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An Introduction to PLAN E

Grand Strategy for the Twenty-First-Century Era of Entangled Security and Hyperthreats

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Abstract: Although the dangers of climate change and ecological collapse are often described as existential or catastrophic threats, in practice they are approached as scientific policy and governance issues. "Securitizing" the issue has long been regarded as problematic, with an assumption that it will lead to draconian top-down solutions. PLAN E presents an alternate approach. In this article, traditional military threat analytical methods are fused with emerging ecophilosophical concepts to produce a prototype concept of operations for how humanity could respond to the hyperthreat of climate and environmental change. The author argues that the nature of threat has changed, which requires a new threat posture. Further, the

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nature of the threat demands a shift toward greater bottom-up and localized response.

Keywords: PLAN E, hyperthreat, entangled security, climate change, hyperobject, strategy, climate emergency, mobilization, transdisciplinary, planetary security, slow violence, sixth extinction event

PLAN E presents a concept for a hyper-response to the hyperthreat of climate and environmental change. It is a creative demonstration of what a new security approach might look and feel like. It deliberately describes some "micro" solutions to assist in the imagining process; these are not intended to be prescriptive but merely to encourage and prompt reimaging more broadly. To help these ideas be accessible across disciplines and beyond academia, where possible, simple language and even some creative narrative techniques such as the use of metaphor are employed, as well as multiple diagrams. The more detailed theoretical arguments and analysis of the hyperthreat's context is provided in this author's main article in the spring 2022 issue of the *Journal of Advanced Military Studies*, which also includes a glossary of terms. For brevity, most of the content of that article is not repeated here, though it would normally be included within PLAN E for completeness.[1]

The Situation

In the twenty-first century, humanity faces a threat for which there is no precedent to draw on: the climate and environment change (CEC) hyperthreat. This hyperthreat has warlike destructive capabilities that are so

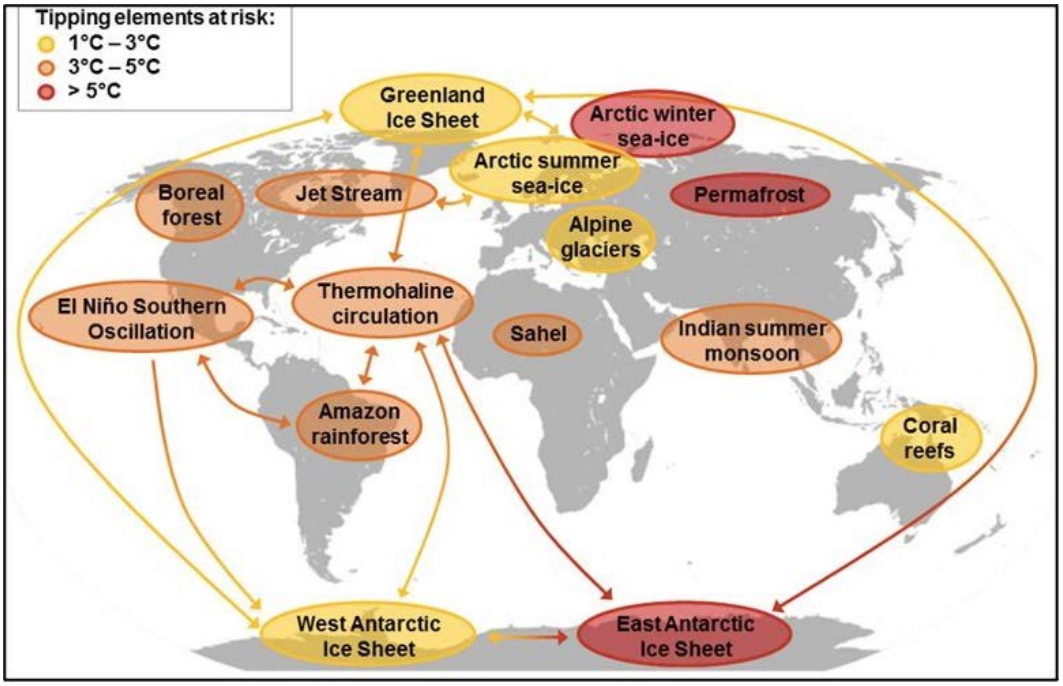
diffuse that it is hard to see the enormity of the destruction coherently or who is responsible for its hostile actions. It comprises the combined impacts of rapid global warming and the unravelling of Earth's ecological systems. The hyperthreat is a phenomenon that humanity has not encountered before. The nature of threat has changed, but so too has the nature of power. The hyperthreat is expected to become the major global shaping force of this century, forcing humanity to accept reduced agency and increasingly occupy a responsive stance.[2]

The hyperthreat's vanguard has arrived, while plans have been intercepted that reveal that its main body forces are currently advancing and will arrive from the year 2030 onward. Generally, the hyperthreat plans to exploit fossil fuel resources and natural ecological systems at rates and scales that will see safe planetary boundaries exceeded.[3] Its intention may be to move rapidly before humanity imposes defenses or outmaneuvers it via alternate technologies.

The hyperthreat's *center of gravity* (COG), the key characteristic that provides its power, is its freedom of movement, which is enabled by its hyperobject-like invisibility and unknowability and by human hesitancy to respond. Human activity that fuels the hyperthreat is often legal, has social license, and is understood as legitimate business or security activity; its contribution to slow violence is often obscured.[4]

The hyperthreat's most dangerous course of action is to provoke cascading tipping elements, accelerating a transition to a "Hothouse Earth" state, which is uninhabitable for most species (figure 1). Without concerted global action between 2022 and 2025, the most dangerous course of action is also the most likely course of action.

Figure 1. Global map of potential tipping cascades



Source: Will Steffen et al., "Trajectories of the Earth System in the Anthropocene," *Proceedings of the National Academy of Sciences of the United States of America* 115, no. 33 (2018), https://doi.org/10.1073/pnas.1810141115.

The hyperthreat sits within a context of old systems of order and meaning that are being disrupted and increasing insecurity. Globally, human socioeconomic, political, and governance systems are becoming increasingly unstable, with levels of freedom in decline. Human security is degrading and involves a wide range of problems, such as poor physical and mental health, modern-day slavery, human trafficking, poverty, unemployment, domestic abuse, sexual violence, pedophilia, hate crimes, and systematic racism. Significant philosophical revisions and understandings of social and individual identity and freedom are under way, which unsettles peoples' sense of epistemological and ontological certainty. Psychological warfare

and information operations waged by multiple actors, including corporations, have a formidable ability to disrupt human's trust in institutions and perceptions of reality.

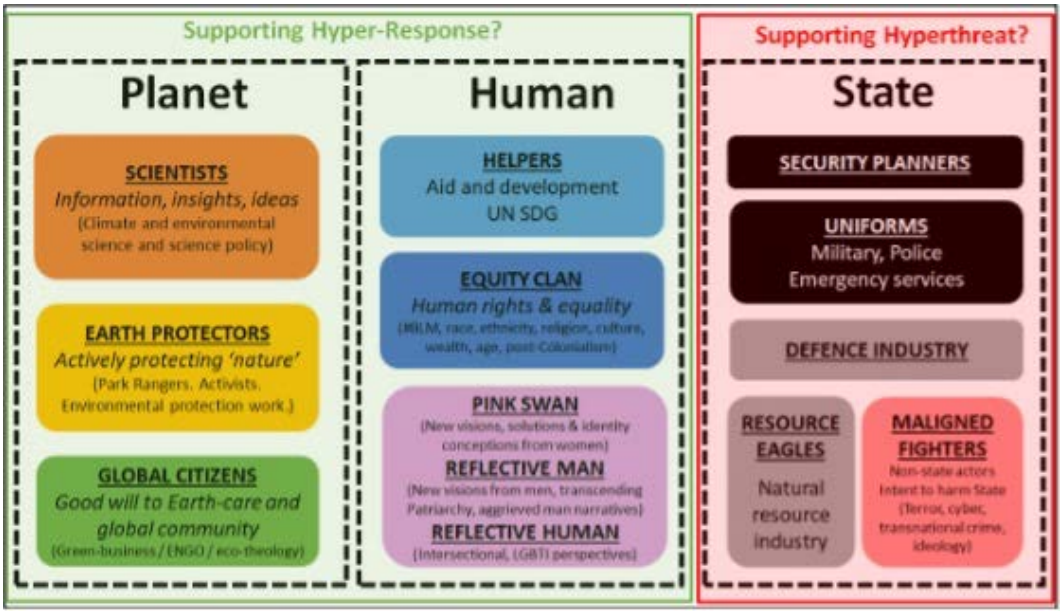
The global security environment has degraded. Worldwide, increased military spending reflects expectations of greater conflict during the decade between 2022 and 2030, including the prospect of major intrastate warfare. Both extensive preparation for warfare or major warfare itself will likely impair or cripple global capacity to achieve *safe Earth* while simultaneously turbocharging the hyperthreat's ferocity.[5] Accordingly, the current global military buildup could represent a situation whereby many nations are entering, unconsciously or perhaps because there seems to be no other option, into a new type of mutually assured destruction (MAD) scenario, or even the Homo sapiens death spiral.

By applying economic, diplomatic, military, and other tools of force and power to participate in the "race for what's left" of Earth's resources, humanity is unwittingly aiding the hyperthreat. Capacity to arrest deteriorating global security is also in doubt, as evidenced by failed efforts in places like Syria, Afghanistan, Iraq, Honduras, South Sudan, or the Democratic Republic of the Congo. Overall, there is the possibility that humanity has lost control of its capacity to achieve security and safety. This echoes ecophilosopher Timothy B. Morton's fundamental conclusions: that humans have lost agency to the hyperobject.

To allow humanity to reach and maintain *safe Earth*, large-scale response to the hyperthreat must occur between 2022 and 2030. At present, however, humanity is not effectively scaled or configured to properly perceive the threat, let alone mobilize an effective response. An

analysis of “friendly forces” via a “tribal discourse” activity found that although many of humanity’s smaller and less powerful tribes are engaged in minor operations against the hyperthreat, its most powerful tribes often abet the hyperthreat (figure 2). If humanity’s tribes could be united against the hyperthreat, the current balance of probabilities, which currently lie with a hyperthreat victory and a Hothouse Earth outcome, could be recast.

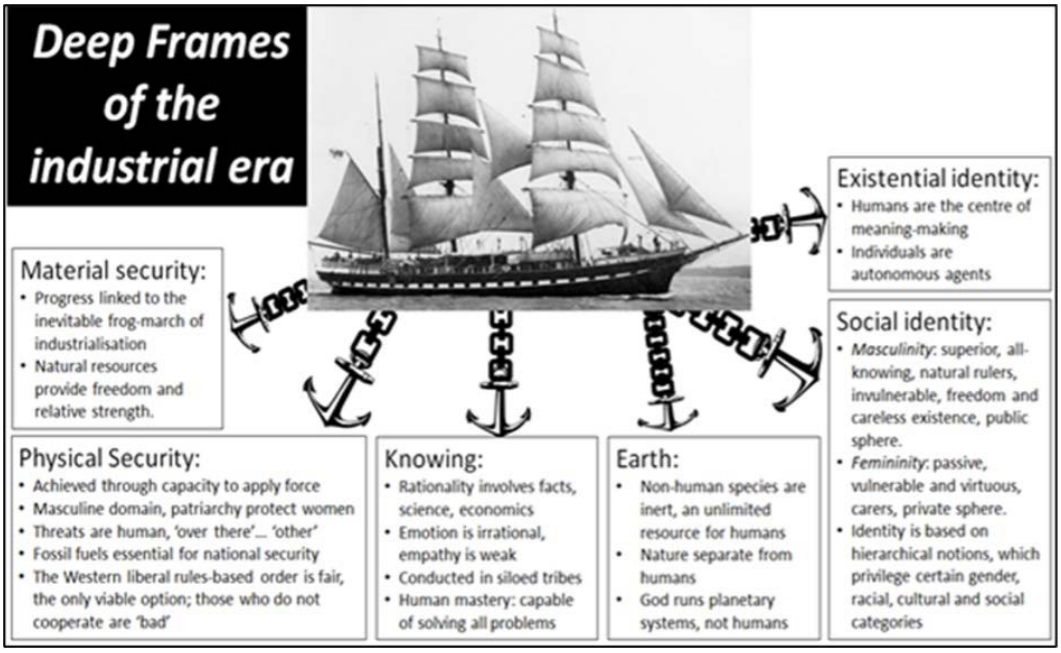
Figure 2. Tribal discourse: generic tribes loosely grouped by their primary security foci and depicting their stance in relation to the hyperthreat



Source: courtesy of the author, adapted by MCUP.

Humanity’s COG is assessed as its *deep frames*, prevalent and dominant worldviews that influence governance decisions across the public and private sectors (figure 3). Simply put, CEC presents a new type of threat—a Frankenstein-like killing and destruction phenomenon—that humanity struggles to conceive or perceive.

Figure 3. Deep frames of the industrial era



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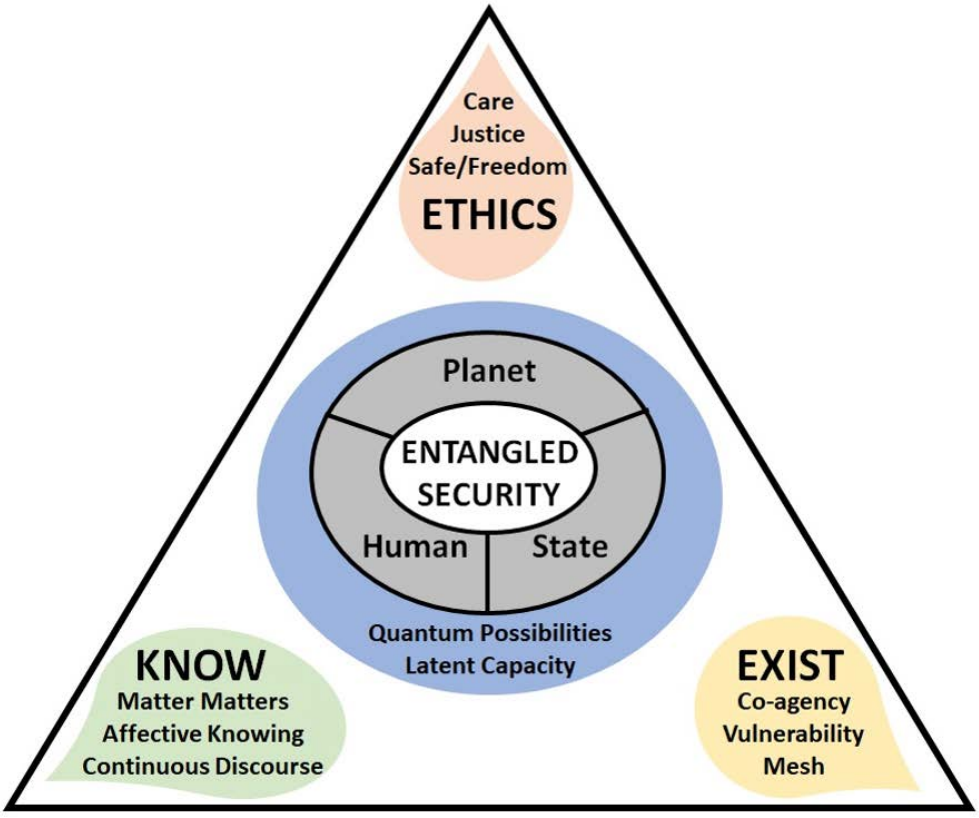
Fortuitously, philosophers working on this problem are helping humanity recalibrate to a new geophysical reality, with ideas that were drawn on to develop an initial prototype for a new deep frame: *entangled security* (figure 4).[6] With socialization, the entangled security compass may help humanity break out of its current quagmire and regain initiative against the hyperthreat.

Figure 4. Entangled security compass



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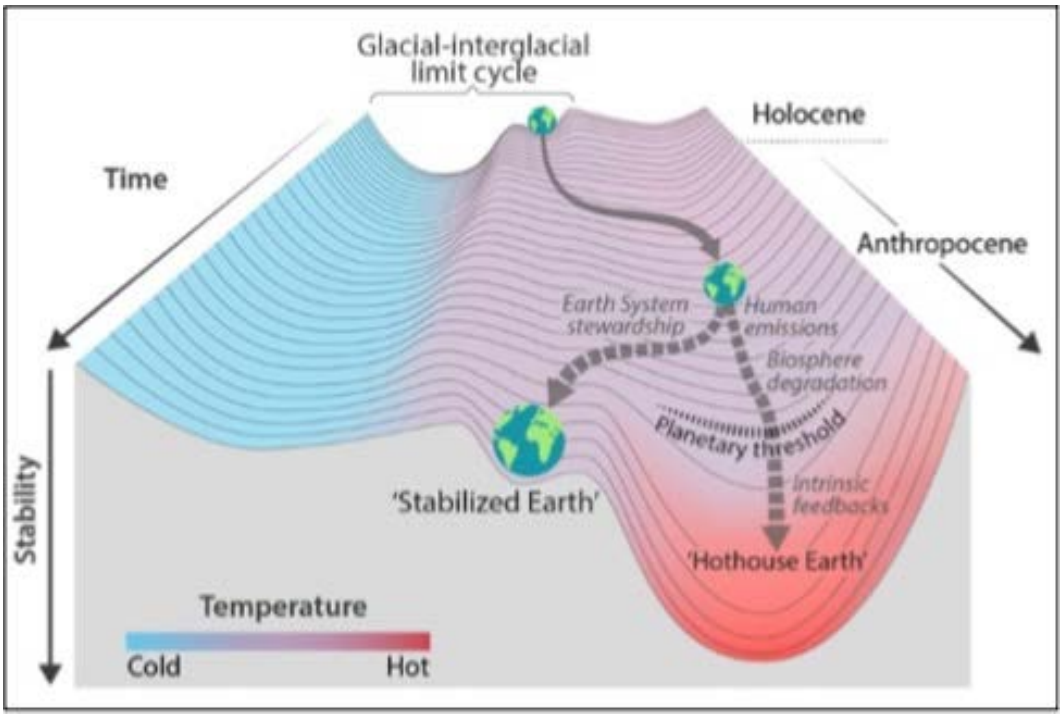
The Mission

Rather than creating long lists of "types" of security threats—or, for instance, following the United Nation's (UN) approach of setting 17 sustainable development goals—a neutral and nonhuman centric threat assessment concludes that effective security strategy requires clear prioritization toward containing the most dangerous threat: the hyperthreat. A clear mission acts as an orchestration tool, which does not discount other objectives but helps to coordinate and order humanity's response and direct limited resources toward where they are most needed.

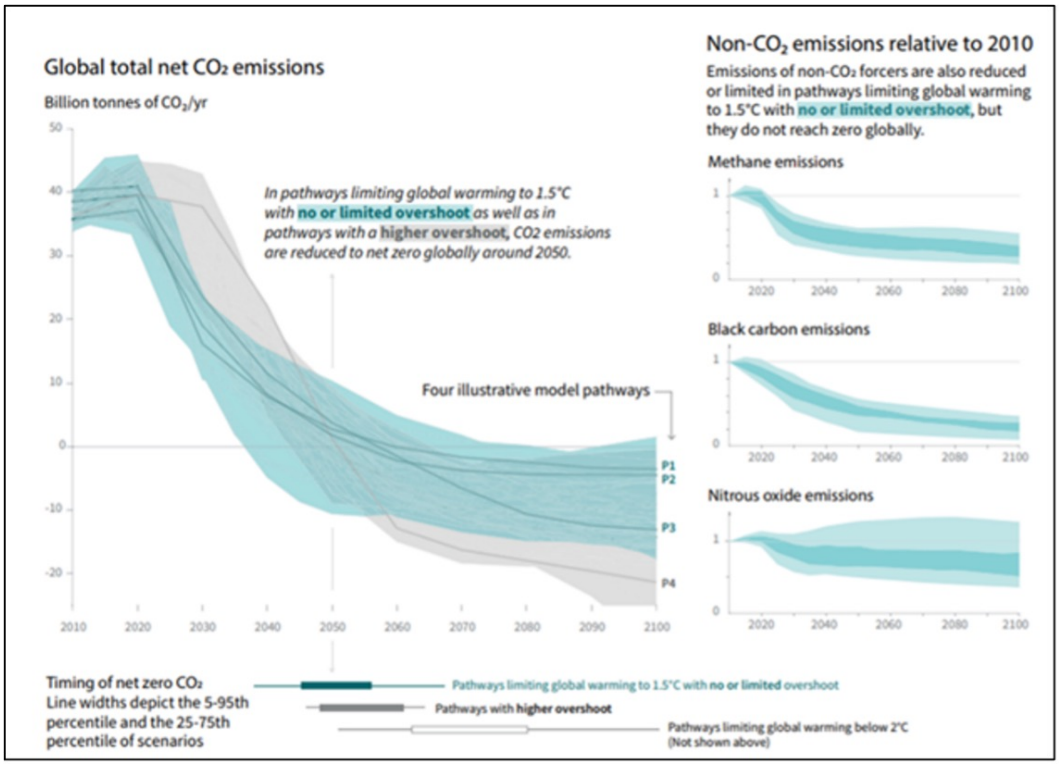
The aim of the hyper-response is to create a safe path to *safe Earth* (figure 5). Among other critical actions, this requires reducing greenhouse gas emissions to limit global warming to 1.5 degrees Celsius and arresting the sixth extinction event (figure 6).

Figure 5. Pathways of the Earth system out of the Holocene period



Source: Steffen et al., "Trajectories of the Earth System in the Anthropocene."

Figure 6. Pathway to limit global warming to 1.5 degrees Celsius



Source: "Summary for Policymakers," in *Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty*, ed. Valérie Masson-Delmotte et al. (Geneva, Switzerland: Intergovernmental Panel on Climate Change, 2018), 15.

Execution

This hyper-response is a six-phase operation that will extend until the year 2100. It is civilian-led and involves a whole-of-society layered mobilization. In broad terms, it involves humanity scaling up to a hyper-level and reconfiguring its activities. It orientates around making the threat visible and

knowable, to an extent that this inspires automatic configuration and realignment across human tribes.

The hyper-response takes the viewpoint that, in the context of the enormous amount of work that needs to be done in a short period of time, Earth's large human population is an asset if it can be effectively leveraged as part of the hyper-response. To explain further, a "humans-as-ants" strategy infuses PLAN E. Like an ant, a single human has little power or agency against the hyperthreat, but when humans amass and align their goals, they can achieve remarkable outcomes. Accordingly, PLAN E operates from homes, communities, and workplaces through to the geopolitical level. It involves children's lunches, grandparents, local rivers, parks, the Amazon Rainforest, hairdressers, refugees, prisoners, farmers, and the mining executive. Its success hinges on not only communication of the problem but also the capacity for humans to undertake synchronized action toward the same goal. Coordination, cooperation, teamwork, and leadership skills become significant to survival capacity.

The hyper-response aims to deflate or attack the hyperthreat by operating at the microlevel through "mesh-interventions" as well as at the macrolevel through realignment of great nation states and tribes. It involves raising significant new capabilities, which include, for example, a "home force," a "point force," and a "planetary security task force." Design of a hyper-response will be dependent on a comprehensive strategic planning process being enacted and ongoing discourse and revision. This strategic concept focuses on phase 1 and provides introductory ideas for phase 2.

The term *deep phases* signifies a shift toward hyperoriented planning horizons. The phrases of the hyper-response are as follows:

1. **Phase 1. PLAN E: Envision and Embark (2022).** In 2022, the focus is exploring and envisioning the hyper-response and embarking on this mission. It will involve engaging and energizing people, analysis, planning, and some early actions. The “E” in PLAN E stands for “Earth,” “everyone,” “everything,” and “everywhere.”
2. **Phase 2. PLAN F: Fast and Furious (2023–26).** For four years, an accelerated and intensive global effort will be made to reduce greenhouse gas emissions and restore ecological stability. It will be “fast and furious” because it will involve startup action as well as implementation. It is focused on the remaining “low-hanging fruit” for fastest global reductions.
3. **Phase 3. PLAN G: Guts and Guile (2027–35).** It is anticipated that this period will address the harder aspects of global transition, in terms of technology, infrastructure, and social behavior change. As initial enthusiasm may have waned, a stoic approach will be required, refreshing the workforce and dealing with more dangerous hyperthreat actions.
4. **Phase 4. PLAN H: Hold; Hello Hell (2035–50).** This period is anticipated to involve severe and sustained attacks by the hyperthreat, which could unravel efforts undertaken in phases 1–3. The hyper-response will need to be advanced, despite ongoing attacks. This may require periods of strategic withdrawal and retreat to safe locations, paired with opportunistic rapid advances. It will be a time of holding on fast to the gains and momentum of phases 1–3. Attributes such as hope, heroism, humor, humanity, hospitality, and honor will be critical.

5. **Phase 5. PLAN I**: **Ingenuity (2050–2100).** A stretch target set for the second half of the twenty-first century is for it to be a time in which humanity has gained knowledge, experience, and confidence in dealing with an entangled security environment and coexisting with the hyperthreat. The collective global effort and learning during phases 1–4 will have allowed ingenious solutions for interdependence to emerge. It will be a time of flourishing invention and inspiration.
6. **Phase 6. PLAN J**: **Jewel Endures (Post-2100).** *Safe Earth* is either achieved or is now achievable. The blue jewel of Earth and its inhabitants endure and shine in the universe. Ecosystems recover, and lost species are reestablished using DNA. Justice, for all species and generations, is restored.

Strategic Concepts

This approach is informed by the following seven strategic concepts, some of which will be described further below:

1. Philosophical pivot
2. Operationalizing entangled security
3. Targeting hyperthreat enablers
4. Creative state
5. International relations realignment
6. Layered mobilization
7. Strengthening affective security

Philosophical Pivot

Recognizing that the CEC hyperthreat operates at micro and macro scales across most forms of human activity and that a whole-of-society approach is required to combat it, the approach to the CEC hyperthreat partly relies on a philosophical pivot. The idea here is that a powerful understanding of the CEC hyperthreat (how it feels, moves, and operates), as well as the larger philosophical and survival-based reasons for hyper-reconfiguration, enables all actors and groups to design their own bespoke solutions. Consequently, the narrative and threat description act as a type of orchestration tool across many agencies. This is like the "shared consciousness" idea in retired U.S. Army general Stanley A. McChrystal's "team of teams" approach to complexity.[7]

Such an approach is heavily dependent on exceptional communication of both the CEC hyperthreat and hyper-response pathways, as well as providing an enabling environment in terms of capacity to make decisions, access information and resources. This idea informs Operation Visibility and Knowability (OP VAK), which will be described later.

The overarching ethos is what is coined the "harm-to-help" ethic. People and groups "pivot" their activities from being harmful, or aligned with the hyperthreat, to helpful, or aligned with the hyper-response.

Operationalizing Entangled Security

Initial "grand narrative" themes revolve around the concept of *entangled security* and infuse this plan. However, deep framing analysis directs that a frame or narrative is not static, but rather holds that to remain truthful, the frame or narrative necessarily evolves in an intra-active way with other

"matter."[8] Accordingly, OP VAK and a societal-wide hyperconversation process provide a mechanism for ongoing narrative development.

Entangled security will be mainstreamed into multilateralism and local, state, and national institutions. It informs the design of the hyper-response force (HRF).[9] Entangled security is part of the philosophical pivot; it is a strategic conceptual framework that provides orchestration logic rather than formal control of any agencies.

Targeting Hyperthreat Enablers

The three key enablers of the hyperthreat—its invisibility, its ability to evade all existing human threat-response mechanisms, and human hesitancy—will be targeted with three corresponding *lines of effort*, which will be pursued across multiple task groups:[10]

1. Make the hyperthreat visible and knowable;
2. Reduce hyperthreat freedom of action; and
3. Achieve mass and speed of response.

Affective Dimensions: Moral Forces

Like the military concept of *moral forces*, *affective dimensions* have utmost importance to capacity for a successful hyper-response.[11] Accordingly, plans, activities and resources to address affective dimensions will infuse the entire approach. A guiding principle will be to make the hyper-response as not only fun and enjoyable as possible but also meaningful via a vibrant grand narrative approach that connects the mission to conceptions of identity, values, and evolving worldviews.[12] Second, acknowledging increased affective insecurity and that heightened vulnerability and fear will

be a factor, great efforts must be made to bolster the care, support and protection provided to people.

A bottom-up approach involves aiming for maximum participation at a society-wide level. While this relates to achieving “mass and speed” of response, it also connects to psychological and philosophical research on the need for belonging and agency. One way a bottom-up approach can achieve maximum participation is through asking individuals, “How do you help us win?” or “How do you help us reach our destination of *safe Earth*?” This differs from most employment circumstances that issue top-down-directed work. It is anticipated that surprising answers will emerge, which allows people to align their aptitude and best skills to the mission. Two examples follow:

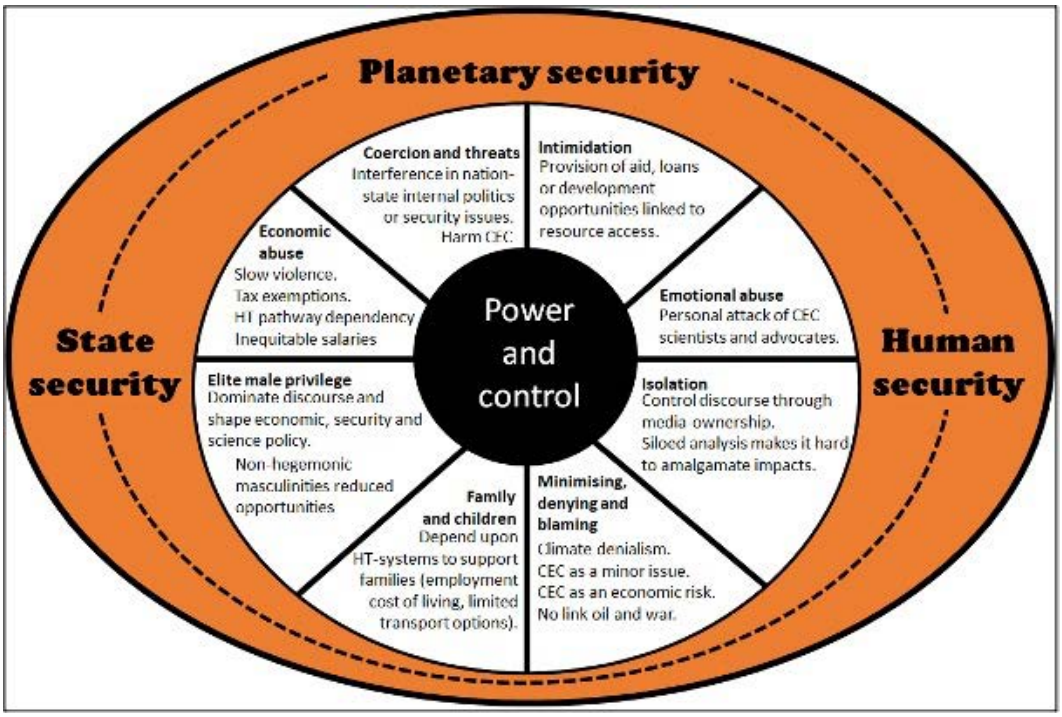
1. Retired elite athletes have skills in goal setting, visualizing success, and motivating action. They could be employed as ecocoaches, supporting teams that are working on difficult transition tasks or leading health and fitness programs for the community.
2. An elderly woman loves exploring thrift shops. She might contribute in circular economy and local recycling programs.

Creative State

Taming the hyperthreat is an enormous governance function. Yet, varying by location, some states are revealed to be weak, lame, and vulnerable, entangled in a destructive codependent relationship with hyperthreat enablers and unable to reconfigure at the hyperscale that is needed. An example is recent analysis of Australian government policy being heavily influenced—if not in some ways “captured”—by the fossil fuel sector.[13] For

this circumstance, a relevant conceptual model, the Duluth model, comes from research on domestic abuse. The Duluth model can be applied to CEC to inform deliberation on how to strengthen a state's capacity to counter the hyperthreat (figure 7).[14]

Figure 7. Hyperthreat behavior and impacts of "worst" enablers



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A *creative state* refers to the idea that a nation state can transform in an intra-active way in response to new demands presented by the hyperthreat. The creative state can emerge as a far more powerful but just and agile entity, with increased agency to protect its people and natural systems. For democratic nations, the creative state also refers to democratic repair, which includes devolution of greater decision-making, analysis, and resources to local levels. Details are not provided here, because the creative

state's form will emerge from societal-wide discourse and hyperconversations. However, at a strategic level, it will free itself from hyperthreat dependencies and move from being an enabler of the hyperthreat to a disabler of the hyperthreat. In some regions of the world, PLAN E may offer an opportune time to reconfigure nation-state boundaries, which are remnants of colonialism and may be incongruent with local cultures or geographic practicalities and therefore aggravate people's affective security.[15]

International Relations Realignment

The hyper-response requires the international relations, defense, and security sectors to rigorously consider how to achieve nation-state and geopolitical security in a way that is decoupled from the hyperthreat. The following offer some ideas:

1. **Establish a climate emergency peace treaty**. A global ceasefire could be declared for between 2022 and 2030 to enable all nations to undertake an emergency hyper-response. New forms of multilateralism and cooperation could emerge, such as specific nations being assigned as lead developers of key technologies or expertise, and the innovation burden could be shared as well as global employment opportunities. The possibilities for mutually beneficial cooperative arrangements to achieve a hyper-response are likely to be extraordinary. Peace also links to Operation Sapiens Star, explained below, which focuses on humans as a species with common interests and an inevitably shared future. This may help

overcome other national, cultural, social, gender, religious, or ethnic divides.

2. **Establish a new, neutral rules-based ordering structure**. Given wide-ranging concerns about globalization, the performance of international organizations, and perceptions that the so-called "liberal rules-based order" holds lingering colonial power dimensions, an overarching conclusion is that the post-World War II global architecture, designed before the advent of CEC or the internet, is outdated and ripe for redesign.[16] A new neutral rules-based order could be established, one that is based on ecological survival and *safe Earth* requirements. Akin to the 2015 Paris Agreement, this might be acceptable to all nations because all are threatened by the CEC hyperthreat. It is an approach that builds on environmental peacekeeping rationale.[17]
3. **Reimagine the role of great powers in the Anthropocene.** It could be argued that any state with great power aspirations that does not consider CEC does not have a realistic or viable strategic outlook. Consequently, an old yet still critical question to raise is: What prospects are there to reconfigure great powers' approach to geopolitical security in a way that aids containment of the hyperthreat? Possible angles include:
    a) **Discourse at the deep framing level.** Approaches and discourse need to occur at the deep framing level, which points to the need to harness the expertise of historians and cultural experts to enrich this discussion.

b) **Western humility**. To facilitate a fresh start, it is proposed that the Western world acknowledge that following colonialism, events such as the Iraq War, and its historic and sometimes brutal role in developing and enabling the hyperthreat, that it—the Western world—is regarded as the main threat by many non-Western countries. Accordingly, to allow for a peaceful solution, payment in the form of reparations or a substantial commitment to support the global hyper-response burden on the part of the Western world may hasten a geopolitical shift toward an era of cooperation around the shared threat.

c) **Gentle wind down and redirection of fighting spirit.** Given widespread preparations for myriad types of conflict, including increased psychological readiness, an aim to "wind down" tensions will need to be approached carefully. The hyperthreat narrative might assist in redirecting some of this pent-up energy toward the new mission of containing the hyperthreat. As a result, great militaries can be repurposed for preventing, for example, illegal fishing or fossil fuel extraction that will exceed planetary boundaries. Armed force may be required to dismantle oil rigs, prevent ecocide, and protect water supplies or forests. Diplomatic and espionage efforts can aid the hyper-response.

4. **Ecomultilateralism**. *Ecomultilateralism* is the idea that instead of being aligned around human-designed political boundaries, multilateralism could align with ecological or climate boundaries. At a

practical level, this would facilitate the care of ecosystems and disaster response.[18]

5. **Earth citizenship.** There are presently nearly 90 million forcibly displaced people around the world. Potentially, at least 18 million of these people may be available and eager to work.[19] Current displaced people and prospective future climate refugees could be given the option to work for the hyper-response for a period of up to five years, which would not only provide them with skills and vocational training but also allow them to earn *Earth citizenship*. Nation states could be requested to incorporate new Earth citizens into their immigration policies, with special arrangements established for them to settle throughout the world and perhaps continue their CEC hyper-response work as part of nation-state responses. Large training institutions could be established in countries already absorbing large numbers of refugees—such as Turkey, Colombia, Uganda, Pakistan, or Jordon—in ways that benefit the host nation.

Layered Mobilization

The scale of danger imposed by the CEC hyperthreat, and the speed and magnitude of the response required, leads to the conclusion that mobilization is required. The rationale for mobilization also draws upon the *just war theory*, whereby warfare—or mobilization against a threat—is regarded as a valid option if not doing so may incur general destruction, loss of autonomy (freedom), or risk to basic survival capacity.[20] Inadequate action against the hyperthreat poses the same three risks.[21] Mobilization is also important to achieving mass and speed of response to the hyperthreat.

However, the principle of economy of effort also needs to be considered because of the likely high cost, difficulty, and disruption that a traditional-style approach (such as that of World Wars I or II) would impose. This leads to a layered approach:

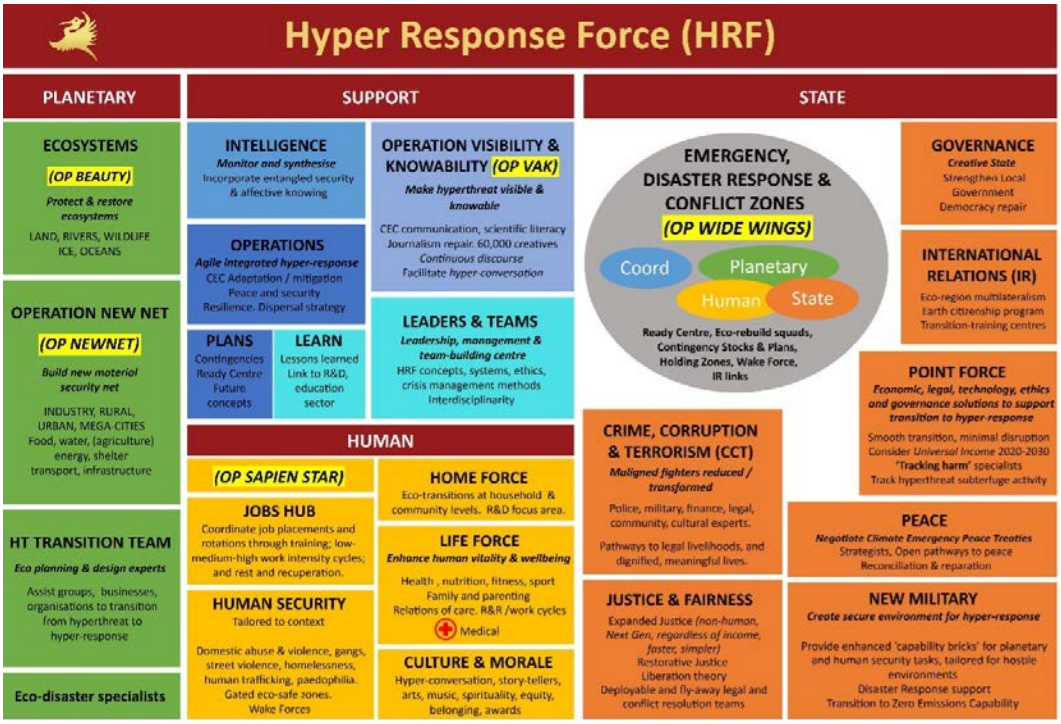
1. **Mobilization-in-place.** *Mobilization-in-place* refers to agencies, institutions, nongovernmental organizations, or companies remaining in their current form and location but reorienting their activities toward the hyper-response.
2. **Soft mobilization.** *Soft mobilization* refers to people or groups regularly undertaking small and manageable tasks, such as the ways in which people participate in a local sporting club or community group.
3. **Mobilization and structured employment.** This third prong is more energetic. It seeks to connect CEC hyper-response with a hyperscale employment, skills, and educational development strategy. This is the Green New Deal concept applied at a much larger, global level.[22]
4. **Veterans and mobilization.** In some countries, most adults could be military veterans of one conflict or another, and many may be experiencing various forms of trauma. There is the possibility that work which involves repairing the world could offer these veterans some form of healing, especially those suffering moral injury.[23] Given numerous areas of overlapping skill and aptitude match, a tailored employment scheme linked to the CEC hyper-response could be the means for veterans to transition into civilian employment, reintegrate into society, and rehabilitate.

5. **Employment as peacebuilding.** In fragile states, conflict or post-conflict areas, and disaster zones, the creation of a local hyper-response workforce will aim to meet planetary security needs at the same time as meeting human and state security needs. Essentially, meaningful employment is weaponized as a type of nonlinear strategy against both the hyperthreat and other destabilizing trends. There is an intention to "recruit" or poach people currently working for the hyperthreat (via terrorism, transnational crime, and especially environmental crime), because they previously had limited options for other employment, and have them work instead for the hyper-response.
6. **Earth citizenship.** As described above, the HRF could offer livelihood and training opportunities for internally displaced persons and refugees, creating a pathway to a new form of citizenship.

Operational Design

The HRF design intends to operationalize entangled security (figure 8). It provides orchestration logic at ecoregional, nation-state, and local levels and is expected to vary according to context. It comprises four main task groups: HRF support; planetary security; human security; and state security.

Figure 8. Hyper-response force: indicative design



Source: courtesy of the author, adapted by MCUP.

The hyper-response commences with five major operations pursed across multiple task forces. The operations are listed below, while a more detailed explanation of their objectives and tasking follows:

1. **Operation Visible and Knowable (OP VAK).** Makes the hyperthreat visible and knowable across the spectrum of society to enable organic response.
2. **Operation Beauty (OP Beauty).** Protects, restores, and strengthens ecosystems. Rescues humanity's most important ally in the fight against the hyperthreat: nature.

3. **Operation New Net (OP NewNet)**. Builds a new material security system for humans that is ecologically viable and just to liberate humanity from hyperthreat control.
4. **Operation Sapiens Star (OP Sapiens Star).** Optimizes Homo sapiens' capability, wellbeing, and health to create the strongest HRF possible and achieve a mission which is significant on the galactic scale.
5. **Operation Wide Wings (OP WideWings).** Provides exceptional levels of safety and support across planetary, human, and state security spheres during disasters and emergencies to match new hyperthreat realities, enhance affective security, and maintain HRF strength.

Task Force: HRF Support

HRF support activities are orientated around coordination, learning, the capacity to see and know the CEC hyperthreat, and improving understanding of effective hyper-response. Two of its most significant tasks will be managing OP VAK and hyperconversations:

Operation Visible and Knowable

OP VAK is a concerted effort to make the hyperthreat visible and knowable across the broad spectrum of society. This has practical, educational aspects, including increasing CEC literacy and improving ecoproduct and services labeling. It also links to the integration of CEC into the remit of mainstream intelligence agencies. To address sensory and affective knowing, as well as the deep framing and meaning-making dimension of hyperthreat "knowing," it will partner with the communications, arts, and humanities sectors in line with the "60,000 artists" concept.[24] It will also

harness the potential of virtual reality technologies, which have already proven effective in CEC communication.[25] Finally, it will involve fast-tracking relevant research and improved mechanisms for conveying and sharing research and knowledge.

Hyperconversations

A hyper-response, which prospectively creates impacts across the whole of society, is such a large undertaking that ideally it requires a mandate from the people. Yet, achieving a mandate would be dependent on population groups understanding their full predicament. Accordingly, OP VAK will also facilitate a society-wide hyperconversation. This hyperconversation operationalizes continuous discourse, including its differentiation and emergent framing aspects. It aims to assist people in developing their own ways of framing and conceiving the problem that makes sense given their social, cultural, and environmental contexts. As depicted in table 1, the hyperconversation also reflects a slower, more deliberate approach to discourse; this acknowledges damaged democratic processes and fractured societal social cohesion. Its optimal design would require input from other relevant disciplines and expertise, such as the Nobel prize-winning bottom-up decision-making work by the late American political economist Elinor C. Ostrom.[26]

Table 1. Hyperconversations: a three-tiered approach to sense-making activities

Differentiation	Tribal discussions. People remain within ideological cohesive groups to undertake threat deliberation and response planning. For example, "elite wealth or power" would be a distinct group, rather than the "managers" of the discourse. Black Lives Matter advocates, coal workers, single parents, creatives, people in the construction industry, teachers, teenage girls, elderly LGBTI (lesbian, gay, bisexual, transgender, and intersex), dairy farmers, or evangelists could be other distinct groups, depending upon people's preferences.
Continuous discourse	A structured and disciplined process whereby various societal or ideological tribes listen to each other's perspectives and analysis. This involves an understanding that one form of "matter" or "other" cannot really know the condition of others. Matter—human or otherwise—must speak for itself, not be spoken for.
Emergent framing	A stretch goal that involves all types of tribes collaborating at the highest level. New understandings, concepts, and synergistic solutions "emerge" from authentic listening and through a genuine desire for mutual understanding to create the best solutions for all. Emergent framing proposes that the best ideas or best concepts have not yet emerged because the preparatory work that would allow them to emerge has not occurred. Consequently, PLAN E involves creating the conditions for emergent framing to occur. Emergent framing also proposes that because of the entangled and effervescent nature of reality, as well as the reactive and changeable nature of life with a hyperthreat, accurate framing remains an ongoing and dynamic activity, not a static one-off. Again, PLAN E sets the parameters and structures in place to allow optimum response to a world in flux, which involves creating structures and systems and institutions that support ongoing emergent framing and hyperconversations.

Source: courtesy of the author, adapted by MCUP.

Task Force: Planetary Security

At an institutional design level, the most significant new initiative is the raising of a planetary security capability. This is conceived as involving at least 20 million people, prospectively several billion. For phases 1 and 2, this

will be the main effort. This is the way in which it is envisioned that the bulk of the Earth citizenship workforce and other workers would be employed. In practical terms, it would involve expanding existing successful global citizen initiatives as well as creating new capabilities. It comprises two major operations:

Operation Beauty

The aim of OP Beauty is to protect, restore, and strengthen ecosystems. Conservation offers huge cleanup and restoration activities that link to natural climate solutions.[27] At a narrative level, OP Beauty could be described as a type of global "backyard blitz" or an enormous global cleanup work party. It represents a rescue operation of humanity's friends and its most important ally in the fight against the hyperthreat: nature. While exact tasking would require specialist advice, low-skill activity might involve collecting rubbish from beaches, oceans, and rivers; habitat restoration; tree replanting activities; and increasing resources to address environmental crime.

The naming of OP Beauty deliberately signposts a secondary objective: wishing to reestablish human's affective bonds with nature. Consequently, OP Beauty involves rewilding as both a practical conservation activity and as a means to build empathic connections to nature—to "rewild our hearts."[28] This will be a multipronged approach that works with OP VAK and OP Sapiens Star around people's sense of wonder and planetary belonging as well as their fitness, well-being, and health needs. Indigenous people will be invited to lead this part of the operation. It will also form a key

plank of new peacebuilding approaches across cultural and religious divides, building upon multifaith ecotheological “creation care” approaches.

Operation New Net

The aim of OP NewNet is to build a new material security system for humans that is ecologically viable and just. The hyperthreat at present has humanity entangled in a type of enormous material security net on which it has become dependent for energy, shelter, transport, food and even water. Accordingly, OP NewNet aims to build a new ecologically viable form of material security and assist humanity unravel from the old net and transition onto the new net. A critical requirement is to hold humanity and creatures safely throughout the process, to ensure that the new net is in place before they are asked to jump, and to hold their hands firmly as they make the jump. This will require a type of leadership that accepts vulnerability and is able to provide strength and care to people while they are in this phase. The strong members of human society must step up. This will involve raising new workforce capabilities, to include transition teams and ecocoaches.

Similar to the way in which oil field executives were invited to Washington, DC, to help the United States mobilize during World War II, the hyper-response will adopt a similar approach to the task of building a new material security net. Leaders in the areas of renewable energy, zero emissions and ecological design, resource eagles, defense, and other relevant research and development fields, as well as tradespeople, will be invited to plan and deliver one of the largest engineering and human

training and employment feats in world history. OP NewNet will jump-start humanity's fight back against the hyperthreat.

As trades skills are identified as a critical capability for OP NewNet and other parts of PLAN E, they require drastic expansion. Historically, tradespeople have not often been included in climate or security policy formulation. However, because of the criticality of tradespeople to the mission and issues of fairness, the hyper-response will integrate more tradespeople into PLAN E leadership and planning roles.[29]

Task Force: Human Security

Ethics of care informs an approach to human security that begins with the emotional, psychological, and physical security needs of individuals and filters up to the needs of households, communities and then through to nations and the global community. It also acknowledges that increased vulnerability, volatility, and danger signify a need for greater caring capacity, preparedness, redundancy, stockpiles, contingency options, and checks and balances. It aims to create more buffers that can absorb shocks. People will receive exceptional support in times of crisis. This approach is achieved through all task forces, with the human security task force to lead OP Sapiens Star and make a major contribution to OP WideWings.

Operation Sapiens Star

The aim of OP Sapiens Star is to optimize Homo sapiens' capability, well-being, and health to create the strongest HRF possible. In the twenty-first century, during the Anthropocene, humans go from being a destructive force to a restorative force at a planetary level. In Latin, the word *sapiens*

means “wise.” The Homo sapiens will embody this meaning by realizing a new way of being. At the level of universes and galaxies, Homo sapiens will shine like bright stars because of the remarkable turnaround they achieve on Earth and their generous reparations to the nonhuman. To achieve this feat, humans will need to be operating at their highest capacity. Accordingly, OP Sapiens Star is about strengthening people so that they can achieve this universally significant mission.

Greater efforts will be made to provide people very solid security at the individual, household, and community level.[30] This will involve an objective of first lifting burdens and stresses from people and then providing them additional support. To lift burdens through a transition to renewable energy, one objective will be to ensure that most households or businesses have no or very low energy and transportation bills. Another objective will be to lift student debts and create greater employment security, perhaps through a universal income scheme.[31] A jobs hub will create the capacity to place people in either low-, medium-, or high-intensity work roles within the HRF to accommodate individual needs and manage employment surge requirements. To avoid burnout, especially among emergency services personnel, there will be structured efforts to dual-train people and to cycle them through high-stress or demanding roles through to low-stress roles and periods of deep rest and revitalization.[32]

Additionally, care work will be remunerated. Far more research and development and resourcing will be committed to support parenting, families, and vulnerable people. The research and development budget can be imagined as similar to a major weapon platform purchase, though research and development would be carried out in close consultations with

families and communities, in combination with selected ecovisionaries and design experts. These ideas inform the home force concept.

For highly vulnerable groups, such as domestic abuse victims, and for some extremely violent or dangerous locations, establishing gated, high-security ecocommunities may be an appropriate option. Specialist capabilities will be developed to suit various community contexts, such as drug addiction, gang violence, racism, or sexual assault. Culture and wellbeing initiatives will be revitalized and resourced at the community level. Barriers that inhibit talent contributing to the hyperthreat, such as cognitive bias or structural barriers, must be overcome through improved human talent and skill management. The home force group will pursue OP Sapiens Star objectives in a way that accords with OP NewNet objectives. Design practices will be needed to achieve this.[33]

Operation Wide Wings

OP WideWings aims to provide exceptional levels of safety and support across planetary, human, and state security spheres during disasters and emergencies. It spans from home force actions that build disaster resilience and strength at local and community levels through to ecoregional disaster response capabilities. Domestic capabilities will be designed so that they can be deployed to support regional or international surge requirements. In general, disaster response capabilities will be expanded to match the demands of the hyperthreat and a deteriorating security context.

The term *disaster response* is used in lieu of *humanitarian assistance and disaster response* to acknowledge that disaster response now extends beyond humans to an entangled security context. In other words, disaster

response planning must now consider the needs of wildlife, fisheries, farm animals, pets, soil health, zoo creatures, rivers, ecological habitats, and state infrastructure. Disaster response will incorporate a new capability called *ecorebuild squads*. Anticipating more extreme weather events that will destroy human settlements and ecological regions, ecorebuild squads specialize in ecologically sound urban and building design and construction as well as landscape and ecological restoration activities. The simple idea is that after a disaster, locations are retrofitted with not only functional but also beautiful new towns or urban spheres that are purpose-built to suit local preferences and future climatic and environmental conditions (figure 9).

Figure 9. Oman Botanic Garden in Muscat, Oman

Source: "Oman Botanic Garden, Muscat, Oman," Grimshaw Architects, accessed 13 April 2022.

Holding zones are large-scale temporary accommodation facilities that include training facilities such as classrooms and lecture halls as well as

rudimentary recreational facilities. Given early warning of an impending extreme weather event, or in its immediate aftermath, large populations groups can be transported out of the disaster zone and placed in these holding zones. Accordingly, while population groups wait in holding zones, aside from receiving trauma support and conducting care-oriented activities, there is the possibility that they can work with ecorebuild designers to plan a replacement settlement to suit their unique requirements. Additionally, to achieve longevity of solutions while in the holding zone, people can attend classes to learn how to use new ecologically smart designs and technologies. On moving into the new facilities, they may also be supported by ecocoaches.

For conflict zones and areas of general insecurity, there is the potential for disaster response activities to contribute to peace-building objectives. Disaster response support provides a genuine and tangible expression of goodwill, which may help defuse geopolitical tensions. Conversely, if such complex circumstances are not responded to effectively, there is also the likelihood of exasperated chaos, suffering, or “threat multiplier” dynamics taking hold. Accordingly, disaster response capabilities designed for conflict zones require careful analysis, planning and recalibration. Some considerations include:

1. **Integral security capacity**. Any deployable disaster response within a conflict zone must have the capacity to protect its own operations and those it is helping from violent force and malevolent interference.
2. **Wake forces.** Insecure, vulnerable populations are easily exploited by a range of predators and need protection in the aftermath of a major shock event. Accordingly, a new capacity called a “wake force” will be

raised, which is tailored for human security and population protection tasking. Its name reflects how it operates like the wake of a boat, in that it follows up combat forces or major hyperthreat actions.[34]

3. **Ecological damage response.** Specialist ecological and veterinary expertise will be required in a nonhuman-centered approach to threat and disaster response. It is likely that greater research and development effort is required to develop this capability to provide improved rapid solutions to situations like oil spills or soil or water contamination.

At a most optimistic level, a grand ambition would be for the international community to offer to support ecorebuilds of settlements destroyed in the recent wars in the Middle East and other conflicts or disasters. These rebuilds could act as symbolic icons of a new pathway toward global peace and reconciliation among humans and between humanity and other matter. This would also accord with entangled security justice principles related to retribution for past wrongs and new ethical approaches to strengthening the "other" in acknowledgment of inherent interconnection. For all involved, ecorebuilds have the potential to create meaningful, dignified work and living, as the narrative shifts from being a destroyer to a builder. To avoid the failures of past "nation building" or development approaches, one approach could involve large numbers of citizens from the conflict-damaged location being given free ecobuilding and other zero-emissions technology vocational training in another neutral country as mutually suitable. An aspiration vision might see cities such as Mosul or Baghdad in Iraq rebuilt with the most advanced ecodesigns

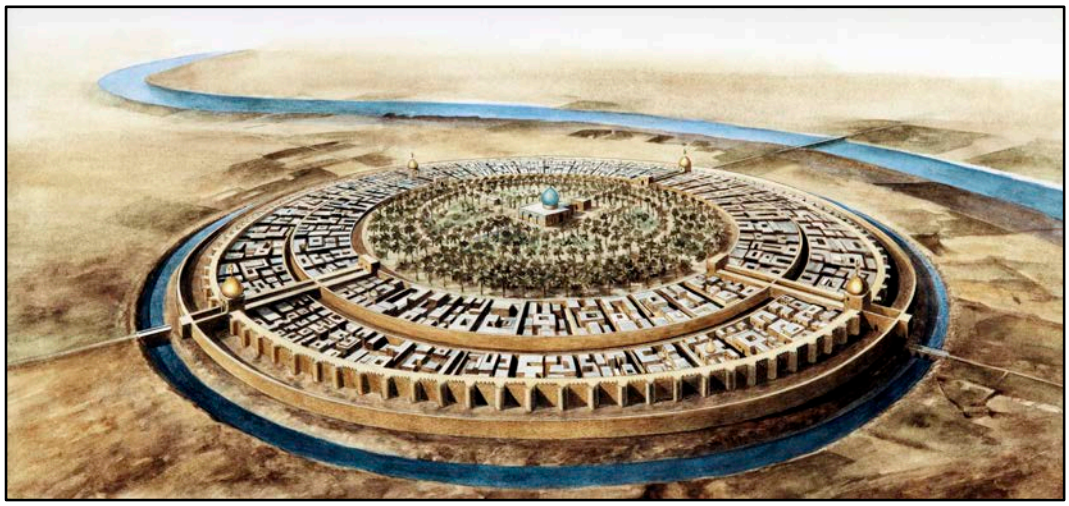
available, which acknowledges the dignity and grandeur of their history and cultural identity. Such cities would be demonstrational of exciting new ecodesign as well as beautiful gestures and symbols of reconciliation. Ecorebuilds may accord with Muslim aspirations for a revived yet peaceful Islamic state (figures 10, 11, and 12).

Figure 10. Education in the Islamic Golden Age

Ottoman astronomers use an astrolabe and a cross-staff to try to determine latitude in an observatory in Constantinople. Painting by Ala ad-Din Mansur-Shirazi, c. 1574–95.[35]

Source: Parvez Mahmood, "Education in the Islamic Golden Age," *Friday Times* (Pakistan), 22 November 2019; rights managed by Alamy.

Figure 11. The round city of Baghdad, ca. tenth century, Abbasid Caliphate



Source: Justin Marozzi, "Story of Cities #3: The Birth of Baghdad Was a Landmark for World Civilisation," *Guardian*, 16 March 2016; artwork by Abbasid Bagdad, rights managed by Science Photo Library.

Figure 12. "Dohasis Vision" ecological design in the Middle East

Source: image design by Albandari Alharami, Heba AlGuhani, Hessa Al Hajri, and Maryam Abbara; published in Anna Grichting, Rob Roggema, and Marco Casagrande, "Dohasis: The Biourban Restoration of Doha," *Urbanista*, no. 3 (2016).

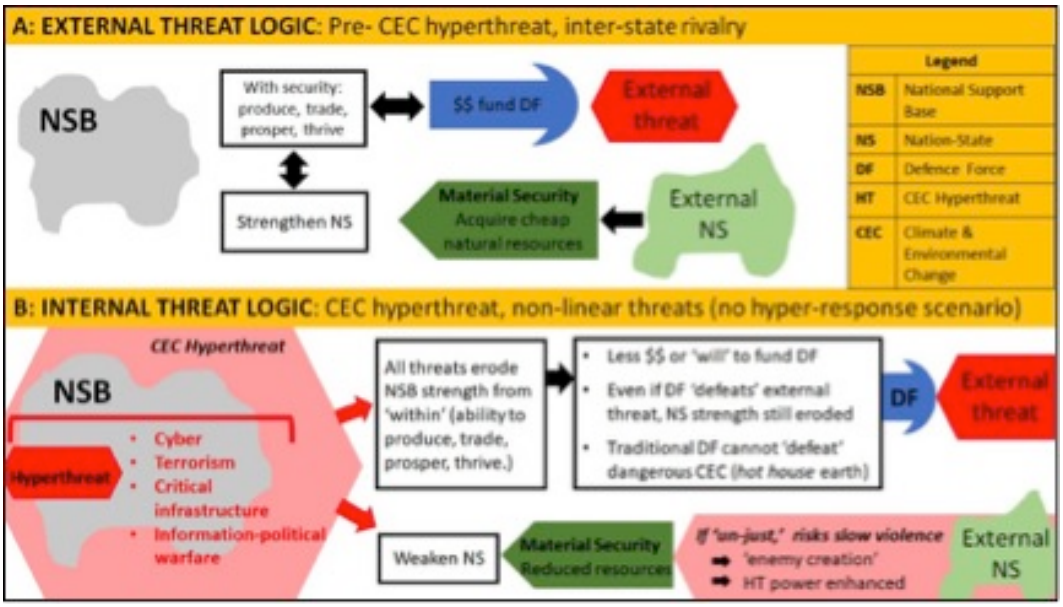
Subsequent major trials could involve global expertise being used to redesign major urban “slum” cities in parts of Africa, South Asia, or South America. In general, wealthy and technologically able countries can more actively support poorer countries to achieve a zero-emissions ecodesign and local food and water security. This method would need to be conceived as new noncolonial approach to existing but flawed “helper” systems, providing help and care with integrity, muscle, and speed.

Task Force: State Security

Nation-state security policy and activity pivots toward supporting the hyper-response. It also responds to the phenomenon that the threat has shifted from being mostly external to increasingly operating “internal” to the state (figure 13). It comprises three objectives:

1. To outmaneuver the hyperthreat by design and dispersal;
2. To create an offensive and pursuit capability (the *point force*) to find, track, and deplete the hyperthreat; and
3. To provide security support and an enabling operating environment for the larger civil-led HRF.

Figure 13. How the hyperthreat changes nation-state threat logic



Source: courtesy of the author, adapted by MCUP.

Maneuver

The hyperthreat can be outmaneuvered by humans reconfiguring their activities in two ways: security by design and security by dispersal. National security in the Anthropocene is increasingly achieved by designing systems and settlements so that enhanced security is incorporated from the start. For example, it can be imagined that each time a person refuels a car with petrol, this action empowers the hyperthreat. This leads to global warming, which creates ocean acidification and in turn reduced fish stocks, while also creating pressures for resource wars, thereby influencing whether a soldier or civilian dies and how much taxpayer resources are required for material security missions. In contrast, zero-emission transportation technologies can "design out" the slow violence and threats associated with a fossil-fuel-intensive lifestyle. This is similar for plastic use, in which case the "threat" is embodied in the high polluting design of consumable products and lifestyle

activities. Likewise, other health threats and longer-term costs are embodied in hidden toxins or sugars in food products. Accordingly, peace, health, and a different form of national prosperity can be created through design, which requires a longer-term and mesh-intervention viewpoint. OP VAK has a role to play in achieving security and safety by design by linking apparently benign activities with their devastating impacts.

The military tactic of dispersal can be applied to the hyperthreat and general security dynamics in the twenty-first century. Shifting from highly centralized systems to localized supply chains, renewable energy, and other off-grid solutions weakens the hyperthreat but also concurrently reduces other security risks, as the following three examples illustrate.

The first example involves attacks on critical infrastructure. There has been a boom of research on the vulnerability of industrial-era human settlements' *critical infrastructure*—the major arterials that keep the modern world functioning—such as energy, transport, cyber, and water networks.[36] Here, attack or sabotage by malicious insiders who use social engineering tactics to gain access is viewed at least as seriously as external attacks.[37] Nevertheless, critical infrastructure literature and discourse have been critiqued for framing this discussion too narrowly, effectively "securitizing" the discussion at the expense of understanding interlinked environmental and social dimensions and therefore containing how the "critical" category is determined.[38] One example of a siloed approach to critical infrastructure is the European Programme for Critical Infrastructure Protection's framework and action plan, which focuses on reducing vulnerability to terror attacks but does not consider integrating climate or environmental dimensions.[39]

Instead of approaching critical infrastructure protection as another systems maintenance task, the hyper-response takes advantage of ecoinnovation.[40] Distributed and localized energy, food, water, and manufacturing solutions mean that the capacity to disrupt the arterials that keep society functioning is reduced. As an example, many citizens and communities rely on one centralized water supply. If these citizens and communities had water tanks and smaller-scale local water supply, this means that if a terror group or other malevolent actor decided to contaminate major national water supplies—or if the hyperthreat itself damaged major central systems—far fewer people would be at risk, and the overall disruption would be less significant. This offers a "security from the ground up" approach, and it applies to other dimensions such as health, food, and energy security.

The second example involves attacks on global fossil fuel supply. Many nations are dependent on uninterrupted fossil fuel supplies. This vulnerability can be exploited by adversaries and therefore external fuel supply also imposes a security protection burden. On the other hand, aggressive pursuit of zero-emissions transportation solutions not only helps dilute the hyperthreat but also enhances nation states' resilience to the hyperthreat, while reducing the threat to a range of ecological systems affected by fossil fuel-extraction operations.

The third example involves local manufacture and supply. The coronavirus (COVID-19) pandemic has highlighted the risks associated with reliance on long globalized supply chains, which are energy- and resource-intensive and therefore help power the hyperthreat. Increasing local manufacturing and supply capacities helps deflate the hyperthreat and

reduces risks associated with stockouts of critical items. Circular economies, which incorporate closed-loop manufacturing and recycling systems, can now be viewed as critical to achieving planetary security.

Point Force: Offensive Operations

The *point force* is meant to develop the fairest possible economic and legal plan to underpin the hyper-response and reduce the hyperthreat's freedom of action. The word *point* is used to highlight the fact that this task force confronts the most difficult (or "pointy") aspect of the transition. Specialist legal and economic expertise is required to address the problem of the hyperthreat having high freedom of movement and the notion that laws and governance mechanisms have not yet been adjusted to account for new ways in which severe harm is inflicted on others in the CEC era. Tom Burgis's book *Kleptopia: How Dirty Money Is Conquering the World* provides a disturbing insight into this "freedom of movement" problem and underscores how skilled and capable the "tracking harm" function will need to be to counter the fiscal dimension of the hyperthreat's operations.[41] The word *offensive* in the point force's operation refers to targeted actions toward diffusing the hyperthreat and overlaps with climate mitigation approaches.

The point force is envisioned as drawing from the burgeoning field of ethical approaches to business, economics, and ecoentrepreneurialism, as invigorated by the French economist Thomas Piketty, plus environmental law and animal law.[42] Ethics, culture, and stakeholder outreach experts would also be used to ensure optimum equity, minimal disruption, and a focus on positive incentive-led approaches. While its activities are best

designed by experts, the point force's initial outline capabilities and options are described below.

The point force is oriented toward achieving larger social-good outcomes. It needs the authority to override extant laws and economic arrangements that hamper the hyper-response, while also mitigating negative impacts of such changes. For example, if a broad goal is to ensure that retirees are adequately cared for, the mechanism to achieve this can be flexible. Consequently, if a superannuation fund's activities impede the hyper-response, contracts can be overridden as long as retiree care is achieved some other way. Other outcome-oriented innovations to be considered include universal income schemes, funding care work and home-based resilience work, and developing capacity for managing surge funding, such as during disaster response, so that resources reach the intended recipients in a timely manner.[43]

The point force will develop a tracking harm capacity, informed by the harm-to-help ethic. In the way in which medical doctors use dynastic dye to identify disease in the human body, *tracking harm* refers to the ability to identify who and what activities are causing the most harm, or which are most empowering the hyperthreat and contributing to slow violence.[44] *Tracking harm* does not refer to the bulk of society who may be locked into some greenhouse gas-intensive lifestyle activities by existing infrastructure or those who are embarking on greenhouse gas transition strategies in good faith. Their greenhouse gas reduction activity will be monitored through the 2015 Paris Agreement's nationally determined contributions (NDC) reporting schemes.

Rather, tracking harm acknowledges that subterfuge is already part of the hyperthreat's modus operandi, which may become more sophisticated as the Paris Agreement progresses. Tracking harm targets conscious deceptive and illegal activity that creates harm for other matter. There are concerns about achieving transparency and honesty in NDC reporting.[45] Further, there is already illegal activity in existence, such as the black market for oil.[46] Given that the hyperthreat is able to exploit the lack of monitoring and governance capacity within the poorest nations of the world, a revitalized approach to "helping" may involve support to bolster this capacity in poorer nations.

The harm-to-help ethic acknowledges the difficulty of many extant systems and methods being geared toward harm-doing. Therefore, wherever possible, the first approach is to identity the harm-doing, then assist the actors, agency, or company in question to transition their activities toward practices that help the hyper-response. For example, if the tracking harm team identifies perpetrators who are consciously engaging in harm-doing, response options will be wider than punitive action, to include referring some cases to the hyperthreat transition team.[47]

Defense, the Defense Industry, the Military, and State Security

The nation-state defense sector will provide an important enabling and support role. Intelligence agencies and policy setting institutions will be tasked with mainstreaming "entangled security" logic into activities and reorientating analytical and policy focus toward containing the hyperthreat and enabling a hyper-response. The defense industry will need to focus on transitioning military equipment, bases, and vehicles onto zero-carbon and

ecologically viable pathways; supporting OP NewNet in developing and implementing new approaches to material security; and providing technological, engineering, and other research and development support for the HRF to develop new HRF planetary and human security capabilities.

Defense forces will be tasked with numerous objectives. Crucially, they will need to create and maintain secure conditions to allow the larger civil HRF, as well as "helpers" in general, to undertake their work. They will also need to support planetary security tasking, such as through providing security patrols and surveillance support and by providing training, advice, and mentorship services. If policing and other governance efforts are overwhelmed, defense forces need to be prepared to use force to prevent ecocide, protect fisheries and forests, and prevent illegal resource extraction and other activity that may threaten planetary boundaries. Potentially, they will be required to shut down or dismantle fossil fuel-extraction facilities, which may be protected by armed force. It is envisioned that demining capabilities will be required to increase available farmland and as part of ecological habitat restoration.

Defense forces will also need to develop intelligence and surveillance techniques to support the tracking harm function of the point force, with a focus on those elements of the hyperthreat that are deemed most dangerous and which may use violent means, such as black markets in oil, armed ecocide, and environmental criminals. When it comes to human security, and depending on final HRF force structure design, defense forces may be part of an expanded disaster response capacity. They will provide or contribute to wake forces and support human security through tailored training, advise and assist, and mentorship services. In general, defense

forces will transition military education and training methods to develop entangled security concepts, planners, and operation management capabilities in collaboration with the HRF support task force.

Finally, defense forces must be prepared to "democratize" threat analysis and planning response methods to enable a wider range of specialists to contribute to threat conceptualization and response and to design bespoke solutions at local, regional, vocational, and industry levels. This includes management of ready centers and provision of mentoring and coaching support to the point force and gated ecosafe zones.[48] They will also need to be prepared to shift from a centralized military toward a local- or regional-based military and security recruitment, training, and operations system, which incorporates dual career paths for military and emergency services personnel. This acknowledges the need to provide rapid response to local hyperthreat impacts and provide sophisticated response through familiarity with local areas, climates, ecologies, institutions, and people.

Defense force structure and design needs to be adapted to match the nature of an entangled security context. This involves achieving redundancy and survivability through force dispersion and by creating a systemic solution to address the problem of "forever wars," so characterized by decades of high intensity operations, and the lack of adequate respite and refreshment for servicemembers. A shift toward a dispersed, more localized force potentially introduces other benefits, such as improving support for servicemembers' families, bridging the distance between militaries and their communities, and helping share the security burden across the population.

Conclusion

> He who is ignorant of mountain and forest, defile and marsh, cannot lead an army.
>
> ~ Sun Tzu[49]

Agential realism draws from the behavior of "unruly" electrons that make quantum leaps to propose that the very nature of existence involves abrupt change, and that predictable trajectories are not the only possibility. Here, in PLAN E, the concept of entangled security translates this idea into meaning that humanity itself can make a great sudden leap. As a species, it can absorb the signs of systemic collapse, register the severe threat to its life support system, and make an explosive sudden change, all within five years.

Rather than passively wait to be inflicted with abrupt change by the hyperthreat, humanity can itself become an agent of abrupt change. This is the vision of OP Sapiens Star—that human's evolution is not finished, and that the hyperthreat provides the impetus for a quantum leap into a new way of being. Through achieving a galactically significant mission—saving Earth's ecological integrity—the Homo sapiens species "stars" within the universe. Humans go from being a menace and fighting one another to being heroic, creative, and tolerant.

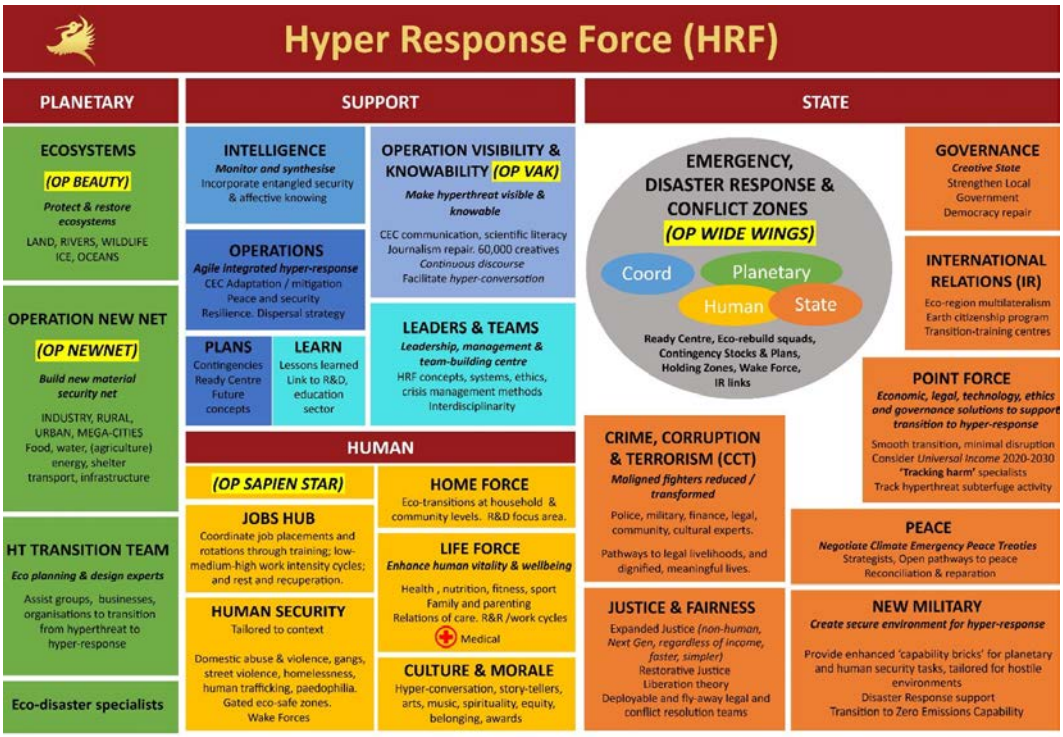
Intrastate warfare, forms of material security that harm the planet, and cumbersome, weak governance mechanisms that no longer match the scale of the problem can be upgraded to the hyper-level mission. The "race for what's left" security pathway, which would see the hyperthreat triumph, is not the only option. Humanity's appetite and enthusiasm for fighting and

warfare can be redirected to the masked but most dangerous threat: the hyperthreat. Though humanity has yet to properly identify the hyperthreat or mobilize to defeat it, it has vast amounts of latent talent, skills, and capabilities for doing so.

Appendix A

Hyper-Response Force (HRF) Indicative Structure

Figure A-1. Hyper-response force



Source: courtesy of the author, adapted by MCUP.

Appendix B

Theoretical Background: Hyperobjects and the Hyperthreat Concept

The "hyperthreat" concept draws from ecophilosopher Timothy Morton's notion of the "hyperobject" and the general field of "new materialism." A brief explanation of the conceptual background and key terms is offered below, drawing on earlier research publications. Information is grouped into four areas: philosophical background; Morton's hyperobject concept; the development of the hyperthreat concept; and quotes and metaphors by Morton.

Philosophical Background

New materialism explores the philosophical significance of "matter," or the nonhuman.[50] Acknowledging the dynamic activity that occurs at the molecular level of all matter—whether it is concrete, sand, a worm, or a dolphin—new materialism acknowledges matter's lively properties and capacity for agency. For example, a rock boulder, through its weight and capacity to block sunlight or rainfall, can exert influence upon other matter. This occurs regardless of human's knowledge of its existence. Jane Bennett's *Vibrant Matter: A Political Ecology of Things* captures this new worldview of attempting to understand existence, meaning, and ethics through the lens of the nonhuman.[51]

Object-oriented ontology, first developed by Graham Harman in 1999, also explores the idea of how objects experience "being."[52] Here, the word *object* is analogous to the way in which *matter* is used: as an academic term for a thing that may or may not be human. Controversially, object-oriented

ontology proposes that all forms of matter—from mosquitos, to eagles, to a piece of gold, to a thistle bush, to a human—have equal existential status. Like new materialism, and significant to the concept of the hyperobject, Harman proposes that objects can have agency, in that they are not merely reactive to other influences or networks, as is generally understood within fields such as systems thinking or ecology. Harman drew on German philosopher Martin Heidegger's earlier explorations of the nature of being and "being in the world," which Heidegger proposed might vary for humans, nonhuman life, or inert objects.[53]

Timothy Morton's Hyperobject Concept

According to Morton, hyperobjects are "things that are massively distributed in time and space relative to humans."[54] While he focuses on global warming as a hyperobject, he explains that there are many types of hyperobjects, such the Agent Orange herbicide chemical; the city and idea of London, England; and the COVID-19 (coronavirus) pandemic.[55]

Hyperobjects, Morton explains, are physical things that typically elude human's sensory or conceptual capacities to see or know them in their entirety. They are also conceptual in that they exert influence and effects through the power, weight, and presence of the "idea" of them. Morton goes to great lengths to describe hyperobjects, assigning them five characteristics. He relies heavily on metaphor to help convey the feeling and nature of this new type of "thing" that humanity has not previously encountered. The five characteristics are as follows:

1. **Viscosity**. Like fog, the hyperobject is everywhere. It is infused through everything in the way that air with greater carbon dioxide

content is in a person's nostrils. It changes form as humans interact with it—like honey, it sticks to everything. It infiltrates into physical, emotional, social, and cultural spaces.

2. **Nonlocality**. Distributed across vast geographical areas, the hyperobject is located everywhere—from the Mariana Trench; to the volcanoes of the Kamchatka Peninsula in Russia; to polar clouds in the mesosphere; to a high-rise studio apartment in Tokyo, Japan; to the quantum-particle level; to a fishing village on the coast of Ghana; to a hospital in Port Moresby, Papua New Guinea; to the soil of the Scottish Highlands, to the coral and sea bird habitat of the archipelagos in the South China Sea. Because a hyperobject's cause-and-effect patterns are distributed across such vast scales and distances, it disrupts human's normal capacities to discern patterns and conduct sense-making activities to "see" the hyperobject.
3. **Temporal undulation.** The hyperobject operates across planetary––not human––time frames. While humans may read of the Earth's 4.5-billion-year history, Morton proposes that humans can only properly comprehend time in terms of human generational lifetimes. The timeframe that the hyperthreat operates on is mismatched to human ways of planning and strategizing. Moreover, Morton toys with the idea that hyperobjects may also defy human understandings of time and space.
4. **Phasing**. In the same way that creatures on Earth see phases of the Moon but cannot see the entire Moon at once, humanity only see "phase states" of the hyperobject. Yet, like a chaotic system, the

hyperobject's phasing patterns are far more complex than that of the simple Earth-Moon dynamic.

5. **Interobjectivity**. The hyperobject operates through other objects and is never seen outright. People may see cracked soil in drought, experience more intense storms or hotter weather, or read of animal extinctions, but they do not see global warming as an entity or a thing. The hyperobject's presence must be inferred through its impacts on other objects and from clues that are sometimes barely discernible from prehyperobject existence.

The collective impact of these characteristics is that humanity struggles to see and know what hyperobjects are. The hyperobject of global warming has arrived in a way that is mostly indiscernible, but has by now infiltrated into every component of planetary living. Humans may see traces of it, while it may also suddenly erupt in one location, then as quickly disappear, in the way that a wave is gone after it crashes. Morton's long exploration and examination of the hyperobject's characteristics and its modus operandi helps teach people how to look at the hyperthreat, how to see it, and how to understand it.

Considering Prussian military theorist Carl von Clausewitz's instruction on understanding the nature and character of a threat, Morton's hyperobject concept offers valuable conceptual building blocks. Once global warming is given a conceptual identity, one can then use it as an analytical tool to ask further questions, such as what its arrival means for humanity.

Morton proposes that the advent of the global warming hyperobject fundamentally alters humanity's ontological and epistemological experience,

or the way in which humans experience “being in the world” and how they come to know or understand existence. Instead of perceiving themselves as being in control of their lives and activities, humanity is increasing forced to adopt a reactive stance. Humans lose agency, with the hyperobject becoming the main shaping agent on Earth. Humans are existentially “demoted” from regarding themselves as an apex species of Earth to merely one of many forms of life and matter on Earth that must coexist as a matter of survival and also face the hyperthreat onslaught together.

Morton proposes that the “time of hyperobjects” is a time of hypocrisy, weakness, and lameness, which emphasizes human powerlessness and vulnerability.[56] Drawing on the Greek origins of the word *hypocrisy*, Morton writes that “*hypo* means under, hidden, or secret, while *krisis* means judgment, determination, or discernment. . . . Hypocrisy is a ‘secret doom’.”[57] Humans are “weak and lame” in that their systems of laws, taxes, or nation states are portrayed as utterly ill-matched to the scale, magnitude, and modus operandi of the hyperobject. Humans have neither the tools nor capacity to understand or counter the hyperobject, which views them as humans might view ants. Ultimately, the hyperobject affects humans, not only through physical changes on Earth but also at a deep existential and psychological level. Morton describes this as feeling like being buried alive, or waking up inside the belly of a whale, or being inside a toxic womb. Morton suggests using Russian matryoshka dolls as a metaphor, with humans as the smallest doll, unable to get outside of the problem to see the problem and attempt to fix it.[58]

Development of the Hyperthreat Concept

The hyperthreat concept retains Morton's five characteristics of hyperojects, but it differs from the hyperobject notion in several ways. First, though Morton frames global warming as a hyperobject, the hyperthreat concept refers to both global warming and general environmental destruction and degradation. Second, the word *object* in *hyperobject* is replaced with *threat* to highlight the harm, destruction, and violence that is associated with a warming climate and ecological crisis. This involves acknowledging violence towards the nonhuman, to include ecocide, mass extinction events, and factory farming and animal testing. It encapsulates the idea of a nonhuman-centred approach to threat and security, in which fish, animal, insect, bird, macrobacteria, and plant safety is considered in a new, holistic approach to the threat.

Third, the hyperthreat conception challenges Morton's perception that humanity has lost all agency and occupies a powerless position. Instead, the hyperthreat notion proposes that humanity still possesses some agency in the capacity to impact the severity of global warming and ecological decline. There may also be capacity to rehabilitate some ecological systems. In confronting humanity's greater vulnerability, a hyperthreat lens draws on the Clausewitzian understanding of moral forces and courage as well as general military studies on humanity's capacity to mobilize, reorganize, strategize, and act in the face of an overwhelming threat.

Fourth, before the subject of global warming entered general societal discourse, there was a sharp distinction made within fields such as disaster studies, geography studies, and security studies between *hazards* and

threats. Hazards were regarded as dangerous events that occurred naturally, such as a cyclone within normal weather bounds, or due to an unfortunate mistake or random event, such as a train driver falling asleep or a tree falling on a railway track, causing a train crash. The key distinction was that hazards involved no conscious hostile intent to cause harm, whereas a threat involved a conscious human brain that had decided to inflict harm.

While Morton's hyperobject concept does not engage with the question of culpability, the hyperthreat notion does, proposing that the old delineation between hazards and threats needs review. If the hyperthreat is centered as the object of a threat analysis, it is clear that it involves new forms of conscious hostile intent. The "brain" behind the hyperthreat expresses its hostile intent in the same way that a hyperobject manifests. For example, reflecting on Morton's nonlocality characteristic of hyperobjects, the cause-and-effect links are difficult to discern. Further, intent to cause harm exists on a wide spectrum, from unwitting participants in a fossil-fuel and resource-intensive society to lobbying or disinformation activity that effectively works to strengthen and empower the hyperthreat. This "hostile intent" involves viscosity, temporal undulation, and interobjectivity. Understanding that threat manifests in this diffuse and distributed way is an essential insight for later deliberations on how to counter the hyperthreat.

Other characteristics of the hyperthreat include slow violence, irreversible damage, and vast separation between victims and perpetrators. Slow violence is a major part of the hyperthreat's modus operandi. It is defined by Rob Nixon as "violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an

attritional violence that is typically not viewed as violence at all."[59] While Nixon does briefly refer to global warming, his initial work focuses on the impacts of economic and industrial activity on the environment and human health. Examples he discusses include the Bhopal gas disaster in India, oil extraction in the Ogoni area of Nigeria, the construction of mega-dams in India, and the use of landmines and cluster bombs in Angola and Afghanistan. Such activities, Nixon argues, can remove livelihoods, damage agricultural production, erode water quality, and displace people, thereby slowly harming and killing.

Moreover, runaway climate change, in which Earth is tipped into a hothouse earth trajectory, is irreversible within meaningful human life time frames. Excepting novel technological interventions such as DNA cloning, generally extinctions of various flora and fauna species are irreversible.

There is a vast distance between victims of the hyperthreat and those decision makers who empower it. Major victim groups include nonhuman species, future generations, and impoverished populations. Presently, most victims of the hyperthreat are nonhuman species such as macrobacteria, plankton, birds, coral species, as well as many other animal, plant, and tree species. The other significant victim group is the very young or not-yet-born humans. Finally, of current-day humans, those who are impoverished—and especially those who are dependent on stable climates and healthy ecological systems, such as subsistence farmers—possess high vulnerability to hyperthreat impacts and limited political capacity to effect change.

This large separation factor may impact hyperthreat related decision-making. The hyperthreat enemy rarely sees or hears from its victims. It cannot hear their cries, which might evoke empathy. Like Hannah Arendt's

analysis of the banality of evil, decision makers are so far removed from the cause-and-effect impact of their actions that they risk abdicating their humanness, which allows ethical judgements to occur.[60] The hyperthreat performs a type of remote killing and destruction that makes even the drone warfare ethics discussion seem simple in comparison. The separation factor between drone operator and victim has been the subject of much deliberation: Will it inhibit some of the moral safeguards that guide a person to only kill when essential and as a last-resort mechanism?[61] This type of thinking needs to be applied to the hyperthreat, which has a far greater separation factor.[62]

The rationale behind the just war theory, that sometimes there are good reasons for human groups to mobilize and fight an aggressor, can be applied to the hyperthreat of climate and environmental change for the following reasons:[63]

1. **The risk of general destruction.** The hyperthreat will destroy habitats, human or otherwise, as a warlike aggressor might. Buildings, roads, ports, railways, water sources, forests, and more are vulnerable to severe weather events such as cyclones, fires, floods, storms, and heatwaves. The hyperthreat can also destroy through slow violence tactics such as decadal droughts, algae infections in freshwater sources, and air pollution. Such tactics reduce the supply of food, water, and fresh air to nonhuman species while also hindering human's capacity to grow food.
2. **Loss of autonomy or freedom.** The hyperthreat attacks human autonomy from multiple directions. If allowed to reach its full strength, the hyperthreat threatens chaos, which in turn affects

human autonomy. The autonomy of future generations will suffer attrition warfare, through which choices will disappear one by one. These choices may even disappear without people having known they once existed.

3. **Survival.** Food and water availability are vulnerable, and in some cases they may be unable to be fortified against the hyperthreat's methods of attack. Habitability of land and dwellings for humans and other species is also at risk.

The hyperthreat also defies existing nation-state security logic. Historically, nation states fund military forces to protect them from external threats. A prosperous nation state can afford to maintain military forces to continue to protect its quality of life and capacity to be productive. The arrival of the hyperthreat overturns this logic, as the hyperthreat attacks the nation state from within, eroding the state's prosperity and quality of life. Life under the hyperthreat means that it is harder to produce food, that there are more costly disaster-response tasks, that infrastructure is disrupted more often, that people face more health risks, that materials may become scarcer and more expensive, and that instead of being industrious and creative, people are cleaning up after flood events, attempting to rebuild after bushfires, and moving or even migrating to more stable locations.

Further, the hyperthreat can concurrently hasten external threats by increasing the prevalence of fragile or failed states and thereby raising the risk of armed violent groups. Moreover, the hyperthreat's destruction of the fundamentals for survival, such as fresh food, water, and shelter, may

hasten geopolitical "race for what's left" dynamics, also known as resource wars. While in theory such risks can be mitigated through political and cooperative measures, in practice this can be difficult to achieve and depends greatly on a range of other contextual factors.

In the end, the hyperthreat possesses warlike destructive capabilities that are so diffuse that it is hard to see the enormity of the destruction or who is responsible for its hostile actions. It defies existing human thought and institutional constructs. The hyperthreat is powered and energized by three key enablers: its invisibility; its ability to evade all existing human threat-response mechanisms; and human hesitancy, as the slower humans are to act, the stronger the hyperthreat becomes.

Rich Picture: Quotes and Metaphors by Timothy Morton

The following quotations from several of Morton's works help provide a richer understanding of hyperobjects and the author's ecological philosophy. His use of metaphors, creative writing, and descriptions of the emotional and philosophical significance of hyperobjects accords with cognitive science research on how to better communicate the significance of climate and environmental science.

> What we desperately need is an appropriate level of shock and anxiety concerning a specific ecological trauma—indeed, *the* ecological trauma of our age, the very thing that defines the Anthropocene as such. That is why I shall be sticking with the phrase *global warming* in this book.[64]

. . . we humans find ourselves embedded in earthly reality, not circling above it in geostationary orbit.[65]

Yet statistics tell me, obliquely, never able to point to a direct causal link, that my cancer may have come from an endocrine disrupter. Hyperobjects seem to inhabit a Humean causal system in which association, correlation, and probability are the only things we have to go on, for now. That's why it's so easy for Big Tobacco and global warming deniers: of course there is no direct proof of a causal link.[66]

I have decided to call these timescales the horrifying, the terrifying, and the petrifying.[67]

The half life of plutonium-239 . . . [is] 24,100 years.[68]

This aporia gives rise to a dilemma: we have no time to learn fully about hyperobjects. But we have to handle them anyway.[69]

Hyperobjects seem to come and go, but this coming and going is a function of our limited human access to them.[70]

Mathematics in this sense, beyond number, is the way the mind acclimatizes itself to reality. The Lorenz attractor is a way for us to breathe the rarefied conceptual oxygen of a higher-dimensional being, the climate. The climate is not a "space" or an "environment," just a higher-dimensional object that we don't see directly.[71]

A hyperobject passes through a thousand sieves, emerging as translated information at the end of the mesh.[72]

Hyperobjects provide great examples of interobjectivity—namely, the way in which nothing is ever experienced directly, but only as mediated through other entities in some shared sensual space. We never hear the wind in itself, argues Heidegger, only the wind in the door, the wind in the trees. This means that for every interobjective system, there is at least one entity that is withdrawn.[73]

Global warming is a big problem, because along with melting glaciers it has melted or ideas of world and worlding. Thus, the tools that humanists have at their disposal for talking about the ecological emergency are now revealed, by global warming itself, to be as useless as the proverbial chocolate teapot. It is rather like the idea of using an antique (or better, antiqued) Christmas ornament as a weapon.[74]

Worlds need horizons and horizons need backgrounds, which need foregrounds. When we can see everywhere (when I can use Google Earth to see the fish in my mom's pond in her garden in London), the world—as a significant, bound, horizoning entity—disappears. We have no world because the objects that functioned as invisible scenery have dissolved.[75]

The time of hyperobjects is the time during which we discover ourselves on the inside of some big objects (bigger than us, that is): Earth, global warming, evolution. Again, that's what the *eco* in *ecology* originally means: *oikos*, home.[76]

Hyperobjects are futural . . . [they] loom into human time like the lengthening shadow of a tree across the garden lawn in the bright sunshine of an ending afternoon. The end of the world is not a sudden punctuation point, but rather it is a matter of deep time.[77]

Our increasing knowledge of global warming ends all kinds of ideas, but it creates other ones. The essence of these new ideas is the notion of coexistence—that is after all what ecology profoundly means. We coexist with human lifeforms, nonhuman lifeforms, and non-lifeforms, on the insides of a series of gigantic entities with whom we also coexist: the ecosystem, biosphere, climate, planet, solar system. A multiple series of nested Russian dolls. Whales within whales within whales.[78]

But no matter how hard we look, we won't find a container in which they all fit; in particular we won't find an umbrella that unifies them, such as world, environment, ecosystem, or even, astonishingly, Earth. What we discover instead is an open-ended mesh that consists of grass, iron ore, popsicles, sunlight, the galaxy Sagittarius, and mushroom spores. Earth exists, no doubt, but not as some special enormous bowl that contains all the "ecological" objects. Earth is one object coexisting with mice, sugar, elephants and Turin.[79]

> The work *withdraws* precisely because it *executes*. . . . The fact that we only see flickering pieces of a hyperobjects is an indication of a hyperobject's reality, not of its nonexistence.[80]

Appendix C

Grand Narrative: Initial Themes

1. **The nature of threat has changed**. As the twenty-first century progresses, the way in which threats manifest, or how killing, destruction, violence, and harm will increasingly occur, has changed. Accordingly, the way in which people, societies, and ecosystems are protected must also change.
2. **Threat behaviors, not identities**. Sociological research on hate crimes and genocide provides strong reasons to avoid creating labels such as "enemy." A less divisive approach is to focus on behaviors, actions, and decisions that create threats for others, rather than on threat identities. The hyperthreat frame achieves these two objectives: it avoids assigning a threat identity, but neither does it obscure the new ways in which violence and harm-doing are caused.
3. **Harm-to-help**. In the twenty-first century, people gain a very sharp understanding of which activities and practices create longer-term harm, or which actions create slow violence or empower the climate and environmental change (CEC) hyperthreat. Subsequently, people and groups may organically reorientate from being aligned with the hyperthreat to being part of the hyper-response, operationalizing a *harm-to-help* ethic.
4. **Nation states weakened from within**. Future threats increasingly include "internal" types of threats, which erode nation states—and thereby citizen security—from within.

5. **Current systems are part of the problem**. Instead of continuing to prop up ailing systems, it is time for metamorphosis and massive (or hyper) reconfiguration.
6. **Hyper-scale thinking**. Humanity begins to think on a much larger scale, scaling up to match the hyperlevel complexity it faces. The hyper-response is in proportion to the complexity, difficulty, and danger posed by the hyperthreat.
7. **Fuse the old with the new**. Bespoke "new" solutions to responding to the hyperthreat can be created, while "old" concepts such as mobilization, bravery, allies, preparedness, vanguards, reserves, fighting spirit, and so on, can be reimagined.
8. **Now**. PLAN E must commence immediately because of the physics-based requirement to adhere to ecological timeframes, and because this formidable transformation must be well underway before hyperthreat impacts become too prohibitive.
9. **Truth**. The era of "fake news," spin, and deceit is rejected. The capacity to confront truth is now understood as critical to human survival.
10. **Climate for peace**. *Dual logic* can be used to make a stronger argument for a new approach to full-spectrum global security and potentially create a new era of global peacefulness. There are now two major reasons why the CEC hyperthreat must be urgently addressed: to prevent dangerous global warming and to reduce geopolitical conflict relating to resources, especially access to fossil fuels.[81]
11. **Reimaging the role of great powers in the Anthropocene**. It can be argued that any state with great power aspirations that does not consider CEC does not have a realistic or viable strategic outlook.[82]

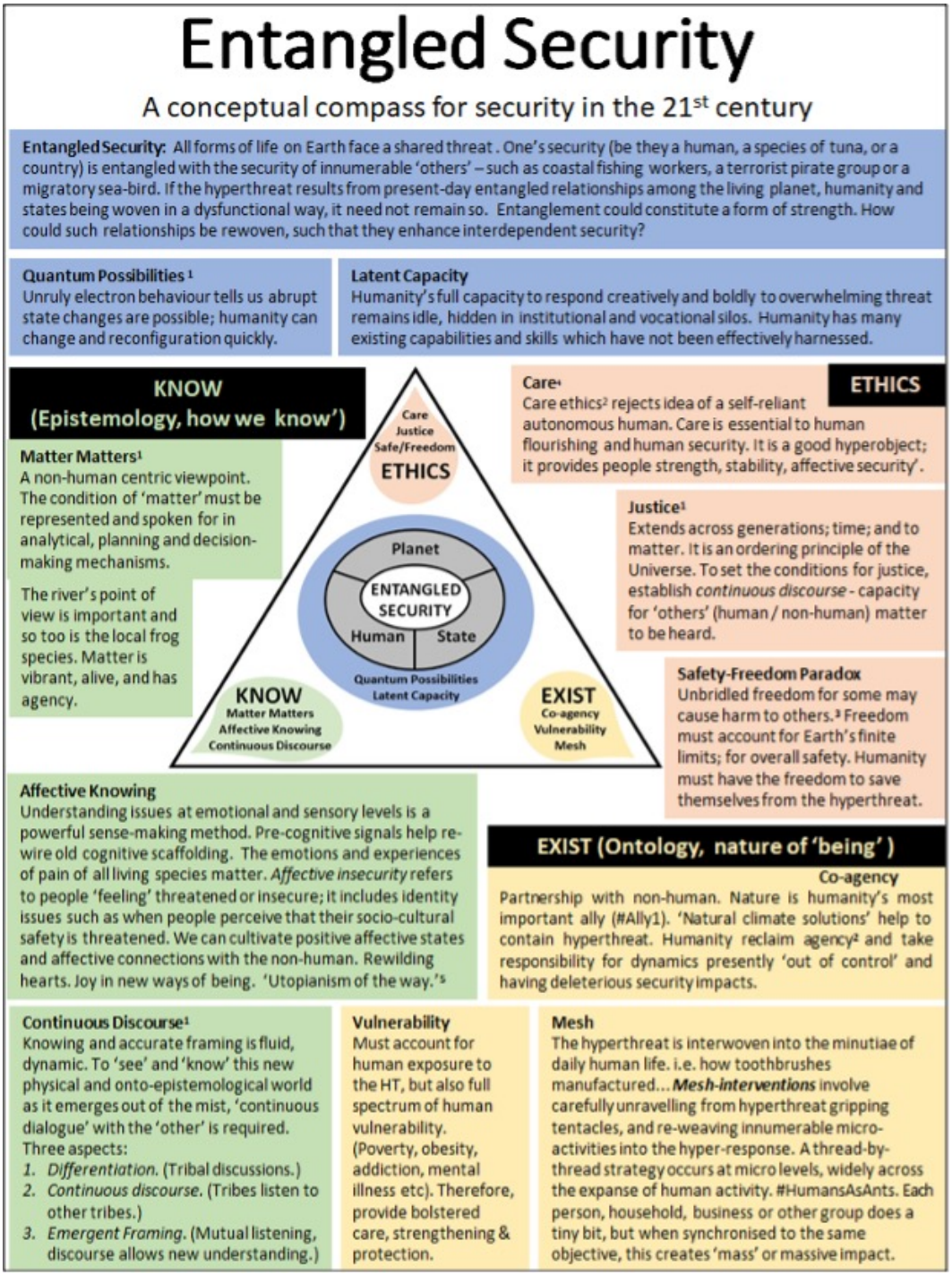
What prospects are there to reconfigure the approaches of great powers to geopolitical security in a way that aids containment of the hyperthreat? For example, could China achieve greatness by becoming a global ecomanufacturing hub, whereby greenhouse gas and pollution reduction is ideologically underpinned by Confucian ideals of harmony? Relevant cultural experts and historians could explore such issues more profoundly for each nation.

12. **Identity and Operation Sapiens Star**. The term *sapiens* highlights the idea that despite differences in social status, culture, nationality, gender, race, ethnicity, or religion, humanity is one species—"we" are all Homo sapiens. Operation Sapiens Star refers to the idea that in the face of the hyperthreat, Homo sapiens evolve as a species and spectacularly saves its life support system (Earth). Human evolution is not finished, and humanity becomes greater. As a species, Homo sapiens begin to "star" within the universe.
13. **Equity and equality**. For groups marginalized by old power structures, cultures and systems, there is now a chance to participate in the creation of something new. PLAN E offers the opportunity to realize and express sidelined agency and capability.
14. **Philosophy is back.** Rather than being the preserve of niche academics or other highly educated people, as humanity undertakes the formidable task of extracting itself from its dangerous predicament and charting a pathway to a viable future, philosophy offers an important handrail. Societal-wide discussions occur to assist humanity review its threat horizon and response options and consider associated philosophical questions, such as the implications for ethics, and

notions such as freedom and justice. The notion of *entangled security* provides a conversation starting point (figure C-1). In general, philosophy needs to be made accessible and considered an important part of both strategy-making and the 100-year hyper-response mission.

15. **It is time for honest discussion and learning.** Grand narrative development must be a bottom-up and societal-wide endeavor. A focus will be upon repairing capacity for honest and effective discourse, which may involve participatory democratic methods or world café-style methodologies. While there are currently good structures in place to support young people's education, PLAN E will likely require a significant supporting adult education and training component as well. In general, adults are encouraged to approach PLAN E with a "learner's" mind-set.

Figure C-1. Entangled security: philosophy on a page



Source: courtesy of the author, adapted by MCUP.

Appendix D

Targeting Hyperthreat Enablers

Table D-1. Targeting the three key hyperthreat enablers

Line of effort (LOE)	**Method**
Make the hyperthreat visible and knowable	• Incorporate information about the hyperthreat into state intelligence functions and expand early warning. • Operation Visibility and Knowability (OP VAK). Create partnerships with such fields as communications, multimedia, arts, and humanities. • Develop "bottom-up" sense-making via hyperconversations. • Develop a "tracking harm" capability to address subterfuge.
Reduce hyperthreat freedom of action	• Operation New Net (OP NewNet). Build zero-carbon, ecologically viable infrastructure, settlements, and human material security systems (including food and water supplies). • At the international relations- and international organization-level, reconfigure to create a permissive, supportive, and secure environment for a hyper-response and less so for hyperthreat-enabling activities. • Create specialist economic, legal, information technology, and investigative capabilities to support a safe and fair economic transition to a clean economy (the point force). This must be capable and powerful enough to counter "dirty money" networks and hyperthreat-related corruption. • Reduce social licence, with support from OP VAK and tracking harm.
Achieve mass and speed of response	• Leverage the large global population. The world's human population is often considered a liability due to its large ecological footprint. However, in the context in which an enormous amount of work must be done in a decade, it is an asset if it can be leveraged properly. Many people, doing small amounts, could have a seismic impact. This can be achieved through a layered approach to mobilization, including mobilization-in-place, soft mobilization, structured employment via the hyper-response force, veteran care and transition, employment as peace-building, an Earth citizenship program; the home force group; and mesh interventions, in which small activities are undertaken widely. • Address hesitation, fear, and starting difficulties.

	• Support phases 1 and 2 with a well-resourced and very strong "hand-holding" capacity to help people overcome fear, uncertainty, hesitation, and frustration with new processes. • Build people's confidence by developing ecotrainers and ecocoaches assigned to local areas, companies, and institutions; by creating transition teams that support organizations, communities, and households with transition; and by pursuing OP WideWings, with a commitment to exceptional disaster response, to provide deep affective security. • Strengthen, inspire, and energize the population through OP Sapiens Star, OP Beauty, OP VAK, and hyperconversations.

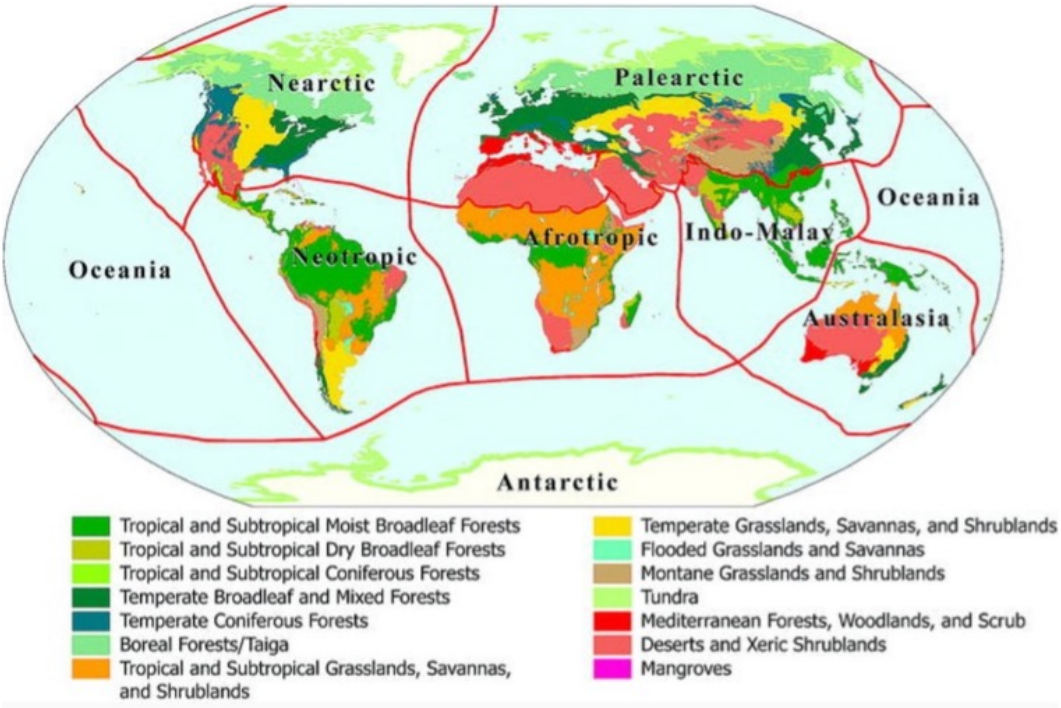
Source: courtesy of the author, adapted by MCUP.

Appendix E

Options for Ecomultilateralism

An entangled security approach to international relations and multilateralism could consider a shift to ecomultilateralism, whereby partnerships and cooperative activities orientate around local ecological and climatic features. This would facilitate regional disaster response and planetary security tasks by which various species, fish, flora, and fauna cross human-derived national or state borders. Pending expert consultation, some options to consider are terrestrial ecoregions, climate zones, and United Nations Sustainable Development Goals (SDG) regional groupings. There are additional options not pictured here, such as Jürgen Schultz's nine ecozones categories or considering freshwater resources.[83]

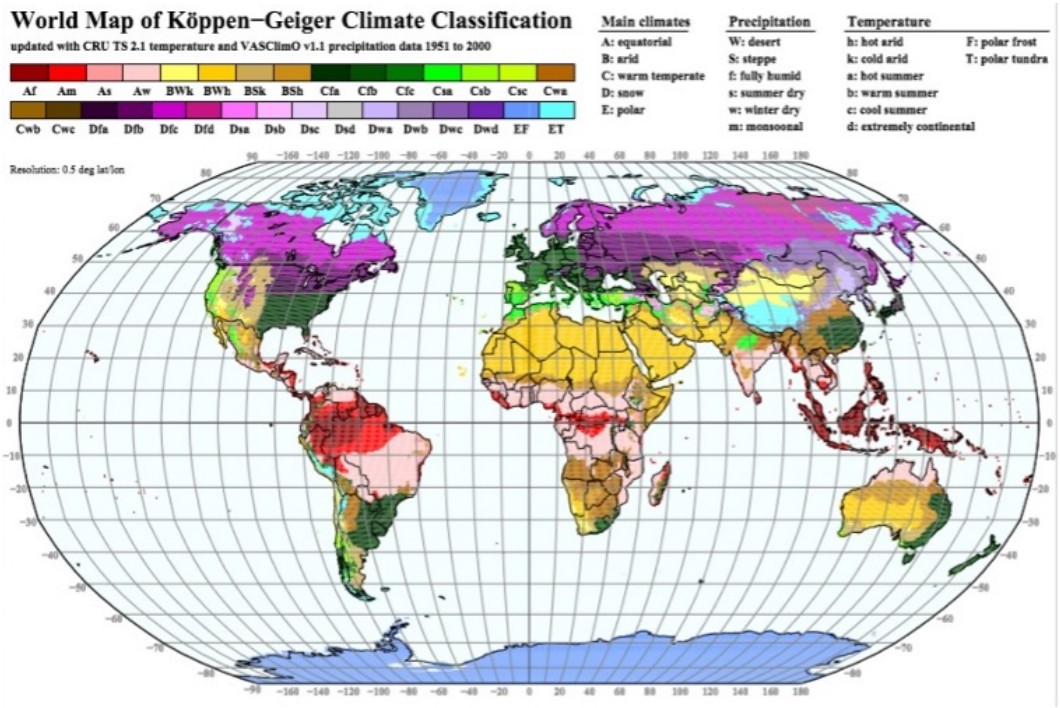
Figure E-1. Terrestrial ecoregions



Although a terrestrial approach excludes freshwater and marine ecosystems, it still provides useful coherence by simplifying some 867 "units" to 14 biomes and 8 biogeographic regions.

Source: David M. Olson et al., "Terrestrial Ecoregions of the World: A New Map of Life on Earth," *BioScience* 51, no. 11 (November 2001): 933–38, https://doi.org/10.1641/0006-3568(2001)051[0933:TEOTWA]2.0.CO;2.

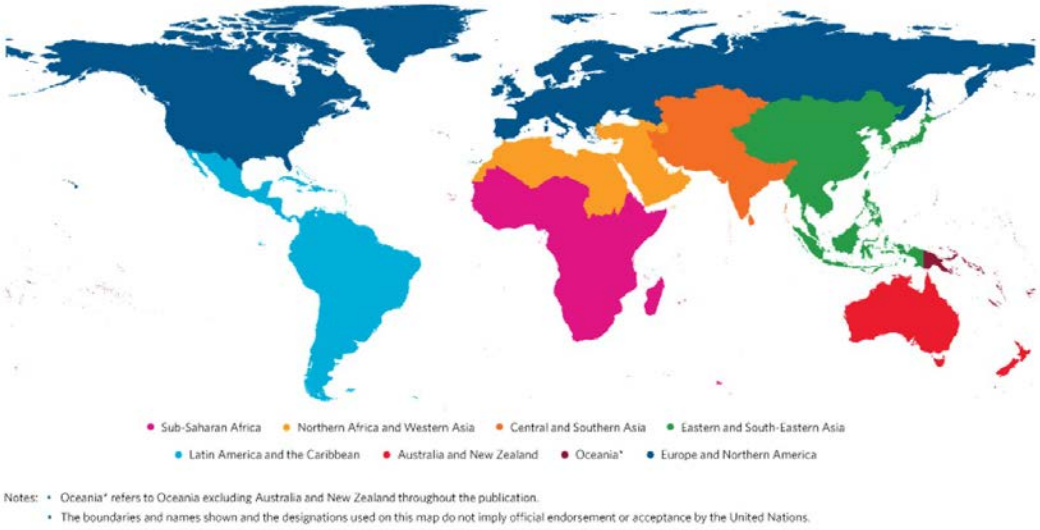
Figure E-2. Climate zones



Used by the World Meteorological Organization, climate zones may aid disaster response planning.

Source: Markus Kottek et al., "World Map of the Köppen-Geiger Climate Classification Updated," *Meteorologische Zeitschrift* 15, no. 3 (2006): 259–63 https://doi.org/10.1127/0941-2948/2006/0130.

Figure E-3. United Nations Sustainable Development Goals regional groupings



To facilitate human hyper-response, an alternate, pragmatic option could be the eight UN SDG regional groupings.

Source: *The Sustainable Development Goals Report 2018* (New York: United Nations, 2018).

Appendix F

The "Home Force" Concept

To apply "mesh interventions," whereby small actions undertaken by billions of people contribute to the mass and speed of the hyper-response, major research and development support could be invested in the household and community spheres. While it is acknowledged that much work has already occurred and is progressing in such areas as sustainability, eco-design, zero-carbon planning, transition towns, garden cities, garden suburbs, permaculture, urban farming, off-grid living, community gardens, and energy efficiency, the "home force" concept aims to resource and expand such innovation at scale and integrate threat logic.

This approach rests on the idea of building new forms of security from the ground up. It considers affective security, psychological safety, and physical human security as well as off-grid ecosolutions. It dares to ask, how can the full range of human security problems—including mental illness, obesity, drug abuse, domestic abuse, and more—be approached considering the task to concurrently "design" the hyperthreat out of existence? How are people protected if critical infrastructure such as water, sewerage, energy, or fuel supply is abrupted halted? Some ideas follow.

- **Home force specialists.** Considering the many benefits to the hyper-response of increased home- or community-based food growing; home cooking; local repair of clothes or other equipment; coordination of circular economy and recycling functions; disaster mitigation work; care for children, the elderly, and other vulnerable people; benefits associated with happy, thriving families and communities; local sports

and exercise groups; and the workload associated with such tasks, there is an argument in favor of creating new forms of “home force specialist” employment. There are many ways that this could occur. For example, a suburban block may have one dedicated gardener who assists all homes to develop productive food gardens and upkeeps food plots on nature strips or nearby allotments. As another, more general example, households may nominate individuals to undertake such tasks, who would be paid in proportion to the functions they take on.

- **Ecotransition coaches and transition support teams.** Skilled coaches and support staff can be assigned to communities and conduct regular training and mentoring activities for community members, tailored to suit age groups, professions, and skill levels. This may demand four to eight hours of work per week, and for consistency, it could occur on the same day each week (e.g., Friday). Consequently, it would be understood across communities throughout the world that the specific day selected is devoted to Earth care and transition and resilience activities.
- **Urban and city farming.** The aim to grow as much food locally as possible, already being progressed under an assortment of initiatives across the world, can also be approached in a more strategic and deliberate way in collaboration with supermarkets, retailers, and existing circular economy expertise.
- **Leverage existing successful initiatives.** To achieve economy of effort and speed of response in the first year of PLAN E, one option is

to provide a seismic funding boost to existing and successful “transition town”-type initiatives to quickly leverage existing expertise.

- **Tradespeople leadership, close security, and mutual support.** Tradespeople, such as electricians, plumbers, arborers, telecommunications specialists, painters, carpenters, and mechanics, will have an enormous job of retrofitting homes, communities, and vehicles. While it may seem obvious that these professionals should be involved in designing systems for this to best occur, in practice they are often excluded from ecovisioning and planning activities as well as government policymaking. Tradespeople, who often work independently, must be funded to participate in planning the hyper-response, since taking time away from their businesses leads to loss of income. Tradespeople need to be given paid leadership and planning roles to facilitate the vast mobilization and training of tradespeople and the development of the best ways for them to support the hyper-response. While bottom-up and context-specific solutions will be needed, some concepts to aid this exploration are offered here:
    - **Close protection**. Tradespeople need to be understood as providing “close protection” to communities from the hyperthreat. They provide an inner layer of security through supporting household and community resilience, while in times of extreme weather events their skills are vital for repair and rebuilding. They can be conceived as being a type of latent army in possession of the exact skill sets needed to counter the hyperthreat.

- **Mutual support**. In the way that military units provide mutual support to one another in battlefield situations, agreements could be made whereby tradespeople from one region are allocated in support to those in a neighboring region during times of hyperthreat attack. These would be mutual support arrangements. **Tradespeople and ecomultilateralism**. Tradespeople can also be considered as national assets that can be used more widely in the fight against the hyperthreat. For example, deployable tradespeople are required for "ecorebuild squads." Additionally, tradespeople will be vital for training the larger hyper-response force, specifically the millions of Earth citizens.
- **Man caves and she sheds.** These have been formed as places for people to connect while often undertaking carpentry or minor construction projects for their communities. Because they contain personnel and skills useful for countering the hyperthreat, they could also be invited to become part of the hyper-response or form a basis for a capability that could be expanded.

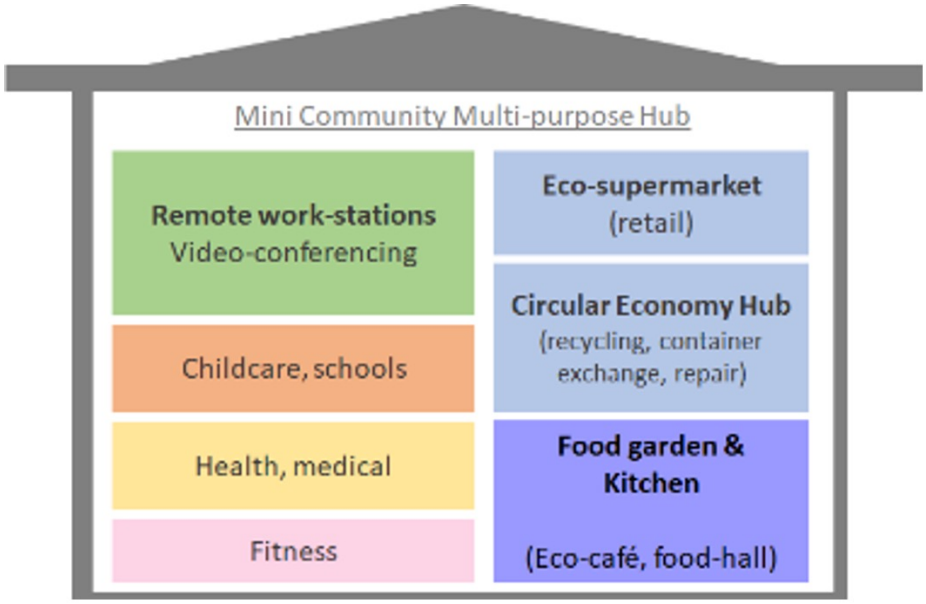
Communities, Design Thinking, and Research and Development

To reduce stress on both humans and the planet, various aspects of daily household and community activities can be redesigned. Multidisciplinary teams involving parents, caregivers, and experts in urban design, tradespeople, preventative health, psychology, education, child development, artificial intelligence, information technology, circular

economy, and sustainable supply chains could undertake formal research and development work to develop new approaches. What is different here from current practice is the transdisciplinary nature of design teams, the involvement of the community in research and development, a different understanding of expertise, and the scale of innovation resourcing directed toward homes and communities. For example, parents' groups might lead a design effort with design-thinking specialists, product designers, urban designers, and eco-specialists supporting them.

One example of how household, family, and community activities could be redesigned is the "minicommunity multipurpose hub," or "minimulti" idea (figure F-1). To reduce commuting burdens, smaller schooling facilities could be colocated with remote work office spaces and other facilities needed for daily living, especially circular economy innovations. To picture it, a parent no longer has to drive their children and themselves long distances to get to school and work. A school running track may meander through local urban food gardens, which could also be used within the school's ecology curriculum. To purchase pasta at the ecosupermarket, the parent returns the reusable pasta container they used last time. At lunchtime, everyone uses the multimini food garden and kitchen, which employs skilled nutrition-oriented cooks. Meals could be centrally prepared, if desired. A parent can go to an exercise class while dropping their child at childcare.

Figure F-1. Minicommunity multipurpose hub (minimulti)



Source: courtesy of the author, adapted by MCUP.

Appendix G

Human Security: Wake Force Concept

Insecure, vulnerable populations are easily exploited by a range of predators and need protection in the aftermath of a major shock event. A "wake force" is tailored for human security and population protection tasking. It is envisioned as a type of infantry-based peacekeeping unit, with a rough composition of at least 40 percent males and 40 percent females. It would include a range of specialists in health and care for highly vulnerable and often traumatized populations.

Depending on the situation, the wake force could work in tandem with traditional policing or military capabilities, or it could be conceived as being an element that comes in after initial policing or military security operations have been conducted (much like the wake of a boat, for which the wake force gets its name). Considering conflict in megacities, the wake force might have a role in establishing safe spaces or evacuation corridors.

Examples of the scope of work assigned to the wake force include:

- Population protection
- Human trafficking, slavery, and paedophile rings
- Critical and emergency governance, infrastructure, and environmental considerations
- Emergency justice, legal, and policing support
- Humanitarian assistance and disaster response
- Urban operations
- Social media and multimedia

- Racial or LGBTI (lesbian, gay, bisexual, transgender, and intersex)-related violence or hate crimes
- Detainee management
- Women, peace, and security
- Sexual violence in conflict
- Care ethics and relations of care
- Human terrain issues
- Child soldiers

Appendix H

The "Ready Center" Concept[84]

Ready centers are envisioned as whole-of-society crisis planning centers that specialize in short-notice integrated risk assessment and response planning during a 4-hour to 30-day time horizon. The driving underpinning logic is to prepare people and systems for chaos. The hypothetical name *ready center* establishes the center's key aim of being "ready" while avoiding the confusion associated with acronym use. Ready centers could operate at nested local, state, national, or ecoregional levels.

Best-practice approaches developed within the fields of disaster response, emergency services, or military planning would inform the development of rapid hyperthreat risk analysis methods. A specific capability that is envisioned as being needed is a "red-flag" service, whereby meteorological and other environmental intelligence agencies (e.g., water catchments or coastal monitoring) have the capacity to issue a red flag notice if they identify trends or phenomena of concern that may fall outside established norms or peer-reviewed scientific research. A red flag notice would precipitate ready centers undertaking rapid analysis.

Permanent staff would be required to run training courses in such methods for agencies and community members typically involved in disaster or emergency response, including meteorological and other environmental intelligence agencies, emergency services, logistics and transportation services, government officials, and medical experts. A suite of possible high-risk scenarios and contingency plans for response would need

to be developed, and simulated training exercises would need to be conducted to test and improve response capability.

This would also involve the production and maintenance of simple publications and online resources that ensure common language and understanding for various subject matter experts and the rapid assembly of multidisciplinary analytical and planning teams. Finally, ready centers would need to potentially provide an institutional home for rapid response or ready reaction forces with niche specialist skills outside normal emergency services agencies, such as deployable crisis planning, logistics, and communications expertise.

Endnotes:

[1] See Elizabeth G. Boulton, "Plan E: A Grand Strategy for the Twenty-First Century Era of Entangled Security and Hyperthreats," *Journal of Advanced Military Studies* 13, no. 1 (Spring 2022): 92–128, https://doi.org/10.21140/mcuj.20221301005.

[2] For more detail on the hyperthreat concept, its theoretical background, and its unique characteristics, see appendix B.

[3] Will Steffen et al., "Planetary Boundaries: Guiding Human Development on a Changing Planet," *Science* 347, no. 6223 (2015), https://doi.org/10.1126/science.1259855.

[4] Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011).

[5] The term *safe Earth* encompasses a body of research. It is a colloquial term for *stabilized Earth*, as described in Steffen et al., "Planetary Boundaries." It contrasts to the alternate *hothouse Earth* trajectory. The term *safe* also connects to research on a "safe" operating space for humanity, as described in Steffen et al., "Planetary Boundaries." It also refers to research on abrupt change and dangerous thresholds, as described in S. Bathiany et al., "Abrupt Climate Change in an Oscillating World," *Scientific Reports* 8, no. 1 (2018), https://doi.org/10.1038/s41598-018-23377-4. Finally, it incorporates analysis on the need to limit global warming to 1.5 degrees Celsius (rather than 2 degrees Celsius) to avoid "dangerous" climate change, as described in "Summary for Policymakers," in *Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty*, ed. Valérie Masson-Delmotte et al. (Geneva, Switzerland: Intergovernmental Panel on Climate Change, 2018).

[6] Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis, MN: University of Minnesota Press, 2013); and Elizabeth G. Boulton, "Climate and Environmental Change: Time to Reframe Threat?" (PhD diss., Australian National University, 2020). For more detail, see appendix C.

[7] Gen Stanley McChrystal, USA, *Team of Teams: New Rules of Engagement for a Complex World* (New York: Portfolio/Penguin, 2015).

[8] The term *intra-action* is distinct from *interaction*, which describes the idea of two distinct, separately formed identities meeting and engaging. Intra-action is the idea that both entities are partly formed through their ongoing interaction with each other. Intra-action "signifies the mutual constitution of entangled agencies . . . distinct agencies do not precede, but rather emerge through, their intra-action." Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007), 33.

[9] For more on the hyper-response force, see appendix A.

[10] For more on these lines of effort, see appendix D.

[11] *Moral forces* comprise the major factors that impact military personnel motivation, cohesion, and sense of well-being and passion. These are often referred to as a soldier's "will to fight." Raphael S. Cohen, "In the Ranks: Making Sense of Military Morale," *World Affairs* 178, no. 1 (May/June 2015): 59–66.

[12] The term *vibrant* relates to new materialism philosophical discourse, the idea of effervescent, ongoing sense-making, in connection with the "nonhuman." See Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010).
[13] Richard Denniss and Allan Behm, "Double Game: How Australian Diplomacy Protects Fossil Fuels," *Australian Foreign Affairs* 12 (July 2021): 49–68.
[14] "What Is the Duluth Model?," Domestic Abuse Intervention Programs, accessed 10 July 2018; and Ellen Pence and Michael Paymar, *Education Groups for Men Who Batter: The Duluth Model* (New York: Springer, 1993).
[15] Pankaj Mishra, *Age of Anger: A History of the Present* (London: Allen Lane, 2017).
[16] Eiríkur Bergmann, "Populism and the Politics of Misinformation," *Safundi: Journal of South African and American Studies* 21, no. 3 (2020): 251–65, https://doi.org/10.1080/17533171.2020.1783086; Susan Park, *International Organisations and Global Problems: Theories and Explanations* (Cambridge, UK: Cambridge University Press, 2018), https://doi.org/10.1017/9781139924788; Michael Barnett, *Empire of Humanity: A History of Humanitarianism* (Ithica, NY: Cornell University Press, 2011); and Thitinan Pongsudhirak, "Maintaining What's Left of Rules-Based Order," *Bangkok Post* (Thailand), 20 July 2018.
[17] Ian Harris and Patricia M. Mische, "Environmental Peacemaking, Peacekeeping, and Peacebuilding: Integrating Education for Ecological Valance and a Sustainable Peace," in *Educating for a Culture of Social and Ecological Peace*, ed. Anita L. Wenden (Albany: State University of New York Press, 2004), 169–82.
[18] For more on ecomultilateralism, see appendix E.
[19] United Nations High Commissioner for Refugees (UNHCR), accessed 11 April 2022. As of mid-2021, there were an estimated 85 million forcibly displaced people in the world, of which 35 million were children. A further 4.6 million new Ukrainian refugees were recorded by the UNHCR in April 2022. In 2020, 52 percent of forcibly displaced people were within the working-age bracket, between 18 and 59 years of age. *Global Trends: Forced Displacement in 2020* (Geneva, Switzerland: UNHCR, 2021), 3. If it is assumed that 80 percent of these working-age individuals have caretaking or other work commitments, are unfit for work, or do not wish to work, that leaves a potential available workforce of around 18 million people.
[20] Nicholas Fotion, *War and Ethics: A New Just War Theory* (London: Continuum, 2007).
[21] Elizabeth G. Boulton, "Climate Change as a Hyperthreat," in *Australian Contributions to Strategic and Military Geography*, ed. Stuart Pearson, Jane L. Holloway, and Richard Thackway (Cham, Switzerland: Springer International, 2018), 69–90.
[22] Edward B. Barbier, *A Global Green New Deal: Rethinking the Economic Recovery* (Cambridge, UK: Cambridge University Press, 2010); and Alexandria Ocasio-Cortez, "Recognizing the Duty of the Federal Government to Create a Green New Deal," H. R. 109, 116th Cong., 1st Sess. (2019).
[23] Kent D. Drescher et al., "An Exploration of the Viability and Usefulness of the Construct of Moral Injury in War Veterans," *Traumatology* 17, no. 1 (2011): 8–13, https://doi.org/10.1177/1534765610395615; and Jonathan Shay, "Moral Injury," *Psychoanalytic Psychology* 31, no. 2 (2014): 182–91, https://doi.org/10.1037/a0036090.
[24] Elizabeth G. Boulton, "It's Time for a New Age of Enlightenment: Why Climate Change Needs 60,000 Artists to Tell Its Story," *Conversation*, 7 June 2016.

[25] Anna Carolina Muller Queiroz et al., "Immersive Virtual Environments and Climate Change Engagement," (paper presentation, Immersive Learning Research Network Conference, Missoula, MT, 2018).

[26] See, for example, Elinor Ostrom, review of *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies*, by Scott E. Page, *Perspectives on Politics* 6, no. 4 (December 2008): 828–29, https://doi.org/10.1017/s1537592708082054; and Elinor Ostrom, Marco A. Janssen, and John M. Anderies, "Going beyond Panaceas," *Proceedings of the National Academy of Sciences of the United States of America* 104, no. 39 (September 2007): 15176–78, https://doi.org/10.1073/pnas.0701886104.

[27] *Natural climate solutions*, also referred to as "the forgotten solution," refers to "conservation, restoration, and improved land management actions that increase carbon storage and/or avoid greenhouse gas emissions across global forests, wetlands, grasslands, and agricultural lands." Bronson W. Griscom et al., "Natural Climate Solutions," *Proceedings of the National Academy of Sciences of the United States of America* 114, no. 44 (October 2017): 11645–50, https://doi.org/10.1073/pnas.1710465114.

[28] Caroline Fraser, *Rewilding the World: Dispatches from the Conservation Revolution* (New York: Picador, 2009); and Marc Bekoff, *Rewilding Our Hearts: Building Pathways of Compassion and Coexistence* (Novato, CA: New World Library, 2014).

[29] For more on the role of trades skills, see appendix F.

[30] For more on these activities, see appendix A.

[31] Rutger Bregman, *Utopia for Realists: How We Can Build the Ideal World*, trans. Elizabeth Manton (New York: Black Bay Books, 2017).

[32] The term *dual train* means than an individual possesses two career specialities or skills. This would apply to people who participate in high-stress work. For example, a paramedic's alternate skill might be horticulture or teaching.

[33] For an example, see appendix F.

[34] For more detail, see appendix G.

[35] The period from the mid-eighth century to the mid-thirteenth century is considered the Islamic Golden Age. It was a time during which Arabs and Muslims made great strides in the fields of science, engineering, education, technology, and more. Astronomy was studied fastidiously to calculate the direction of the Qibla, to fix the times for Muslim prayers, and to aid sailors and navigators.

[36] Brian T. Bennett, *Understanding, Assessing, and Responding to Terrorism: Protecting Critical Infrastructure and Personnel*, 2d ed. (Hoboken, NJ: Wiley, 2018).

[37] Ibrahim Ghafir et al., "Security Threats to Critical Infrastructure: The Human Factor," *Journal of Supercomputing* 74 (2018): 4986–5002, https://doi.org/10.1007/s11227-018-2337-2.

[38] Wendy Steele, Karen Hussey, and Stephen Dovers, "What's Critical about Critical Infrastructure?," *Urban Policy and Research* 35, no. 1 (2017): 74–86, https://doi.org/10.1080/08111146.2017.1282857.

[39] *Communication from the Commission on a European Programme for Critical Infrastructure Protection* (Brussels, Belgium: Commission of the European Communities, 2006).

[40] *Systems maintenance* refers to activities undertaken by a nation-state's security sector to ensure that its citizens and material-security needs (e.g., access to fuel, timber, minerals, and water) are met. As Doug Stokes explains, after the end of the Cold War, the United States sought to create a liberal rules-based international order based on democratic

capitalism. As this system became more vulnerable to disruptions in energy supply, there was an increased "global commons" argument to use tools of force, such as the Central Intelligence Agency (CIA) and the U.S. military, to "maintain the system." The United States, and much of the rest of the world, depends on a stable energy supply. Consequently, in American statecraft, systems maintenance—the use of security forces to achieve material security—is understood or framed as dutiful service to the United States and the broader world. Doug Stokes, "Blood for Oil?: Global Capital, Counter-Insurgency and the Dual Logic of American Energy Security," *Review of International Studies* 33, no. 2 (April 2007): 245–64, https://doi.org/10.1017/S0260210507007498.

[41] Tom Burgis, *Kleptopia: How Dirty Money Is Conquering the World* (New York: HarperCollins, 2020).

[42] Facundo Alvaredo et al., "The Elephant Curve of Global Inequality and Growth" *American Economic Association Papers and Proceedings* 108 (2018): 103–8, https://doi.org/10.1257/pandp.20181073.

[43] Bregman, *Utopia for Realists*. For more information on funded care work and home-based resilience work, see appendix F.

[44] Inevitably there will be overlap between this function and that of the task force responsible to combating crime, corruption, and terrorism. Delineations would need to be determined by relevant agencies. Broadly, the point force is focused on the climate and environmental change hyperthreat, especially greenhouse gas emissions.

[45] Henry D. Jacoby, Y. H. Henry Chen, and Brian P. Flannery, "Informing Transparency in the Paris Agreement: The Role of Economic Models," *Climate Policy* 17, no. 7 (2017): 873–90, https://doi.org/10.1080/14693062.2017.1357528.

[46] Quy-Toan Do et al., "Terrorism, Geopolitics, and Oil Security: Using Remote Sensing to Estimate Oil Production of the Islamic State," *Energy Research and Social Science* 44 (October 2018): 411–18, https://doi.org/10.1016/j.erss.2018.03.013.

[47] This task force will exist within the planetary security group.

[48] For more on ready centers, see appendix H.

[49] Sun Tzu, *The Complete Art of War*, trans. Ralph D. Swayer (Boulder, CO: Westview Press, 1996).

[50] Diana Coole and Samantha Frost, eds., *New Materialisms: Ontology, Agency, and Politics* (Durham, NC: Duke University, 2010); and Rick Dolphijn and Iris van der Tuin, *New Materialism: Interviews and Cartographies* (London, Open Humanities Press, 2012).

[51] Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University, 2010).

[52] See Graham Harman, *Tool-Being: Heidegger and the Metaphysics of Objects* (Chicago, IL: Open Court, 2002).

[53] Martin Heidegger, *Being and Time*, trans. John Macquarrier and Edward Robinson (New York: Harper Perennial, 2008).

[54] Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013), 1.

[55] Morgan Meis, "Timothy Morton's Hyper-Pandemic," *New Yorker*, 8 June 2021.

[56] Morton, *Hyperobjects*, 148, 176, 195.

[57] Morton, *Hyperobjects*, n.p.

[58] Morton, *Hyperobjects,* 128.

[59] Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011), 2.
[60] See Hannah Arendt, *Eichmann in Jerusalem: A Report on the Banality of Evil* (New York: Penguin, 1963).
[61] See Daniel Brunstetter and Megan Braun, "The Implications of Drones on the Just War Tradition," *Ethics and International Affairs* 25, no. 3 (Fall 2011): 337–58, https://doi.org/10.1017/S0892679411000281; and Grégoire Chamayou, *Drone Theory* (London: Penguin, 2015).
[62] Elizabeth G. Boulton, "Climate Change as a Hyperthreat," in *Australian Contributions to Strategic and Military Geography*, ed. Stuart Pearson, Jane L. Holloway, and Richard Thackway (Cham, Switzerland: Springer International Publishing, 2018), 80.
[63] Nicholas Fotion, *War and Ethics: A New Just War Theory* (London: Continuum International Publishing Group, 2007).
[64] Morton, *Hyperobjects*, 8–9. This quote is part of Morton's explanation as to why he rejects the term *climate change* and insists on using the term *global warming*.
[65] Morton, *Hyperobjects*, 36.
[66] Morton, *Hyperobjects*, 39.
[67] Morton, *Hyperobjects*, 59.
[68] Morton, *Hyperobjects*, 59.
[69] Morton, *Hyperobjects*, 67.
[70] Morton, *Hyperobjects*, 74.
[71] Morton, *Hyperobjects*, 75–76.
[72] Morton, *Hyperobjects*, 77.
[73] Morton, *Hyperobjects*, 86.
[74] Morton, *Hyperobjects*, 103.
[75] Morton, *Hyperobjects*, 104.
[76] Morton, *Hyperobjects*, 118. Emphasis added.
[77] Morton, *Hyperobjects*, 122.
[78] Morton, *Hyperobjects*, 127–28.
[79] Morton, *Hyperobjects*, 129.
[80] Morton, *Hyperobjects*, 186.
[81] Doug Stokes, "Blood for Oil?: Global Capital, Counter-Insurgency and the Dual Logic of American Energy Security," *Review of International Studies* 33, no. 2 (April 2007): 245–64, https://doi.org/10.1017/S0260210507007498.
[82] The term *realistic* draws on Karen Barad's definition of *agential realism*, whereby realism is "not about representations of an independent reality but about the real consequences, interventions, creative possibilities, and responsibilities of intra-acting within and as part of the world." Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007), 37. It also accords with Sally McFague's "return to earth" (or "get real") ecofeminist theological approach. Sallie McFague, *A New Climate for Theology: God, the World, and Global Warming* (Minneapolis, MN: Fortress Press, 2008). It contrasts with traditional foreign affairs studies, which regard *realpolitik* as involving pragmatic pursuits for power and dominace.
[83] See Jürgen Schultz, *The Ecozones of the World: The Ecological Divisions of the Geosphere*, trans. Bridget Ahnert, 2d ed. (Berlin: Springer, 2005).

[84] The concept for a ready center, of which the driving undepinning logic is to prepare people and systems for chaos, is explained in greater detail in Elizabeth Boulton, "Submission 47: Senate Inquiry into Implications of Climate Change for Australia's Security" (paper, Foreign Affairs Defence and Trade References Committee, Parliment of Australia, Canberra, Australia, 2017).