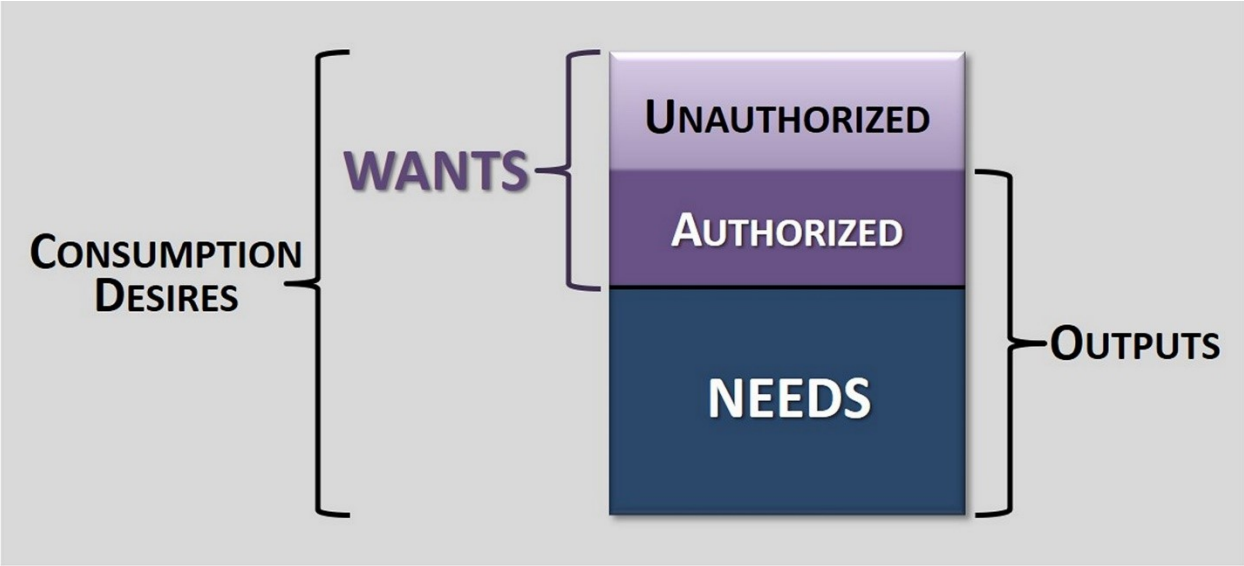

Figure 7-2. Needs and wants

Needs and wants are both consumption desires. The difference, by definition, is that satisfying a need maintains or increases physical health, but satisfying a want does not. Typical needs are for food, shelter, and clothing. Typical wants are for travel, wine, and entertainment.

A second difference is that need satisfaction is strictly limited by the maximization of physical health, whereas want satisfaction is limited only by appetites and imagination. Because unconstrained consumption is environmentally dangerous, ENL divides wants into the socially authorized and unauthorized. This distinction is based on two factors: *ecological space* (the possibility of increased production without violating environmental limits) and the strength of a society's unmanipulated consumption desires for such outputs.

Applying the above concepts, *well-being* in ENL is defined as the combination of need satisfaction and authorized want satisfaction (net of human costs incurred). This combination, which is depicted at right in figure 7-2, establishes the set of outputs that an ENL-based economy strives to produce.

Because physical health is the core factor in human survival and life enjoyment, ENL uses health as its standard of value and cost. "Value" in economics refers to what is desirable in outputs, and "cost" to the sacrifices required to obtain them. These concepts are used to determine which outputs should be produced, at which quantities, to sustainably maximize a society's aggregate health.

ENL uses graphs such as the one below to make these determinations. Although the details must be skipped, a brief description will give the reader some insight into the framework's analytical approach. See figure 7-3.

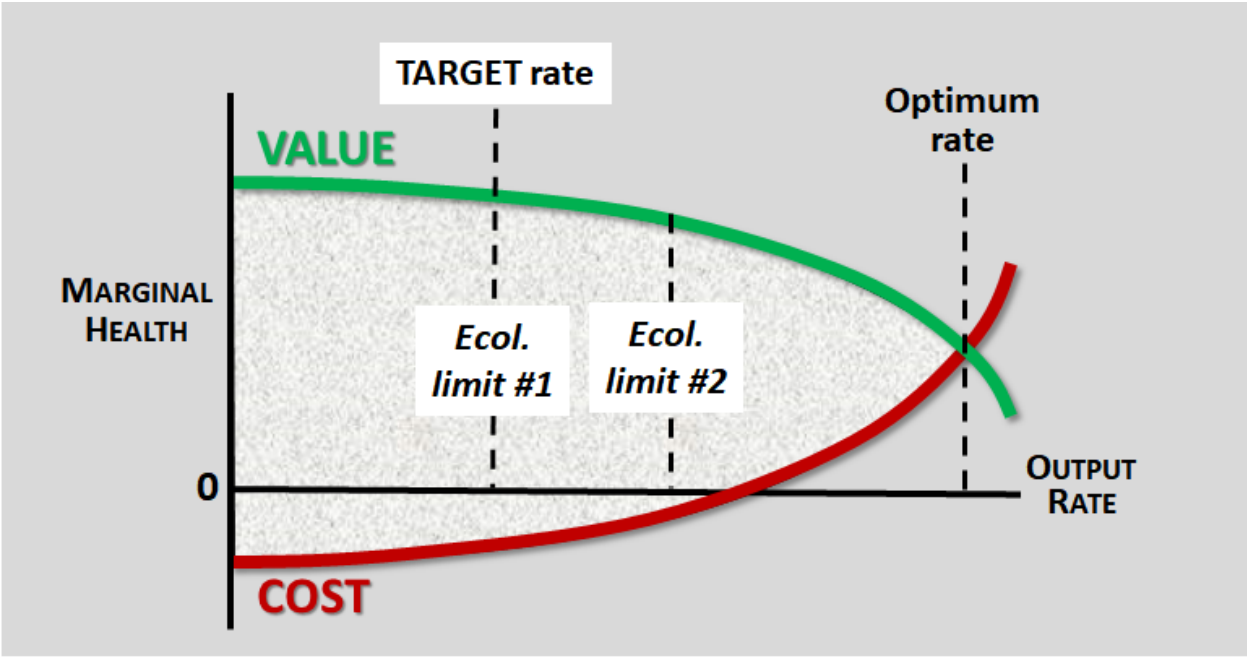

Figure 7-3. Ecological limits and the target output rate

This graph depicts a declining value curve and a rising cost curve as the output rate increases. The area between the two curves represents aggregate social health, which is maximized at the optimum output rate. In the absence of environmental limits this is also the target rate, or rational aim. In the presence of such limits, as here, the most restrictive environmental limit establishes the target rate instead.

The key point is this: if all outputs are produced at their target rates, society will squeeze as much health as possible from its economic production without violating any natural limits. The above graph is therefore a key analytical tool in the quest for a sustainable world.

This is a summary of ENL's economic logic:

1. The economy's goal is sustainable well-being;
2. Natural sources and sinks are strictly limited and must be rationally allocated;
3. Workers are treated as both labor inputs and human beings who desire well-being;
4. The populace is treated as both consumers and human beings who desire well-being.

D. CURRENT APPROACHES

Standard economics:
Also known as neoclassical economics, this mainstream theory formally expresses capitalism's economic logic and is thus taught at universities around the world. Consistent with the system's goal of maximum profits and growth, it is based on a subjective standard for value and cost. This reflects the fact that capitalist economies produce outputs based on

affordable desire: consumption desires backed by the capacity to pay. The theory does not distinguish between needs and wants.

A deeply hidden aspect of the standard discipline is that it combines the guiding and functional roles. It is overtly a functional framework, with sophisticated tools to analyze the operations of a capitalist economy. However, it tacitly embraces capitalism's economic logic, thereby smuggling the system's destructive assumptions into its analytical concepts and methods.

Ecological economics:
This heterodox field appeared in the late 1980s as a response to the environmental ignorance of standard economics. Regrettably it made two major concessions to gain academic acceptance: it embraced expansionary capitalism despite its professed goal of optimal scale, and it adopted the subjective standard of value and cost despite a warning by co-founder Herman Daly that this is environmentally perilous. The field is thus intellectually compromised and unable to guide the economic transition.

Ecological economics is strongly associated with the Degrowth movement, and the two play a similar role in social control. Degrowth attracts thinkers who support economic contraction and then diverts them to futile projects. Ecological economics attracts those who support a sustainable economy and then diverts them to a futile theory. Their shared control task is to neutralize potentially dangerous social thinkers.

Doughnut economics:
Despite the name, this is not an economics - that is, a formal economic theory. As described in Kate Raworth's book, it is instead a historical overview of economic thought and a set of guidelines - change the goal, design to distribute, etc. - to allow the reader to "think like a 21st century economist". Raworth avoids any discussion of capitalism, economic logic, value and cost, etc. She has numerous suggestions for economic change, but fails to acknowledge that both revolutionary change and a formal theory will be required to implement them.

Local economics:
This is my catch-all term for the various attempts to transcend capitalist logic at the community level. Relevant organizations include the New Economy Coalition (NEC), the New Economics Foundation (NEF), the Schumacher Center for a New Economics, and Pathways to a People's Economy. Although such projects cannot be fully implemented while capitalism still reigns, they are significant because they allow people to experiment with post-capitalist economic arrangements and modes of economic thought. As with the knowledge and insights of indigenous peoples, the results of these experiments will be indispensable in the transition to a sustainable world.

E. LEADERSHIP CONSIDERATIONS

- Economics is a specialized topic that you may want to avoid given your other responsibilities. You might therefore choose to assign people with an economics education to deal with these issues. If so, ensure that they are open to an unbiased reassessment of economic thought. Be aware that, to earn an economics degree, the

student must deeply internalize capitalism's economic logic, and that escaping from this indoctrination will be impossible for many. It may therefore be better to choose strong analysts who lack such education and can approach the topic with open minds.

- If you have a progressive background you may find it difficult to accept the idea of social neutrality, which makes progressive values optional. If so, remember that your primary responsibility is youth ecological survival. To achieve this, cooperation and formal alliances with conservative groups and individuals will likely be necessary. You must accept the fact that politics makes strange bedfellows, and that some aspects of social justice must be deferred until youth survival has been ensured.
- Don't become ensnared by the seductive idea that "economic democracy" - the populace's control of the economy - is sufficient for sustainability. Very little in human nature, or in the populace as shaped by capitalism, is a reliable source of economic rationality under today's ecologically constrained conditions. Without an explicit set of well-founded principles, an economy steered by popular demands could destroy the biosphere almost as quickly as one steered by capitalist logic.
- The transition from feudalism to capitalism was a gradual process that took several centuries to complete. Standard economics was developed to theoretically support and socially justify this process. Given today's ecological time constraints, the shift from capitalism to a sustainable economy must be completed within years or possibly a few decades. This will entail an extremely rapid and theory-driven process. A framework such as ENL will therefore be a critical requirement, and you should insist on its rapid development by social thinkers.

F. KEY POINTS

- The difficult transition from capitalism to a sustainable economy can be facilitated by applying two principles: *minimum effective change* and *social neutrality*.
- Capitalism's economic logic is environmentally destructive and must be replaced by a sustainable alternative. Its narrow assumptions about workers and consumers must be substantially modified to maintain social stability under contractionary conditions.
- Capitalism's institutions, which implement the system's logic, should be selectively retained and modified as required. New institutions will also be necessary.
- My proposed starting point for a sustainable economic theory is the Economics of Needs and Limits (ENL). This guiding framework is based on an objective theory of value and cost, distinguishes between needs and wants, and offers analytical tools for achieving sustainable well-being.
- The two main current theories are standard and ecological economics. Both are based on a subjective theory of value and cost, and both embrace expansionary capitalism despite the escalating ecological crisis.

Chapter 8:
The post-capitalist world

Assume that the youth ecological revolution has been successful. That is, a sustainable ruling group holds political power, the transformed state is aggressively implementing the rational crisis response, and the transition from capitalism to a sustainable economy is substantially complete. Given the human and social realities discussed in previous chapters, what will likely be the broad characteristics of this post-capitalist world?

A. HUMAN NATURE

As discussed in chapter four, humankind is a biological, ecological, and moral species. As a biological species we have innate material interests. As an ecological species we have a highly intelligent brain. And as a moral species we have inherent ethical sensibilities. Under capitalism all three sides of this nature have been severely distorted. Our material interests have been inflamed by the system's expansionary logic, our minds have been shaped by its deceptive social control, and our ethical sensibilities have been vitiated by its hyper-competitive individualism. Human nature in the post-capitalist world can therefore be characterized by the projected changes in these three areas.

In a sustainable society capitalism's intensification of our material interests will cease. Some people will still be more acquisitive than others, but the economy's logic will no longer intensify our inborn tendencies. However, because capitalism has been globally dominant for centuries, we cannot know where these tendencies leave off and the system's influences begin. It is also extremely difficult to estimate how long it will take for people to adjust to the new economic conditions. Thus, beyond the eventual moderation of our material interests, I find it impossible to specify how they will evolve.

Regarding our minds, in the post-capitalist world these will no longer be in the service of profit-maximizing economic expansion. Although social control will still shape our thinking, its aim will be sustainable well-being. One result will be a major shift in the boundary between permissible and impermissible thought. Recall from chapter five that thought is permissible only to the extent that it has ruling-class approval. As society is transformed, this thought landscape will be dramatically transformed as well. Much of what is now impermissible will become openly accepted, and today's restrictions will be seen as ludicrous impediments to free and independent thought.

I strongly suspect that, of the three traits, humankind's ethical sensibility will be most powerfully affected by the post-capitalist shift. Even today, when an emergency strikes and people are forced to drop their capitalist personas, powerful feelings of community solidarity and interpersonal obligations come flooding back. In an economy that aims for sustainable well-being instead of growth and profits, our deep-seated moral sense will likely express itself with a vigor that would today seem childlike.

Two interesting speculations about human nature in a sustainable society can be found in Ernest Callenbach's perceptive novel, *Ecotopia* (see section G):

- After the ecologically-driven secession of Northern California, Oregon, and Washington from the U.S., an American visitor found the residents of the resulting Ecotopia to be strongly emotional. They are sentimental about nature and native people, quarrel acrimoniously in public, and openly express their sexuality.
- An important feature of Callenbach's society is ritual warfare, where groups of young people battle each other with spears, and serious injuries are sometimes incurred. The author explains that, "... it was essential to develop some kind of open civic expression for the physical competitiveness that seemed to be inherent in man's biological programming - and [that] otherwise came out in perverse forms, like war." (p. 80)

B. POLITICS

In chapter five I said that the political threat to the young is not the structure of power, but rather the domination of this structure by the capitalist class. This is why the youth-military strategy leaves the structure intact, but replaces the capitalist class and its state with their sustainable counterparts. The result is shown in figure 8-1.

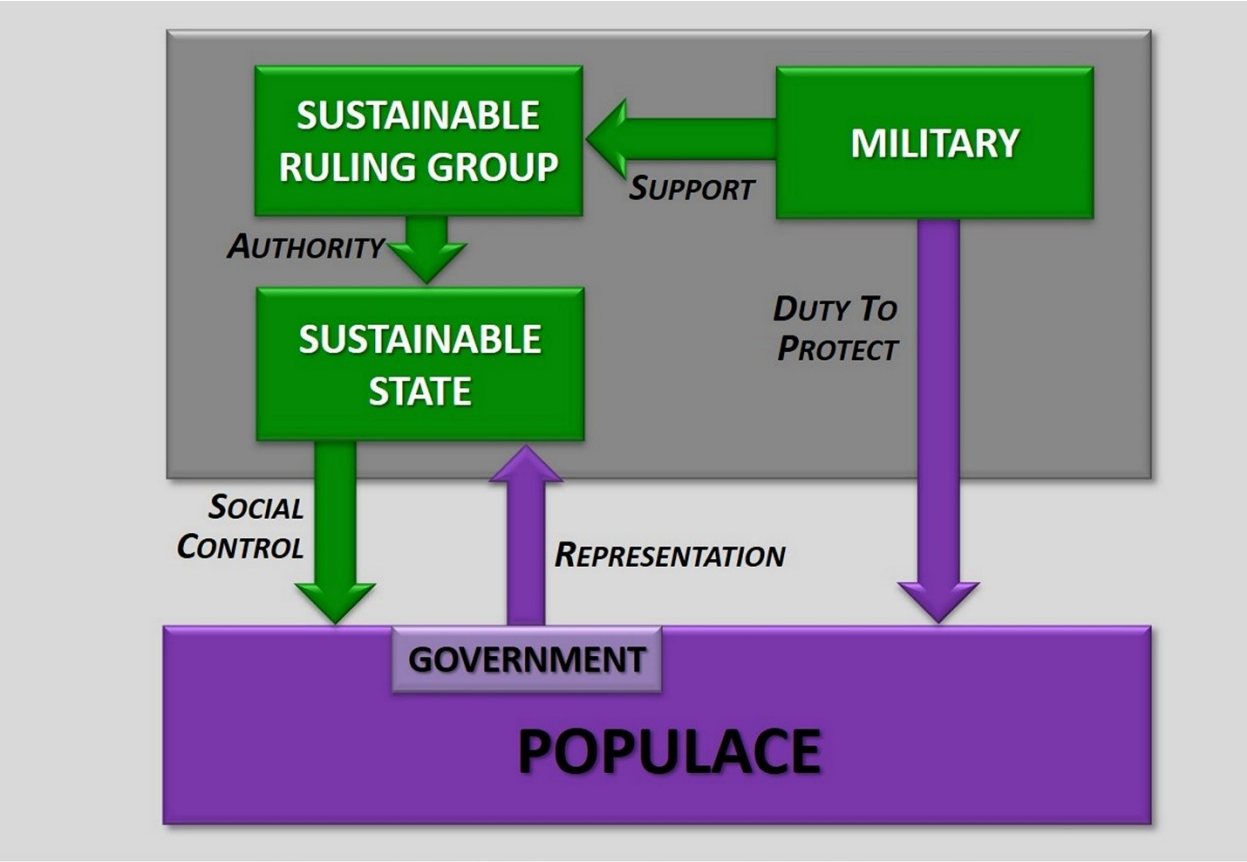

Figure 8-1. Political power in a sustainable society

The following are some key points:

- The military now supports the sustainable ruling group and thus ensures its hold on power. If the new rulers at some point betray the populace, environmentally or otherwise, the military will again be duty-bound to intervene. As under capitalism, the military safeguards the populace from existential threats such as foreign invasions and environmental disasters.
- The sustainable ruling group does not represent a specific social entity such as the capitalist class, but rather the goal of sustainable well-being and its associated economic logic. The group's core responsibility is to maintain a sustainable society by ensuring that post-expansionary economic principles are faithfully implemented.
- The new ruling group has authorized its state to exercise social control as required to maintain and regulate a sustainable society. The state thus enforces the constitution, laws, policies, regulations, etc. that have been formulated for this purpose. It also seeks to shift the populace to a sustainable mode of life through its propaganda. The state therefore uses education, public information campaigns, and mass events to instill post-capitalist perspectives and behaviors.
- Government still represents the populace's interests by pressuring the state to implement government policies. Electoral politics looks much like it did under capitalism, but there are two important differences. First, structures that were clearly established to blunt the popular will, such as the UK's House of Lords and the Electoral College in the U.S., have been dissolved. Second, members of the ruling group and their representatives are constitutionally forbidden from participating in or influencing government in any way.

C. ECONOMY

Based on the approach outlined in chapter seven, the state has adopted a sustainable economic theory for guiding decisions about output production, natural sources and sinks, trade relations, the population level, etc. Capitalist institutions that promoted economic expansion have been eliminated. To support the new economic logic, capitalism's useful institutions have been adopted in modified form, and novel institutions have been introduced. The state regulates the economy for sustainability, well-being, and social stability.

These are some other attributes of a post-capitalist economy:

- It is mixed - that is, a combination of private and state ownership. This division is non-ideological in that the only criterion is sustainable well-being. Because well-being is a socially neutral concept, the private/state choice is socially specific.
- To the extent that capitalists retain their economic assets, they have become *proprietors*: business owners as before, but under a sustainable logic that is enforced by a sustainable state. Workers have either remained workers and are thus employees of these proprietors, or have become proprietors themselves.

- Because of the proprietor-worker division, a class structure still exists, but in a highly attenuated form. The relative social status of workers has risen while that of former capitalists has declined.
- The work week has been sharply reduced, likely to 20 hours or less, as an adjustment to reduced production and consumption. Based on this factor and the treatment of workers as human beings, the labor market has been extensively modified. The following comment by Callenbach on Ecotopia's 20-hour work week reveals the likely results:

> "... the profoundest implications of the decreased work week were philosophical and ecological: mankind, the Ecotopians assumed, was not meant for production, as the 19th and early 20th centuries had believed. Instead, humans were meant to take their modest place in a seamless, steady-state web of living organisms, disturbing that web as little as possible. This meant sacrifice of present consumption, but it would ensure future survival - which became almost a religious objective, perhaps akin to earlier doctrines of 'salvation'." (p. 47)

D. SOCIETY

These will likely be the most prominent aspects of a post-capitalist society:

- Because economic activities have been curtailed, the work-week shortened, and the division between workers and business owners weakened, society is less stratified, pressured, and competitive than under capitalism. Workers have more time and energy to explore their interests, develop their talents, and possibly become proprietors.
- Given the inherent differences among individuals and the remaining distinction between workers and proprietors, some level of economic inequality remains. This is however limited by the need to maintain social stability under reduced consumption. The degree of social justice beyond this depends on a society's political perspective and the pressures exerted by progressive forces.
- Communities and neighborhoods have returned. Capitalism deliberately tore people away from these social bonds to isolate and disorient them, thereby facilitating their manipulation for profits and growth. Post-capitalist society has reversed this trend and strongly encourages community solidarity and neighborhood activities. The *family fetish*, which was heavily promoted by capitalist culture to compensate for the social losses, has largely lapsed. Family remains a core feature of human life, but strong consideration is also given to neighborhood, community, region, society, species, and biosphere.
- To humanely reduce population, social experiments have begun on increasing the ratio of parents to children. China attempted to control its population by reducing the ratio of children to parents (the one-child policy), but this was strongly resisted by the populace. Legally permitting families to take forms such as five adults and two children, or eight adults and three children, could satisfy the human drives to procreate and nurture, allow for siblings, broaden the range of adult influences, lighten the burdens of child-rearing, and reduce financial pressures on individual parents.

E. SCIENCE

Capitalist science is *pragmatic*: it explains the world to permit the profitable implementation of the system's economic logic, but it looks no further. Its ruling dictum is thus the one that blights today's quantum mechanics: "Shut up and calculate!" In the 20th century this shallow approach was systematized through the lavish financial assistance of the Rockefeller Foundation and other wealthy funders. See appendix F for a discussion of this important topic.

This conceptually skewed treatment of science has been decisively repudiated, resulting in the following theoretical shifts:

- The physical sciences have been re-conceptualized based on the rejection of capitalism's reductionist worldview. Most significantly, biological life is no longer seen as a set of molecular processes, but as the awareness that arises from them. The notion that "information" underpins life, which was a last-ditch effort to salvage the capitalist perspective, has been dropped. A living organism is now defined as the combination of a unique awareness and its physical infrastructure, thereby transforming biology.
- To incorporate awareness into its worldview, post-capitalist science has worked with the revived field of philosophy to develop an ontology that recognizes the full scope of existence. As one important consequence, the subjectivity that inexplicably pops up in capitalist science (the "observer" in quantum mechanics and relativity, the "theory of mind" in biology, aware plants, etc.) now has a firm intellectual foundation.
- The social disciplines, which served capitalism in numerous ways, have also been drastically modified. This is obviously the case for economics, which is now based on a sustainable rather than an expansionary logic. It is also true for "political science", which now addresses both electoral politics (government representation) and deep politics (power and social control).
- The *capitalist disease model* has been abandoned. This ascribed disease causes to individuals while largely ignoring the societies and environments in which they lived. One key tactic was to treat susceptibility as cause: people get sick not because their water is tainted, but because they're more vulnerable to tainted water than others. Another was to treat addiction as a physical disease. This gave the addict medical and community support, but evaded the social pathologies that frequently caused self-destructive behaviors. For details see the work of psychologist Bruce Alexander.

F. KEY POINTS

- The core aspects of human nature are still expressed in a sustainable society, but their capitalist distortions and intensifications have ceased.
- Although social control continues to shape human thought, its purpose now is sustainable well-being rather than profits and growth.
- The structure of political power is largely unchanged, but the capitalist ruling class and state have been replaced by their sustainable counterparts. Democracy is still limited to

the populace's political representation, but the latter is no longer compromised by institutional obstacles or ruling-class influences.

- The economy is guided by a sustainable economic theory such as ENL. Its ownership is mixed, most capitalists have become proprietors, the work-week has been sharply reduced, and the labor market has been radically restructured.
- Because society is more equitable and less pressured, workers have more time and energy for personal development and life enjoyment. Some may therefore choose to become proprietors instead.
- Various personal and collective activities have been introduced to compensate for reduced consumption.
- Social experiments are being conducted to restructure the family for lower population levels and other benefits.
- Science has moved beyond its pragmatic restrictions and now seeks, in concert with philosophy, to deeply understand the world rather than just controlling it for capitalist ends.

G. FURTHER READING

BOOKS

The Right to be Lazy - Paul Lafargue (1883)
Lafargue ridicules the capitalist notion of a "work ethic", which reconciles the worker to degrading labor under alienated conditions. His main message is that the working class, "… must return to its natural instincts, it must proclaim the Right of Laziness, a thousand times more noble and more sacred than the anemic Rights of Man ... It must accustom itself to working but three hours a day, reserving the rest of the day and night for leisure and feasting." (p. 34) Lafargue blames both capitalists and the workers themselves: "... the working class, with its simple good faith, has allowed itself to be thus indoctrinated ..." (p. 38)

Ecotopia - Ernest Callenbach (1974)
Callenbach envisions a sustainable and humane society after its ecologically-motivated secession from the United States. The book provides numerous sparkling insights about a post-capitalist world. An important aspect of the Ecotopian secession is that it required the threat of massive violence: the secessionists were said to have mined the harbors of major eastern U.S. cities with nuclear weapons to prevent a military reaction by Washington.

The Reenchantment of the World - Morris Berman (1981)
Berman's topic is the capitalist worldview, which holds that the universe is entirely physical, thereby eliminating mind and consciousness. Although the author mystifies capitalism, he is correct on this important point: "… the forces that triumphed in the second half of the seventeenth century were those of bourgeois ideology and laissez-faire capitalism. Not only was

the idea of living matter heresy to such groups, it was also economically inconvenient. … if nature is dead, there are no restraints on exploiting it for profit.” (p. 117)

WEBSITE DOCUMENT

Life, Biology, and Capitalism (2016) - Here I offer my views on the essence of life, propose a shift from today's mechanistic biology to "vital biology", and discuss capitalism's role in the field's intellectual corruption.

Conclusion:
Power or Perish!

The world's young people have been ecologically betrayed, and those who betrayed them continue to hold political power. Therefore, to have any chance of survival, the young must instigate revolutionary change. In this book I have provided theoretical guidance to the militant youth leaders who will hopefully arise to meet this existential challenge.

My core advice to them is this: ***by default reject <u>everything</u> the older tell you about the crisis and its solutions***. Our behavior to date leaves no doubt that, as a group, we care little about your future. We have selfishly pursued our material interests and slavishly complied with capitalist social control. We have told you grotesque lies to diminish and distort the crisis, and we continue to pretend that governments have the power to solve it. Instead of implementing the rational response we have offered you false assurances, futile conferences, and meaningless agreements. *We have abandoned you.*

The young and their supporters must instigate the military, and the military must decisively intervene. At this late date no other strategy can work. No-one else will do the instigation, and no other social force can rapidly sweep away an ecocidal system and ruling class. The prospect of revolutionary change is profoundly disturbing, but civilizational collapse will be terrifying beyond all imagination.

Young people, fight like hell for your survival! Grasp the reins of history now! Exert your will. Be defiant, courageous, and resolute. ***With political power you may survive; without it you will surely suffer and die.***

This book's final words must be directed at my age cohort - the older. We must first confess, with profound contrition, that we have failed to meet our most basic responsibility: to preserve the global environment for the civilized survival of the young and future humankind. We must also recognize that we can to some degree redeem ourselves by supporting the young with our indispensable assets: knowledge, experience, influence, authority, and military force. The past is tragic, but gone; our ethical moment of truth is now.

Afterword

In this book I focused on the ecological betrayal of the young primarily for a strategic reason: revolutionary change requires a revolutionary agent, and an agent becomes revolutionary only through deep and visceral anger. The working class felt this rage under the brutalities of early capitalism and could therefore play a revolutionary role. The young increasingly feel it now as their genocide looms. They and their older supporters are therefore the potential agents of revolutionary change today.

Given this focus, the book restricted itself to the *interests* of the young. Here I would like to briefly examine two other aspects of this singular generation: its *ethical responsibility* and *historical significance*. I will also touch on a development that, while understandable, threatens to block revolutionary change: their growing *environmental defeatism*.

1. **ETHICAL RESPONSIBILITY.** If the young fail to instigate revolutionary change and implement the rational crisis response, billions of human beings and trillions of non-human organisms will likely perish. *The young have an ethical responsibility to prevent this omnicidal outcome.* This is not a burden they should have to bear, but given the betrayal of their elders they must bear it nevertheless. Based on this enormous responsibility and their absolute right to survival, the young are fully justified in humanely doing whatever is necessary - including violence if this is strategically justified - to achieve the required social and environmental changes.
2. **HISTORICAL SIGNIFICANCE.** Let us assume that these changes are successful and that organized human life continues. The social, economic, and political choices made during this rescue period will set our species on an entirely new course - possibly for centuries or millennia to come. Humankind will by necessity have shifted from biologically-driven expansion to consciously-driven contraction and stability. This *species redirection* means that today's young are potentially the most significant generation that has ever lived. They should embrace this as an extraordinary opportunity to decisively shape the human destiny.
3. **ENVIRONMENTAL DEFEATISM.** This posture apparently stems from two sources: the mainstream's denial of workable crisis solutions and a misunderstanding of the rational goal. The revolutionary strategy and rational crisis response proposed in this book will hopefully alleviate the first source. The second can be addressed by emphasizing that the only realistic goal today is to minimize collapse for organized human survival. It is far too late to retain capitalist civilization and current lifestyles. Young people who aim too high will be subject to crushing pessimism and thus defeatism. They must learn to restrict their ambitions to what can still be achieved, and then to concentrate all their efforts on achieving it.

APPENDIX A:
Youth Survival Manifesto

NOTE: A manifesto is a public declaration of a group's values, principles, analysis, and objectives. This document is intended as a starting point for the manifestos that youth leaders may soon wish to produce. It is written from the youth perspective and assumes that the young have become fully aware of their existential predicament.

PREAMBLE

We, the young, have been ecologically betrayed. Older generations have a clear ethical responsibility to protect the environment for our present and future well-being, but the natural world is now being ruthlessly destroyed. The international community vowed decades ago to maintain greenhouse gas concentrations at safe levels, but concentrations have increased disastrously and now pose an existential threat.

We know that, as a result of this betrayal, we will suffer intensely and in many cases perish well before our time. We are also convinced that, under current political conditions, nothing of any significance will be done before the crisis spins out of human control. In brief, we understand that we have been abandoned to a grim ecological fate.

Based on this understanding, we have lost faith in the capitalist class and its allies as our social leaders. Although they have long known about the unfolding catastrophe, they have continued with business as usual to protect their power and privileges.

We therefore demand that they be replaced by leaders who will rationally tackle the crisis we face. To give us a chance at ecological survival, we demand revolutionary change.

WE REFUSE TO BE PASSIVELY SLAUGHTERED. We refuse to follow our morally corrupt leaders and their compliant supporters down the path of ecological destruction. We will fight to the last breath for our future, the future of our species, and the future of life on Earth.

We desperately ask all ethical and compassionate people to stand with us in this life-and-death struggle.

THEIR LIES AND OUR TRUTHS

Today's monstrous inaction on the ecological crisis is possible only because the capitalist class and its supporters have spun a web of lies to disorient and misdirect the environmentally concerned. The door to rational action will remain closed until these falsehoods have been exposed and refuted. We therefore begin by replacing their most damaging lies with our respective truths.

LIE #1: The ecological crisis is climate change, which was caused by greenhouse gas (GHG) emissions.

TRUTH #1: The crisis is ***ecological overshoot***, which was caused by the over-expansion of the global capitalist economy. This resulted in the violation of multiple environmental limits starting around 1950. Climate change, properly defined, is just one aspect of this far broader and deeper environmental disaster.

LIE #2: "Global warming" and "climate change" are synonymous, hence interchangeable.

TRUTH #2: These terms denote causally related but distinct phenomena. "Global warming" refers to the rising temperature of the Earth's surface as a result of increased GHG concentrations. "Climate change" refers to alterations in the world's climates as a result of this warming. Global warming is thus the cause, and climate change is one of its effects. This also implies that "climate change" is an inaccurate term for the full range of GHG-based harms. We therefore use "GHG crisis" instead.

As young people who are desperately trying to escape the calamity we face, we are appalled that these and other terms have been compromised. We are reminded of George Orwell's Newspeak, which shaped and simplified the language so as to make non-compliant thought impossible. The modified strategy here is to muddle the core vocabulary in order to prevent rational discourse, thereby preventing fundamental change.

LIE #3: The rational aim for the GHG crisis is net-zero emissions.

TRUTH #3: Decades ago the rational aim was to maintain safe GHG concentrations, as stipulated in the UNFCCC agreement - an international treaty that was ratified by 197 countries in 1994. Because the IPCC effectively nullified this agreement a year later by shifting the goal to emissions reductions, these levels have been greatly exceeded. Because it is physically impossible to reduce concentrations to safe levels in time for our survival, the rational aim today is rapid global cooling - primarily through a rational mix of SRM measures. ***As with the IPCC's nullification of the UNFCCC agreement, we interpret the mainstream's dismissal of SRM as a genocidal assault on our generation.*** Another critical factor is that industrial emissions contain cooling aerosols, which are removed from the atmosphere when emissions are reduced. We are appalled that this well-known effect is consistently ignored by mainstream climate science.

LIE #4: Reducing consumption and population levels can be ignored in the reduction of environmental impacts.

TRUTH #4: These measures must be implemented quickly and equitably. Any environmental impact is driven by three factors: consumption, population, and efficiencies. To significantly reduce the impacts, efficiencies must rise as rapidly as is technically feasible (hence irrespective of the profit motive), and in the rich world both consumption and population levels must decline as rapidly as is socially feasible.

LIE #5: The IPCC is a scientific organization.

TRUTH #5: The IPCC is a political organization with a scientific facade. No scientific organization would shift its attention from the problem of unsafe GHG concentrations to the problem's emissions-based increments. No scientific body would fail to reassess its strategic approach if its results were unsatisfactory, as the IPCC's have clearly been: over its 34-year tenure the atmosphere's CO2 level has risen by about 65 ppm, at an accelerating pace. Despite this, the organization has never questioned its energy and efficiency fixations.

Based on this illogical and dishonest behavior we have concluded that, although we respect the empirical research of its associated scientists, the IPCC itself is a political body. Its designated roles are to attract the environmentally concerned by acknowledging the GHG crisis and opposing denialism, and then to divert them from any solutions that might threaten capitalism or growth. ***This attract-and-divert tactic, on an existential issue, fills us with revulsion and rage.***

LIE #6: The ecological crisis can be solved though government policies and political will.

TRUTH #6: The hardest lesson we have learned is that social leadership is exercised not by the people or their governments, but by those who control the economy: the capitalist ruling class and its state. These forces cannot be voted out of office, and they impose strict limits on government action. Having overcome the deceptive propaganda we have absorbed all our lives, we now understand that the people are not sovereign, and that any workable strategy must explicitly recognize this fact.

Our overall conclusion is this: The fundamental requirement for our ecological survival is not political will within the prevailing social order, but the political power to create a new and sustainable social order.

OUR DEMANDS

Based on the above truths, we make the following demands. We will militantly assert these until our ecological survival is ensured.

DEMAND #1: Replace the capitalist class as social leaders

The capitalist class must be replaced by a group that is fully committed to a sustainable world. After examining the political structure of capitalist societies we have determined that the military is the only social force that can achieve this end in the time available. We are dismayed that military intervention is necessary, but there is no feasible alternative at this late stage.

Military intervention could be either indirect or direct. Indirect intervention would apply if a mature civilian group is available. In that case the military could support this group while keeping itself on the sidelines. If such a group has not appeared, the military would have to assume political power itself. In that case it should relinquish power as soon as a qualified civilian group is prepared to assume control.

We fully understand that military intervention and revolutionary change will cause profound social disruption. However, the betrayal and inaction of recent decades have convinced us that this is our only road to survival.

DEMAND #2: Initiate measures for rapid global cooling

The first responsibility of the new social leadership will be to rapidly cool the planet to maintain a livable environment. The most critical measure is SRM to reflect solar radiation. This should be implemented on a multilateral basis if possible, but unilateral action may well be necessary.

Although the environmental risks associated with SRM are real and serious, they must be assessed in the context of our threatened future. Conventional discussions ignore this threat and thus falsify the assessment. In our view a rational mix of SRM measures must be implemented as quickly as is technically feasible while minimizing the potential damage to humankind and nature.

DEMAND #3: Transform ecocidal economies

Once new social leaders are in place and global cooling has begun, work must immediately begin on the transition from capitalism and other expansionary systems to sustainable economies.

The main conceptual requirement for this transition is a new economic theory. We propose an independent framework, the Economics of Needs and Limits (ENL), as a starting point for the new theory's development.

The exact nature of a sustainable economy cannot be foreseen. Because global overshoot is unprecedented, humankind is facing a sharp historical discontinuity. This means that our species cannot move towards a predefined system such as socialism. Instead, we must move away from capitalism under the guidance of sustainable economic principles. A post-capitalist economy will therefore be the unknowable outcome of a rapid, organic, and theory-driven process.

DEMAND #4: Restore environmental health

Our fourth demand is to return the global environment to a healthy state insofar as this is feasible. This will entail three broad initiatives: restoring the Earth's energy balance, rationalizing the use of natural sources and sinks, and rehabilitating damaged ecosystems. This demand is last because these projects are incompatible with capitalism's economic logic. It is therefore necessary to begin the economic transition and to supersede this logic before they can be seriously undertaken.

As a general statement, ***our species must quickly establish its optimum level of planetary impact.*** Some impact is necessary for our survival and life enjoyment, but too much is ecologically fatal. Humankind has overshot the Earth's natural limits and must now locate the delicate balance between the sufficient and the sustainable.

POSTSCRIPT

The ecological crisis is ultimately an ethical issue. This assertion goes well beyond the standard recognition that the global rich are its primary cause and the global poor its primary victims.

Past revolutions have succeeded when material interests were effectively aligned with revolutionary ends. For the ecological crisis this visceral motivation is absent: material interests lead us away from rather than towards ecological salvation. The main impetus to fundamental change must therefore lie in the ethical realm. A critical mass of people, in positions of sufficient power, authority, and influence, must override their personal comforts for the sake of the young, the poor, and life on Earth. Can they rise to this challenge?

For the capitalist class and its allies this question has already been answered. Not only have they failed to respond rationally to ecological overshoot, they have cruelly blocked effective action. Whatever their individual merits, they are an amoral group.

For the compliant supporters of this class and its ecocidal economy, the answer will soon be evident. To date they have obediently disseminated the mainstream's lies and refused to develop the intellectual infrastructure for a sustainable society. But some pangs of conscience are perhaps being felt, and an ethical reassessment may be under way. If so, they should understand that time is short and the crisis won't wait.

For the military the question has yet to be posed. Its professional responsibility is to safeguard the people from existential threats, but it mistakenly believes that this can be achieved under capitalist leadership. We must therefore awaken this critical force to today's environmental and political realities. The military must then decide if will honor its core commitments, or if its loyalties will remain with the destructive masters it presently serves.

Our generation faces immense challenges as well. In the rich world we have a strong material interest in capitalist affluence and thus the ecocidal status quo. This must be courageously overcome. Related to this is the siren call of progressivism, a movement with humane values that restricts itself to system reforms when system replacement is clearly required. For revolutionary purposes we must either shift this movement to militancy or abandon it. We must also learn to distinguish between friend and foe among our elders. Many are complicit in the cataclysm we face, but others are eager to help us influence the military and to share their knowledge and experience as we seek a sustainable world.

Our final challenge, should it come, will be the most daunting. If the military fails to respond constructively in a timeframe that is consistent with our ecological survival, we will seek political power ourselves. Facing a terrifying future and left with no other choice, we will shift from persuasion and agitation to outright insurrection.

We will <u>not</u> be passively slaughtered!

APPENDIX B:
Public statement by the U.S. military

NOTE: This is my proposal for a public statement by the United States military shortly after its political intervention to replace the country's ruling class. The U.S. military was chosen because it is globally significant, and because its leaders have occasionally expressed enlightened views about the GHG crisis. The following are some examples from Department of Defense (DoD) documents (8MB PDF):

- "Climate change is real, serious, and inescapable, and its looming effects ... may prove to be destabilizing on a massive scale." (p. 407)
- GHG tipping points have, "... a real potential to wipe out a majority of the population and species on the planet." (p. 165)
- "The life-sustaining capacity of our planet may be in jeopardy." (p. 408)

Citizens of the United States:

Over the past twenty-four hours your military has seized control of the country's key centers of communication, transportation, commerce, and government. This intervention was necessary to take emergency action on the environment and to initiate the economic and political restructuring required to prevent catastrophic ecological and social collapse. Military control will be relinquished as soon as a qualified civilian group can assume responsibility for these critical tasks. The political leaders of key countries have been informed of our actions and the reasons for taking them.

We recognize that, even as a temporary measure, military intervention is a drastic step that runs counter to America's values and traditions. A fuller explanation is therefore in order.

The military's fundamental purpose is to protect our nation - that is, to safeguard the collective interests of the American people. We have historically assumed that the country's leaders served these interests as well. However, the complete absence of an effective response to the ecological crisis has made it clear that this assumption no longer holds. There is a growing divergence between the interests of the people and the actions of their leaders. *The military has therefore been forced to choose, and it has chosen the people.*

Our first step will be solar radiation management (SRM) to begin cooling our disastrously overheated planet. Continued global warming would devastate the biosphere and doom the homeland. SRM and related measures now have the same existential urgency as repelling a foreign invader from America's shores.

Once global cooling has been initiated, the military will begin to transform our economy so that it is fully sustainable. This will entail a rapid shift from economic expansion to contraction as well as efficiency improvements that are unconstrained by the profit motive. Large-scale efforts to repair environmental damage will commence as soon as possible.

America's foreign policy will be modified to encourage other countries to move in these directions. Military expenditures for the defense of our nation will not be compromised as a result of these changes.

Business leaders are strongly encouraged to embrace the economic transformation and to play a constructive role in the new economy. Your knowledge and experience are valued, and will be appropriately rewarded so long as your businesses fully comply with all environmental and social regulations.

Citizens must understand that the production of non-essential outputs will decline. Goods and services that provide little objective benefit or that cause excessive environmental damage will be curtailed or eliminated. Workers who are displaced by these adjustments will be financially supported until they are re-employed in a transformed labor market.

The above changes are far-reaching and will require extensive intellectual support. This includes the development of a new economic theory, new economic institutions, and the legal infrastructure to manage a sustainable economy. Funding for social research will be distributed accordingly. Most scientific funding will be diverted to technical measures for solving the crisis.

Americans must understand that, although they are free to discuss these initiatives, public opposition and active resistance will not be tolerated. Martial law, which is now in effect, will be strictly enforced to punish any offenders.

More information on these profound changes, and what they imply for citizens, businesses, and governments, will be distributed shortly.

We are confident that the American people will understand that the military is acting on their behalf, and that these exceptional measures are unavoidable at this late hour.

APPENDIX C:
Public statement by ethical climate scientists

NOTE: This is my proposal for a public statement by climate scientists who are committed to the field's ethical principles. It announces a professional split with their mainstream colleagues, who continue to disseminate deadly climate falsehoods.

The undersigned are climate scientists who are determined to serve society by upholding the field's ethical principles and thus telling the scientific truth about the climate crisis. We are appalled that mainstream climate science consistently violates these principles by falsifying both the crisis and its solutions. With this statement we therefore dissociate ourselves professionally from our mainstream colleagues.

Our primary reason for taking this divisive step is the extreme weather of 2021. These events have convinced us that, unless our discipline is fundamentally transformed to guide rational human action, the crisis will rapidly escalate and a horrific future will unfold. Based on these events, we now understand that:

1. At 1.2°C the global temperature anomaly is already intolerable, at 1.5°C it will be catastrophic, and at 2°C or higher it will threaten human extinction.
2. The Earth's average surface temperature must therefore be rapidly decreased by about 1°C. In other words, global cooling must now be aggressively pursued.

To our dismay, the mainstream's response to the weather events has been to rigidly maintain its ecocidal stance: aim for net-zero emissions and thus allow global warming to continue. The mainstream also disseminates the defeatist falsehood that the best humankind can do is limit how disastrous climate conditions will become. Human agency to improve these conditions is thereby irrationally dismissed.

As noted above, our primary motivations are the ethical principles that have been adopted by our field's professional associations. For example, the American Geophysical Union (AGU) states in its *Scientific Integrity and Professional Ethics* booklet that the AGU promotes science for the benefit of humankind and a sustainable future. The document stipulates that, "Members have an ethical obligation to responsibly, accurately, and clearly inform the public about natural resources, hazards, and other geoscience phenomena of importance to the well-being of Earth and society." The mainstream egregiously violates this obligation and is therefore guilty of scientific misconduct.

These are our proposed measures for rapid global cooling:

1. **Aggressive reduction of GHG releases** to minimize further environmental damage. These reductions will entail sharply increased GHG efficiencies, including the widespread implementation of carbon capture and storage (CCS).
2. **Prudent control of fossil-fuel emissions.** These emissions contain aerosols, which have a desirable cooling effect. Reducing emissions and thus aerosols would benefit human health, but could dangerously increase global warming.

3. **Immediate implementation of a rational set of SRM measures**. Strong consideration should be given to land- and space-based mirrors, marine-cloud brightening, polar ice brightening, and stratospheric aerosol injection.

The main practical implications of this professional split are as follows. First, we will identify ourselves as practitioners of "ethical climate science" rather than climate science generically. Second, we will vigorously oppose the mainstream's falsehoods and promote the above survival measures. This implies our strong opposition to the IPCC, which has long represented the mainstream's views. Third, we will urge professional bodies such as the AGU to sanction the mainstream for its scientific misconduct. Fourth, we will attempt to persuade media outlets, educational institutions, and other sources of public information to tell the scientific truth about the crisis and humankind's rational response.

We urge our colleagues to reject the unethical, unscientific, and unprofessional assertions of mainstream climate science by joining our breakaway group.

(Signatories)

APPENDIX D:
Public statement by concerned parents

NOTE: This is my proposal for a public statement by concerned parents who have concluded that existing youth-support organizations are ineffective in supporting the children they cherish. The statement's aim is to spur the creation of organizations that offer mature assistance to the young as they formulate and execute a revolutionary strategy for their ecological survival.

The undersigned are parents who are deeply concerned about the catastrophic impact of the climate crisis on their children. We are eager to offer them meaningful support, but have found that existing organizations are misguided and ineffective. Groups such as Parents For Future and Mothers Out Front embrace the same scientific and political falsehoods that many of the young have innocently adopted. *Our view is that parents, given their accumulated knowledge and experience, have a responsibility to guide the young rationally rather than supporting them blindly.*

Today's support groups make two critical errors: they trust mainstream climate science to tell the truth about the climate crisis, and they assume that governments have the capacity to solve it.

Regarding the science, it has long been evident that mainstream climate science serves the powerful and rich rather than humankind and the environment. It thus protects capitalism and growth by promoting an irrational GHG strategy (emissions reductions instead of a safe global temperature), rejecting solar radiation management (SRM) for global cooling, and disseminating the unfounded idea that human agency can only limit climate degradation but not improve climate conditions.

Regarding government capacity, both history and political analysis demonstrate that this institution is limited to capitalism-friendly policies. History records numerous cases where governments were overthrown by military coups or electoral manipulations for impeding capitalist ends. Political analysis reveals that, although government can represent popular interests, society is dominated by those who control the economy: its ruling class and state. The tasks involved in solving the climate crisis are thus far beyond any government's political reach.

Given these realities, we urge concerned parents to form new support organizations based on the following guidelines:

1. Reject mainstream climate science by embracing "ethical climate science". This is a breakaway initiative that takes youth survival seriously by objectively analyzing the crisis and proposing effective solutions. For details see this statement.
2. Accept the existence of ruling-class power by directing youth activism away from government-based reforms and towards revolutionary change. As stated in this youth manifesto, "The fundamental requirement for our ecological survival is not political will within the prevailing social order, but the political power to create a new and sustainable social order."

We fully accept that existing support groups are passionate about protecting their children from ecological collapse. Our claim is that their support is ineffective in practice because it is false in theory. We urge members to either transform their groups radically, or to abandon them and form more enlightened youth-support organizations.

(Signatories)

APPENDIX E:
Michael Mann's *The New Climate War*

NOTE: Mann is a central climate figure, and his recent book is highly relevant to the ecological plight of the young. This appendix therefore summarizes the book's thesis, suggests reasons for its appearance at this stage, and notes its significance for youth leaders.

A. MANN AND HIS BOOK

Michael Mann is the Distinguished Professor of Atmospheric Science at Penn State, a major research university in Pennsylvania, U.S. He has won numerous professional awards and in 2020 was elected to the National Academy of Sciences. In a previous book, *The Hockey Stick and the Climate Wars* (2013), he described the brutal attacks by industry-funded deniers that he and other climate scientists had endured. Because he is battle-scarred and prestigious, Mann is highly credible while being deeply committed to the capitalist status quo.

The thesis of *The New Climate War* is that the old war against "hard denial", which rejects the scientific evidence about the GHG crisis, has been largely replaced by the new war against "soft denial", which accepts the evidence but then goes astray in various ways. The soft deniers include those who exaggerate the crisis ("doomists"), blame individuals instead of corporations ("deflectors"), and use age, gender, ethnicity, and other "pre-existing fault lines" to splinter the climate movement ("dividers"). Mann calls all these people "inactivists" who, wittingly or unwittingly, do the bidding of fossil-fuel interests and thus prevent effective action.

B. GOOD COP/BAD COP

The New Climate War puts a novel spin on an old social-control tactic: good cop/bad cop. This has long been a favorite of the IPCC, and Mann uses it to beat down anyone who might undercut the mainstream's disastrous strategy: government policies to reduce emissions in order to "avoid the worst consequences".

Let me clarify Mann's tactical twist and then offer some possible explanations for his book's publication at this juncture. See figure E-1.

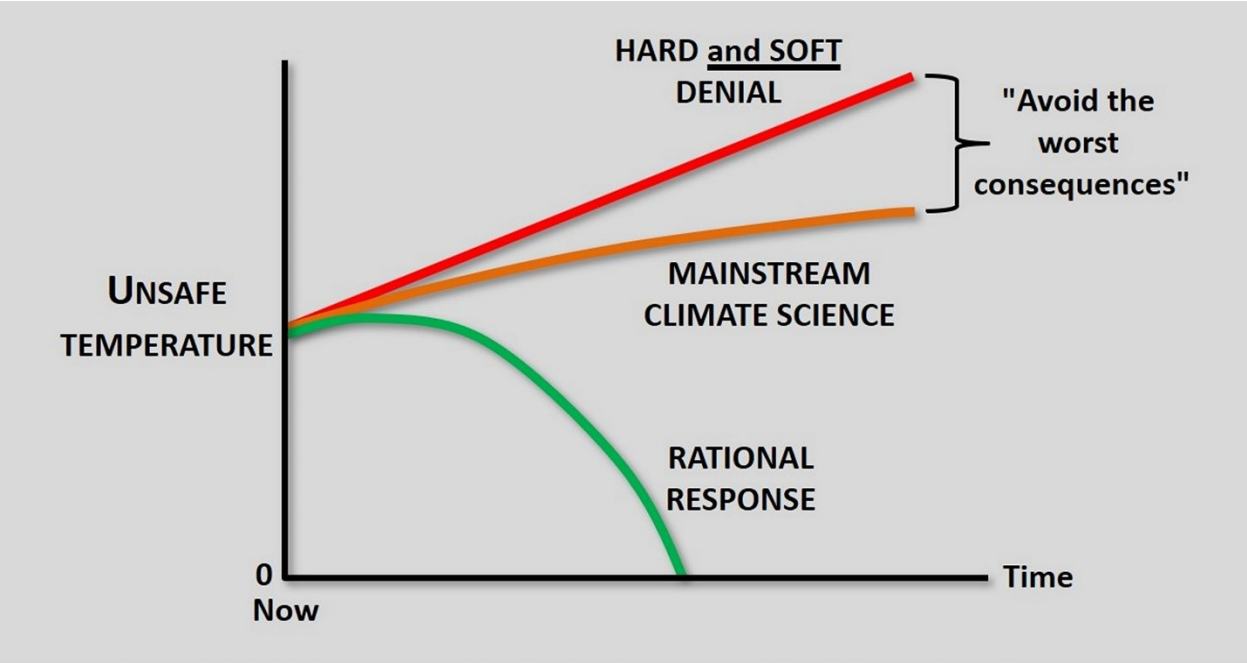

Figure E-1. The warming trajectories behind Mann's good cop/bad cop

The above graph tracks the global temperature over time as GHG concentrations increase. The red line at top depicts the rapid warming from business as usual, which in the old war was blamed primarily on the hard deniers. The brown curve in the middle reflects the reduced warming purportedly achieved through the mainstream's emissions reductions strategy. The green curve at bottom represents the rational response outlined in chapter three and appendix C.

The older tactic pitted the hard deniers, who were cast as the bad cop, against mainstream climate science, which was cast as the good cop. This worked because the good-cop strategy (purportedly) "avoids the worst consequences" and is thus *relatively* better. With massive help from the capitalist media, this was sold as the solution. However, as explained in chapter two, ecological damage is represented by the areas under the above curves, so both approaches are *absolutely* ecocidal. This is why the two "cops" must be ignored and a "lawyer" called to demand the rational response.

As shown at the top of the figure, Mann's tactical update is to lump the soft deniers in with the hard deniers and classify them all as bad cops. For example, he claims that "doomists" like Jem Bendell and David Wallace-Wells are just as harmful to the climate cause as the hard deniers of the past. With the soft and hard deniers placed in the same category, the trick works as before: public attention is sharply focused on the battle between the supposedly good and bad guys, and the rational alternative to both is removed from view.

The book is thus a deep deception to ensure that the mainstream approach is not undermined by an objective "lawyer" who insists on the rational and ethical approach: rapidly reduce the global temperature to a level that is safe for the global poor.

C. WHY NOW?

Why would Mann's book have appeared in early 2021? The following, in rough order of importance, strike me as the most plausible reasons:

- Responding rationally to the GHG crisis has revolutionary implications, so the ruling class must maintain tight control over the GHG message. In 1988 it seized control of this message from independent scientists by establishing the IPCC. In 2018 it countered the fading credibility of the 2°C story with the IPCC's 1.5°C report. I therefore surmise that, in 2021, the ruling class sought to prevent radical statements about the escalating catastrophe by bolstering the capitalism-friendly message of mainstream climate science.
- Under capitalist rule the GHG crisis will rapidly escalate, and Mann's book prepares us to accept this dark future. He repeatedly states that *the best we can do is reduce emissions to constrain* ***how much worse*** *things will eventually get*. Thus, although he excoriates the "doomists" who explicitly state that it's too late to avert disaster, he preaches this implicit version of doom himself.
- The peasants, AKA the young, are getting restless and must be prevented from grabbing pitchforks and attacking their ethically challenged elders. The book thus praises the immature, reformist youth movements typified by Greta Thunberg in an attempt to stop the young from becoming a more mature and militant threat.
- Some liberal climate scientists, including Kevin Anderson, the authors of the "Hothouse Earth" paper, and those associated with Scientists Warning and the Alliance of World Scientists, have made modestly provocative statements that clash with the mainstream's conservative wing. This threatens a disruptive split within the good-cop camp. Mann's book thus disciplines these apostates: comply with the conservative stance or face increasing pressures in your professional lives.

D. LEADERSHIP CONSIDERATIONS

1. Reviews of Mann's book have been effusive and uncritical (examples here and here). This reflects the current social-control situation: Mann as the designated big dog to direct the GHG discussion into capitalism-friendly channels, and a mass of compliant followers to help him spread the ecocidal message. Don't waste your time engaging with these people. Forsake them, build a militant movement, and instigate revolutionary change.
2. A striking feature of Mann's book is its intolerance: the author contemptuously dismisses anything that falls even slightly outside the conservative mainstream approach. Besides its belligerent title, the book's first few pages are replete with references to "the enemy". Although Mann parades as a liberal Democrat, he could well be laying the groundwork for a fascistic future within both his discipline and society as a whole.
3. Another striking feature is the book's lack of concern about the young. Consider that, under Mann's approach, they will move from an already perilous present into a truly gut-wrenching future while being denied SRM protection. This underscores one of my main points: your generation has been ecologically abandoned and must take full responsibility for its ecological survival. This burden falls heavily on your shoulders as a youth leader.

4. Mann appears to have erred by implicitly confirming that duration is a major factor in the ecological damage from unsafe temperatures (see chapter two). On p. 213 he quotes ally Richard Betts, who correctly states that a single year at 2°C would not be catastrophic, but several decades at this temperature very likely would be. In other words: *the duration of a temperature anomaly matters - a lot*. However, this greatly weakens the mainstream claim that stabilizing the globe at an elevated temperature is a rational objective. As a youth leader you should jump on such missteps for polemical and recruitment purposes.
5. You must clearly recognize that the young are threatened by mainstream climate science as a whole - that is, both the liberal wing of Anderson, Will Steffen, Johan Rockström, etc. and the conservative wing of Mann, Betts, Katharine Hayhoe, etc. The liberals appear more enlightened because they acknowledge the gravity of tipping points and the need for fundamental social change. However, *neither wing admits that rapid global cooling is now an existential requirement, and that revolutionary change is necessary to achieve this end. Both are thus equally genocidal for the global young*.

APPENDIX F:
The Rockefeller Foundation

The intellectual corruption of climate science, as described in this book, is devastating for humankind and nature. However, it is just one aspect of a far broader and more sinister development. This is the 20th-century transformation of science as a whole from a moderately objective mode of inquiry into a dedicated instrument for maximizing capitalist profits and growth. The young, and especially their leaders, must understand this extraordinary shift and its impact on environmentalism in recent decades.

Intellectual corruption under capitalism is nothing new. In the 19th century, after the capitalist classes in England and France had consolidated their power, they quickly threw objective economic theory out the window. Karl Marx commented that, "It was thenceforth no longer a question [of] whether this theorem or that was true, but whether it was useful to capital or harmful, expedient or inexpedient, politically dangerous or not. In place of disinterested inquirers, there were the hired prizefighters; in place of genuine scientific research, the bad conscience and evil intent of apologetic."

Marx wrote this in 1867. Fifty years later capitalism had matured sufficiently to extend its intellectual corruption to the physical sciences. A major force in this process was The Rockefeller Foundation. Fortunately a perceptive historian of science, Lily E. Kay, has written a detailed book about the Foundation's role: *The Molecular Vision of Life* (1996). I will first summarize Kay's book, then cite a recent book about trusting today's science, and finally discuss an investigative article that examines the Foundation's connection to today's environmentalism.

A. KEY POINTS: *The Molecular Vision of Life*

- The aim of the Rockefeller Foundation was to "endow scientists with unprecedented power over life" with the intention of, "... ***restructuring human relations [for] industrial capitalism***". (pp. 3 and 8, emphasis added) Central to this aim was the reduction of biological life to the physical processes of chemistry and physics. A highly influential source for this perspective was Jacques Loeb's essay, *The Mechanistic Conception of Life* (1912).
- This recasting of life and human relations was a vast undertaking that was beyond the capacity of the capitalist state. The latter is not structured for such transformations and is to some degree bound by democratic norms. The ruling class therefore financed and coordinated the shift through the private Rockefeller Foundation and other plutocrat funders (Carnegie, Ford, etc.). ***The corruption of science was thus completely undemocratic: the unilateral imposition of capitalist will to serve capitalist ends.***
- The Foundation's project was strongly influenced by eugenics. This refers to the intentional manipulation of hereditary characteristics to "improve" the species - that is, to mold the populace for its assigned economic roles. The term and its explicit aim lost

favor during World War II because of the Nazi death camps, but the ruling-class quest for biological human "improvement" continued in more socially acceptable forms.

- Kay summarizes her findings as follows: "Through education, public opinion, stimulation of a specific research agenda, and the promotion of selective categories of knowledge and research, the Foundation played a key role in the creation of a ... consensus [on social control] between social and political elites on one hand, and academic interests on the other." (p. 28, minor edit for clarity)
- In her conclusion Kay emphasizes that the molecular vision of life was not the logical result of objective research, but rather the intended outcome of a well-defined capitalist agenda. This echoes the Walsh Commission, which in 1912 investigated industrial relations in the U.S. and characterized the Foundation's work as, "a thinly disguised capitalistic manipulation of the social order." (p. 28)

Briefly stated, the capitalist class in the early 20th century decided to shape people, society, and science based on its worldview and economic logic. It did so by circumventing its own state and instead using private funders like the Rockefeller Foundation. As a result, today's scientific thought is pragmatic, mechanistic, and reductionist - hence destructive of people, community, and nature.

B. RECENT BOOK: *Why Trust Science?*

The book mentioned above is *Why Trust Science?* by Naomi Oreskes. Her main claim is that, "... the basis for our trust is not in scientists - as wise or upright individuals - but in science as a social process that rigorously vets claims." (p. 141) With respect to empirical research, this is reasonably accurate: such science is collaborative and generally self-correcting.

The problem arises with the intellectual framework in which the research is conducted and conclusions are drawn. As Oreskes says, "Scientific facts are claims about which scientists have come to agreement." (p. 127) But this agreement is rooted in the prevailing scientific worldview, which has been implanted as described above. For example, climate scientists agree that emissions must decline, so this is a scientific "fact". They don't agree that global cooling is an immediate requirement, so this is not. Clearly, the criterion being applied here is not human survival or environmental integrity, but rather compliance with the Rockefeller-imposed version of reality.

Oreskes either ignores or is oblivious to this deep history. In either case her book is grossly mistitled - especially for the threatened young. For them the question is not, "Why trust *science*?", but rather, "Why trust *capitalist* science?"

C. THE CAPITALIST CORRUPTION OF ENVIRONMENTALISM

Let me now turn to the investigative article. This will be an eye-opener for many and should be carefully read - here I provide only a glimpse. It was written by Max Blumenthal and is titled, "'Green' billionaires behind professional activist network that led suppression of 'Planet of the

Humans' documentary". The writer does an excellent job of refuting the arguments made by the film's suppressors, but my focus is on their connection to the Rockefeller Brothers Fund, which the Rockefeller Foundation calls "our sister organization".

As one example, Blumenthal notes that the environmental group 350.org was deeply implicated in this suppression, and that the Rockefeller Brothers Fund provided the group's initial financing and guided its agenda. Two leading figures in 350.org are Bill McKibben and Naomi Klein. The writer comments that, "In 2011, when Klein was appointed to 350.org's board of directors, she joined forces with an environmental organization incubated by the Rockefeller Brothers Fund and supported by the Ford Foundation." Blumenthal identifies many other well-known groups and individuals who are in some way aligned with billionaire interests. His message is clear: *capitalist influences permeate today's environmental movements*.

What can be expected from such influences? That is, what would be the likely impacts on environmental thought and action if environmentalists are backed by plutocrat capitalists? In my view the most significant of these would be:

- Profound mystification of the ecological crisis and outright dismissal of the rational response;
- Categorical rejection of militant movements and revolutionary change;
- Minimal constraints on profits and economic growth;
- Strict enforcement of capitalism's worldview and economic logic;
- Support for activists, NGOs, scientists, etc. to the extent that they comply with the above.

As we survey today's environmental scene, this is exactly what we find. The crisis has been massively distorted and workable solutions have been categorically dismissed. All initiatives revolve around government policies and reject the replacement of an ecocidal ruling class. The core initiative, emissions reductions, poses little threat to capitalism's profitable expansion. Michael Mann's recent book (appendix E) and the blatant censorship of Planet of the Humans are zealous enforcements of the capitalist perspective. Finally, the people and organizations identified in Blumenthal's article are supported in various ways - funding, access to publishers, friendly media treatment, etc. - because they comply with capitalist demands.

For youth leaders the conclusions are inescapable: categorically reject today's deeply compromised environmental movements, independently rethink the crisis and its solutions, carefully reconsider political power and the role of government, and quickly organize militant movements to spur revolutionary change.

APPENDIX G:
Glossary

NOTE: Italicized terms are either my formulations or have meanings that are specific to this book.

A. ENVIRONMENTAL TERMS

***Aerosol effect*:** The loss of aerosol cooling during emissions reductions. Emissions typically contain both long-lived GHGs that warm the atmosphere and short-lived aerosols that cool it. When emissions are reduced, the cooling aerosols quickly disappear while the warming GHGs remain in the atmosphere.

***Aerosol deception*:** The mainstream's concealment of the aerosol effect. This is achieved by equating "emissions" with "GHG emissions" (or "CO2 emissions", "carbon emissions", etc.), which falsely implies that emissions consist of GHGs exclusively.

***Aerosol releases*:** The aerosol component of emissions. See also "GHG releases".

Aerosols: Small particles, either solid or liquid, found in fossil-fuel and other emissions. These particles reflect solar radiation and thus - with the exception of black carbon (soot) - have a cooling effect.

Carbon budget: The quantity of CO2 that can purportedly be emitted while remaining within a global temperature limit such as 1.5°C or 2°C.

Carbon capture and storage (CCS): The extraction of CO2 from effluents during industrial processes - hence *before* it enters the atmosphere. CCS is thus a form of ecological efficiency.

Climate change: A prolonged change in the mean and variability of key weather components. (IPCC glossary) This is part of the GHG crisis.

Collapse: Comprehensive environmental breakdown, widespread destruction of civilizational infrastructure, and a rapid human die-off.

Concentration: The level of a GHG in the atmosphere, in either parts per million (ppm) or parts per billion (ppb).

Ecological crisis: The global environmental damage resulting from ecological overshoot.

***Ecological damage function*:** The relationship between global warming and the resulting ecological damage. This damage is a function of the speed, magnitude, and duration of the unsafe temperature.

Ecological efficiency: The measure of an economy's success in minimizing resource use and waste expulsion in production activities. Specifically: the quantity of a resource or waste per unit of economic output.

Ecological overshoot: The roughly concurrent violation of multiple global environmental limits starting around 1950.

Ecological restoration: The repair of past damage from non-GHG harms such as habitat destruction, ocean degradation, chemical toxification, and atmospheric pollution. Two key measures are the abandonment of capitalist modes of resource extraction and the Earth's extensive rewilding.

Emissions: The combination of GHGs and aerosols released into the atmosphere by economic processes. GHGs have a warming effect whereas aerosols have a cooling effect. Note that "concentrations" refers to GHGs alone, so emissions and concentrations are qualitatively distinct and cannot be quantitatively compared. The mainstream deceptively ignores this incommensurability.

***Emissions fallacy*:** The false idea that the initial solution to the GHG crisis was to reduce emissions rather than maintain safe concentrations levels, as was stipulated in the 1992 UNFCCC agreement.

Energy balance: The relationship between the energy flowing from the Sun to the Earth and the energy flowing from the Earth into space. The Earth is in energy balance when these two rates are equal. Global warming occurs when the inflow rate is greater than the outflow rate. Global cooling occurs when the opposite is true.

Geoengineering: Originally this term referred to the combination of solar radiation management (SRM) and GHG removal (GGR) - the measures required to restore the Earth's energy balance and thus reverse global warming. Today it is increasingly applied to SRM alone.

***GHG crisis*:** The full set of damaging environmental effects from unsafe GHG concentrations. The GHG crisis is one of two components of the ecological crisis, the other being non-GHG harms.

GHG emissions: A deceptive term because it implies that emissions contain warming GHGs alone. For fossil fuels and other industrial effluents this is false because they contain cooling aerosols as well.

***GHG releases*:** The GHG component of emissions. See also "aerosol releases".

Global brightening: An increase in the Earth's reflectivity, primarily due to a decrease in atmospheric aerosols.

Global cooling: A decrease in the Earth's surface temperature due to SRM measures, lower GHG concentrations, or increased aerosols.

Global dimming: A decrease in the Earth's reflectivity due primarily to an increase in atmospheric aerosols.

Global warming: An increase in the Earth's surface temperature due to higher GHG concentrations or decreased aerosols in the atmosphere. Global warming, including the existing global *warmth*, is one aspect of the GHG crisis.

Greenhouse gases (GHGs): Gases such as CO2, methane, nitrous oxide, and water vapor that act like a blanket over the atmosphere by trapping heat radiated from the Earth. Increased GHG concentrations cause global warming.

Greenhouse gas removal (GGR): The extraction of unsafe GHGs from the atmosphere through natural or industrial methods to lower their concentrations.

IPAT formula: A mathematical identity (two equivalent expressions) that disaggregates environmental impact (I) into three components: population (P), affluence (A) and technology (T). Affluence here refers to average per-capita consumption, and technology to ecological efficiencies.

***Linear fallacy*:** The untenable assumption that an increased environmental impact always results in a proportional increase in environmental harms. Hence, the unscientific repudiation of non-linear events: tipping points and points of no return (PONRs).

Mitigation (of climate change): A human intervention to reduce emissions or enhance the sinks of greenhouse gases. (IPCC AR6 glossary) The mainstream typically uses this term in reference to emissions reductions alone.

Net-zero emissions: The mainstream's invalid goal for the GHG crisis. An alternative term is "decarbonization".

***Non-GHG harms*:** The full set of damaging environmental effects that are unrelated to unsafe GHG concentrations. These harms constitute one of two components of the ecological crisis, the other being the GHG crisis.

Ocean acidification: An increase in ocean acidity due to the chemical effect of unsafe CO2 concentrations. This is part of the GHG crisis.

Ocean deoxygenation: A decrease in the ocean's oxygen level due to ocean warming. This is part of the GHG crisis.

Ocean warming: An increase in the ocean's temperature due to unsafe GHG concentrations. This is part of the GHG crisis.

Point of no return (PONR): The stage in an ecosystem's decline where damage is so great, or time is so short, that human agency no longer suffices to prevent its destruction. Compare: "tipping point".

Solar radiation management (SRM): The set of measures for increasing the Earth's reflectivity to reduce solar radiation and thus the global temperature (global cooling).

***SRM denialism*:** The mainstream's refusal to acknowledge that SRM methods will be required to cool the Earth in order to maintain survivable global temperatures.

Tipping point: The stage in an ecosystem's decline where damage increases sharply due to positive feedbacks, cascading effects, or other factors. At this stage human agency still exists and collapse can be prevented with an adequate response. Compare: "point of no return".

B. POLITICAL AND ECONOMIC TERMS

Authority: Power that is delegated by the capitalist ruling class to its state. This permits the state to manage society in accordance with capitalist interests.

Business: Production and exchange for profit. Business is distinct from capitalism: it long preceded the system and, if we survive, will continue long after it is gone.

Capitalism: The world's dominant economic system, which is defined by its economic logic: the goal of maximum profits and growth, output production based on affordable desires, the assumption of unlimited natural sources and sinks, and treatment of the populace exclusively as workers and consumers rather than human beings who work and consume.

Coercion: A mode of social control that is employed when voluntary compliance through legitimacy fails. Coercion can be psychological, material, or physical. See also "legitimacy".

Conservatism: An ambiguous term that can refer to either traditional or modern conservatism. The traditional version is rooted in pre-capitalist, land-based feudalism and is highly critical of capitalism and its rulers. The modern version is a pragmatic mix of traditional views and classical liberalism - the former to gain the populace's support and the latter to incorporate capitalism's economic logic.

Consumption desires: In ENL this refers to needs and wants, collectively. Satisfying a need maintains or increases humankind's physical health; satisfying a want does not.

Coup: The replacement of a government, typically by military force, when it threatens the power or privileges of the ruling class.

Deep politics: Political thought and action that address political power and social control as well as government representation of the populace. Compare: "electoral politics".

Degrowth: An instrument of capitalist thought control. The Degrowth movement seeks to divert concerned economic thinkers from post-capitalist contraction to futile and ill-defined projects within the current system. See also "ecological economics".

Ecofascism: A highly ambiguous term that has been used by both environmentalists and staunch anti-environmentalists.

Ecological economics: An instrument of capitalist thought control. This academic field seeks to divert concerned economic thinkers from a sustainable theory to an environmentally aware version of standard economics. See also "degrowth".

Economic logic: An economy's goal, production criteria, assumptions about humankind and nature, and the resulting forces that drive its activities. Capitalism's economic logic is rooted in the drive for luxury consumption by social elites during the medieval period. ENL's logic is based on the goal of sustainable well-being.

Economics of Needs and Limits (ENL): My proposed framework for achieving the transition from capitalism to a sustainable economy, and for the subsequent guidance of that economy.

Electoral politics: Political thought and action that address government representation of the populace, but not political power and social control. Compare: "deep politics".

Fascism: An extreme mode of capitalist rule. Fascism is employed when the ruling class decides that democratic rights must be violated and extreme coercion applied to control the populace.

Government: A social institution that represents the will and interests of the populace by pressuring the capitalist state to implement desired policies.

Human nature: Humankind's evolved and thus inherent attributes, both mental and physical.

Legitimacy: A mode of social control that achieves compliance through non-coercive methods: the satisfaction of material interests, various forms of manipulation, thought control, and surveillance. See also "coercion".

Material interests: Humankind's biologically-rooted desires for consumption, security, and life enjoyment. The term excludes both inordinate greed and ethical concerns.

Militancy: The commitment to revolutionary change and the willingness to humanely do whatever is necessary to achieve this end.

Military: A component of the capitalist state that is society's most dominant coercive force. The military has two critical responsibilities: to support the political power of the ruling class so long as it serves the interests of the populace, and to safeguard the populace from existential threats such as foreign invasions and environmental disasters.

***Minimum effective change*:** One of two principles intended to facilitate the transition from capitalism to a sustainable economy. According to this principle, economic institutions (markets, corporations, legal structures, etc.) should be modified only as required for sustainable well-being. See also "social neutrality".

Political power: The capacity of a social group to impose its worldview, economic logic, social structure, and chosen path of historical development on the rest of society.

Populace: All members of a society except its ruling class and state. Intellectuals are a special group within the populace because they are subject to thought control in addition to standard social control.

Progressivism: A social movement that strives for justice within the prevailing social order. Its thinking and activism are therefore reformist rather than revolutionary.

Proprietor: A business owner in a post-capitalist economy.

Revolution: The replacement of society's current rulers with a new ruling group. Thus, the first stage of revolutionary change.

***Revolutionary change*:** The social transformation that is initiated by a revolution and ends with the establishment of a post-revolutionary economy and society.

Ruling class: The social group that holds political power. Under capitalism this term refers to society's major capitalists and their allies organized as a political force to protect and advance their shared interests.

Social control: The various methods used by the capitalist state to control the populace for capitalist ends.

***Social neutrality*:** One of two principles intended to facilitate the transition from capitalism to a sustainable economy. According to this principle the progressive and conservative views of society are accorded equal respect, particularly in a sustainable economic theory such as ENL. See also "minimum effective change".

Standard economics: The mainstream economic theory that formally expresses and socially justifies capitalism's expansionary and ecocidal economic logic.

State: The various institutions, administrative structures, and instruments of coercion that implement social control and regulate a society's functioning based on capitalist interests.

Thought control: The state's management of intellectual thought to serve capitalism's economic ends and prevent disruptive political threats.

Value: The central concept in economic thought. Value specifies the criterion for economic desirability and thus establishes the broad patterns of production and consumption.

***Youth-military strategy*:** My proposed revolutionary strategy. The young, with their older supporters, will first shift the military's loyalties from the ruling class to the populace. They will then instigate the military to replace this class with a sustainable ruling group.